

CHEMUNG COUNTY, NEW YORK

COUNTY-WIDE FIRE SERVICES STUDY

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The logo consists of a central diamond shape formed by four squares. The top and bottom squares are oriented with their corners towards the center, while the left and right squares are oriented with their sides towards the center.

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I. EXECUTIVE SUMMARY

This *County-Wide Fire Services Study* was conducted by MMA Consulting Group, Inc., and assesses current services and identifies methods to improve service delivery. There are 20 fire departments in Chemung County; one fire department has recently deactivated. Eighteen of the remaining 19 fire departments are volunteer fire departments; the City of Elmira has a career fire department. Several volunteer fire departments supplement their volunteer response by employing part-time personnel or a small number of full-time personnel. In addition to the city fire department, there are village fire departments, fire districts and fire protection districts in the County. The fire departments respond to approximately 6,500 calls for service annually. Approximately eight percent of calls are fire calls (building, vehicle, and other fires); 62 percent are emergency medical services (EMS) calls; and 30 percent are other types of calls. There are more than 500 active volunteers and 24 fire stations in the County.

Chemung County is not directly responsible for fire services in the County, but has an Office of Fire and Emergency Management with broad planning and organization responsibilities. The Director of the Office of Emergency Management serves as the County Fire Coordinator. The County also employs a Deputy Coordinator. The Director of the Office of Fire and Emergency Management is responsible for the County-wide E-911 emergency communication and dispatch center. The Director of the Office of Fire and Emergency Management is referred to as the Fire Coordinator throughout this report.

The Fire Coordinator's Office administers the County mutual aid plan, manages a training facility, and assists in the coordination of County-wide training efforts. The Fire Coordinator's office has established a system of several volunteer coordinators to serve various parts of the County. The Fire Coordinator's office works with a County Fire Advisory Board, which meets on a regular basis to discuss issues, share problems and information, and coordinate activities.

The review of County fire services required the consultants to develop an understanding of the organization of fire services and the challenges faced by the fire and rescue organizations in the County. The consultants conducted field visits to meet with each fire department, inspect facilities and apparatus, and discuss operational practices. Written documents, response data and other data were

reviewed and computer maps were prepared. The consultants also participated in several meetings with the County Fire Advisory Board. The County Fire Coordinator provided the consultants with data and background information and organized several meetings and site visits for the consultants. Fire and rescue personnel were concerned about the future of the fire service in the County, but were generally optimistic. Officials expressed pride in the work they performed and, while there may be friendly competition among fire departments, the predominant attitude is one of mutual support.

Volunteer fire department chief officers were concerned at the outset of the study that the purpose of the study would be to reduce the number of volunteer departments through merger or consolidation. In fact, the purpose of this study is to foster discussion among the fire departments and develop methods of functional or operational integration. The study is concerned with the provision of services to the public and the promotion of the safety of volunteer and career firefighters.

STUDY FINDINGS

The primary finding of the study is that the fire and rescue system in Chemung County has evolved to reflect the unique needs of different parts of the County. The fire and rescue service will continue to change in many ways, but the current organizational framework for providing fire and rescue services is expected to exist, in general, in its current form. There are many ways to improve the level of cooperation among the departments and thus, the effectiveness and efficiency of the system. A number of recommendations presented in this report require the cooperation of a variety of officials. The Chemung County Fire Advisory Board and the County Fire Coordinator are the primary parties that must be involved in the implementation of recommendations. It is important to note that the volunteer fire departments, the Elmira Fire Department, and the County Fire Coordinator's office have limited administrative support staff, which reduces the effectiveness of each organization. Implementation of many recommendations will require some office assistance and professional staff support.

Other major findings in the report include:

- The relatively large number of fire departments results in a series of complex organizational, operational, and personal relationships.

- The volunteer fire departments provide service to two-thirds of the County's residents. The City of Elmira's paid fire department serves approximately one-third of the County's population, which is concentrated in 7.2 square miles of land area.
- The resources devoted to fire departments are often the product of local property tax monies. The fire departments in wealthier areas of the County generally have better facilities and equipment.
- The fire departments collectively appear to maintain a relatively large inventory of buildings and apparatus. However, many buildings are old and in need of repair. Some departments have old apparatus and equipment.
- The strength of volunteer fire departments, when measured by the number of active members, indicates that some organizations may be more viable than others.
- The stability of fire departments and the ability of departments to respond to incidents appears to be the result of active, devoted, volunteer members and chief officers who are willing to devote many hours to department work.
- The County's geography and road network make it difficult for fire departments to protect rural areas. Fire departments with dwindling membership are able to respond with an adequate number of personnel only with the aid of another, sometimes distant, fire department.
- The provision of fire protection, emergency medical first responder service, technical rescue (such as vehicle extrication, trench collapse, and machinery accidents), hazardous materials response, and flooding and water rescue, present challenges to the County's fire departments, especially those with a limited number of members.
- The volunteer system has been augmented in two or three fire departments by the employment of a small number of part-time or full-time personnel.

- The volunteer fire chiefs in the County have a relatively large administrative burden. However, few departments have office support staff.
- The County fire and rescue system responds to approximately 6,500 calls annually; 62 percent of the calls are for EMS services, which suggests that there is a need to assess the burden EMS places on the volunteer component of the fire and rescue system.
- The County's consolidated emergency communication system makes coordinated and safe fire and rescue response possible.
- The Fire Coordinator's Office and the County Fire Advisory Board are essential to ensure an effective and coordinated fire and rescue system in the County.
- There are opportunities for shared administrative services, such as joint purchasing of equipment, the use of multi-media training, and use of specialized equipment items (e.g., air compressors for self-contained breathing apparatus tanks), repair and maintenance services, office assistance, and grant writing assistance.
- The Fire Advisory Board has not established uniform measures or performance standards by which each fire department could assess its capabilities.
- There are no standards or measures within the County to define a viable and effective fire and rescue department.
- The County fire departments are organized into four districts for mutual aid purposes. This division structure requires review and adjustment.
- The Volunteer Deputy Fire Coordinator structure has merit, but the role of the Volunteer Deputy Coordinators requires expansion.
- The County's fire departments participate in mutual aid and automatic mutual aid, but the system requires expansion.

- The County mutual aid system is essential to the effectiveness of fire operations and the safety of firefighting personnel. It appears that the Elmira Fire Department is not a full participant in the mutual aid system.
- The County Fire Coordinator's office has broad responsibilities, with a small staff of employees. The staff has limited time to assist in coordinating fire and rescue services.
- The organization of the Fire Coordinator's office within the Office of Emergency Management is a sound organizational plan.
- The County E-911 center has implemented emergency medical dispatch (EMD). The EMD protocols are followed by fire departments in the County.
- The County E-911 system generates a great deal of data. However, the system lacks report writing capability to generate usable data for fire departments and the Fire Coordinator.
- The office space allotted to the County E-911 center is limited and more space is needed.

The recommendations in this report cover a range of topics relating to coordination, planning, automatic mutual aid, development of measures of performance, and emergency response strategies. These suggestions are designed to improve operations and encourage cooperative service delivery.

RECOMMENDATIONS

The primary recommendations resulting from this analysis are summarized below.

COUNTY-WIDE FIRE AND RESCUE ORGANIZATION RECOMMENDATIONS

- The current organizational framework for providing fire and rescue services should be continued, but with an increase in operational and administrative cooperation efforts.
- The County elected and appointed officials should make a systematic effort to support and maintain the volunteer character of fire departments in Chemung County.

- The County Fire Advisory Board should have a stronger role in the coordination of fire and rescue services.
- The County Fire Coordinator should be a full participant in efforts to create a strong fire and rescue system.
- The Chemung County Fire Advisory Board should appoint a subcommittee composed of four or five members of the Board and the Fire Coordinator. This subcommittee should draft a document describing the role of the County Fire Advisory Board.
- The County Fire Advisory Board, working with the County Fire Coordinator, should define the elements of a viable fire-rescue department. A set of goals or standards should be established to enable volunteer fire departments to measure their performance. A fire department should have:
 - ▶ a defined home area district for which it is required to provide protection;
 - ▶ appropriate organizational structures for fire operations and for company business and social functions;
 - ▶ an active, knowledgeable, and dedicated policy governing/policy board, or individual, to oversee operations;
 - ▶ a set of Planned Standards of Cover requirements for targeted structures and areas within the district;
 - ▶ a set of formal working mutual aid agreements;
 - ▶ a sufficient number of trained and certified members to provide adequate and safe initial attack, meeting OSHA requirements and relevant NFPA standards;
 - ▶ appropriate requirements for continuing training, officer training, and a set of standard operating guidelines or standard operating procedures (SOG/SOPs);

- ▶ one or more appropriately located, maintained, and safe fire station(s);
 - ▶ a record of participation in the County Fire Advisory Board and battalion activities;
 - ▶ a sufficient income source, or sources, to support adequate and safe department operations.
- The Fire Coordinator, working with the County Fire Advisory Board, should coordinate the development of a new battalion structure.
- The organization of new battalions should be based on factors such as geography, road networks, mutual response dependency, availability of personnel, and reasonable proximity. Exhibit 1 shows the current district arrangement and presents three examples of possible battalion structures. Proposed Battalion Organization Model 1 is the most desirable alternative and is described in detail in the report.

**EXHIBIT 1
ALTERNATIVE BATTALION CONFIGURATIONS**

CURRENT	PROPOSED BATTALION ORGANIZATION MODEL 1	PROPOSED BATTALION ORGANIZATION MODEL 2	PROPOSED BATTALION ORGANIZATION MODEL 3
<p><i>District 1</i> Big Flats, Golden Glow, Tompkins Corners, West Elmira, West Hill</p> <p><i>District 2</i> Chemung, Pine City, Southport, Webbs Mills, Wellsburg</p> <p><i>District 3</i> Baldwin, Breesport, East Hill, Erin, Van Etten</p> <p><i>District 4</i> Elmira Heights, Horseheads, Millport, Town & Country</p>	<p><i>Battalion 1</i> Tompkins Corners, Millport, Town & Country Van Etten, Erin, Breesport</p> <p><i>Battalion 2</i> Big Flats, Horseheads, Elmira Heights, West Hill (deactivated)</p> <p><i>Battalion 3</i> Baldwin, Chemung East Hill, Southport, Wellsburg</p> <p><i>Battalion 4</i> Webbs Mills, Pine City, Golden Glow, West Elmira</p> <p><i>Battalion 5</i> Elmira City</p>	<p><i>North Battalion</i> Van Etten, Erin, Breesport, Horseheads, Town & Country</p> <p><i>Central Battalion</i> Elmira Heights, Elmira, West Elmira, West Hill</p> <p><i>West Battalion</i> Tompkins Corners, Millport, Big Flats, Golden Glow, Pine City, Webbs Mills</p> <p><i>South Battalion</i> Southport, Wellsburg, Chemung, Baldwin, East Hill</p>	<p><i>Urban Battalion</i> Elmira, Elmira Heights, West Elmira, Horseheads, Town & Country, Southport, Big Flats</p> <p><i>Urban Ring Battalion</i> Millport, Tompkins Corners, Pine City, Webbs Mills, Wellsburg, Chemung, Van Etten, Baldwin, Erin, Big Flats, Breesport, Southport, East Hill, West Hill, Golden Glow</p>

Note: The Chemung County Airport has a fire department which is not incorporated into a battalion.

- The County Fire Advisory Board should ensure that periodic battalion meetings are held.
- The County Fire Coordinator should assign a volunteer Deputy Fire Coordinator to assist each battalion with the development of formal mutual aid agreements for regular and automatic response within each battalion area and among battalions.
- The Volunteer Deputy Coordinators should be assigned specific responsibilities for activities, such as County-wide training, standardized preplanning and plan dissemination to mutual aid units, joint purchasing of goods and services, and special operations.
- The County Fire Advisory Board should establish battalion and County-wide working committees for training, emergency communication, joint purchasing, special operations, preplanning, master resource lists, etc.

- The County volunteer Deputy Fire Coordinators should be paid a reasonable annual stipend of between \$2,500 and \$3,500.

MUTUAL AID RELATED RECOMMENDATIONS

- The Fire Advisory Board should conduct a detailed review of automatic aid and regular on-call mutual aid arrangements.
- The County Fire Advisory Board should ensure that mutual aid practices are formalized in writing. The agreements should be reviewed periodically and adjusted as needed.
- The review of mutual aid agreements should include mutual aid arrangements involving departments from other New York State counties and Pennsylvania.
- The County Fire Advisory Board should establish additional County-wide specialized teams, similar to the existing Hazmat Team. Battalion teams (or multiple battalion teams) should be established for functions such as Rapid Intervention Team (RIT), safety officer, tanker, wildland, overhead, water rescue and recovery, multiple casualty incident, air crash, airport, etc.
- The County fire rescue service should develop standardized, County-wide preplanning forms for all target hazards. The forms should include a mutual aid preplan for each hazard.
- The concept of nearest station response should be explored in order to shorten response distances and arrival times for first-due units. The home department should continue to respond and maintain command.
- The County fire and rescue service should ensure that each fire department and battalion conduct a hazard analysis of its service area. The minimum Standards of Cover assignment should be established for each target hazard identified. A Standard of Cover consists of:
 - ▶ The minimum number of site-trained, certified responders, together with the number and types of apparatus needed for a specific target or target area;

- ▶ The maximum response times allowable for the arrival of the first-due engine company followed by the entire first-due assignment.
- The County Fire Coordinator should work with the County Fire Advisory Board to ensure that all fire departments are full participants in the mutual aid system and that responses are integrated.
- The City of Elmira and adjacent volunteer fire departments should establish automatic mutual aid agreements.
- The Elmira Fire Department and the surrounding volunteer fire departments should develop an agreement which requires the automatic deployment of a Rapid Intervention Crew (RIT) when all on-duty Elmira Fire Department firefighters are committed to firefighting operations. An adjacent volunteer fire company should be dispatched to the assignment within the City.
- The volunteer fire departments adjacent to the City of Elmira should develop an agreement to provide an automatic RIT mutual aid response when a volunteer fire department is committed to firefighting operations.
- The County's dispatch protocols should automatically deploy a volunteer engine company to the City of Elmira, when the Elmira Fire Department's response capability is reduced to one engine and a ladder due to a single company assignment.
- The County Fire Coordinator should establish a user committee to address emergency dispatch, radio reception, or related problems.
- The fleet of pumpers should be adjusted to reflect a redeployment plan. Over a period of time, the pumper fleet should be reduced by seven; this will result in cost savings of approximately \$1,750,00 to \$2,100,000, or \$250,00 to \$300,000 per apparatus.

PROFESSIONAL DEVELOPMENT RECOMMENDATIONS

- The County-wide fire and rescue services should offer combined officer training and volunteer leadership programs and open the programs to all fire departments.

- The Fire Advisory Board and the Fire Coordinator should consider issuing a certified firefighter (exterior or interior) identification card.
- The Fire Advisory Board should establish a mentoring program for new chiefs, and possibly other ranks or specialty positions.
- The County should expand the training facility to include a structure with classrooms.

ADMINISTRATIVE AND SUPPORT SERVICES RECOMMENDATIONS

- The Fire Advisory Board and the Fire Coordinator should develop a strategy to acquire office support for volunteer fire departments. Two or more departments should share one support person on a part-time basis.
- The County Fire Coordinator should provide assistance to fire departments with ISO preparation, grant writing, annual report preparation, public relations and member recruitment campaigns, budget preparation, and apparatus/equipment specification preparation.
- The Fire Advisory Board should develop and implement a County-wide volunteer member recruiting program.
- The Fire Advisory Board should conduct one or more annual social activities open to all County fire department members, to encourage a unified County fire protection system.
- The County Fire Coordinator should be authorized to employ one additional staff person. This staff person should be responsible for coordinating training and administrative needs of fire and rescue agencies.
- The Fire Advisory Board and the County Fire Coordinator should prepare an annual report which describes fire service activities.
- The Fire Advisory Board and the County Fire Coordinator should review the fire-rescue service levels (local Standard of Cover) available in various parts of the County and relate this to an analysis of the tax rate and total fire department dollar allocation for each department.

MEASUREMENT OF ACTIVITY AND STANDARDS OF PERFORMANCE RECOMMENDATIONS

- The County fire and rescue service should begin measuring services provided using generally accepted standards and guidelines. NFPA Standard 1710 should be used for measuring the Elmira career fire department and relevant sections of NFPA Standard 1720 should be used to measure the volunteer fire departments.
- The County Fire Advisory Board, working with the County Fire Coordinator, should consider developing other measures of performance.
- The County E-911 center should develop reports of fire and rescue activities to allow fire departments to assess trends.

EMERGENCY COMMUNICATION FACILITIES AND STAFFING RECOMMENDATIONS

- The County should develop a long-term plan to relocate the current emergency communication center.
- The County should conduct a space needs analysis for the emergency communication center. It is estimated that the center requires 3,700 to 4,300 square feet of space.
- The County should evaluate report writing software that will allow the development of detailed fire and rescue response reports.
- The County should continue to use an Emergency Medical Dispatch system. The Elmira Fire Department should follow established County EMD procedures.
- Chemung County should conduct a staffing study of the emergency communications system.

Exhibit 2 lists the major recommendations in the order they are presented in this report, along with assigned priorities. The recommendations have been categorized as follows:

Priority 1: Recommendations which directly affect the safety of personnel or the public, or establish the framework for other recommendations. These recommendations should be addressed immediately.

Priority 2: Recommendations which should be implemented without delay, since they may bear directly on safety, productivity, cost and efficient operation of fire and rescue services in Chemung County.

Priority 3: Recommendations which are important to the efficient provision of fire and rescue services in Chemung County. These recommendations should be implemented as soon as reasonable and practical.

Priority 4: Recommendations which can contribute to the continued improvement of fire and rescue services in Chemung County. These recommendations should be implemented as soon as resources and operating conditions permit.

**EXHIBIT 2
RECOMMENDATIONS**

	RECOMMENDATION	PRIORITY
1	County elected and appointed officials should make a systematic effort to support the effective volunteer fire departments in Chemung County.	1
2	The County Fire Advisory Board should have a stronger role in the coordination of fire and rescue services.	1
3	The County Fire Advisory Board should seek to: establish an effective response system which maximizes automatic mutual aid; develop mechanisms which help ensure firefighter safety; identify response, equipment, communication or other problems with the emergency response system and suggest solutions to identified problems; and provide information and data to the public and elected officials concerning the effectiveness of the fire and rescue system and potential problems within the system.	2
4	The County Fire Advisory Board, working with the County Fire Coordinator, should be responsible for establishing standards and measures for fire departments to follow.	2
5	The County Fire Coordinator should be a full participant with the County Fire Advisory Board in creating a strong fire and rescue system.	1
6	The Chemung County Fire Advisory Board should appoint a subcommittee composed of four or five members of the Board and the Fire Coordinator, to develop a document describing the goals and role of the Board.	1
7	The Chemung County Fire Advisory Board should circulate a draft of the document to the leadership of each fire department.	2
8	The Chemung County Fire Advisory Board should circulate a draft of the document to elected and appointed officials.	2
9	The Chemung County Fire Advisory Board should officially vote to adopt the document.	2

	RECOMMENDATION	PRIORITY
10	The County should develop a long-term plan to relocate the current emergency communication center.	4
11	The County should conduct a space needs analysis for the emergency communication center.	3/4
12	The County should evaluate software which is designed to generate detailed fire and rescue response reports.	2/3
13	The County should continue to use an Emergency Medical Dispatch system and dispatch departments and personnel in accordance with protocols.	1
14	The County Fire Coordinator should establish a user committee to address emergency dispatch, radio reception, or related problems.	3
15	The County should conduct a technical staffing review of the emergency communications system to assess staffing needs.	3
16	The Fire Advisory Board should conduct a detailed review of automatic mutual aid and regular on-call mutual aid arrangements.	1
17	The County Fire Advisory Board should ensure that mutual aid practices are formalized in writing. The agreements should be reviewed periodically and adjusted as needed.	1/2
18	The review of mutual aid agreements should include mutual aid arrangements involving departments from other New York counties and Pennsylvania.	2
19	The County fire departments should establish specialized teams.	2/3
20	The County fire departments should develop standardized, County-wide preplanning forms for all target hazards.	2
21	The County Fire Advisory Board should consider implementing a strategy which uses the concept of nearest station response.	2
22	The County fire services should ensure that each fire department and each district conduct a hazard analysis of its service area.	3
23	The minimum Standards of Cover assignment should be established for each target hazard identified. A Standard of Cover should consist of: The minimum number of site-trained, certified responders, together with the number and types of apparatus needed for a specific target or target area and the maximum response times allowable for the arrival of the first-due engine company, followed by the entire first-due assignment.	3
24	The Elmira Fire Department should provide an RIT mutual aid response to adjacent volunteer fire departments.	1
25	The volunteer fire departments adjacent to the City of Elmira should provide an RIT mutual aid response to the Elmira Fire Department.	1

	RECOMMENDATION	PRIORITY
26	The City of Elmira and adjacent volunteer fire departments should establish comprehensive mutual aid agreements.	1
27	The County dispatch protocols should require the deployment (pursuant to an agreement) of a volunteer engine company to the City of Elmira, when the Elmira Fire Department's response capability is reduced to one engine and a ladder, and a simultaneous call for a structure fire is received.	2/3
28	The City of Elmira and adjacent volunteer fire departments should systematically work to strengthen relationships.	1/2
29	The County Fire Department should develop an aggressive volunteer recruitment program.	1
30	The Chemung County Fire Advisory Board, working with the County Fire Coordinator, should define the essential elements of a volunteer fire department.	2
31	The Chemung County Fire Advisory Board and the County Fire Coordinator should help fire departments meet locally developed standards.	2
32	The County Fire Advisory Board should review NFPA Standard 1720 and apply the standard to each volunteer fire department.	2
33	The County Fire Advisory Board should include NFPA Standard 1720 within the performance guidelines developed by the Board.	2
34	The County Fire Advisory Board, working with the County Emergency Communication Center, should develop an approach or recommended practice which allows tracking of the number of personnel and apparatus that arrive at the scene of major incidents.	3
35	The County Fire Coordinator should be responsible for compiling performance information and reviewing these data with the County Fire Advisory Board.	3
36	The City of Elmira should measure its performance in several ways, including application of NFPA Standard 1710. Application of this standard should consider a combination of on-duty personnel, call-back personnel, and mutual aid. The development of a new battalion organization requires officials to consider factors, such as geography, road network, demand for service, apparatus and location of key apparatus types (aerial and heavy rescue), apparatus needed in the County, location of full-time deployed personnel, volunteer fire personnel resources, and firefighter safety.	2
37	The County Fire Advisory Board should consider the safety of personnel when developing standards and measures of department capability.	1
38	The Fire Coordinator, working with the County Fire Advisory Board, should coordinate the development of a new battalion structure.	2/3

	RECOMMENDATION	PRIORITY
39	The development of a new battalion organization requires officials to consider factors, such as geography, road network, demand for service, apparatus and location of key apparatus types (aerial and heavy rescue), apparatus needed in the County, location of full-time deployed personnel, volunteer fire personnel resources, and firefighter safety.	2/3
40	The County fire response district structure should be reorganized.	3
41	The County Fire Advisory Board should consider alternative battalion deployment plans.	3
42	The County Fire Advisory Board should consider Proposed Battalion Organization Model 1, a five-battalion organization plan.	3
43	The County Fire Advisory Board should consider the location of fire stations, available resources, road networks, and the capability of fire departments when adopting a new battalion structure.	3
44	The County Fire Advisory Board should select a headquarters station for each battalion.	4
45	The County Fire Advisory Board should ensure that periodic battalion meetings are held.	3
46	The County Fire Coordinator should develop programs to ensure that battalions train together.	3
47	The County Fire Coordinator should assign a Volunteer Deputy Fire Coordinator to assist each battalion with the development of formal mutual aid agreements for regular and automatic response within each battalion area and among battalions.	2
48	The volunteer Deputy Coordinators should be assigned specific responsibilities for activities, such as: County-wide training; standardized preplanning and plan dissemination to mutual aid units; joint purchasing of goods and services; and special operations.	2
49	The County Fire Advisory Board should establish battalion and County-wide working committees for training, emergency communication, joint purchasing, special operations, preplanning, master resource lists, etc.	3
50	The County volunteer Deputy Fire Coordinators should be paid a reasonable annual stipend of between \$2,500 and \$3,500.	3
51	The County Fire Advisory Board should establish dispatch protocols linked to the battalion organization structure and require the dispatch of three engines, one aerial/ladder, and one heavy rescue unit to all reports of a structure fire. Appropriate tanker resources should be deployed in non-hydrant areas.	3
52	The County should develop criteria for the deployment of a Rapid Intervention Crew.	1

	RECOMMENDATION	PRIORITY
53	The County should develop criteria for the deployment of a County Safety Officer to a working fire.	1
54	The County apparatus fleet should reflect the needs of each department and the County. A County-wide fleet deployment plan should be developed.	4
55	The fleet of pumpers in the County should be adjusted to reflect the redeployment plan.	4
56	The County Fire Advisory Board should review the number of heavy rescue units and aerials needed in the County.	3
57	The County Fire Coordinator should be authorized to employ one additional staff person, a Fire and Rescue Technical Assistant.	1
58	The County Fire Coordinator, if authorized to employ a Fire and Rescue Technical Assistant, should establish a small committee of Fire Chiefs to assist in the selection process.	1
59	The County should consider authorizing a small appropriation of funds to allow the employment of office personnel to be shared by several fire departments.	3
60	The County should encourage fire departments to develop inventories of specialized equipment and tools. These inventories should be consolidated by the County Fire Advisory Board.	3
61	The County should encourage the integration of resources to help minimize the redundancy of equipment and apparatus.	3/4
62	The County Fire Advisory Board should encourage a systematic replacement of apparatus in the County following reasonable life cycle policies.	2
63	The County Fire Advisory Board should assess the number and type of apparatus needed in the County.	3
64	The County Fire Advisory Board should review report recommendations and create a Project Implementation Committee. The County Fire Advisory Board should provide the Implementation Committee with areas where recommendations, if implemented, will support the fire service and ensure the safety of firefighters and the public.	1
65	The Project Implementation Committee should be composed of representatives from the fire service and several other key officials or their representatives.	1
66	The Chiefs of the Southport, West Elmira, Elmira Heights, and Elmira Fire Departments, in coordination with the Fire Coordinator, should meet to establish a new automatic mutual aid response policy.	1

The report is organized into several chapters. The *Executive Summary* presents the major findings and recommendations. Chapter II, *Scope of the Study*, discusses the purpose of the study and the concepts underlying the analysis within the report. Chapter III, *Background and Demand for Services*, provides a description of the fire departments, information on the level of activity, and the resources of the fire departments. Chapter IV, *County-wide Fire and Rescue Coordination*, describes an approach to improve coordination of service delivery. Chapter V, *Measuring Capability and Performance*, provides an outline of some methods to measure fire departments and services. Chapter VI, *Response Capability, Computer Mapping & Meeting Response Objectives*, displays a number of computer maps which analyze the response capability of the County's fire departments. Chapter VII, *Reorganizing Fire Department Districts*, outlines a new County-wide fire department battalion organization. Chapter VIII, *Administrative Support Services*, discusses administrative needs of fire departments and the Fire Coordinator's office. Chapter IX, *County Apparatus Fleet*, presents suggested apparatus replacement guidelines. Chapter X, *Implementation of Recommendations*, discusses the most important recommendations and suggests an implementation approach. This section lists each recommendation with an assigned priority and related comments. Chapter XI, *Future Fire/Rescue Protection Needs in Chemung County*, outlines a series of long-term options they may need to be considered in the future.

Several abbreviations used in this report are defined below:

ACLS	Advanced Cardiac Life Support
ALS	Advanced Life Support
EMD	Emergency Medical Dispatch
EMS	Emergency Medical Services
ISO	Insurance Services Office
NFPA	National Fire Protection Association
RIT	Rapid Intervention Team

II. SCOPE OF THE STUDY

The purpose of this study is to conduct an evaluation of Chemung County's existing local fire services and develop recommendations for improvement in the sharing of personnel, equipment and resources. The study required the consultants to develop an inventory of fire and rescue capability, review service levels, identify alternative service delivery approaches, and develop alternatives for consideration by fire departments, Chemung County, and other political jurisdictions.

The nature of this County-wide study required the consultants to consider the different approaches to service delivery used by each fire department. The consultants reviewed a great deal of data, much of which was generated by the County E-911 Center. The officials of various fire departments were interviewed. These officials provided information freely and suggested sources of data. Officials freely expressed their opinions and concerns and expressed pride in the work they performed; while there may be friendly competition between fire departments, the predominant attitude is one of mutual support and commitment to providing services. In addition, we found fire and rescue personnel to be generally optimistic, and while many were concerned about the future, most officials appeared to believe that they could manage change.

The analysis conducted for this study reviewed a range of possibilities:

- *Status Quo* - The status quo model assumes that no actions should be taken and the current system will continue to operate successfully.
- *Administrative Cooperation* - The administrative cooperation model assumes that the fire departments would share certain administrative tasks, such as purchasing, joint training, etc.
- *Functional Consolidation* - The function consolidation model assumes that fire departments would use some equipment or personnel resources on a shared basis. Fire departments would maintain independence.
- *Operational Consolidation* - The operational consolidation model assumes that fire departments operate in an integrated manner when responding

to incidents. Departments maintain their identity and independence organizationally.

- *Partial Consolidation* - The partial consolidation model assumes that departments consolidate specific functions and operate as a single entity, or department, when performing the consolidated functions.
- *Consolidation* - The consolidation model assumes that two or more fire departments join together to form one department.
- *Merger* - The merger model assumes that one or more smaller fire departments are abolished and become part of a larger department.

Chemung County and the fire and rescue departments in the County have integrated some services and functions to allow for effective operations. Several departments, by their own actions, have developed approaches to providing service in their areas of the County. The number of fire and rescue agencies in the County suggests that the fire and rescue services in Chemung County may be fragmented. However, there are a number of factors which have had the effect of at least partially integrating fire and rescue operations.

- The County, like other counties in New York, has a Fire Coordinator who has an important role in coordinating resources.
- The County has a County-wide emergency communication system (E-911 system). The E-911 system is a major element of the County's ability to coordinate resources.
- The County has a mutual aid system.
- The County has established a Fire Advisory Board that meets periodically, which allows sharing of information and the development of professional relationships.
- The County has one emergency medical service provider which works with each fire and rescue department.

There are also a number of factors which have may divide, rather than integrate, fire and rescue agencies. There is a strong feeling of independence within each fire and rescue agency. This is the result of the legal organization of fire and rescue agencies, community spirit, and friendly competition. The relationships between the fully career fire departments in Elmira and the volunteer fire departments requires should be strengthened. There are no clear standards by which departments can measure themselves. Some departments are wealthier than others and have more resources. It is also important to recognize that the County has approximately 412 square miles of territory. It is very difficult to have equitable service throughout a County of this size.

The following factors need to be considered in the development of a program to enhance fire and rescue operations.

- The provision of fire and rescue services within the County, except in the City of Elmira, would not be possible without the volunteer system.
- The Chemung County Fire Advisory Board is essential to the implementation of change on a County-wide basis.
- The safety of volunteer and career personnel must be an essential part of a County-wide fire and rescue strategy.
- The leaders of each volunteer fire department have only a limited amount of time available to implement new policies and procedures.
- The leaders of each volunteer fire department must be realistic about the ability of a department to respond to emergencies in a timely and effective manner.
- The fire and rescue system developed must reflect a responsible financial model.

III. BACKGROUND AND DEMAND FOR SERVICES

FIRE AND RESCUE SERVICE DELIVERY SYSTEM

Chemung County has an area of approximately 412 square miles, and was reported to have a population of 91,070 in 2000. In 2008, the County's population was estimated to be 87,813. The County has an urban area, a commercial belt, suburban areas, and rural areas. The terrain, in some instances, creates long response times for fire apparatus. Much of Chemung County has always received fire protection from long-established volunteer fire departments. The City of Elmira has had a full-time career fire department for many generations.

New York State laws establish the basic framework for organizing local fire departments. State laws do not allow for the establishment of "town" fire departments and, outside of the City of Elmira, Chemung County is protected by nineteen fire districts, fire protection districts, and village departments. The Fire Districts are special service districts, each with five publically elected fire commissioners having tax levying authority and the ability to provide fire protection. Typically, each Fire District in Chemung County uses a volunteer membership corporation to staff district owned stations and apparatus. Fire Protection Districts are geographic areas, usually within a "town," protected by volunteer membership fire companies which own their own stations and apparatus. A town enters into annual contracts with fire companies to provide services for the fire protection district. Like cities, villages may have "municipal" fire departments, volunteer or otherwise, with the funding coming from the village through the annual budget.

Chemung County has one city fire department, fire districts, fire protection districts, and village fire departments. Fire protection area boundary lines are complex, and often not coterminous with village or town boundaries. Exhibit 3 presents the list of fire departments in the County and the area each is assigned to cover.

EXHIBIT 3
ORGANIZATION OF CHEMUNG COUNTY FIRE DEPARTMENTS

DEPARTMENT NAME	COVERAGE AREA
Baldwin Fire Department	Town of Baldwin (Baldwin Fire District #1)
Big Flats Fire Department	Part of the Town of Big Flats (Big Flats Fire District #1)
Breesport Fire Department	Part of the Town of Horseheads (Fire District #1) and part of the Town of Erin (Fire District #1)
Chemung Fire Department	Most of the Town of Chemung Fire District #1, except the northeast portion of Town which is covered by Lockwood Fire Department (Tioga County)
East Hill Fire Department	Town of Elmira Fire Protection District #5
Elmira Fire Department	City of Elmira
Elmira Heights Fire Department	Village of Elmira Heights, Town of Horseheads Fire Protection District #2, and Town of Elmira Fire Protection District #2
Erin Fire Department	Town of Erin (Erin Fire District #1), except the portion of the Town which is covered by the Breesport Fire Department
Golden Glow Fire Department	Town of Big Flats Fire District #2 and Town of Southport Fire Protection District #2
Horseheads Fire Department	Village of Horseheads
Millport Fire Department	Village of Millport, Catlin Fire Protection District #2, and Veteran Fire Protection District #1
Pine City Fire Department	Pine City Fire District #1, located within the Town of Southport
Southport Fire Department	Town of Southport Fire Protection District #1
Tompkins Corners Fire Department	Town of Catlin Fire Protection District #3
Town & Country Fire Department	Town of Horseheads Fire Protection District #1, Town of Big Flats Fire Protection District #1, and Town of Veteran Fire Protection District #3
Van Etten Fire Department	Village of Van Etten and Town of Van Etten Fire Protection District #1
Webbs Mills Fire Department	Town of Southport Fire District #4
Wellsburg Fire Department	Village of Wellsburg, Town of Ashland Fire Protection District #1, and Town of Elmira Fire Protection District #4
West Elmira Fire Department	Town of Elmira Fire District #1
West Hill Fire Department (deactivated)	Protection area assigned to other departments

Source: County officials

BALDWIN FIRE DEPARTMENT

The Baldwin Fire Department covers the entire Town of Baldwin (Baldwin Fire District #1), serving a population of 853. The fire department operates from two fire stations; the main fire station is located at 460 Breesport Road; Station #2 is located at 2372 Wyncoop Creek Road. Baldwin receives automatic mutual aid on all alarms from the East Hill Fire Department. The Department operates two engines, one tanker, and two EMS/rescue vehicles. The Department has eight volunteers and has responded to an annual average of 55 incidents over the last three years.

BIG FLATS FIRE DEPARTMENT

The Big Flats Fire Department covers part of the Town of Big Flats (Big Flats Fire District #1), with a population of 4,380. The fire station is located at 505 Maple Street and houses three engines, one tanker, one brush truck, and one EMS/rescue vehicle. The Department responds as part of the airport task force. The Department has 35 volunteers and has responded to an annual average of 372 incidents over the last three years.

BREESPORT FIRE DEPARTMENT

The Breesport Fire Department covers part of the Town of Horseheads (Fire District #1) and part of the Town of Erin (Fire District #1). The Town of Horseheads Fire District #1 has a population 837. The fire station is located at 3 Jackson Avenue in Breesport. The Department's equipment consists of one engine, one tanker, one brush truck, one utility vehicle, and one EMS/rescue vehicle. The Department has 25 volunteers and has responded to an annual average of 104 incidents over the last three years.

CHEMUNG FIRE DEPARTMENT

The Chemung Fire Department is located at 5392 Main Street in Chemung. The Department covers the majority of the Town of Chemung Fire District #1, except the northeast portion, which is covered under contract by the Lockwood Fire Department (Tioga County). The Department serves a population of 2,665 and operates two engines, two tankers, and one brush truck. The Department has 25 volunteers and has responded to an annual average of 155 incidents over the last three years.

CITY OF ELMIRA FIRE DEPARTMENT

The Elmira Fire Department covers the entire City of Elmira, with a population of 30,940. The Department operates three fire stations; the Headquarters Station is

located at 101 West Second Street; Station #3 is located at 213 West Miller Street; Station #5 is located at 338 Roe Avenue. All firefighting personnel are sworn, full-time employees. The Department provides a County-wide Hazardous Materials Response Team, through a contractual agreement. Equipment operated by the Department includes two engines, two reserve engines, one aerial, one reserve aerial, one EMS rescue vehicle, one utility vehicle, and other miscellaneous vehicles. The Department also houses the County weapons of mass destruction (WMD) trailer and a tow vehicle. The Department has 60 full-time firefighters and has responded to an annual average of 3,003 incidents over the last three years.

EAST HILL FIRE DEPARTMENT

The East Hill Fire Department covers the Town of Elmira Fire Protection District #5 from a fire station located at 266 Jerusalem Road. The Department receives automatic mutual aid on all alarms from the Baldwin Fire Department, and provides services to a population of 599. One engine, one tanker, one brush truck, and one EMS rescue vehicle are housed at the station. The Department has 10 volunteers and has responded to an annual average of 54 incidents over the last three years.

ELMIRA HEIGHTS FIRE DEPARTMENT

The Village of Elmira Heights Fire Department covers the Village, the Town of Horseheads Fire Protection District #2, and the Town of Elmira Fire Protection District #2. The coverage area has a population of 6,945. The fire station, located at 215 Elmwood Avenue in Elmira Heights, houses three engines, one aerial tower, one heavy rescue vehicle and one EMS rescue vehicle, and one brush truck. The Department has 45 volunteers and has responded to an annual average of 450 incidents over the last three years.

ERIN FIRE DEPARTMENT

The Erin Fire Department covers the entire Town of Erin (Erin Fire District #1), except the portion of the Town which is covered by the Breesport Fire Department. The Department serves a population of 2,054. The fire station, located at 1462 Breesport Road, houses one engine, one tanker, one brush truck, one rescue vehicle, and one EMS/rescue vehicle. The Department has 26 volunteers and has responded to an annual average of 113 incidents over the last three years.

GOLDEN GLOW FIRE DEPARTMENT

The Golden Glow Fire Department provides coverage to the Town of Big Flats Fire District #2 and the Town of Southport Fire Protection District #2. The Department serves a population of 1,330 from two fire stations. The main fire station is located at 39 Alvord Drive and Station #2 is located at 10 Harris Hill Road, both in Elmira. Equipment consists of two engines, one tanker, and one brush/rescue vehicle. The Department has 26 volunteers and responded to an average of 54 incidents over the last three years.

HORSEHEADS FIRE DEPARTMENT

The Horseheads Fire Department covers the Village of Horseheads, with a population of 6,452. The fire station is located at 134 North Main Street and houses three engines, one aerial, and two EMS rescue vehicles. The Department has 25 volunteers and has responded to an annual average of 489 incidents over the last three years.

MILLPORT FIRE DEPARTMENT

The Village of Millport Fire Department provides coverage to a total population of 2,092, located in the Village of Millport, the Catlin Fire Protection District #2, and the Veteran Fire Protection District #1. The fire station is located at 2016 Crescent Street in Millport. The Department operates two engines, one tanker, one brush truck and one EMS rescue vehicle. The Department has 30 volunteers and has responded to an annual average of 119 incidents over the last three years.

PINE CITY FIRE DEPARTMENT

The Pine City Fire Department covers the Pine City Fire District #1, located within the Town of Southport, with a population of 1,495. Two engines, one tanker, one brush truck, and one EMS rescue vehicle are housed at the fire station at 1463 Pennsylvania Avenue in Pine City. The Department has 30 volunteers, responded to an average of 122 incidents over the last three years, and operates a dive/rescue team.

SOUTHPORT FIRE DEPARTMENT

The Southport Fire Department protects the Town of Southport Fire Protection District #1; the population of the coverage area is 8,687. The fire station is located at 1001 Carl Street in Elmira and houses three engines, one aerial, one utility vehicle, one brush truck, one heavy rescue vehicle, and one EMS vehicle. The Department has

40 volunteers and has responded to an annual average of 132 incidents over the last three years.

TOMPKINS CORNERS FIRE DEPARTMENT

The Tompkins Corners Fire Department provides coverage to the Town of Catlin Fire Protection District #3, which has a population of 1,078. Located at 422 Chambers Road in Horseheads, the fire station operates two engines, one tanker, one EMS rescue vehicle, and one brush truck. The Department has 10 volunteers and has responded to an annual average of 113 incidents over the last three years.

TOWN AND COUNTRY FIRE DEPARTMENT

The Town and Country Fire Department covers the Town of Horseheads Fire Protection District #1, the Town of Big Flats Fire Protection District #1, and the Town of Veteran Fire Protection District #3. The total population covered is 14,471. The Department's headquarters is located at 130 Gardner Road in Horseheads. Equipment includes three engines, one aerial tower, one tanker, one brush truck, and two EMS rescue vehicles. The Department has 56 volunteers and has responded to an annual average of 631 incidents over the last three years.

VAN ETTEN FIRE DEPARTMENT

The Village of Van Etten Fire Department protects the Village and the Town of Van Etten Fire Protection District #1, with a population of 1,518. The fire station, located at 2 Hixson Street, houses three engines, one brush truck, one heavy rescue vehicle, and one EMS rescue vehicle. The Department has 25 volunteers and has responded to an annual average of 126 incidents over the last three years.

WEBBS MILLS FIRE DEPARTMENT

The Webbs Mills Fire Department covers the Town of Southport Fire District #4, which has a population of 902. The Department operates from a fire station located at 18 Firehouse Lane in Pine City, with two engines, one tanker, one brush truck, one EMS rescue vehicle, and one squad rescue vehicle. The Department has 56 volunteers and responded to an average of 52 incidents over the last three years.

WELLSBURG FIRE DEPARTMENT

The Village of Wellsburg Fire Department covers the Village, the Town of Ashland Fire Protection District #1, and the Town of Elmira Fire Protection District #4, with a total population of 2,016. The fire station is located at 3661 Front Street

in Wellsburg. Equipment includes two engines, one tanker, one brush truck, one squad vehicle, and two EMS rescue vehicles. The Department has 30 volunteers and has responded to an annual average of 150 incidents over the last three years.

WEST ELMIRA FIRE DEPARTMENT

The West Elmira Fire Department covers The Town of Elmira Fire District #1, which has a population of 4,819. The Department operates two engines, one aerial, one squad vehicle, and one EMS rescue vehicle from the fire station located at 1299 West Water Street in Elmira. The fire company employs four full-time, career, firefighters and has responded to an average of 181 incidents over the last three years.

DEMAND FOR SERVICE

The following exhibits display calls for service for each fire department. Data is drawn from two sources, the County's Communication System and the National Fire Incident Reporting System (NFIRS). The following exhibits display the calls for service for each fire department.

Exhibit 4 presents calls for service for the years 2006, 2007 and 2008. The fire departments are organized according to the current County fire district assignments. These data are from the County's Emergency Communication Center. The exhibit also presents the approximate population served by each fire department. In the years shown, the County's fire and rescue departments responded to an average of 6,500 calls for service each year. Forty-six percent of the calls were calls for the Elmira City Fire Department; 9.7 percent of all calls for service were from the area protected by the Town and Country Fire Department; 7.5 percent of calls for service were from the area protected by the Horseheads Fire Department; and 6.9 percent of the calls for service were from the area protected by the Elmira Heights Fire Department. Several departments responded to less than one percent of calls for service. The Southport Fire Department generally responds to the same number of fire incidents as other fire departments; however, the Southport Fire Department's policy is to respond to a limited number of EMS calls for service.

EXHIBIT 4
CALLS FOR SERVICE 2006 TO 2008

DISTRICT	NAME	POP.	2008	2007	2006	TOTAL	3-YEAR AVERAGE	% OF CALLS BY DEPARTMENT
1	Big Flats	4,380	411	358	347	1,116	372	5.7%
1	Golden Glow	1,330	57	51	53	161	54	0.8%
1	Tompkins Corners	1,078	118	114	108	340	113	1.7%
1	West Elmira	4,819	190	170	183	543	181	2.8%
1	West Hill	752	14	33	30	77	26	0.4%
	<i>Subtotal</i>	12,359	790	726	721	2,237	746	11.4%
2	Chemung	2,665	148	159	157	464	155	2.4%
2	Pine City	1,495	116	131	119	366	122	1.9%
2	Southport	8,687	115	201	81	397	132	2.0%
2	Webbs Mills	902	55	49	53	157	52	0.8%
2	Wellsburg	2,016	167	160	124	451	150	2.3%
	<i>Subtotal</i>	15,765	601	700	534	1,835	611	9.4%
3	Baldwin	853	62	57	45	164	55	0.8%
3	Breesport	837	112	109	91	312	104	1.6%
3	East Hill	599	65	56	41	162	54	0.8%
3	Erin	2,054	110	123	106	339	113	1.7%
3	Van Etten	1,518	116	130	131	377	126	1.9%
	<i>Subtotal</i>	5,861	465	475	414	1,354	452	6.8%
4	Elmira Heights	6,945	458	448	443	1,349	450	6.9%
4	Horseheads	6,452	519	497	452	1,468	489	7.5%
4	Millport	2,092	124	123	110	357	119	1.8%
4	Town & Country	14,471	760	597	536	1,893	631	9.7%
	<i>Subtotal</i>	29,960	1,861	1,665	1,541	5,067	1,689	25.9%
	Airport		9	10	9	28	9	0.1%
	City of Elmira	30,940	3,148	3,148	2,713	9,009	3,003	46.1%
	<i>Total</i>	94,885	6,874	6,724	5,932	19,530	6,510	100.0%

Exhibits 5 and 6 show data from a summary of five years of NFIRS reports. Exhibit 5 shows the number of fires occurring in the County over a five-year period. The fire departments are organized by the response district to which each is assigned. The five years of NFIRS reports identify 2,379 fires. Approximately 28 percent of the fires were in the City of Elmira, 11.2 percent were in Town and Country, 7.1 percent were in Southport, 6.3 percent were in Big Flats, and 5.5 percent were in Elmira Heights.

EXHIBIT 5
FIRE CALLS BY CATEGORY - FIVE-YEAR AVERAGE

DISTRICT	NAME	BUILDING FIRES	VEHICLE FIRES	OTHER FIRES	TOTAL
1	Big Flats	67	32	52	151
1	Golden Glow	18	5	10	33
1	Tompkins Corners	30	3	21	54
1	West Elmira	25	4	20	49
1	West Hill	7	1	8	16
2	Chemung	14	10	32	56
2	Pine City	47	10	38	95
2	Southport	7	19	79	170
2	Webbs Mills	34	7	15	56
2	Wellsburg	48	15	46	109
3	Baldwin	25	8	31	64
3	Breesport	46	18	40	104
3	East Hill	5	2	9	16
3	Erin	46	16	34	96
3	Van Etten	34	11	16	61
4	Elmira Heights	84	17	31	132
4	Horseheads	66	33	26	125
4	Millport	12	11	36	59
4	Town & Country	140	51	75	266
	City of Elmira	361	85	221	667
	<i>Total</i>	<i>1,116</i>	<i>358</i>	<i>840</i>	<i>2,379</i>

Exhibit 6 displays the number and percent of calls for service by category (fire, EMS or other) for each department in the County.

EXHIBIT 6
FIVE YEARS OF CALLS FOR SERVICES (FIRE, EMS, OTHER)
PERCENT OF CALLS BY DEPARTMENT

DISTRICT	NAME	FIRE	EMS	OTHER	TOTAL	5-YEAR	5-YEAR	5-YEAR	% OF TOTAL CALLS
						AVG. FIRE CALLS	AVG. EMS CALLS	AVG. ALL CALLS	
1	Big Flats	151	1,037	472	1,660	30	207	332	5.2%
1	Golden Glow	33	121	36	190	7	24	38	0.6%
1	Tompkins Corners	54	237	136	427	11	47	85	1.3%
1	West Elmira	49	637	246	932	10	127	186	2.9%
1	West Hill	16	55	71	142	3	11	28	0.4%
	<i>Total by District</i>	303	2,087	961	3,351	61	417	670	10.5%
2	Chemung	56	501	319	876	11	100	175	2.8%
2	Pine City	95	213	303	611	19	43	122	1.9%
2	Southport	170	69	433	672	34	14	134	2.1%
2	Webbs Mills	56	126	77	259	11	25	52	0.8%
2	Wellsburg	109	422	211	742	22	84	148	2.3%
	<i>Total by District</i>	486	1,331	1,343	3,160	97	266	632	9.9%
3	Baldwin	64	160	53	277	13	32	55	0.9%
3	Breesport	104	374	65	543	21	75	109	1.7%
3	East Hill	16	40	80	136	3	8	27	0.4%
3	Erin	96	339	120	555	19	68	111	1.7%
3	Van Etten	61	434	111	606	12	87	121	1.9%
	<i>Total by District</i>	341	1,347	429	2,117	68	269	423	6.7%
4	Elmira Heights	132	1,425	605	2,162	26	285	432	6.8%
4	Horseheads	125	1,456	834	2,415	25	291	483	7.6%
4	Millport	59	394	158	611	12	79	122	1.9%
4	Town & Country	266	1,757	981	3,004	53	351	601	9.4%
	<i>Total by District</i>	582	5,032	2,578	8,192	116	1,006	1,638	25.8%
	City of Elmira	667	9,970	4,339	14,976	133	1,994	2,995	47.1%
	<i>Total</i>	2,379	19,767	9,650	31,796	476	3,953	6,359	100.0%

Exhibit 7 summarizes the percent of calls for service for each department, by category. For example, over a five-year period, Big Flats had 151 fire calls which represented 9.1 percent of its total calls for service; 62 percent of Big Flats calls were for EMS.

EXHIBIT 7

NUMBER AND PERCENT OF CALLS FOR EACH DEPARTMENT BY CATEGORY

DISTRICT	NAME	FIRE CALLS	% OF FIRE CALLS	EMS CALLS	% OF EMS CALLS	OTHER CALLS	% OF OTHER CALLS	TOTAL CALLS
1	Big Flats	151	9.1%	1,037	62.5%	472	28.4%	1,660
1	Golden Glow	33	17.4%	121	63.7%	36	18.9%	190
1	Tompkins Corners	54	12.6%	237	55.5%	136	31.9%	427
1	West Elmira	49	5.3%	637	68.3%	246	26.4%	932
1	West Hill	16	11.3%	55	38.7%	71	50.0%	142
	<i>Total & % by District</i>	303	9.0%	2,087	62.3%	961	28.7%	3,351
2	Chemung	56	6.4%	501	57.2%	319	36.4%	876
2	Pine City	95	15.5%	213	34.9%	303	49.6%	611
2	Southport	170	25.3%	69	10.3%	433	64.4%	672
2	Webbs Mills	56	21.6%	126	48.6%	77	29.7%	259
2	Wellsburg	109	14.7%	422	56.9%	211	28.4%	742
	<i>Total & % by District</i>	486	15.4%	1,331	42.1%	1,343	42.5%	3,160
3	Baldwin	64	23.1%	160	57.8%	53	19.1%	277
3	Breesport	104	19.2%	374	68.9%	65	12.0%	543
3	East Hill	16	11.8%	40	29.4%	80	58.8%	136
3	Erin	96	17.3%	339	61.1%	120	21.6%	555
3	Van Etten	61	10.1%	434	71.6%	111	18.3%	606
	<i>Total & % by District</i>	341	16.1%	1,347	63.6%	429	20.3%	2,117
4	Elmira Heights	132	6.1%	1,425	65.9%	605	28.0%	2,162
4	Horseheads	125	5.2%	1,456	60.3%	834	34.5%	2,415
4	Millport	59	9.7%	394	64.5%	158	25.9%	611
4	Town & Country	266	8.9%	1,757	58.5%	981	32.7%	3,004
	<i>Total & % by District</i>	582	7.1%	5,032	61.4%	2,578	31.5%	8,192
	City of Elmira	667	4.5%	9,970	66.6%	4,339	29.0%	14,976
	<i>Total</i>	2,379	7.5%	19,767	62.2%	9,650	30.3%	31,796

Exhibit 8 provides a summary of five years of calls for service in the County. Data indicate that, during the five-year period, 7.5 percent of calls were fire calls, 30.3 percent were other calls for service; and 62.2 percent were emergency medical service calls.

EXHIBIT 8
FIVE-YEAR SUMMARY BY TYPE OF CALL
(INCLUDES ALL CHEMUNG COUNTY FIRE DEPARTMENTS)

	TOTAL CALLS FOR SERVICE	% OF TOTAL CALLS
Building Fires	1,116	3.5%
Vehicle Fires	358	1.1%
Other Fires	840	2.6%
Total Fires	2,379	7.5%
EMS	19,767	62.2%
Other	9,650	30.3%
Total	31,796	100.0%

Exhibit 9 provides a general context for the number of calls for service by presenting the number of calls for service per 100 population.

EXHIBIT 9
FIRE, EMS & TOTAL CALLS FOR SERVICE - PER 100 POPULATION
FIVE-YEAR AVERAGE

	POPULATION ESTIMATE	FIRE CALLS PER 100 POP.	EMS CALLS PER 100 POP.	TOTAL CALLS PER 100 POP.
Big Flats	4,380	0.7	4.7	7.5
Golden Glow	1,330	0.5	1.9	2.9
Tompkins Corners	1,078	1.0	4.3	7.8
West Elmira	4,819	0.2	2.7	3.9
West Hill	752			
Chemung	2,665	0.4	3.7	6.5
Pine City	1,495	1.3	2.8	8.1
Southport	8,687	0.4	0.2	1.5
Webbs Mills	902	1.4	3.2	6.5
Wellsburg	2,016	0.5	1.8	3.1
Baldwin	853	1.4	3.6	6.2
Breesport	837	2.6	9.4	13.6
East Hill	599	0.5	1.3	4.5
Erin	2,054	0.9	3.2	5.3
Van Etten	1,518	0.8	5.8	8.1

	POPULATION ESTIMATE	FIRE CALLS PER 100 POP.	EMS CALLS PER 100 POP.	TOTAL CALLS PER 100 POP.
Elmira Heights	6,945	0.4	4.1	6.3
Horseheads	6,452	0.4	4.5	7.4
Millport	2,092	0.6	3.8	5.8
Town & Country	14,471	0.4	2.5	4.3
City of Elmira	30,940	0.4	6.4	9.7

The Southport Fire Department responds to the smallest number of calls for service per 100 population, since the Fire Department, by department policy, limits the number of EMS calls to which it responds. The City of Elmira annually responds to approximately one call for each 10 residents.

The City of Elmira services about one-third of the population in the County and over the last three years responded to about 47 percent of the calls for service in the County. The following two exhibits show the number of fire and emergency medical calls for service that occurred in the City of Elmira during the period from 2006 to 2008. The first exhibit shows data organized in two-hour increments to illustrate the number of calls and the average number of calls which occur by time of day.

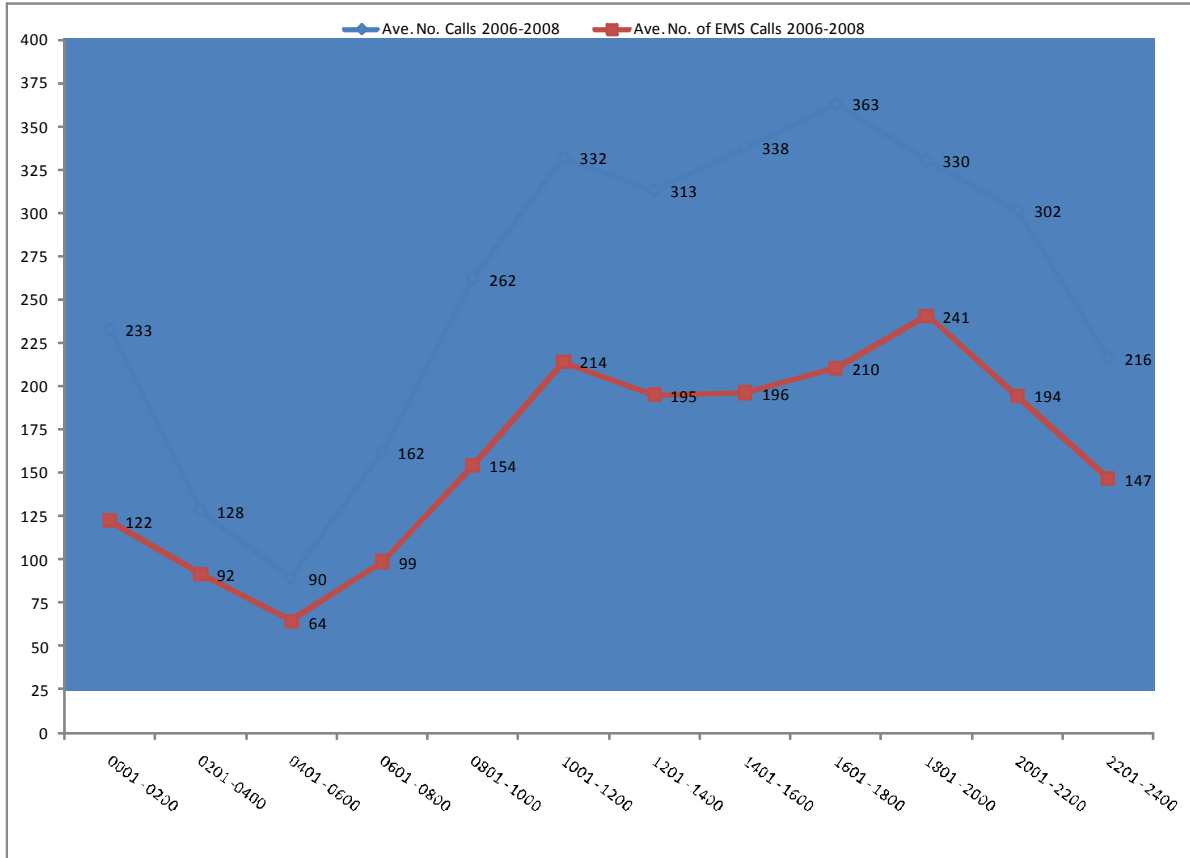
The demand for service is shown graphically in the second exhibit on the Elmira Fire Department. The graphic displays the average number of calls for service from 2006 to 2007 by time of day. Fire calls and emergency medical calls for service are shown separately.

EXHIBIT 10
CITY OF ELMIRA - AVERAGE NUMBER OF FIRE & EMS CALLS 2006 TO 2008
BY TIME OF DAY

ELMIRA <i>Time of Day</i>	TOTAL NUMBER OF CALLS 2006 TO 2008				TOTAL NUMBER OF EMS CALLS 2006 TO 2008			
	<i>2008</i>	<i>2007</i>	<i>2006</i>	<i>Avg. 2006-2008</i>	<i>2008</i>	<i>2007</i>	<i>2006</i>	<i>Avg. 2006-2008</i>
0001 - 0200	173	376	150	233	120	128	119	122
0201 - 0400	148	135	102	128	109	98	68	92
0401 - 0600	92	98	79	90	66	67	60	64
0601 - 0800	151	158	178	162	101	96	99	99
0801 - 1000	283	258	245	262	190	120	153	154
1001 - 1200	335	347	314	332	231	211	200	214
1201 - 1400	338	302	299	313	224	183	178	195
1401 - 1600	358	340	316	338	203	204	182	196
1601 - 1800	414	379	296	363	231	225	175	210
1801 - 2000	336	372	283	330	320	226	176	241
2001 - 2200	302	341	262	302	195	228	160	194
2201 - 2400	218	242	189	216	142	174	124	147
	3,148	3,348	2,713		2,132	1,960	1,694	

EXHIBIT 11

CITY OF ELMIRA - TOTAL CALLS FOR SERVICE AND EMS CALLS FOR SERVICE BY TIME OF DAY



FIRE DEPARTMENT RESOURCES

Chemung County fire departments have a variety of resources. Exhibit 12 shows the number of fire stations, the number of volunteers, and the number and of type of apparatus owned by each fire department. The exhibit presents departments in alphabetical order. The exhibit shows data which indicate that there are 546 volunteers in the County. The City of Elmira Fire Department employs 60 full-time personnel. The Elmira Heights, Town & Country, West Elmira, and Big Flats Fire Departments also employ full-time or part-time personnel to provide 24/7 coverage with at least one firefighter on-duty. We have assumed that the Elmira Heights, Town & Country, West Elmira, and Big Flats Fire Departments employ the equivalent of four full time employees (FTEs).

EXHIBIT 12
FIRE DEPARTMENT RESOURCES
NUMBER OF PERSONNEL (VOLUNTEER AND FULL-TIME PERSONNEL) & NUMBER AND TYPE OF APPARATUS

DISTRICT	DEPARTMENT	STATIONS	VOLUNTEERS	FULL-TIME PERSONNEL (FTE)	ENGINE	AERIAL	HEAVY RESCUE/ RESCUE PUMPER	TANKER	BRUSH	UTILITY	TOTAL
3	Baldwin	2	8		2			1		2	5
1	Big Flats	1	35	4	2		1	1	1		5
3	Breesport	1	25		1			1	1	2	5
2	Chemung	1	25		1		1	2	1	2	7
3	East Hill	1	10		1			1	1	1	4
	Elmira	3		60	4	2				6	12
4	Elmira Heights	1	45	4	3	1	1		1	1	7
3	Erin	1	26		1			1	1	2	5
1	Golden Glow	2	30		2			1	1	1	5
4	Horseheads	1	25		2	1	1			2	6
4	Millport	1	30		2			1	1	1	5
2	Pine City	1	30		2			1	1	2	6
2	Southport	1	40		3	1	1		1	2	8
1	Tompkins Corners	1	10		2			1	1	1	5
4	Town & Country	2	56	4	2	1	1	1	1	2	8
3	Van Etten	1	25		3		1		1	1	6
2	Webbs Mills	1	56		2			1	1	2	6
2	Wellsburg	1	30		2			1	1	3	7
1	West Elmira	1	40	4	2	1				2	5
1	West Hill	Deactivated						2		1	3
<i>Total</i>		<i>24</i>	<i>546</i>	<i>76</i>	<i>39</i>	<i>7</i>	<i>7</i>	<i>14</i>	<i>16</i>	<i>38</i>	<i>120</i>

The data in this chapter suggest a number of general conclusions or findings.

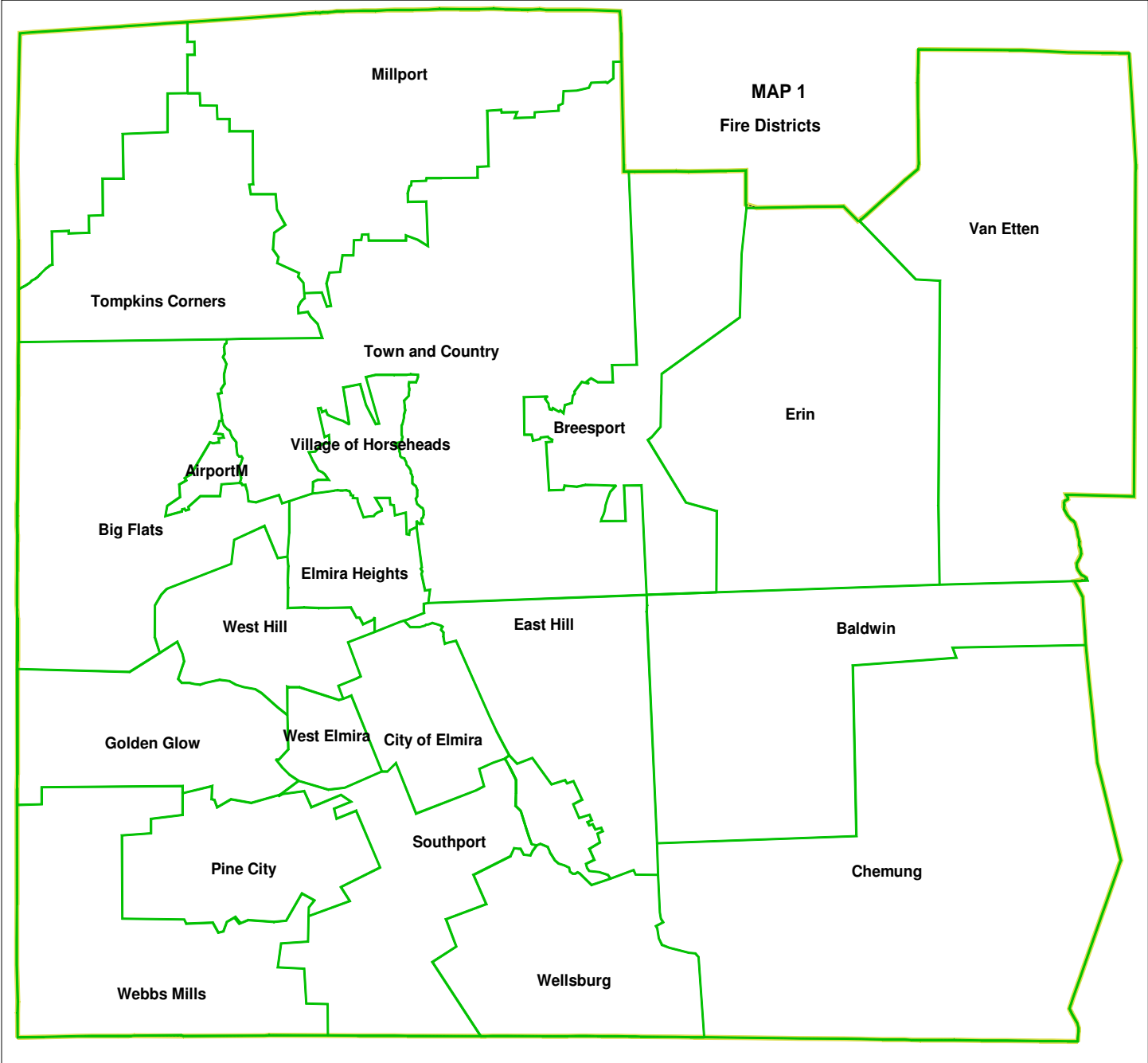
- The number of calls for service has been relatively stable over the last several years.
- The number of emergency medical service calls account for the largest proportion of calls for service, approximately 62 percent of all calls. Fire calls represent 7.5 percent of calls.

- Several volunteer fire departments have employed personnel or engaged in contractual relationships to ensure that there is at least one firefighter available on-duty 24 hours per day, 365 days per year.
- There are more than 500 active fire department volunteers participating in emergency response activities in the County.
- Several volunteer fire departments have a small number of available volunteer personnel, including Baldwin, East Hills, and Tompkins Corners. These departments service small populations and have few calls for service.
- The fire departments appear to have a relatively large fleet of apparatus. It should be noted that some of the fleet is relatively old and may be assigned to reserve status.

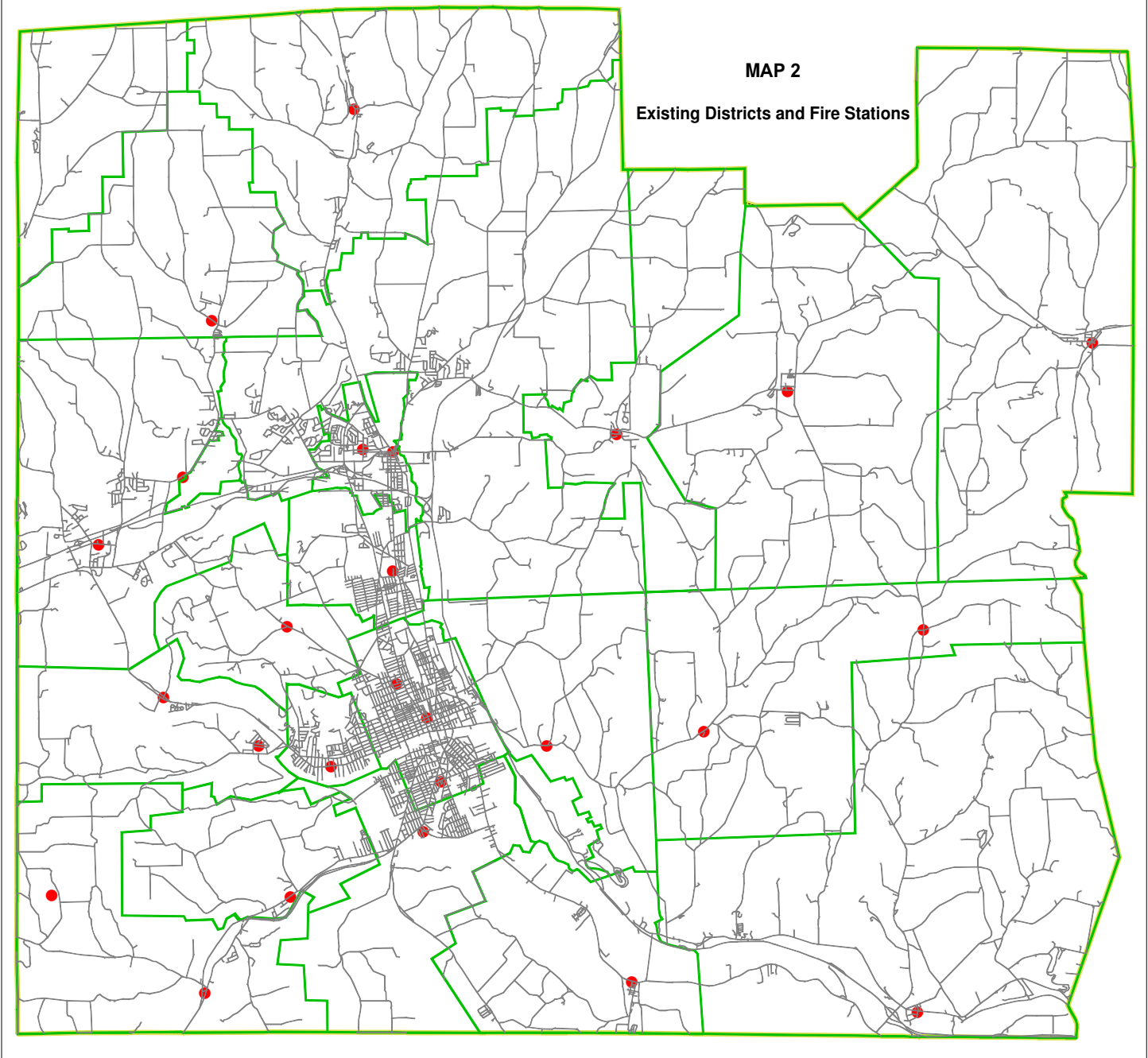
Volunteer fire departments service about two-thirds of the County's population. It would be costly for the fire and rescue service in the County to operate a comprehensive career fire department. County elected and appointed officials should make a systematic effort to support and maintain the volunteer character of fire departments in Chemung County.

***RECOMMENDATION 1:** County elected and appointed officials should make a systematic effort to support the effective volunteer fire departments in Chemung County.*

Map 1 and Map 2 (following pages) display the current fire protection areas served by various fire departments and the location of fire stations. Map 1 displays the geographic area of each fire service area. Map 2 displays the fire service areas, the location of fire stations, and the road network of the County. Map 2 displays a complex road network which makes providing services to many rural areas difficult. Map 2 shows that the eastern part of Chemung County has widely dispersed fire stations, reflecting a population density less than that in the western part of the County.



MAP 2
Existing Districts and Fire Stations



IV. COUNTY-WIDE FIRE AND RESCUE COORDINATION

The fire and rescue system in Chemung County has evolved to reflect the unique needs of different parts of the County. The fire and rescue service will continue to change in many ways, but the current organizational framework for providing fire and rescue services is expected to continue in its current form. The County will continue to have fire districts, fire protection districts and village fire departments. However, it is possible that the number of fire and rescue departments may change over a period of time, with some mergers or consolidations. It is possible that town boards, or boards of fire commissioners may seek alternative approaches to providing services.

Many volunteer fire departments in the County are vibrant and appear to deliver services effectively. At the same time, there are several departments that report limited membership, which suggests weakened capability. Moreover, the City of Elmira's Fire Department, while participating in some activities, is not fully integrated into the County fire and rescue response system.

A mechanism is needed to coordinate the activities of the independent fire departments in the County. Fire departments are independent, but are mutually dependent on one another, and are linked by the need to provide effective and safe response. The Chemung County Fire Advisory Board and the County Fire Coordinator are the primary parties that must be involved in coordinating services.

COUNTY FIRE ADVISORY BOARD AND THE COUNTY FIRE COORDINATOR

The Chemung County Office of Fire and Emergency Management is under the oversight of a Director who also serves as the County Fire Coordinator. The office includes a Deputy Director/Deputy Fire Coordinator, a Safety Officer/Emergency Planner and a support staff member. The County Fire Coordinator is assisted by several volunteer fire coordinators. The County Fire Coordinator administers the County mutual aid plan. The Fire Coordinator's responsibility, in an emergency, is to assist fire officers by advising them about available resources. The Office of Fire and Emergency Management facilitates training, and shares information during an emergency and during the planning for and recovery from an emergency. The County Emergency Communication Center (E-911 center) is managed by the Fire Coordinator.

The Fire Coordinator's Office works with a County Fire Advisory Board which meets on a regular basis to discuss issues, share problems and information, and coordinate activities. The County Fire Advisory Board includes representatives from each fire department in the County. The Fire Coordinator's office helps prepare an agenda and present issues at meetings of the Advisory Board.

There appear to be strained relations between some fire department officials and the Fire Coordinator's Office. Some level of tension is to be expected, since the fire departments are independent organizations. Moreover, County-wide needs may conflict with the individual desires of particular departments. The other source of possible concern is the assessment by each fire department of another fire department's capability and reliability. As a result, some fire officials may have some lack of trust in the ability of one or more departments to perform during an emergency.

Fire department officials do not appear to be concerned with the perceptions of elected and appointed officials. It is important that elected and appointed leaders have confidence in the fire and rescue service, and that the departments are accountable to elected governing bodies (e.g., town board, village board, or board of fire commissioners).

It is essential that the fire and rescue service address several issues:

- The tendency of many departments to operate as independently as possible.
- The concern that there are significantly different levels of capability among departments.
- The need to recognize weaknesses in the current response system and work toward building a fully integrated fire and rescue response system.

The most effective approach to address these issues is for the County Fire Advisory Board to assume a greater role in the future of the fire and rescue service. We are fully aware that the Board is a voluntary organization with no specific authority to demand conformance of a fire department to specific policies. However,

the Board, as the representatives of the fire and rescue system, can have a major influence on future developments within in the County.

Strengthening the County Fire Advisory Board will require participants to consider issues beyond the needs of an individual department and consider the entire emergency response system. The primary goal of the County Fire Advisory Board should be to ensure effective and safe fire and rescue response throughout the County. The Board's role should be expanded beyond an organization that shares information. The Board should help establish an emergency operations framework that expands mutual aid capabilities, ensures firefighter safety, and addresses response problems that may occur in the County.

***RECOMMENDATION 2:** The County Fire Advisory Board should have a stronger role in the coordination of fire and rescue services.*

***RECOMMENDATION 3:** The County Fire Advisory Board should seek to:*

- ▶ *establish an effective response system which maximizes automatic mutual aid;*
- ▶ *develop mechanisms which help ensure firefighter safety;*
- ▶ *identify response, equipment, communication or other problems with the emergency response system and suggest solutions to identified problems;*
- ▶ *provide information and data to the public and elected officials concerning the effectiveness of the fire and rescue system and potential problems within the system.*

***RECOMMENDATION 4:** The County Fire Advisory Board, working with the County Fire Coordinator, should be responsible for establishing standards and measures for fire departments to follow.*

The County and fire officials have no established standards to measure the viability and effectiveness of a fire and rescue department. It may be difficult for the County Fire Advisory Board to develop and promulgate such measures or standards. However, the safety of personnel and effective response require some method by which departments may measure themselves. Examples of measures and standards to consider for adoption are outlined in Chapter V.

The County Fire Advisory Board should recognize that the participation of the County Fire Coordinator in the development of a more effective response system is essential. The County Fire Coordinator has the responsibility to administer the mutual aid plan, but also has the capability of marshaling support within County government to help meet the needs of fire departments.

RECOMMENDATION 5: The County Fire Coordinator should be a full participant with the County Fire Advisory Board in creating a strong fire and rescue system.

The Chemung County Fire Advisory Board should develop a written document outlining its mission and responsibilities. The Board should select a subcommittee of four or five members and the County Fire Coordinator, or a representative, to develop a document which describes the mission and responsibility of the Chemung County Fire Advisory Board. The subcommittee should prepare a draft of the document and circulate the draft to all fire departments for review. In addition, the County Fire Advisory Board should also circulate the document to County officials, city officials, and the officials of the towns and villages within the County.

It is important for the Chemung County Fire Advisory Board to share its plans and ideas with other elected and appointed officials in the County. Providing information to officials demonstrates that the Chemung County Fire Advisory Board has the desire to develop a coordinated service delivery structure. Moreover, sharing information and plans builds support among elected and appointed policy leaders in the County. Additional support will be necessary to address changing circumstances.

The development of this document requires the following steps:

- The County Fire Advisory Board considers the concept of developing a written document.
- The County Fire Advisory Board appoints a subcommittee to prepare a draft document.
- The draft document is circulated to fire departments.

- The draft document is circulated to various elected and appointed officials.
- The Fire Advisory Board reviews comments.
- The County Fire Advisory Board Votes to adopt the document.

Exhibit 13 presents a draft of a document which outlines some of the major goals that the County Fire Advisory Board should consider.

EXHIBIT 13

RESPONSIBILITIES OF THE CHEMUNG COUNTY FIRE ADVISORY BOARD

The Chemung County Fire Advisory Board is an organization of County fire departments. Each fire department should be represented by its fire chief, or other designee. The County Fire Advisory Board is responsible for developing a coordinated fire and rescue response system. The Board should share information and ensure that mutual aid and automatic mutual aid are effective in serving the residents of the County.

Members of the Chemung County Fire Advisory Board recognize that the Board does not have the authority to impose its policies, procedures or goals on any one fire department. However, the Chemung County Fire Advisory Board should develop reasonable measures of performance or response goals for fire departments to meet.

The Chemung County Fire Advisory Board has several major goals.

- The Chemung County Fire Advisory Board desires to maximize the effectiveness of the County's fire and rescue service by encouraging effective mutual aid and automatic mutual aid.
- The Chemung County Fire Advisory Board supports practices and programs which result in the safety of the public and firefighters.
- The Chemung County Fire Advisory Board encourages the effective sharing of resources by supporting administrative coordination such

as joint purchasing of goods and services, grant preparation and other services.

- The Chemung County Fire Advisory Board desires to develop a set of standards or goals for each fire department to meet.

RECOMMENDATION 6: *The Chemung County Fire Advisory Board should appoint a subcommittee composed of four or five members of the Board and the Fire Coordinator, to develop a document describing the goals and role of the Board.*

RECOMMENDATION 7: *The Chemung County Fire Advisory Board should circulate a draft of the document to the leadership of each fire department.*

RECOMMENDATION 8: *The Chemung County Fire Advisory Board should circulate a draft of the document to elected and appointed officials.*

RECOMMENDATION 9: *The Chemung County Fire Advisory Board should officially vote to adopt the document.*

COUNTY EMERGENCY COMMUNICATION (COUNTY E-911 CENTER)

The County's Emergency Communication system makes the coordination of emergency response possible and effective. Members of the consulting team visited the County Emergency Communication Center (County E-911 Center) and observed operations. The E-911 Center is well organized. The facility is has limited space and is located near a police facility. The Emergency Communication Center has 21 employees and handles almost 100,000 calls for service annually. Approximately 6,800 calls for service are fire and rescue incidents to which a fire department is dispatched.

An effective emergency communication center is essential to an efficient public safety and emergency response system. Our on-site observations suggest that the emergency communication system operates efficiently; however, it is clear the current facility is not adequate to meet the needs of a modern dispatch center. We estimate that a communication center requires approximately 400 to 425 square feet

for each dispatch position. Office space, an equipment room, a break room, lockers and storage space are needed. We estimate that 4,000 to 5,000 square feet is required. Exhibit 14 outlines possible space needs. This space needs summary is only an estimate. The County should conduct a detailed space analysis when a new facility is contemplated.

EXHIBIT 14
EMERGENCY COMMUNICATION CENTER ESTIMATED SPACE NEEDS

Dispatch Area/Center (6 dispatch positions)	400 to 425 square feet x 6 = 2,400 to 2,550
Office space, break room, lockers, etc.	800 to 1,100 square feet
Equipment room/space	500 to 700 square feet
Estimated space needs	3,700 to 4,350 square feet

We were provided with a great deal of information by the Emergency Communication Center, such as number and type of calls for service. Ideally, additional software should be purchased that allows the development of more information on fire, rescue, and EMS calls. Data which show the time of a call, call processing time, response time of units, response by mutual aid companies, and number of personnel responding to major incidents within time increments is not currently available. Such information should be collected, since it will assist in developing mutual aid plans and Standards of Cover.

RECOMMENDATION 10: *The County should develop a long-term plan to relocate the current emergency communication center.*

RECOMMENDATION 11: *The County should conduct a space needs analysis for the emergency communication center.*

RECOMMENDATION 12: *The County should evaluate software which is designed to generate detailed fire and rescue response reports.*

The County operates an Emergency Medical Dispatch (EMD) system which deploys emergency units and fire department units in accordance with

predetermined protocols based on the seriousness of the call. The Elmira Fire Department is dispatched by EMD.

RECOMMENDATION 13: *The County should continue to use an Emergency Medical Dispatch system and dispatch departments and personnel in accordance with protocols.*

The consulting team heard several complaints regarding dispatch procedures, which were generally related to specific incidents. The Fire Coordinator investigates and corrects any problems or concerns as a matter of routine business. However, it is suggested that the Fire Coordinator consider establishing a user committee that would meet periodically and review any dispatch problems which may occur. The role of the user committee is likely to be relatively important during the next several years as the fire department revises mutual aid and automatic mutual aid policies.

RECOMMENDATION 14: *The County Fire Coordinator should establish a user committee to address emergency dispatch, radio reception, or related problems.*

The Fire Coordinator should review the staffing needs of the Emergency Communication Center during the next 12 to 18 months. New response protocols, or an increase in demand for service, may require the employment of additional full-time or part-time personnel. The County should conduct an analysis of dispatch staffing needs. A staffing analysis requires a review of shift schedules, actual hours worked by personnel, and the time devoted to dispatching by time of day, day of week and other analysis. The staffing analysis and the space needs analysis of the communication center should be conducted at the same time.

RECOMMENDATION 15: *The County should conduct a technical staffing review of the emergency communications system to assess staffing needs.*

MUTUAL AID AND AUTOMATIC MUTUAL AID

The fire departments in Chemung County participate in and rely on mutual aid. Some fire departments have established automatic response systems for all emergencies. For example, the Baldwin Fire Department and the East Hill Fire

Department have a reciprocal arrangement by which each department receives automatic mutual aid on all alarms from the other department.

There is a need to formalize mutual aid agreements. The County Fire Advisory Board should conduct a systematic review of regular on-call mutual aid and automatic mutual aid. This analysis needs to consider the location of major hazards, the location of resources, the availability of volunteer personnel during different times of the day and days of the week, and the capabilities of various departments. The County Fire Advisory Board has the capability to encourage and require departments to participate in a review of mutual aid arrangements.

The review of mutual aid agreements should be a priority for the Board. The adoption of a new battalion structure will have a direct effect on mutual aid agreements. (See the proposed Battalion Structure in Chapter VII).

RECOMMENDATION 16: *The Fire Advisory Board should conduct a detailed review of automatic mutual aid and regular on-call mutual aid arrangements.*

RECOMMENDATION 17: *The County Fire Advisory Board should ensure that mutual aid practices are formalized in writing. The agreements should be reviewed periodically and adjusted as needed.*

RECOMMENDATION 18: *The review of mutual aid agreements should include mutual aid arrangements involving departments from other New York counties and Pennsylvania.*

The County Fire Advisory Board, with the assistance of the County Fire Coordinator, should organize additional County-wide specialized teams or functions, similar to the existing hazmat teams. The County should establish a Rapid Intervention Team (RIT), and a safety officer program. The County should also consider establishing specialized teams for services, such as tanker, wildland, overhead, and water rescue.

RECOMMENDATION 19: *The County fire departments should establish specialized teams.*

The review and revision of the mutual aid plans would be facilitated by the development of standardized preplanning forms for all target hazards. The County fire departments should develop standardized County-wide preplanning forms for all target hazards. These plans can be integrated into the mutual aid protocols.

RECOMMENDATION 20: *The County fire departments should develop standardized, County-wide preplanning forms for all target hazards.*

The County Fire Advisory Board should consider a new response strategy which assesses each department's response area and develops a strategy which uses the concept of nearest station response. Under this approach, the units assigned to the fire station closest to an emergency incident should be dispatched, without consideration of official boundaries. The intent of this approach is to shorten response. The nearest station response system should require the fire department in whose area the incident occurred to maintain command of an incident. There are several computer maps in this report which display response capability; these maps will assist fire departments in the creation of the new response strategy.

RECOMMENDATION 21: *The County Fire Advisory Board should consider implementing a strategy which uses the concept of nearest station response.*

The County fire and rescue service should consider the concept of Standards of Cover. This concept identifies the number of trained personnel, number and type of apparatus, and the maximum response time for the arrival of a first-due engine company and the entire first-due assignment for specific hazards or facilities. Application of this concept requires that each fire department and fire district within the County conduct a hazard analysis of its service area.

RECOMMENDATION 22: *The County fire services should ensure that each fire department and each district conduct a hazard analysis of its service area.*

RECOMMENDATION 23: *The minimum Standards of Cover assignment should be established for each target hazard identified. A Standard of Cover should consist of:*

- ▶ *The minimum number of site-trained, certified responders, together with the number and types of apparatus needed for a specific target or target area;*
- ▶ *The maximum response times allowable for the arrival of the first-due engine company, followed by the entire first-due assignment.*

The City of Elmira Fire Department participates in the County Fire Advisory Board and provides mutual aid to surrounding areas. However, the Fire Department does not fully participate in the mutual aid system. There has been resistance, as we understand it, to the receipt of automatic mutual aid from surrounding volunteer fire departments. There appears to be some concern within the City that if volunteer fire departments routinely respond to incidents within the City there will be an effort to made to replace career firefighters. We understand the concerns of personnel; however, it is our opinion that it is necessary for the Elmira Fire Department to fully participate in the mutual aid system within the County. Automatic aid can be of assistance to the City in many ways. For example, currently there is no automatic mutual aid response to fill this RIT role for a working fire in the City of Elmira. It should be noted that the State of New York uses the term, Firefighter Assist Team (FAST), in lieu of the term RIT.

The Elmira Fire Department currently staffs two engines and one ladder company on a daily basis. An officer and two firefighters are assigned to each apparatus. In addition, there is a Deputy Chief on duty. Thus, there are 10 personnel on duty. Assuming this staffing complement, the deployment of an RIT team should be a matter of Department protocol.

The Elmira Fire Department, the County Fire Coordinator, and the fire departments surrounding the City of Elmira should collectively develop an agreement in which an automatic FAST (RIT) mutual aid response is provided by adjacent volunteer fire departments to the City. An automatic RIT mutual aid response to adjacent volunteer fire company areas should be provided by the Elmira Fire Department, as needed. An engine company should be deployed by the Elmira Fire Department to an adjacent volunteer fire department response assignment if the assignment has been declared a working fire. The Elmira Fire Department company should serve as the RIT for the incident.

RECOMMENDATION 24: *The Elmira Fire Department should provide an RIT mutual aid response to adjacent volunteer fire departments.*

RECOMMENDATION 25: *The volunteer fire departments adjacent to the City of Elmira should provide an RIT mutual aid response to the Elmira Fire Department.*

The Elmira Fire Department should work with adjacent departments to develop additional support, as needed. For example, when the Elmira Fire Department resources are reduced to one engine and one ladder, as a result of a single engine company assignment (a medical-rubbish or car fire response), and a simultaneous response for a structural fire is received, an adjacent volunteer engine company should be automatically dispatched to support the Elmira Fire Department.

RECOMMENDATION 26: *The City of Elmira and adjacent volunteer fire departments should establish comprehensive mutual aid agreements.*

RECOMMENDATION 27: *The County dispatch protocols should require the deployment (pursuant to an agreement) of a volunteer engine company to the City of Elmira, when the Elmira Fire Department's response capability is reduced to one engine and a ladder, and a simultaneous call for a structure fire is received.*

A problem which is common to the fire service is the different perspectives of volunteer and career firefighting personnel. The problem exists in Chemung County and needs to be addressed. The County has limited resources and the need for effective resource deployment requires closer cooperation among fire and rescue personnel. The volunteer fire departments and the Elmira Fire Department should make a systematic effort to strengthen relationships.

RECOMMENDATION 28: *The City of Elmira and adjacent volunteer fire departments should systematically work to strengthen relationships.*

Additional coordination efforts are described in Chapter VII of this report.

COUNTY-WIDE VOLUNTEER RECRUITMENT

The level of participation by volunteers varies among fire departments. The expansion of a volunteer fire department is a difficult task, but several models are available. The County should develop a County-wide volunteer firefighter recruitment effort. This effort must include support and help from each fire department. The County-wide recruitment program should be aggressive and focus on outreach efforts to identify possible sources of volunteers. The County should seek information from the National Volunteer Fire Council, U. S. Fire Administration, and International Association of Fire Chiefs.

RECOMMENDATION 29: *The County Fire Department should develop an aggressive volunteer recruitment program.*

V. MEASURING CAPABILITY AND PERFORMANCE

There are no standards by which a fire department can measure its performance within Chemung County. The need to develop a measurement process is dictated by the nature of the County. There has been a reduction in the population of the County; the County has an aging population; several volunteer fire departments report having difficulty maintaining volunteers and the deactivation of the West Hill Fire Department raises the issue whether all of the volunteer fire departments will be viable in the future. These are all factors which suggest that measures of capability are required.

Measures of capability are important for several reasons:

- The general public should be aware of the level of services provided by a fire department.
- The fire departments are part of a County-wide integrated system and it is essential that fire departments understand the capabilities of one another.
- The fire departments, if they are aware of a problem with another fire department, may be able to support or help the other department.
- The safety of the public and firefighters must be maintained.

The difficulty in evaluating any department's performance in the County is that each fire department is an independent organization. Therefore, the measurement of any organization is a voluntary responsibility of each department and its governing authority. Since town boards and boards of fire commissioners are responsible for reviewing services provided by organizations within their jurisdiction, some reasonable methods of measurement should help those boards fulfill their responsibilities.

The County Fire Advisory Board should encourage the development of an evaluation process. The County Fire Advisory Board, working with the County Fire Coordinator, should define the elements of a viable fire-rescue department. A set of

goals or standards should be established to enable volunteer fire departments to measure their performance. A fire department should have:

- ▶ a defined home area district for which it is required to provide protection;
- ▶ appropriate organizational structures for fire operations and for company business and social functions;
- ▶ an active, knowledgeable, and dedicated governing/policy board, or individual, to oversee operations;
- ▶ a set of planned Standards of Cover requirements for targeted structures and areas within the district;
- ▶ a set of formal working mutual aid agreements;
- ▶ a sufficient number of trained and certified members to provide adequate and safe initial attack, and to meet OSHA requirements and relevant NFPA standards;
- ▶ appropriate requirements for continuing training, officer training, and a set of standard operating guidelines, or standard operating procedures (SOG/SOPs);
- ▶ one or more appropriately located, maintained, and safe fire station(s);
- ▶ a record of participation in the County Fire Advisory Board and battalion activities;
- ▶ a sufficient income source, or sources, to support adequate and safe department operations.

RECOMMENDATION 30: *The Chemung County Fire Advisory Board, working with the County Fire Coordinator, should define the essential elements of a volunteer fire department.*

The County Fire Advisory Board should determine if a fire department meets its standards. The Board should assist a department to meet locally developed

standards. It should be noted that it is not the responsibility of the County Fire Advisory Board or the County Fire Coordinator to correct a serious deficiency; that responsibility rests with a town board, village board, or board of fire commissioners.

RECOMMENDATION 31: *The Chemung County Fire Advisory Board and the County Fire Coordinator should help fire departments meet locally developed standards.*

Exhibit 15 presents the standards that could be used to measure the performance of the volunteer fire departments.

EXHIBIT 15
STANDARDS TO MEASURE VOLUNTEER FIRE DEPARTMENT PERFORMANCE

STANDARD	COMMENT
Defined home area district for which it is required to provide protection	Departments in Chemung County have defined areas; consideration should be given to the concept of <i>closest department available</i> .
Appropriate organizational structures for fire operations and for company business and social functions	A command structure must be in place.
An active, knowledgeable, and dedicated governing/policy board, or individual, to oversee operations	Boards of fire commissioners, village boards or boards of directors should be aware of problems in a fire department.
A set of planned Standards of Cover requirements for targeted structures and areas within the district	Departments should identify each target structure or hazard within the response area and have a response plan.
A set of formal working mutual aid agreements	Mutual aid response must be clear and unambiguous. Mutual aid departments should train together.
A sufficient number of trained and certified members to provide adequate and safe initial attack, and to meet OSHA requirements and relevant NFPA standards	Departments need an adequate number of response personnel. If too few responders are available, steps must be taken to increase the number of responders.
Appropriate requirements for continuing training, officer training, and a set of standard operating guidelines or standard operating procedures (SOG/SOPs)	
One or more appropriately located, maintained, and safe fire station(s)	Station locations must be appropriate for the area serviced. If stations are not appropriately located, relocation or other alternatives should be considered.

STANDARD	COMMENT
A record of participation in the County Fire Advisory Board and battalion activities	Department Chiefs should participate in County-wide functions. Coordination and information sharing is essential to effective operations.
A sufficient income source, or sources, to support adequate and safe department operations	A fire department without sufficient resources may have to be financially supported, or merged with another department.

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

The National Fire Protection Association (NFPA) has established several benchmarks, or standards, for measuring fire and rescue response. NFPA Standard 1720 applies to predominantly volunteer departments; NFPA Standard 1710 applies to career departments. NFPA 1720 is applicable to each volunteer fire department in Chemung County.

NATIONAL FIRE PROTECTION ASSOCIATION STANDARD 1720

NFPA Standard 1720 is a performance standard concerned with both the number of personnel who respond to an incident and the time it takes to respond to an incident. Exhibit 16 displays the performance standards for volunteer departments. NFPA Standard 1720 states that the department should identify the minimum staffing required to ensure that sufficient numbers of personnel are available to allow safe operations at an emergency scene. The exhibit presents the staffing and response time requirements from NFPA Standard 1720.

EXHIBIT 16
NFPA 1720 PERFORMANCE STANDARD
STAFFING & RESPONSE TIME STANDARDS FOR VOLUNTEER FIRE DEPARTMENTS

DEMAND ZONE	POPULATION PER SQ. MI.	PERSONNEL	TIME (IN MINUTES)	PERCENTAGE OF TIME
Urban	>1,000	15	9	90%
Suburban	500 to 1,000	10	10	90%
Rural	<500	6	14	80%
Remote	travel distance >8 miles	4	-	90%

Source: NFPA 1720

NFPA Standard 1720 indicates that a town with a population density of less than 500 residents per square mile should be able deliver six firefighters to the scene of a fire within 14 minutes. In a service area with a population density of 500 to 1,000 persons per square mile, the fire department should be able to deliver 10 personnel within 10 minutes.

The volunteer fire departments in Chemung County generally cover large geographic areas. It appears that the majority of fire department service areas have population densities of less than 500 persons per square mile. Using NFPA Standard 1720 as a guide, the benchmarks for these fire departments would require that six personnel arrive at the scene of incident within 14 minutes. Some areas served are beyond the eight-mile travel distance parameter and the demand zone would be viewed as remote under NFPA Standard 1720. The Elmira Heights Fire Department serves an area with a population density greater than 1,000 persons per square mile; as a result, the Department can be measured in relation to the part of the standard that calls for the delivery of 15 personnel to the scene of an incident within nine minutes, 90 percent of the time.

The response time and staffing standard provided in NFPA Standard 1720 also establishes a time frame to begin the initial attack. NFPA 1720 states that, upon arrival of the required number of personnel at the scene of an incident, a fire department should have the capability to safely begin initial attack within two minutes, 90 percent of the time. Some fire departments may have difficulty achieving the response objective included in NFPA Standard 1720.

NFPA Standard 1720 provides the basic performance measures that should be developed for each fire department. It is important to develop a method of tracking the number of personnel who are at the scene of major incidents. This information will also help the County Fire Advisory Board develop automatic mutual aid plans.

RECOMMENDATION 32: *The County Fire Advisory Board should review NFPA Standard 1720 and apply the standard to each volunteer fire department.*

Achievement of the goals set forth in NFPA Standard 1720 should be possible with the implementation of an effective automatic mutual aid system and adoption (or selected adoption) of the closest station response strategy.

RECOMMENDATION 33: *The County Fire Advisory Board should include NFPA Standard 1720 within the performance guidelines developed by the Board.*

RECOMMENDATION 34: *The County Fire Advisory Board, working with the County Emergency Communication Center, should develop an approach or recommended practice which allows tracking of the number of personnel and apparatus that arrive at the scene of major incidents.*

RECOMMENDATION 35: *The County Fire Coordinator should be responsible for compiling performance information and reviewing these data with the County Fire Advisory Board.*

Performance specifications should include:

- ▶ Response time measures
- ▶ Number of personnel responding to specified incident types
- ▶ Number of vehicles deployed to specified incident types
- ▶ Types of certifications held by personnel and competencies of personnel

These performance specifications are often referred to as Standards of Cover. Standards of Cover are concerned with the nature of response, the type of apparatus and equipment deployed, and the number of personnel.

NATIONAL FIRE PROTECTION ASSOCIATION STANDARD 1710

The response time benchmarks for substantially career fire departments, such as the Elmira Fire Department, are found in NFPA Standard 1710. The standard presents response time measures and staffing goals and also stipulates that these response time performance objectives should be achieved in at least 90 percent of the incidents. In summary, the response time standards are:

Fire Suppression Incident - Four minutes (240 seconds) or less for the arrival of the first-arriving engine company at a fire suppression incident and/or eight minutes (480 seconds) or less for the deployment of a full first-alarm assignment at a fire suppression incident.

Emergency Medical Incident - Four minutes (240 seconds) or less for the arrival of a unit with first responder (or higher) level capability at an emergency medical incident. Eight minutes (480 seconds) or less for the arrival of an ALS unit at an emergency medical incident, where this service is provided by the fire department.

Note: These response time performance objectives should be achieved at least 90 percent of the time.

These NFPA Standard 1710 time lines do not include dispatch and turn-out time. One additional minute is allowed for dispatch and one minute is added for turn-out time, for a total of two minutes. It should be noted that turn-out time is less when a fire department responds to an emergency medical services incident, since personnel are not required to put on turn-out gear.

NFPA Standard 1710 calls for 14 or 15 responders for working single-family dwelling fires, which can be accomplished by a combination of on-duty personnel, call back of personnel, and mutual aid. Higher staffing levels are necessary for large commercial structures, multiple residences, larger single-family residences, and high rise structures.

RECOMMENDATION 36: *The City of Elmira should measure its performance in several ways, including application of NFPA Standard 1710. Application of this standard should consider a combination of on-duty personnel, call-back personnel, and mutual aid.*

FIREFIGHTER SAFETY PRACTICES

Firefighter safety should be a major factor in assessing emergency response protocols. Several factors need to be considered in the context of the safety of emergency response personnel, as the Fire Advisory Board develops its measures and

standards. A number of important firefighter safety requirements should be considered.

- ▶ The *requirement* for a minimum of four equipped personnel to be present before entry in a structure fire incident.
- ▶ The *requirement* for a rapid intervention team (RIT) to be present for safety reasons at working structure fires.
- ▶ The *requirement* for a qualified incident commander and a qualified safety officer to be present at working incidents.

RECOMMENDATION 37: *The County Fire Advisory Board should consider the safety of personnel when developing standards and measures of department capability.*

VI. RESPONSE CAPABILITY, COMPUTER MAPPING & RESPONSE OBJECTIVES

The National Fire Protection Association (NFPA) has established several benchmarks, or standards, for measuring fire and rescue response. NFPA Standard 1720 applies to predominantly volunteer departments; NFPA Standard 1710 applies to career departments. NFPA Standard 1720 is a performance standard, concerned with both the number of personnel who respond to an incident and the time it takes to respond to an incident. The response time and staffing requirements provided in NFPA Standard 1720 also establish a time frame to begin the initial attack. NFPA 1720 states that, upon arrival of the required number of personnel at the scene of an incident, a fire department should have the capability to safely begin initial attack within two minutes, 90 percent of the time. (See NFPA Standard 1720.) NFPA Standard 1710 is applicable to a career fire department, such as the Elmira Fire Department. NFPA 1710, like NFPA 1720, sets forth both the number of personnel who respond to an incident and the time it takes to respond to an incident. NFPA Standard 1710 presents a more rigorous time framework which assumes the immediate availability of personnel.

The maps and the associated response data generated by the maps included in this chapter provide a measure of the services that may be provided within the County. The maps show a variation in service levels within the County, which is to be expected in an area as large as Chemung County.

The data indicate that it is difficult to meet standards in some instances. However, information indicates that meeting reasonable standards and benchmarks is possible in many areas of the County, especially with the implementation of a comprehensive automatic mutual aid system.

COMPUTER MAPPING ANALYSIS

The consultants conducted a computer mapping analysis of the response capability of the Chemung County fire and rescue services response system, to develop more detailed information about the ability of the departments to respond to emergencies. The computer analysis required the consultants to review maps of the County, examine transportation networks, conduct site visits to the stations, and review data. The computer mapping analysis allows an evaluation of the current fire response and deployment system.

MAPPING METHODOLOGY

The mapping methodology shows response coverage from each fire department's existing fire stations in Chemung County. The model analyzes the travel distances that can be attained by apparatus from each fire station responding to its surrounding area within a given time, assuming defined average response speeds. Color-coded maps are designed to illustrate fire department response throughout the County.

The mapping methodology consists of the following steps:

- Prepare a digitized base map of the County's street and highway network.
- Locate the fire stations to be analyzed with respect to that network.
- Locate the service area of each fire department.
- Assign appropriate road speeds to reflect reasonable response expectations.
- Generate maps indicating travel times from fire stations throughout the County, in specified increments.

The mapping analysis required fire and rescue consultants to tour the County to assess the road network and potential response problems. The computer mapping specialist on the consulting team also drove through the County to assess the road network and the nature of major transportation routes.

The street network is based on TIGER files from the United States Census Bureau. The resulting digitized street network was used in the computer mapping analysis to determine travel times to various points in the County from the various fire stations. To facilitate this analysis, the longitude and latitude of the fire station location was established and inserted on the digitized street network and speed assignments were made. The TIGER files contain 2000 census information which has been incorporated in this analysis. The population of the County in 2000 was 91,070; the estimated population in 2008 was 87,813, which reflects an decrease of 3,257, or 3.6 percent.

COMPUTER GENERATED MAPS

A series of maps was prepared to analyze the response capability from the current fire station configuration. The travel time maps were developed based on the assumption that the average speed for all streets in the network is 25 miles per hour. The current speed assumptions were based on consultations with officials and site visits by the consultants, which included an over-the-road survey of fire stations. The speed is designed to take into account different conditions likely to be encountered, including the type of road, time of day, weather, traffic, and roadway conditions.

The maps only depict over-the-road travel, or running, times. Notification, dispatch, and time to travel to the station and mount apparatus should be added to these times for an estimate of total response time. We have no data on the time it takes for volunteers to arrive at a fire station, mount apparatus and respond to an incident.

The Big Flats, Elmira Heights, Town and Country, and West Elmira Fire Departments each deploy the equivalent of one firefighter on a 24/7 basis. We have assumed that in Chemung County it will require four minutes for a volunteer fire department to deploy an apparatus from a fire station upon notification of an emergency. Response time is estimated by totaling travel time and turn-out time (notification, dispatch, and time to travel to the station and mount apparatus). For example, four minutes of travel time means that the actual response time will be eight minutes.

Maps 1 and 2, displayed in Chapter III, present the response areas for each fire department. Maps 3, 4, 5, and 6 provide an overview of the response capability within the County. These four maps divide the County into four areas to graphically illustrate the response capability of each department. The maps show fire districts, or response areas, fire station locations, and the general road network of the County. The maps are identified as Group 1, 2, 3, 4 and 5 for convenience of display. It is important to recognize that these maps display travel time only.

Maps 3 through 6 display the response from each fire station. Maps 3 to 5 present response in four-minute time increments (less than four minutes, four minutes to less than eight minutes, and eight minutes to less than 12 minutes) with

an average speed of 25 miles per hour. Map 6 presents response capability in two-minute increments, in the most densely populated area of the County.

Maps 3, 4, and 5 use the following color codes to depict areas covered within time increments.

Blue	Less than four minutes from a station
Green	More than four minutes, but less than eight minutes from a station
Pink	More than eight minutes, but less than twelve minutes from a station
White or no color	More than twelve minutes from a station

Map 6 represents the urban core of the County and presents response capability in two-minute increments using different color codes than Maps 3, 4 and 5. Map 6 uses the following color codes to depict areas covered within time increments.

Dark Blue	Less than two minutes from a station
Light blue	More than two minutes, but less than four minutes from a station
Brown	More than four minutes, but less than six minutes from a station
Green	More than six minutes, but less than eight minutes from a station
Tan	More than eight minutes, but less than ten minutes from a station
Pink	More than ten minutes, but less than twelve minutes from a station
White or no color	More than twelve minutes from a station

Map 3, *Group 1 Fire Districts*, shows travel time from the Baldwin, Breesport, Chemung, Erin and Van Etten fire stations. The locations of six fire stations in this area are shown as red dots. The map shows the areas covered by each of these departments.

Map 4, *Group 2 Fire Districts*, shows travel time from seven fire stations for Horseheads, Millport, Tompkins Corners, Town and Country, and Big Flats. West Hill is depicted on the map, although there is no longer a response from the West Hill

Fire Department, and the Department is deactivated. The Horseheads and Town and Country fire stations are located near each other and essentially have the capability of serving the same area.

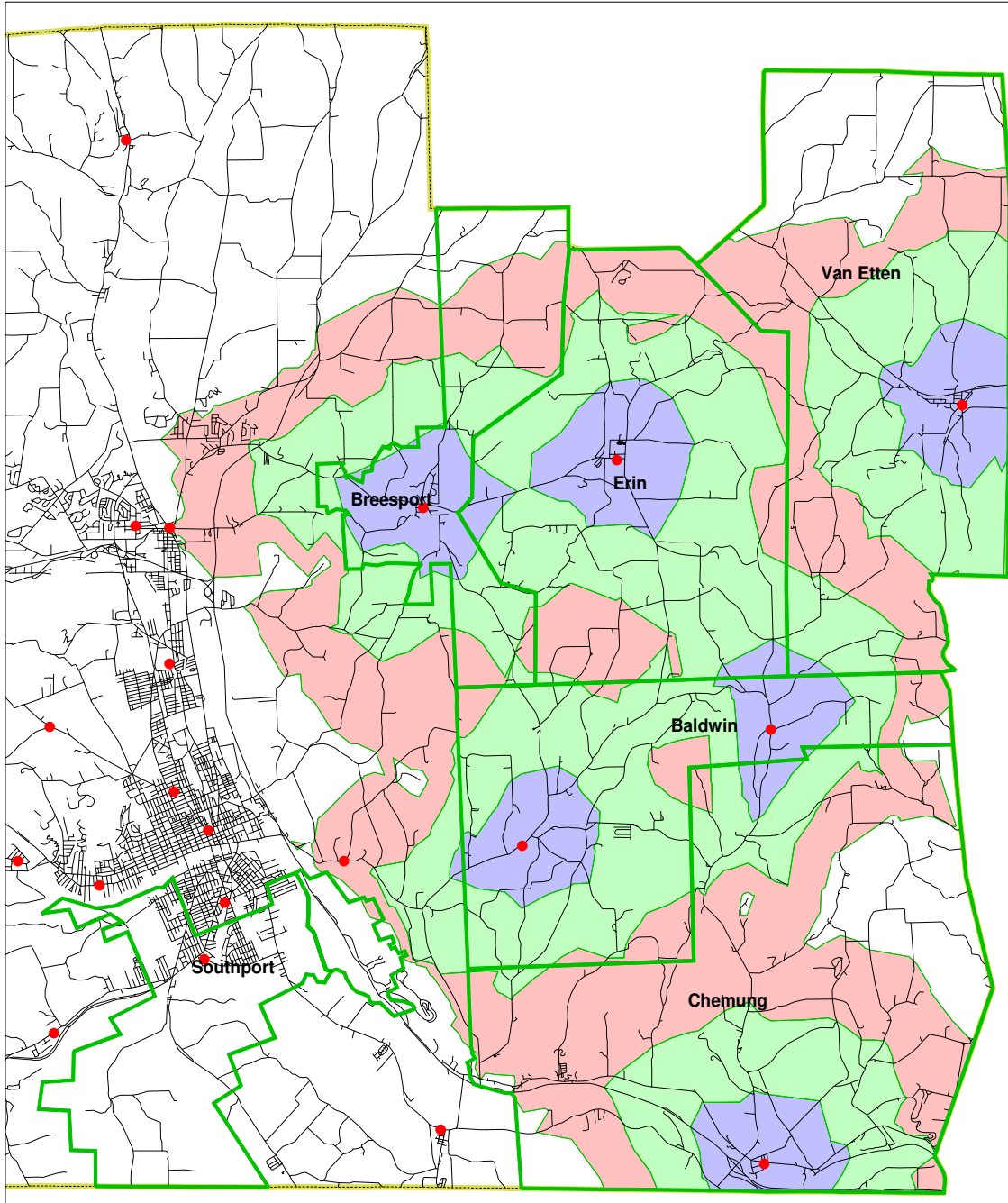
Map 5, *Group 3 Fire Districts*, shows travel time from eight fire stations for Golden Glow, Pine City, Webbs Mills, Southport, Wellsburg, and East Hill. Southport is able to cover parts of the City of Elmira within four minutes.

Map 6, *Group 4 Fire Districts*, shows travel time from five fire stations for Elmira Heights, City of Elmira, and West Elmira. The map indicates that the urban core of the County is substantially covered within six minutes travel time. The maps indicate that the City of Elmira is able to provide mutual aid on a timely basis and receive mutual aid on a timely basis from Southport, West Elmira, and Elmira Heights.

It should be noted that Maps 3, 4, 5, and 6 display response from each fire station without considering current response districts. These maps suggest that in many instances, either response areas need to be adjusted or automatic mutual aid response should be implemented, using the closest station concept. It is important to consider the actual capability of a department to respond when applying the closest station response concept.

Map 7, *Streets Coded According to Best Distance from a Station*, assumes that there is a response from all fire stations at the same time. The map depicts the response based on the closet unit available response concept and indicates that several new response zones may be possible for some fire departments. The overlapping nature of fire response is shown in the urban core of the County.

Map 8, *Streets Covered by Two Stations (Maximum Travel Time of 12 Minutes)*, indicates streets within the County that can be covered by a response from at least two fire stations within 12 minutes. The map clearly shows the response challenges that rural volunteer fire companies must confront.

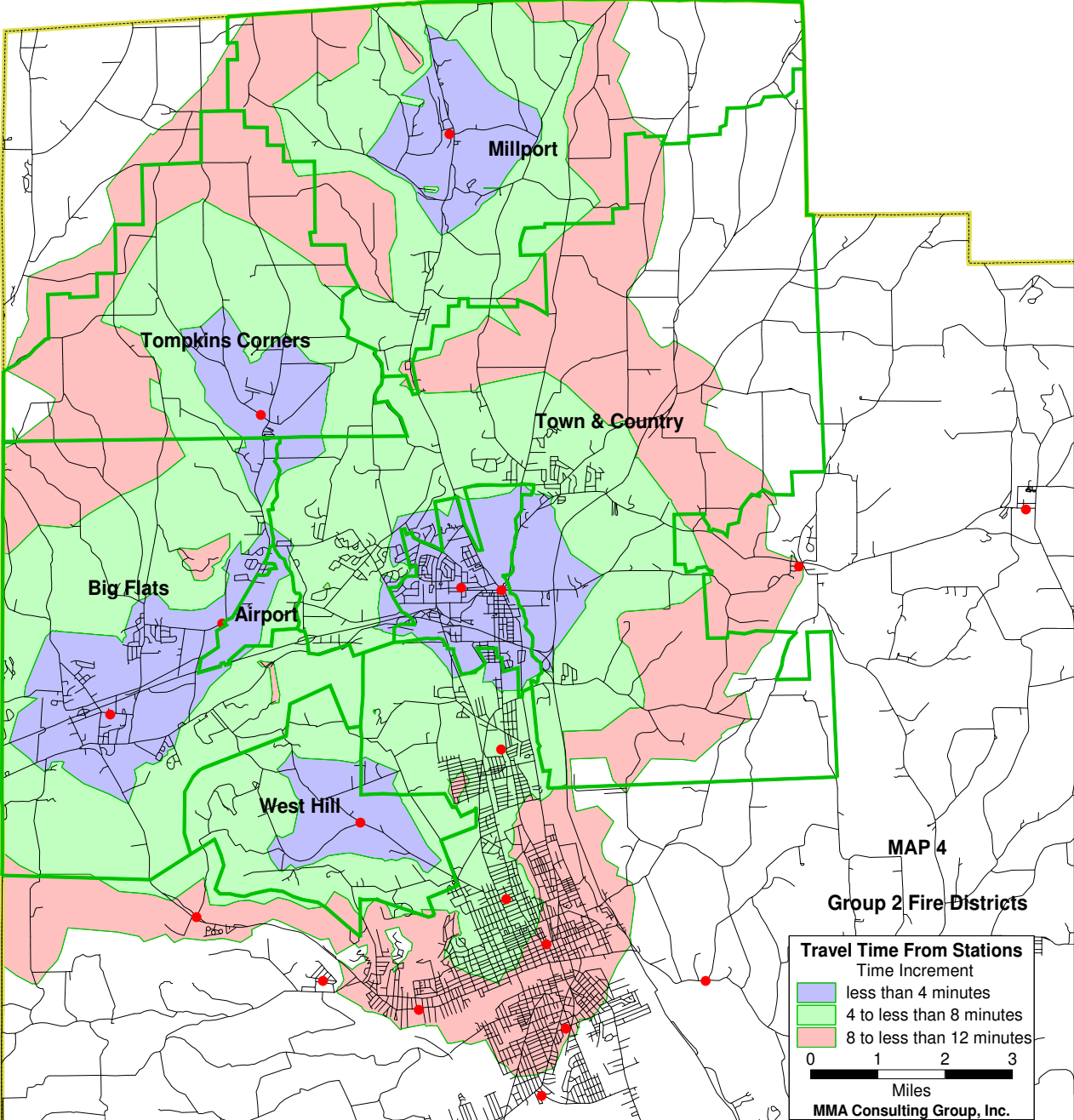


MAP 3
Group 1 Fire Districts

Travel Time from Stations
 Time Increment

- less than 4 minutes
- 4 to less than 8 minutes
- 8 to less than 12 minutes

0 1 2 3
 Miles
 MMA Consulting Group, Inc.



Millport

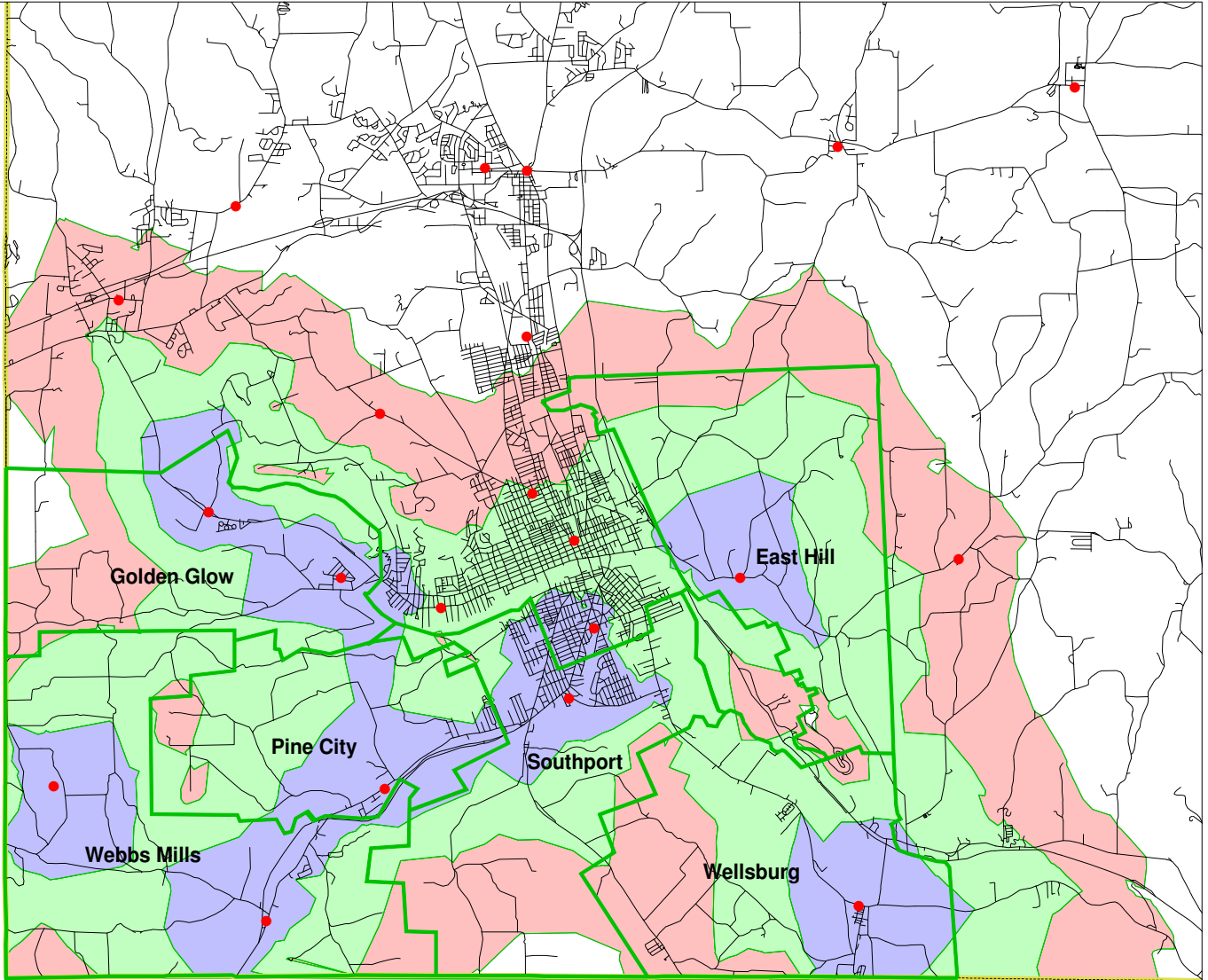
Tompkins Corners

Town & Country

Big Flats

Airport

West Hill

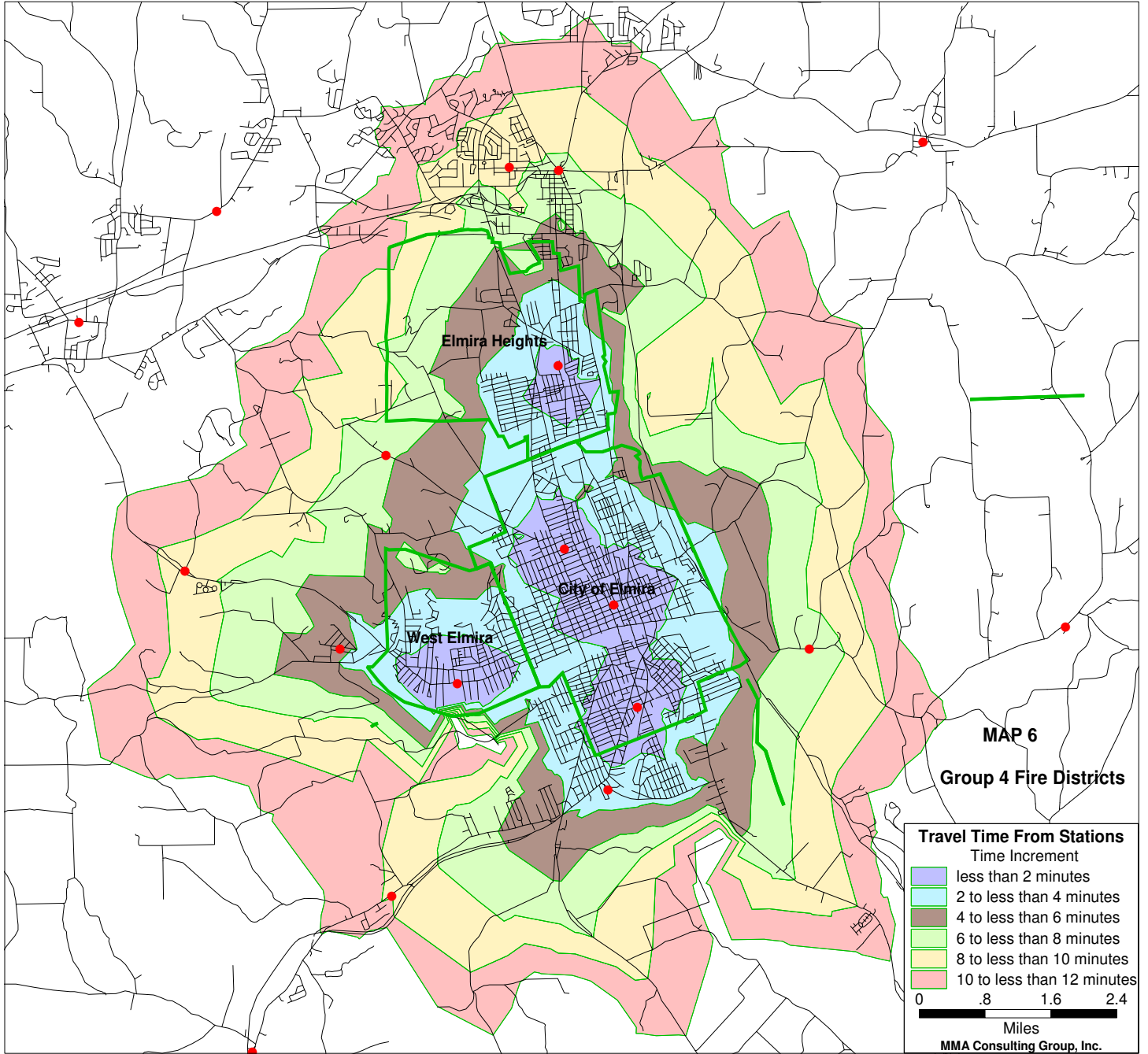


MAP 5
Group 3 Fire Districts

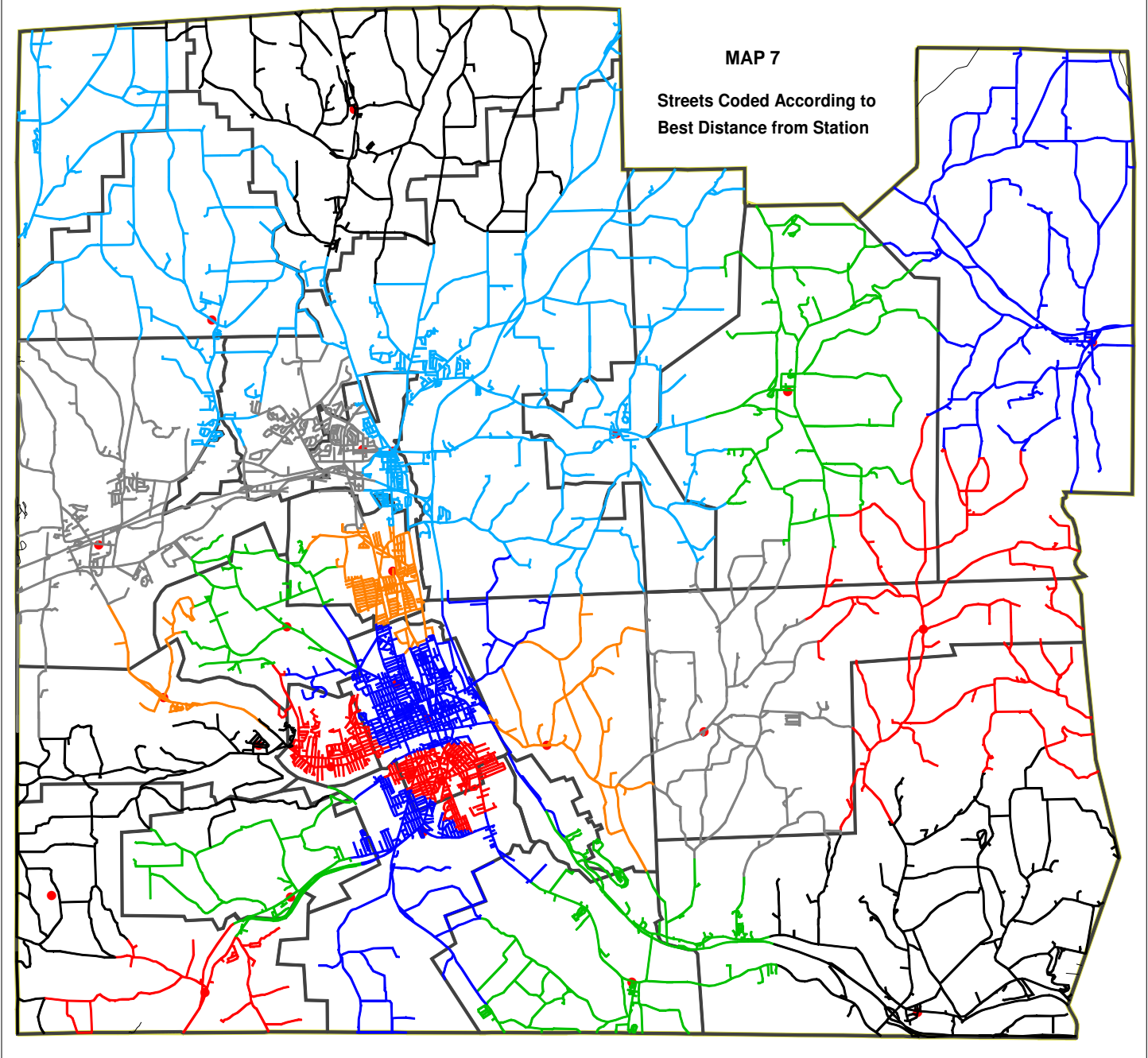
Travel Time From Stations
 Time Increment

- less than 4 minutes
- 4 to less than 8 minutes
- 8 to less than 12 minutes

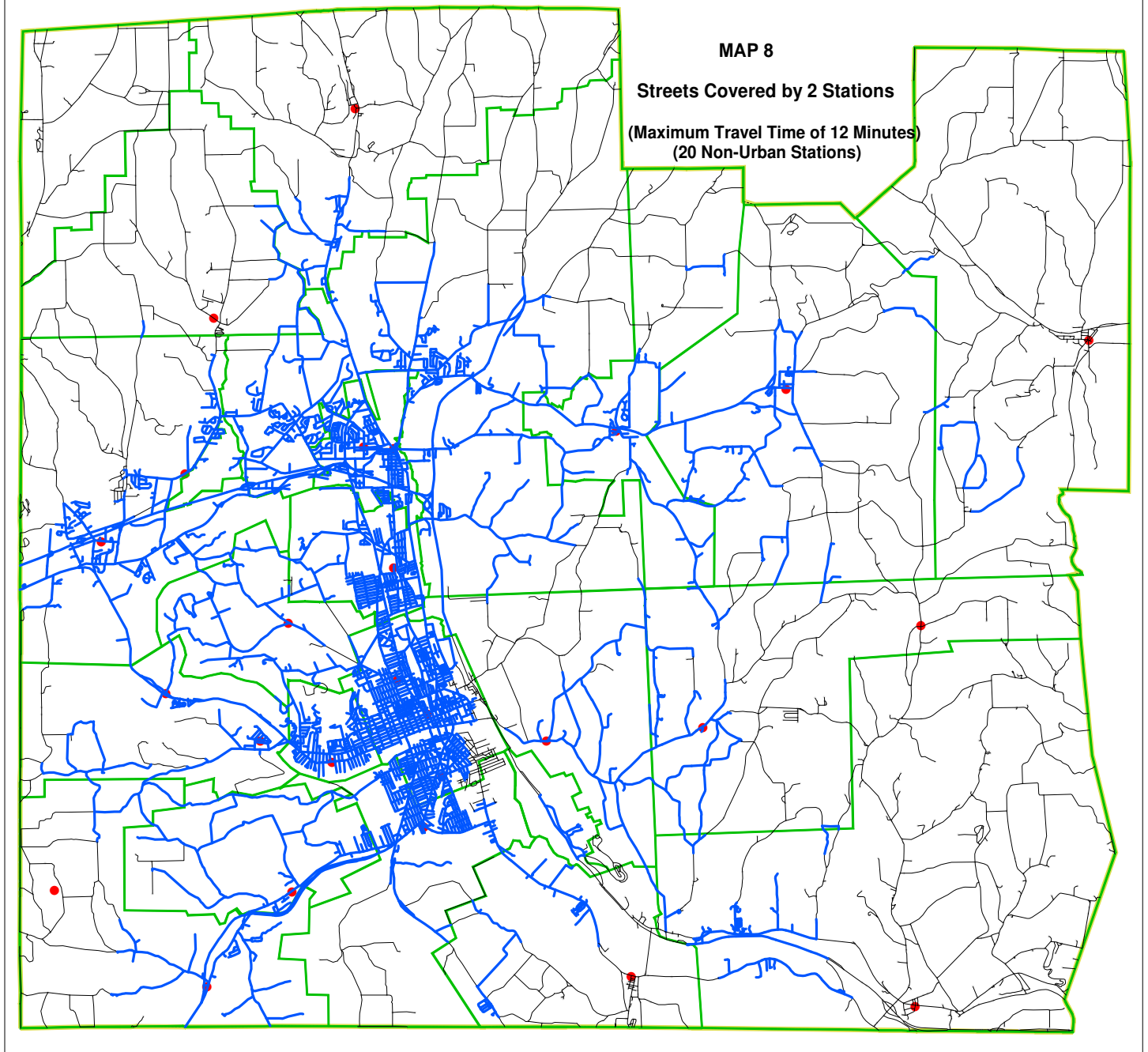
0 1 2 3
 Miles
 MMA Consulting Group, Inc.



MAP 7
Streets Coded According to
Best Distance from Station



MAP 8
Streets Covered by 2 Stations
(Maximum Travel Time of 12 Minutes)
(20 Non-Urban Stations)



VII. REORGANIZING FIRE DEPARTMENT DISTRICTS

RESTRUCTURING COUNTY FIRE DISTRICTS AND CREATING COUNTY BATTALIONS

The County's fire departments are organized into a series of fire service districts. Analysis suggests that the districts should be realigned. Geography, road networks, mutual response dependency, available personnel and apparatus resources should be considered in redesigning the fire districts.

Three possible district structures are shown in Exhibit 17. It is our view that the County should rename the districts and refer to them as battalions. The three examples of battalion organization provide some guidance in the redesign of response approaches, the development of a comprehensive automatic mutual system, and the deployment of resources. One of the proposed battalion structures (Proposed Battalion Model 1) is presented in detail, and two others are shown in summary form. Proposed Battalion Model 1 presents a five battalion organization; Proposed Battalion Model 2 presents a four battalion model; and Proposed Battalion Model 3 presents a two battalion structure.

***RECOMMENDATION 38:** The Fire Coordinator, working with the County Fire Advisory Board, should coordinate the development of a new battalion structure.*

***RECOMMENDATION 39:** The development of a new battalion organization requires officials to consider factors, such as:*

- ▶ *geography*
- ▶ *road network*
- ▶ *demand for service*
- ▶ *apparatus and location of key apparatus types (aerial and heavy rescue)*
- ▶ *apparatus needed in the County,*
- ▶ *location of full-time deployed personnel*
- ▶ *volunteer fire personnel resources*
- ▶ *firefighter safety*

Exhibit 17 presents the current division organization and three possible battalion organization structures to be considered.

EXHIBIT 17
CURRENT DIVISION STRUCTURE AND PROPOSED BATTALION ORGANIZATION

CURRENT	PROPOSED BATTALION ORGANIZATION MODEL 1	PROPOSED BATTALION ORGANIZATION MODEL 2	PROPOSED BATTALION ORGANIZATION MODEL 3
<i>District 1</i> Big Flats, Golden Glow, Tompkins Corners, West Elmira, West Hill (deactivated)	<i>Battalion 1</i> Tompkins Corners, Millport, Town & Country, Van Etten, Erin, Breesport	<i>North Battalion</i> Van Etten, Erin, Breesport, Horseheads, Town & Country	<i>Urban Battalion</i> Elmira, Elmira Heights, West Elmira, Horseheads, Town & Country, Southport, Big Flats
<i>District 2</i> Chemung, Pine City, Southport, Webbs Mills, Wellsburg	<i>Battalion 2</i> Big Flats, Horseheads, Elmira Heights, West Hill (deactivated)	<i>Central Battalion</i> Elmira Heights, Elmira, West Elmira, West Hill	<i>Urban Ring Battalion</i> Millport, Tompkins Corners, Pine City, Webbs Mills, Wellsburg, Chemung, Van Etten, Baldwin, Erin, Big Flats, Breesport, Southport, East Hill, West Hill, Golden Glow
<i>District 3</i> Baldwin, Breesport, East Hill, Erin, Van Etten	<i>Battalion 3</i> Baldwin, Chemung, East Hill, Southport, Wellsburg	<i>West Battalion</i> Tompkins Corners, Millport, Big Flats, Golden Glow, Pine City, Webbs Mills	
<i>District 4</i> Elmira Heights, Horseheads, Millport, Town & Country	<i>Battalion 4</i> Webbs Mills, Pine City, Golden Glow, West Elmira	<i>South Battalion</i> Southport, Wellsburg, Chemung, Baldwin, East Hill	
Elmira treated as separate entity	<i>Battalion 5</i> Elmira City		

Proposed Battalion Organization Model 1 is the most desirable alternative and is described in detail in this chapter. The model also links demand for service with needed apparatus and presents an integrated County-wide support system. Exhibit 18 indicates current district assignments, type and number of emergency response units, and average annual number of responses from each fire department. In addition, the exhibit indicates which departments deploy full-time or part-time firefighters. It is important to note that fire department officials may develop other battalion models which may be deemed more appropriate.

The current District 1 includes five fire departments: Big Flats, Golden Glow, Tompkins Corners, and West Hill. The West Hill Fire Department has been deactivated with response duties contracted to other fire departments. District 1 responds to an average of 670 calls for service each year. The Big Flats and West Elmira Fire Departments each deploy one full-time employee, 24/7. District 2 includes the Chemung, Pine City, Southport, Webbs Mills, and Wellsburg Fire Departments. Fire departments in District 2 respond to an average of 632 calls for service each year. District 3 includes the Baldwin, Breesport, East Hill, Erin, and Van Etten Fire Departments. Fire Departments in District 3 respond to an average of 423

calls for service each year. District 4 includes the Elmira Heights, Horseheads, Millport, and Town and Country Fire Departments. Fire departments in District 4 respond to an average of 1,638 calls for service each year.

EXHIBIT 18
ACTIVITY AND RESOURCES BY CURRENT DISTRICT

DEPARTMENT	AVG. ANNUAL CALLS	FULL-TIME PERSONNEL ON-DUTY 24/7	ENGINE	AERIAL	HEAVY RESCUE/ RESCUE PUMPER	TANKER	BRUSH	UTILITY	TOTAL
<i>District 1</i>									
Big Flats	332	1	2		1	1	1		5
Golden Glow	38		2			1	1	1	5
Tompkins Corners	85		2			1	1	1	5
West Elmira	186	1	2	1				2	5
West Hill	28	Deactivated				2		1	3
<i>District Total</i>	670	2	8	1	1	5	3	5	23
<i>District 2</i>									
Chemung	175		1		1	2	1	2	7
Pine City	122		2			1	1	2	6
Southport	134		3	1	1		1	2	8
Webbs Mills	52		2			1	1	2	6
Wellsburg	148		2			1	1	3	7
<i>District Total</i>	632		10	1	2	5	5	11	34
<i>District 3</i>									
Baldwin	55		2			1		2	5
Breesport	109		1			1	1	2	5
East Hill	27		1			1	1	1	4
Erin	111		1			1	1	2	5
Van Etten	121		3		1		1	1	6
<i>District Total</i>	423		8		1	4	4	8	25
<i>District 4</i>									
Elmira Heights	432	1	3	1	1		1	1	7
Horseheads	483		2	1	1			2	6
Millport	122		2			1	1	1	5
Town & Country	601	1	2	1	1	1	1	2	8
<i>District Total</i>	1,638	2	9	3	3	2	3	6	26
Elmira	2,995	10	4	2				6	12

Note: Source NFIRS

Exhibit 19 indicates that there are 14 full-time (or equivalent) personnel on-duty within the County at any given time. It should be noted that there are often volunteers at various fire stations during the course of the day, evening and weekends engaged in station duties, meetings and other activities. There are more than 100 pieces of apparatus, including engines, aerials, heavy rescue vehicles, tankers, brush trucks, and other utility vehicles in the County.

EXHIBIT 19
SUMMARY OF ACTIVITY AND RESOURCES BY CURRENT DISTRICT

DISTRICT	AVG. ANNUAL CALLS	FULL-TIME PERSONNEL ON-DUTY 24/7	ENGINE	AERIAL	HEAVY RESCUE/ RESCUE PUMPER	TANKER	BRUSH	UTILITY	TOTAL
District 1	670	2	8	1	1	5	3	5	23
District 2	632		10	1	2	5	5	11	34
District 3	423		8		1	4	4	8	25
District 4	1,638	2	9	3	3	2	3	6	26
Elmira	2,995	10	4	2				6	12
All Districts	6,358	14	39	7	7	16	15	36	120

Proposed Battalion Organization Model 1 is displayed in Exhibit 20. The proposal presents a five battalion organization. Exhibit 20 is organized in the same manner as Exhibit 19 and displays the average number of calls by department, and the resources of each fire department. The proposed five battalion organization creates a northeast/northwest County battalion (Battalion 1), a north central County battalion (Battalion 2), a southeast County battalion (Battalion 3), a southeast County battalion (Battalion 4), and the Elmira Battalion (City of Elmira).

EXHIBIT 20
PROPOSED BATTALION ORGANIZATION MODEL 1

DEPARTMENT	AVG. ANNUAL CALLS	FULL-TIME PERSONNEL ON-DUTY 24/7	ENGINE	AERIAL	HEAVY RESCUE/ PUMPER	TANKER	BRUSH	UTILITY	TOTAL
<i>Battalion 1</i>									
Tompkins Corners	85		2			1	1	1	5
Millport	122		2			1	1	1	5
Town & Country	601	1	2	1	1	1	1	1	7
Van Etten	121		3		1		1	1	6
Erin	111		1			1	1	2	5
Breesport	109		1			1	1	2	5
<i>Battalion Total</i>	1,149		11	1	2	5	6	8	33
<i>Battalion 2</i>									
Big Flats	332	1	2		1	1	1		5
Horseheads	483		2	1	1			2	6
Elmira Heights	432	1	3	1	1		1	1	7
West Hill	28								
<i>Battalion Total</i>	1,275	2	7	2	3	1	2	3	18
<i>Battalion 3</i>									
Baldwin	55		2			1		2	5
Chemung	175		1		1	2	1	2	7
East Hill	27		1			1	1	1	4
Southport	134		3	1	1		1	2	8
Wellsburg	148		2			1	1	3	7
<i>Battalion Total</i>	539		9	1	2	5	4	10	31
<i>Battalion 4</i>									
Webbs Mills	52		2			1	1	2	6
Pine City	122		2			1	1	2	6
Golden Glow	38		2			1	1	1	5
West Elmira	186	1	2	1				2	5
<i>Battalion Total</i>	398	1	8	1		3	3	7	22
<i>Battalion 5</i>									
Elmira	2,995	10	4	2				6	12

The proposed model is suggested for several reasons. First, under the proposed organization, four of the five battalions (three of the four volunteer battalions) will have at least one fire department with a full-time firefighter on-

duty, 24/7. The only battalion without such coverage would be Battalion 3, but the close proximity of this battalion to the Elmira, Elmira Heights, and West Elmira Fire Departments would allow support from these departments with 24/7 capability. The new battalion structure is designed to allow fire companies from the different departments to train together. The restructured battalion framework should make it possible for fire companies to respond to structure fire assignments with fire companies from within their own battalion on the majority of assignments. We assume this type of response may be possible 90 percent of the time. It is also necessary for fire departments to consider responses which cross battalion boundaries.

The redistricting or reorganization of battalions will generally provide at least one aerial/ladder device and one heavy rescue (or rescue pumper) vehicle within each battalion which provides capability to respond to all structure fires, or as required by battalion response protocols. There are two exceptions. Structure fire responses in Battalion 3 will require a heavy rescue response from Southport. An assignment in the City of Elmira will require a heavy rescue response from Southport or Elmira Heights.

Each of the new battalions should be organized with a headquarters for administrative purposes. Under the five battalion structure, the headquarters of each battalion could be as follows.

EXHIBIT 21
PROPOSED BATTALION HEADQUARTERS (MODEL 1)

BATTALION	HEADQUARTERS
Battalion 1	Town & Country Fire Station
Battalion 2	Elmira Heights Fire Station
Battalion 3	Southport Fire Station
Battalion 4	West Elmira Fire Station
Battalion 5	City of Elmira Headquarters

RECOMMENDATION 40: *The County fire response district structure should be reorganized.*

RECOMMENDATION 41: *The County Fire Advisory Board should consider alternative battalion deployment plans.*

RECOMMENDATION 42: *The County Fire Advisory Board should consider Proposed Battalion Organization Model 1, a five-battalion organization plan.*

RECOMMENDATION 43: *The County Fire Advisory Board should consider the location of fire stations, available resources, road networks, and the capability of fire departments when adopting a new battalion structure.*

RECOMMENDATION 44: *The County Fire Advisory Board should select a headquarters station for each battalion.*

BATTALION RESPONSE AND COORDINATION

The development of a new battalion structure requires the County Fire Advisory Board and the County Fire Coordinator to ensure that personnel and fire officers fully understand the new response strategies. It is essential that battalion meetings are held. The Fire Coordinator, along with the Deputy Fire Coordinators, should develop training exercises for each battalion.

RECOMMENDATION 45: *The County Fire Advisory Board should ensure that periodic battalion meetings are held.*

RECOMMENDATION 46: *The County Fire Coordinator should develop programs to ensure that battalions train together.*

The role of the Volunteer Deputy Fire Coordinators should be enlarged to support the new County-wide organization structure. There should be a Deputy Coordinator for each battalion. The Deputy Coordinator should be responsible, under general policy guidelines, to assist the fire departments in each battalion to develop regular and automatic mutual aid agreements. The Volunteer Deputy

Coordinators should have other assigned duties or specialities to meet specific needs in the County, such as emergency communications, or joint purchasing.

The expanded role of the Volunteer Deputy Coordinators will require that each deputy commit a substantial amount of time to working with departments within their battalion. It is recommended that the County consider paying Volunteer Deputy Fire Coordinators a small stipend.

***RECOMMENDATION 47:** The County Fire Coordinator should assign a Volunteer Deputy Fire Coordinator to assist each battalion with the development of formal mutual aid agreements for regular and automatic response within each battalion area and among battalions.*

***RECOMMENDATION 48:** The volunteer Deputy Coordinators should be assigned specific responsibilities for activities, such as: County-wide training; standardized preplanning and plan dissemination to mutual aid units; joint purchasing of goods and services; and special operations.*

***RECOMMENDATION 49:** The County Fire Advisory Board should establish battalion and County-wide working committees for training, emergency communication, joint purchasing, special operations, preplanning, master resource lists, etc.*

***RECOMMENDATION 50:** The County volunteer Deputy Fire Coordinators should be paid a reasonable annual stipend of between \$2,500 and \$3,500.*

The process of redesigning the battalions would require the Fire Advisory Board to consider several important response and safety considerations. Response criteria should be established which result in:

- Dispatching three engines, one aerial/ladder and one heavy rescue unit to all reports of a structure fire. Appropriate tankers should be provided in non-hydrant areas.

- Developing criteria for the deployment of a rapid intervention crew.
- Developing criteria for the deployment of a County Safety Officer to a working fire in the County.

***RECOMMENDATION 51:** The County Fire Advisory Board should establish dispatch protocols linked to the battalion organization structure and require the dispatch of three engines, one aerial/ladder, and one heavy rescue unit to all reports of a structure fire. Appropriate tanker resources should be deployed in non-hydrant areas.*

***RECOMMENDATION 52:** The County should develop criteria for the deployment of a Rapid Intervention Crew.*

***RECOMMENDATION 53:** The County should develop criteria for the deployment of a County Safety Officer to a working fire.*

APPARATUS AND BATTALION STRUCTURE

The Proposed Battalion Model 1 indicates the amount and type of apparatus required in each battalion. The County Fire Advisory Board should consider several factors in assessing the apparatus needs of each department and the County, in general, including the number of responses by a department, the activity level of a department, and the risks within a response area.

Each Department has independence in selecting equipment, but the selection should be made in the context of the available resources of other jurisdictions. There are 120 major pieces of apparatus when utility vehicles are considered. Some of this fleet is relatively old; the analysis below does not consider the age or condition of any apparatus.

Using the proposed battalion structure, it is possible to determine the number of front-line pumpers required for the response capability needs of the County while maintaining an adequate reserve pumper fleet. Several measures should be considered in determining needed apparatus:

- Fire departments that respond to less than 300 calls per year should maintain one front-line pumper.
- Fire departments that respond to more than 300 calls per year should maintain two front-line pumpers.
- Fire departments should maintain a collective reserve pumper fleet equal to 50 percent of the number of front-line pumpers deployed.

Based on the proposed battalion structure, it is our opinion that a fleet of 24 front-line pumpers is required, with a reserve fleet of 12 pumpers. This would be a reduction of seven pumpers.

Exhibit 22 displays the deployment of apparatus under Model 1.

EXHIBIT 22

PROPOSED BATTALION ORGANIZATION MODEL 1 - PUMPER FLEET

DEPARTMENT	AVG. ANNUAL CALLS	CURRENT PUMPERS	PROPOSED FRONT-LINE PUMPERS	PROPOSED RESERVE PUMPERS	PUMPERS (+ OR -)
<i>Battalion 1</i>					
Tompkins Corners	85	2	1		- 1
Millport	122	2	2	1	
Town & Country	601	3	1	1	
Van Etten	121	3	1	1	- 1
Erin	111	1	1		
Breesport	109	1	1		
<i>Battalion Total</i>	1,149	12	7	3	- 2
<i>Battalion 2</i>					
Big Flats	332	3	2	1	
Horseheads	483	3	2	1	
Elmira Heights	432	3	2	1	
West Hill (deactivated)					
<i>Battalion Total</i>	1,275	9	6	3	
<i>Battalion 3</i>					
Baldwin	55	2	1		- 1
Chemung	175	2	1	1	
East Hill	27	1	1	1	
Southport	134	3	1	1	- 1
Wellsburg	148	2	1		- 1
<i>Battalion Total</i>	539	10	5	3	- 3
<i>Battalion 4</i>					
Webbs Mills	52	2	1		- 1
Pine City	122	2	1	1	
Golden Glow	38	2	1		- 1
West Elmira	186	2	1	1	
<i>Battalion Total</i>	398	8	4	2	- 3
<i>Battalion 5</i>					
Elmira	2,995	4	2	2	
		43	24	12	- 7

RECOMMENDATION 54: *The County apparatus fleet should reflect the needs of each department and the County. A County-wide fleet deployment plan should be developed.*

RECOMMENDATION 55: *The fleet of pumpers in the County should be adjusted to reflect the redeployment plan.*

The County-wide fleet plan should determine the number of aerials/ladders required to meet the needs of each battalion. Under the proposed Model 1, there are seven companies with aerial/ladder capability in the County. The reorganized battalion plan would allow each battalion to have aerial/ladder capability within their battalion. There are currently seven heavy rescue units (including rescue-pumpers) in the County; under the proposed battalion structure (Model 1), all battalions except Battalion 4 and Battalion 5 would have heavy rescue capability.

RECOMMENDATION 56: *The County Fire Advisory Board should review the number of heavy rescue units and aerials needed in the County.*

The proposed Model 1 has only one battalion (Battalion 3) without a full-time staffing component. Using the model we have suggested, a long-term plan may be to deploy one person in one of the fire departments on a full-time, 24/7, basis.

COMPUTER GENERATED MAPS AND BATTALION REORGANIZATION

A series of maps was prepared to analyze the Proposed Battalion Model 1 structure. The travel time maps were developed using the assumption that the average speed for all streets in the network is 25 miles per hour. The maps only depict over-the-road travel, or running, times. Notification, dispatch, and time to travel to the station and mount apparatus should be added to these times for an estimate of total response time. We have no data on the time it takes for volunteers to arrive at a fire station, mount apparatus and respond to an incident.

Maps 9 to 14 illustrate the Proposed Battalion Model 1. Exhibit 23 lists the maps presented. The exhibit shows the battalion assignment of each fire department and the exhibits which present data associated with each map.

EXHIBIT 23
LIST OF MAPS AND PROPOSED BATTALIONS

	BATTALION	FIRE DEPARTMENTS ASSIGNED	ASSOCIATED EXHIBITS
Map 9	1	Tompkins Corners, Millport, Town & Country, Van Etten, Erin, Breesport	Exhibits 24 & 25
Map 10	2	Big Flats, Horseheads, Elmira Heights, West Hill (deactivated)	Exhibits 26 & 27
Map 11	3	Baldwin, Chemung, East Hill, Southport, Wellsburg	Exhibits 28 & 29
Map 12	4	Webbs Mills, Pine City, Golden Glow, West Elmira	Exhibits 30 & 31
Map 13	5	City of Elmira	
Map 14	5	City of Elmira (detail of City)	

Maps 9 to 12 present the response from each fire station in the proposed Battalion 1. The maps are color coded to show coverage in two-minute increments, from two to 14 minutes. Maps 9 to 12 use the following color codes to depict areas covered within time increments.

Dark Blue	Less than two minute from a station
Light blue	More than two minutes, but less than four minutes from a station
Light Green	More than four minutes, but less than six minutes from a station
Green	More than six minutes, but less than eight minutes from a station
Yellow	More than eight minutes , but less than ten minutes from a station
Tan	More than ten minutes, but less than twelve minutes from a station
Pink	More than twelve minutes, but less than fourteen minutes from a
White or no color	More than fourteen minutes from a station

Map 9, *Battalion 1 Fire Districts*, displays the wide distribution of fire stations in the battalion. It should be noted that the Town and Country and Horseheads Fire Departments are assigned to two different battalions. The fire stations in the Town and Country Fire Department and the Horseheads Fire Department are located close to each other.

Map 10, *Battalion 2 Fire Districts*, shows the area just north and west of the City of Elmira. It is interesting to note that response from Elmira Heights and Horseheads is mutually supportive. Elmira Heights response capability into the city of Elmira is strong. The West Hill fire station is depicted on this map for convenience purposes. The department has been deactivated.

Map 11, *Battalion 3 Fire Districts*, depicts the area south of the City of Elmira. The battalion covers the southeastern area of the County.

Map 12, *Battalion 4 Fire Districts*, covers the southwestern part of the County. Response coverage from Battalion 3 and Battalion 4 overlap in the City of Elmira.

Map 13, *Battalion 5, City of Elmira*, displays the area that can be covered within 14 minutes travel time from the Elmira Fire Department. Map 14, *Battalion 5, City of Elmira (detail)*, shows the response capability of the Elmira Fire Department within the City. Most of the City is covered with four minutes travel time.

The data displayed in the following exhibits are derived from Maps 9, 10, 11, 12, and 13. The maps generate data which indicate the area (square miles) and streets (miles) that will be served by the proposed battalion system. Maps present coverage in two-minute time increments. Maps 9 to 13 show response capability from two to 14-minutes travel time. Map 14 presents coverage for the City of Elmira only.

Note: The maps and data displayed only depict over-the-road travel, or running, times. The maps do not include the time required for notification, dispatch, travel to the fire station, and time to mount the apparatus. Two minutes for notification, dispatch, and turn-out time should be added to travel times for an estimate of total response time for the City of Elmira, since it is a fully staffed fire Department. Four minutes for notification, dispatch, and time responding to the station should be added to travel times for the volunteer departments.

Exhibits 24 to 31 display the area and street miles covered within two-minute time intervals, from two to 14 minutes. The data shown in the exhibits in

this chapter are generated from the computer maps. Each exhibit is composed of two parts. The top part of the exhibit shows travel time within each time segment; the bottom part of the exhibit presents cumulative response over time. The street miles covered within time segments is an important measure to consider, since most residents live along roadways.

Exhibit 24, *Battalion 1 Area Covered within the Battalion and within the County*, shows the area covered within the battalion and the area covered in time segments for the County as a whole. For example, if all stations in Battalion 1 were responding at the same time, 31.29 square miles of area within the Battalion (of a total of 181.74 square miles) would be covered within a four to six minute travel time. Cumulatively, within six minutes, 54.33 square miles, or 29.9 percent of the district area would be covered. About 14.8 percent of the total County would be covered within six minutes.

Exhibit 25, *Battalion 1 Street Miles Covered within the Battalion Response Area and within the County*, presents the coverage provided with a response from Battalion 1 fire stations. The exhibit indicates that 76.5 percent of the streets within the battalion response area can be reached within 10 minutes travel time. Assuming a four-minute turn-out time for volunteers, total response time would be 14 minutes.

Exhibit 26, *Battalion 2 Area Covered within the Battalion and within the County*, shows the area covered with a response from fire stations in Battalion 2. Mapping suggests that it is possible to reach 63.2 percent of the battalion's response area within 10 minutes. However, Exhibit 27, *Battalion 2 Street Miles Covered within the Battalion Response Area and within the County*, indicates that 36.3 percent of the street miles can be reached within 10 minutes.

Exhibit 28, *Battalion 3 Area Covered within the Battalion and within the County*, shows the area covered with a response from fire stations in Battalion 3. Mapping indicates that it is possible to reach 72.3 percent of the battalion's response area within 10 minutes. However, Exhibit 29, *Battalion 3 Street Miles Covered within the Battalion Response Area and within the County*, indicates that 79 percent of the street miles can be reached within 10 minutes.

Exhibit 30, *Battalion 4 Area Covered within the Battalion and within the County*, shows the area covered with a response from fire stations in Battalion 4. Mapping indicates that it is possible to reach 93 percent of the Battalion response area within 10 minutes. Exhibit 31, *Battalion 4 Street Miles Covered within the Battalion Response Area and within the County*, shows that 95 percent of the street miles can be reached within 10 minutes. It is interesting to note that 76.1 percent of the street miles within Battalion 4 can be reached within six minutes.

EXHIBIT 24

BATTALION 1

**AREA COVERED WITHIN THE BATTALION AND WITHIN THE COUNTY
RESPONSE WITHIN EACH TIME SEGMENT**

MINUTES	CHEMUNG COUNTY		BATTALION 1	
	AREA (SQ. MILES)	PERCENT OF COUNTY COVERED	AREA (SQ. MILES)	PERCENT OF BATTALION RESPONSE AREA COVERED
Less than 2	6.27	1.5%	5.15	2.8%
2 to less than 4	20.63	5.0%	17.89	9.8%
4 to less than 6	33.84	8.3%	31.29	17.2%
6 to less than 8	42.97	10.5%	39.63	21.8%
8 to less than 10	41.04	10.0%	35.42	19.5%
10 to less than 12	32.48	7.9%	21.35	11.7%
12 to less than 14	30.47	7.4%	11.16	6.1%

CUMULATIVE RESPONSE

MINUTES	CHEMUNG COUNTY		BATTALION 1	
	AREA (SQ. MILES)	PERCENT OF COUNTY COVERED	AREA (SQ. MILES)	PERCENT OF BATTALION RESPONSE AREA COVERED
Less than 2	6.27	1.5%	5.15	2.8%
2 to less than 4	26.9	6.6%	23.04	12.7%
4 to less than 6	60.74	14.8%	54.33	29.9%
6 to less than 8	103.71	25.3%	93.96	51.7%
8 to less than 10	144.75	35.3%	129.38	71.2%
10 to less than 12	177.23	43.2%	150.73	82.9%
12 to less than 14	207.7	50.6%	161.89	89.1%

EXHIBIT 25**BATTALION 1****STREET MILES COVERED WITHIN THE BATTALION RESPONSE AREA AND WITHIN THE COUNTY
RESPONSE WITHIN EACH TIME SEGMENT**

CHEMUNG COUNTY			BATTALION 1	
MINUTES	STREET MILES	PERCENT OF COUNTY COVERED	STREET MILES	PERCENT OF BATTALION RESPONSE AREA COVERED
Less than 2	49.08	4.0%	33.25	7.7%
2 to less than 4	76.24	6.2%	48.75	11.3%
4 to less than 6	104.04	8.4%	87.19	20.2%
6 to less than 8	119.85	9.7%	96.07	22.3%
8 to less than 10	92.14	7.4%	64.67	15.0%
10 to less than 12	84.71	6.8%	40.13	9.3%
12 to less than 14	107.15	8.7%	23.24	5.4%

CUMULATIVE RESPONSE

CHEMUNG COUNTY			BATTALION 1	
MINUTES	STREET MILES	PERCENT OF COUNTY COVERED	STREET MILES	PERCENT OF BATTALION RESPONSE AREA COVERED
Less than 2	49.08	4.0%	33.25	7.7%
2 to less than 4	125.32	10.1%	82	19.0%
4 to less than 6	229.36	18.5%	169.19	39.2%
6 to less than 8	349.21	28.2%	265.26	61.5%
8 to less than 10	441.35	35.7%	329.93	76.5%
10 to less than 12	526.06	42.5%	370.06	85.8%
12 to less than 14	633.21	51.2%	393.3	91.2%

EXHIBIT 26**BATTALION 2****AREA COVERED WITHIN THE BATTALION AND WITHIN THE COUNTY
RESPONSE WITHIN EACH TIME SEGMENT**

CHEMUNG COUNTY			BATTALION 2	
MINUTES	AREA (SQ. MILES)	PERCENT OF COUNTY COVERED	AREA (SQ. MILES)	PERCENT OF BATTALION RESPONSE AREA COVERED
Less than 2	3.98	1.0%	0.01	0.0%
2 to less than 4	13.99	3.4%	0.72	1.7%
4 to less than 6	20.53	5.0%	2.7	6.2%
6 to less than 8	21.46	5.2%	10.76	24.8%
8 to less than 10	17.86	4.4%	13.25	30.5%
10 to less than 12	20.22	4.9%	11.99	27.6%
12 to less than 14	21.1	5.1%	3.96	9.1%

CUMULATIVE RESPONSE

CHEMUNG COUNTY			BATTALION 2	
MINUTES	AREA (SQ. MILES)	PERCENT OF COUNTY COVERED	AREA (SQ. MILES)	PERCENT OF BATTALION RESPONSE AREA COVERED
Less than 2	3.98	1.0%	0.01	0.0%
2 to less than 4	17.97	4.4%	0.73	1.7%
4 to less than 6	38.5	9.4%	3.43	7.9%
6 to less than 8	59.96	14.6%	14.19	32.7%
8 to less than 10	77.82	19.0%	27.44	63.2%
10 to less than 12	98.04	23.9%	39.43	90.9%
12 to less than 14	119.14	29.0%	43.39	100.0%

EXHIBIT 27
BATTALION 2STREET MILES COVERED WITHIN THE BATTALION RESPONSE AREA AND WITHIN THE COUNTY
RESPONSE WITHIN EACH TIME SEGMENT

CHEMUNG COUNTY			BATTALION 2	
MINUTES	STREET MILES	PERCENT OF COUNTY COVERED	STREET MILES	PERCENT OF BATTALION RESPONSE AREA COVERED
Less than 2	44.69	3.6%	0.16	0.1%
2 to less than 4	95.09	7.7%	2.04	1.0%
4 to less than 6	94.7	7.7%	5.84	3.0%
6 to less than 8	97.08	7.8%	23.65	12.0%
8 to less than 10	79.63	6.4%	40.1	20.3%
10 to less than 12	93.54	7.6%	81.17	41.1%
12 to less than 14	70.76	5.7%	44.57	22.6%

CUMULATIVE RESPONSE

CHEMUNG COUNTY			BATTALION 2	
MINUTES	STREET MILES	PERCENT OF COUNTY COVERED	STREET MILES	PERCENT OF BATTALION RESPONSE AREA COVERED
Less than 2	44.69	3.6%	0.16	0.1%
2 to less than 4	139.78	11.3%	2.2	1.1%
4 to less than 6	234.48	18.9%	8.04	4.1%
6 to less than 8	331.56	26.8%	31.69	16.0%
8 to less than 10	411.19	33.2%	71.79	36.3%
10 to less than 12	504.73	40.8%	152.96	77.4%
12 to less than 14	575.49	46.5%	197.53	100.0%

EXHIBIT 28
BATTALION 3
AREA COVERED WITHIN THE BATTALION AND WITHIN THE COUNTY
RESPONSE WITHIN EACH TIME SEGMENT

CHEMUNG COUNTY			BATTALION 3	
MINUTES	AREA (SQ. MILES)	PERCENT OF COUNTY COVERED	AREA (SQ. MILES)	PERCENT OF BATTALION RESPONSE AREA COVERED
Less than 2	4.84	1.2%	4.74	3.9%
2 to less than 4	15.89	3.9%	14.71	12.1%
4 to less than 6	26.58	6.5%	22.86	18.7%
6 to less than 8	29.67	7.2%	25.45	20.9%
8 to less than 10	28.17	6.9%	20.37	16.7%
10 to less than 12	23.59	5.8%	11.67	9.6%
12 to less than 14	21.82	5.3%	7.65	6.3%

CUMULATIVE RESPONSE

CHEMUNG COUNTY			BATTALION 3	
MINUTES	AREA (SQ. MILES)	PERCENT OF COUNTY COVERED	AREA (SQ. MILES)	PERCENT OF BATTALION RESPONSE AREA COVERED
Less than 2	4.84	1.2%	4.74	3.9%
2 to less than 4	20.73	5.1%	19.45	16.0%
4 to less than 6	47.31	11.5%	42.31	34.7%
6 to less than 8	16.98	4.1%	67.76	55.6%
8 to less than 10	105.15	25.6%	88.13	72.3%
10 to less than 12	128.74	31.4%	99.8	81.8%
12 to less than 14	150.56	36.7%	107.45	88.1%

EXHIBIT 29
BATTALION 3
STREET MILES COVERED WITHIN THE BATTALION RESPONSE AREA AND WITHIN THE COUNTY
RESPONSE WITHIN EACH TIME SEGMENT

CHEMUNG COUNTY			BATTALION 3	
MINUTES	STREET MILES	PERCENT OF COUNTY COVERED	STREET MILES	PERCENT OF BATTALION RESPONSE AREA COVERED
Less than 2	35.48	2.9%	33.3	10.5%
2 to less than 4	77.87	6.3%	55.31	17.5%
4 to less than 6	106.97	8.6%	58.1	18.4%
6 to less than 8	111.8	9.0%	58.76	18.6%
8 to less than 10	86.8	7.0%	44.04	13.9%
10 to less than 12	70.33	5.7%	27.75	8.8%
12 to less than 14	71.39	5.8%	12.39	3.9%

CUMULATIVE RESPONSE

CHEMUNG COUNTY			BATTALION 3	
MINUTES	STREET MILES	PERCENT OF COUNTY COVERED	STREET MILES	PERCENT OF BATTALION RESPONSE AREA COVERED
Less than 2	35.48	2.9%	33.3	10.5%
2 to less than 4	113.35	9.2%	88.61	28.0%
4 to less than 6	220.32	17.8%	146.71	46.4%
6 to less than 8	332.12	26.8%	205.47	65.0%
8 to less than 10	418.92	33.8%	249.51	79.0%
10 to less than 12	489.25	39.5%	277.26	87.7%
12 to less than 14	560.64	45.3%	289.65	91.7%

EXHIBIT 30

BATTALION 4

**AREA COVERED WITHIN THE BATTALION AND WITHIN THE COUNTY
RESPONSE WITHIN EACH TIME SEGMENT**

CHEMUNG COUNTY			BATTALION 4	
MINUTES	AREA (SQ. MILES)	PERCENT OF COUNTY COVERED	AREA (SQ. MILES)	PERCENT OF BATTALION RESPONSE AREA COVERED
Less than 2	4.97	1.2%	4.95	11.1%
2 to less than 4	13.51	3.3%	12.18	27.2%
4 to less than 6	16.02	3.9%	12.19	27.2%
6 to less than 8	18.16	4.4%	8.62	19.3%
8 to less than 10	14.74	3.6%	3.68	8.2%
10 to less than 12	15.13	3.7%	1.87	4.2%
12 to less than 14	16.02	3.9%	1.14	2.5%
Total within 14	98.55	24.0%	44.63	99.7%

CUMULATIVE RESPONSE

CHEMUNG COUNTY			BATTALION 4	
MINUTES	AREA (SQ. MILES)	PERCENT OF COUNTY COVERED	AREA (SQ. MILES)	PERCENT OF BATTALION RESPONSE AREA COVERED
Less than 2	4.97	1.2%	4.95	11.1%
2 to less than 4	18.48	4.5%	17.13	38.3%
4 to less than 6	34.5	8.4%	29.32	65.5%
6 to less than 8	52.66	12.8%	37.94	84.8%
8 to less than 10	67.4	16.4%	41.6	93.0%
10 to less than 12	82.53	20.1%	43.49	97.2%
12 to less than 14	98.55	24.0%	44.63	99.7%

EXHIBIT 31
BATTALION 4
STREET MILES COVERED WITHIN THE BATTALION RESPONSE AREA AND WITHIN THE COUNTY
RESPONSE WITHIN EACH TIME SEGMENT

CHEMUNG COUNTY			BATTALION 4	
MINUTES	STREET MILES	PERCENT OF COUNTY COVERED	STREET MILES	PERCENT OF BATTALION RESPONSE AREA COVERED
Less than 2	36.85	3.0%	36.85	26.3%
2 to less than 4	51.62	4.2%	41.6	29.7%
4 to less than 6	69.13	5.6%	28.01	20.0%
6 to less than 8	104.14	8.4%	17.3	12.4%
8 to less than 10	77.54	6.3%	9.2	6.6%
10 to less than 12	64.08	5.2%	4.75	3.4%
12 to less than 14	52.03	4.2%	1.7	1.2%

CUMULATIVE RESPONSE

CHEMUNG COUNTY			BATTALION 4	
MINUTES	STREET MILES	PERCENT OF COUNTY COVERED	STREET MILES	PERCENT OF BATTALION RESPONSE AREA COVERED
Less than 2	36.85	3.0%	36.85	26.3%
2 to less than 4	88.47	7.1%	78.45	56.1%
4 to less than 6	151.6	12.2%	106.46	76.1%
6 to less than 8	261.74	21.1%	123.76	88.4%
8 to less than 10	339.28	27.4%	132.96	95.0%
10 to less than 12	403.36	32.6%	137.71	98.4%
12 to less than 14	455.39	36.8%	139.41	99.6%

Maps 13 and 14 display response from the City of Elmira Fire Department. Exhibit 32, *Battalion 5 Street Miles Covered within the Battalion Response Area and within the County*, presents the data associated with Maps 13 and 14. Map 13 shows response from the three Elmira Fire stations. The Elmira Fire Department is able to cover 95 percent of City street miles within four minutes travel time. It is interesting to note that the City of Elmira could cover approximately 25 percent of all the road miles in the County within 10 minutes. Exhibit 32 displays road miles covered; data concerning area covered are not shown, since the City area is relatively small, approximately 7.6 square miles.

EXHIBIT 32
BATTALION 5
STREET MILES COVERED WITHIN THE BATTALION RESPONSE AREA AND WITHIN THE COUNTY
RESPONSE WITHIN EACH TIME SEGMENT

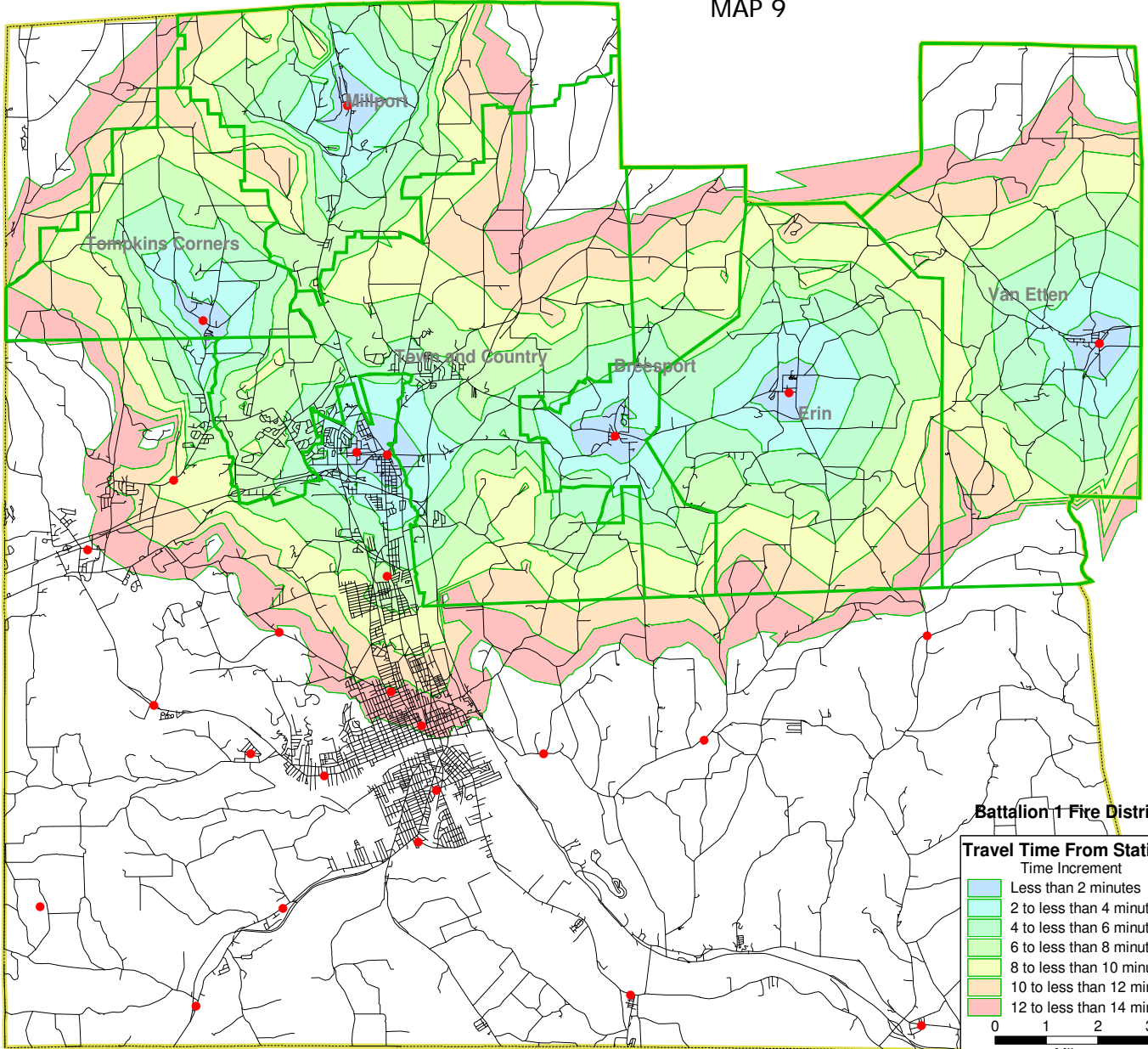
MINUTES	CHEMUNG COUNTY		BATTALION 5	
	STREET MILES	PERCENT OF COUNTY COVERED	STREET MILES	PERCENT OF BATTALION RESPONSE AREA COVERED
Less than 2	73.45	5.9%	70.74	56.3%
2 to less than 4	84.92	6.9%	48.8	38.8%
4 to less than 6	56.9	4.6%	6.21	4.9%
6 to less than 8	45.98	3.7%		
8 to less than 10	46.1	3.7%		
10 to less than 12	65.76	5.3%		
12 to less than 14	65.66	5.3%		

CUMULATIVE RESPONSE

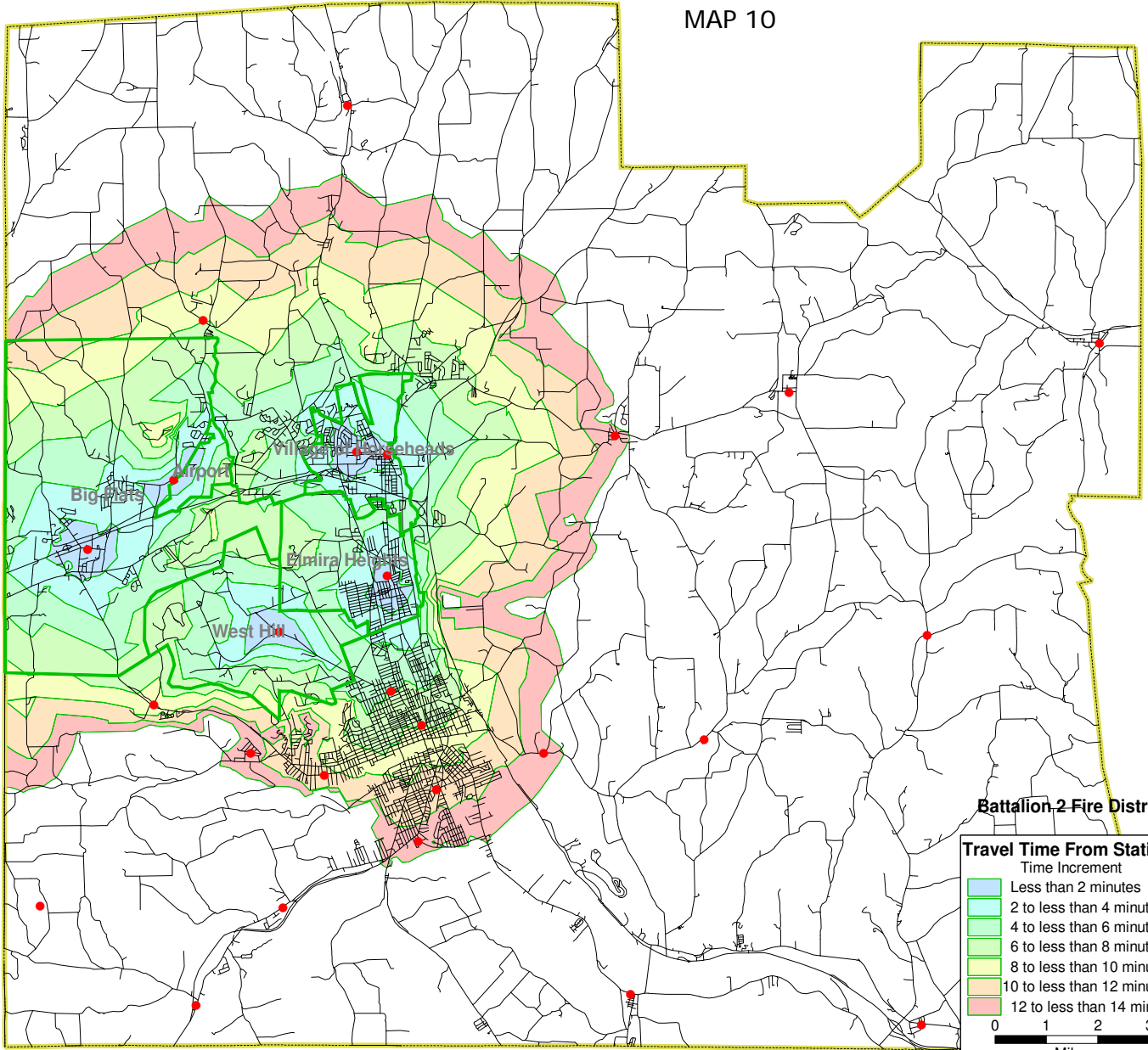
MINUTES	CHEMUNG COUNTY		BATTALION 5	
	STREET MILES	PERCENT OF COUNTY COVERED	STREET MILES	PERCENT OF BATTALION RESPONSE AREA COVERED
Less than 2	73.45	5.9%	70.74	56.3%
2 to less than 4	158.37	12.8%	119.54	95.1%
4 to less than 6	215.27	17.4%	125.75	100.0%
6 to less than 8	261.25	21.1%		
8 to less than 10	307.35	24.8%		
10 to less than 12	373.1	30.1%		
12 to less than 14	438.76	35.4%		

The battalion organization outlined in this chapter, the computer maps, and the data associated with the maps are designed to provide a general analytical framework for designing a battalion response system. The maps and data could provide some guidance when constructing mutual aid plans.

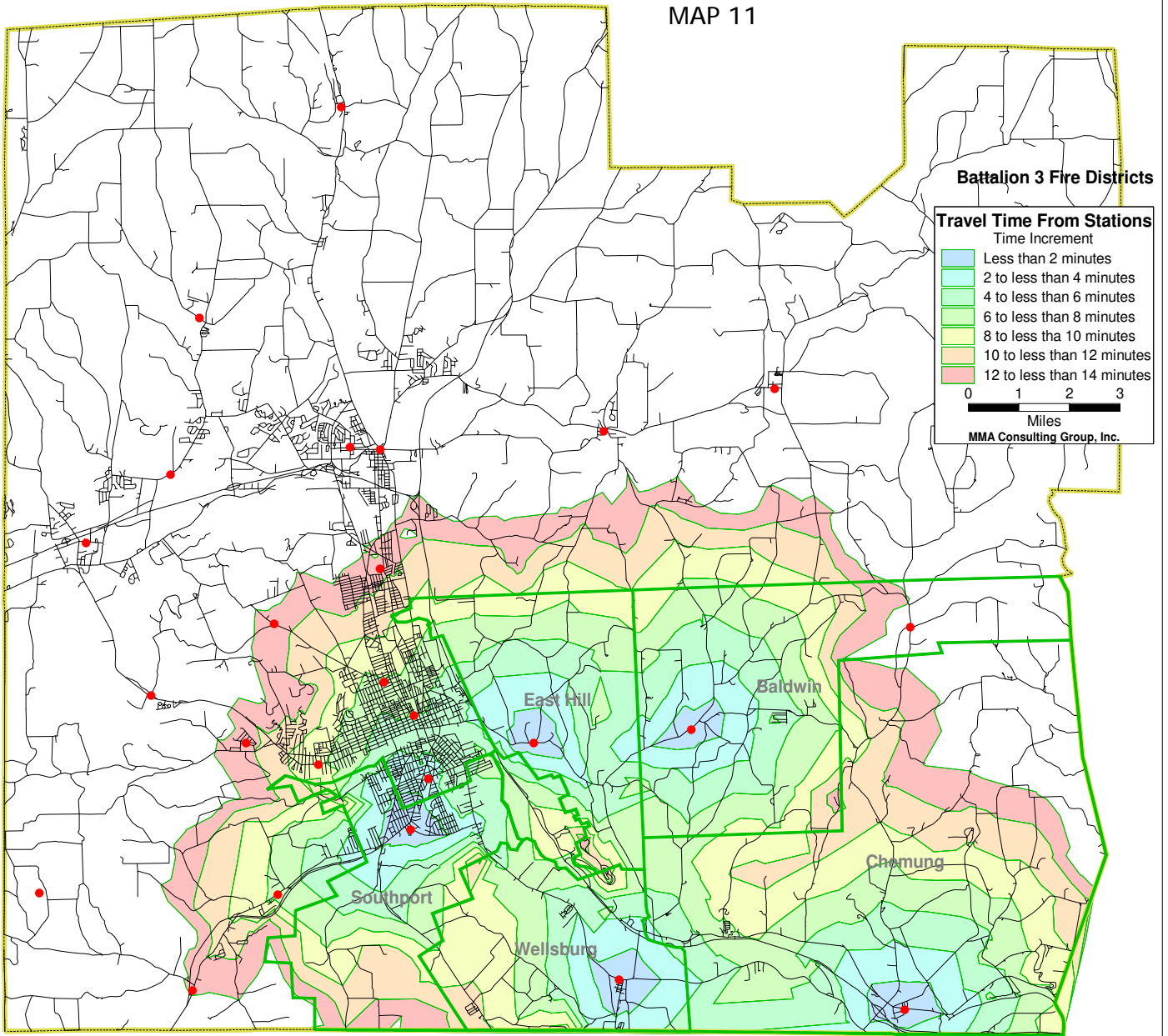
MAP 9



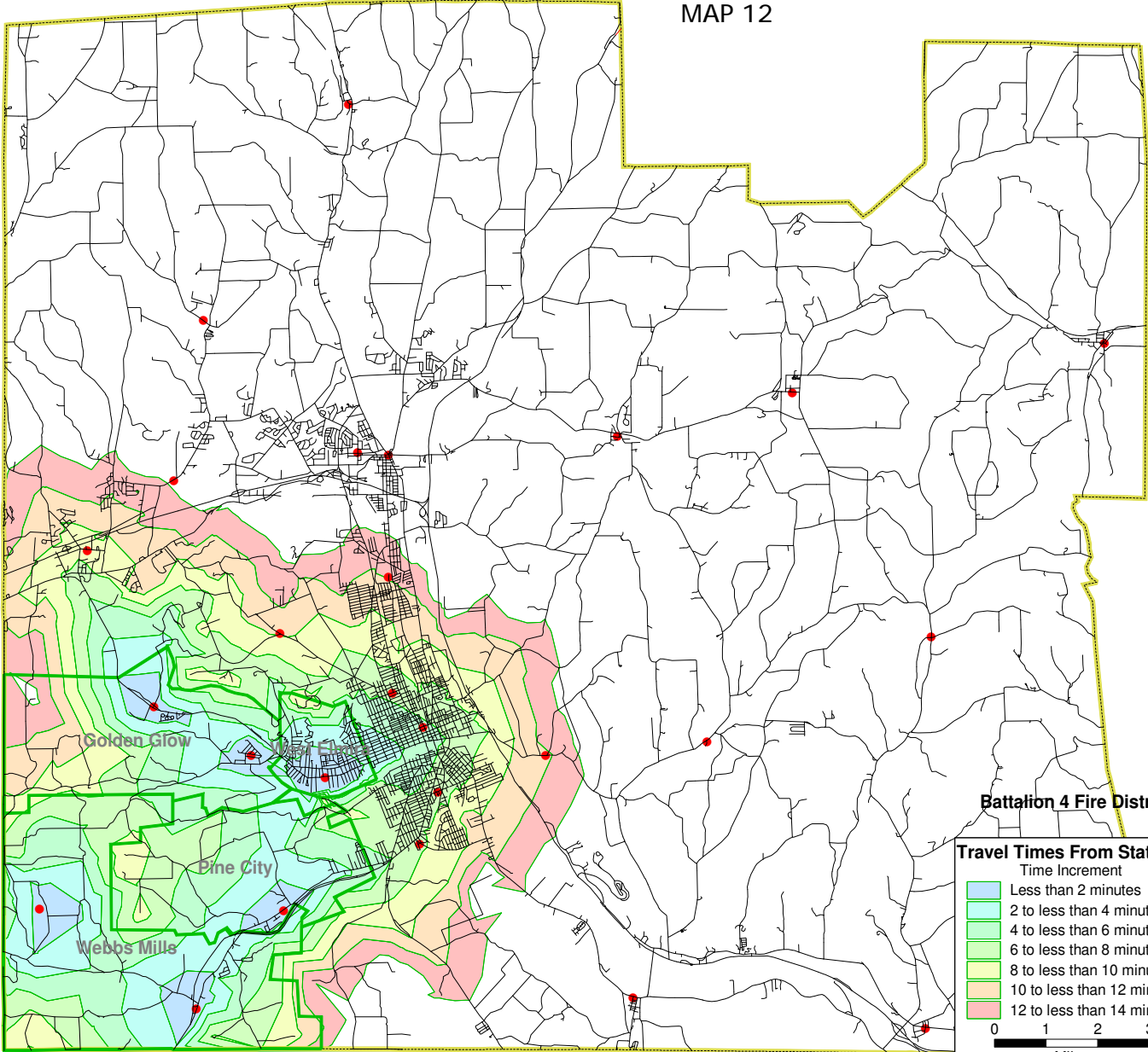
MAP 10



MAP 11



MAP 12



Battalion 4 Fire Districts

Travel Times From Stations

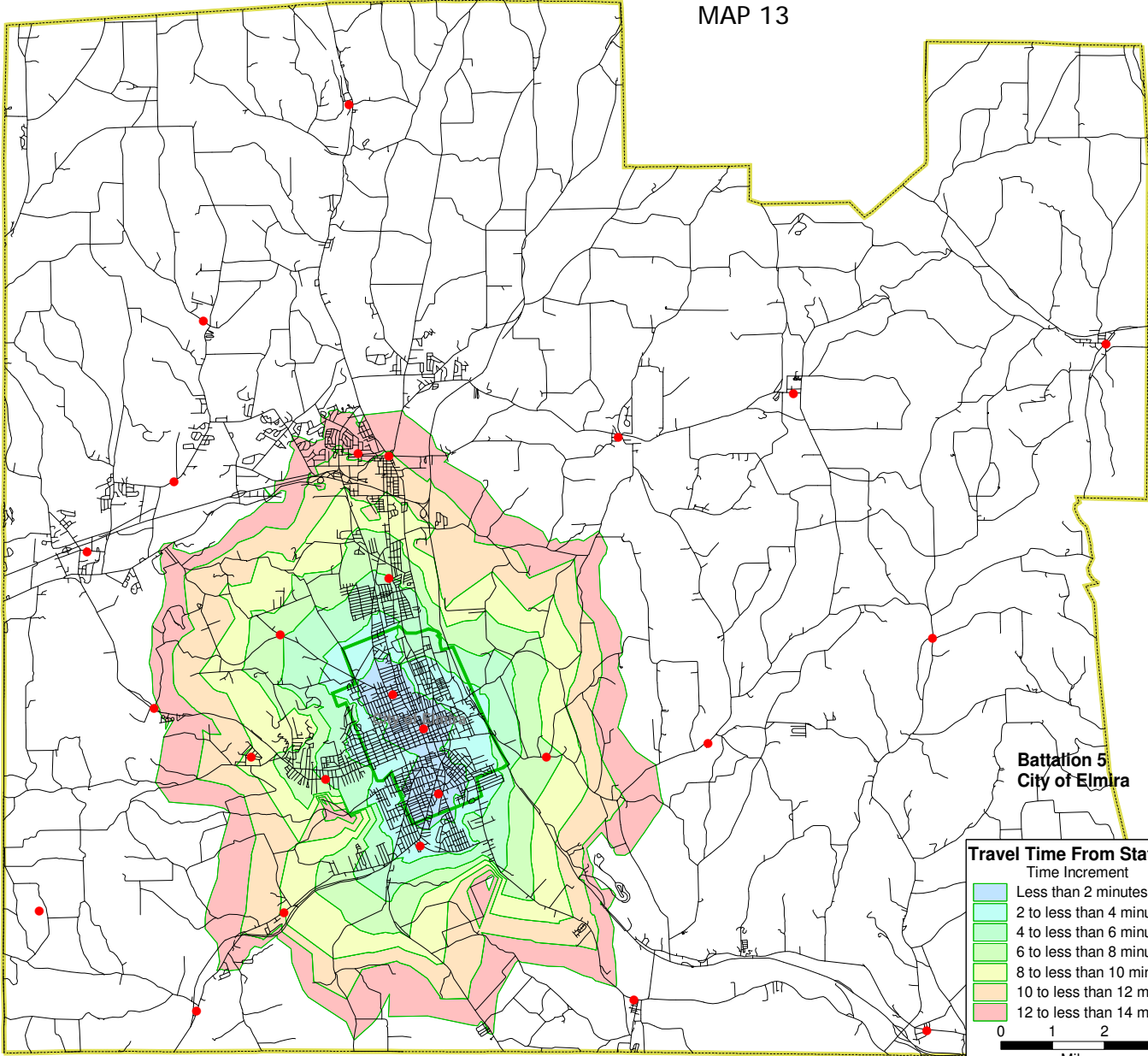
Time Increment

Less than 2 minutes
2 to less than 4 minutes
4 to less than 6 minutes
6 to less than 8 minutes
8 to less than 10 minutes
10 to less than 12 minutes
12 to less than 14 minutes

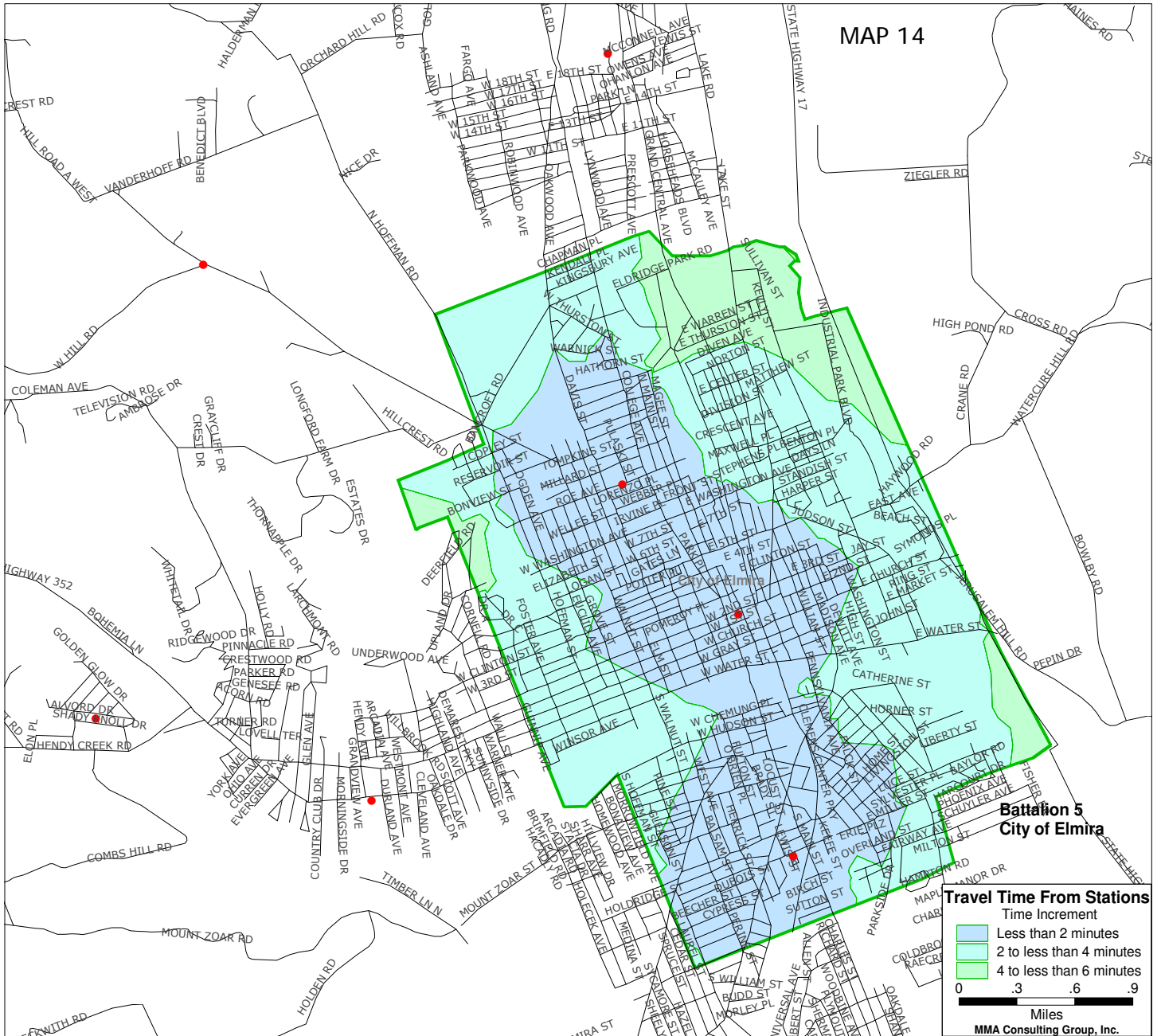
0 1 2 3
Miles

MMA Consulting Group, Inc.

MAP 13



MAP 14



VIII. ADMINISTRATIVE SUPPORT SERVICES

ADMINISTRATIVE SUPPORT ISSUES AND STAFFING

There is a lack of staff support for the volunteer fire departments and for the Fire Coordinator's Office. Fire Chiefs have many administrative responsibilities, which include preparing correspondence, completing reports for State and other agencies, reviewing policies, and purchasing items. One of the most important responsibilities of a Fire Chief is to communicate with personnel within the fire department. Moreover, a Chief must attend meetings and coordinate with other fire departments.

There is limited time to develop new plans, prepare grants, and perform planning related activities. Fire Chiefs need assistance with performing routine administrative activities. It is important to note that if County fire departments adopted some of the coordination mechanisms proposed in this study, they will have less time for administrative activities. Few departments have the resources to employ administrative help, but it seems reasonable that two or three departments could share the resources of a part-time employee.

The Office of Fire and Emergency Management has broad planning and organization responsibilities. The office is responsible for emergency management functions, management of the County Emergency Communication Center (County-wide E-911), administering the mutual aid plan, organizing or coordinating fire department training activities, and other activities. The Fire Coordinator's office is involved in the administration of grants and the management of special projects.

This report includes a number of recommendations which will require actions by the Fire Coordinator's Office. Much of this work will require technical staff support services. Some of the responsibilities assigned to the Fire Coordinator include:

- Working with the County Fire Advisory Board to create a strong fire and rescue system.
- Working with the County Fire Advisory Board to develop standards and measures of performance.

- Working with the County Advisory Board to develop a written document describing the goals and role of the Board.
- Working with the County Fire Advisory Board to develop a new battalion structure.
- Coordinating the development of new a new automatic mutual aid plan.
- Redesigning the role of the Deputy Fire Coordinator to assist each battalion with the development of formal mutual aid agreements for regular and automatic response within each battalion area and among battalions.
- Working with the County Fire Advisory Board to ensure that all fire departments are full participants in the mutual aid system and that responses are integrated.
- Establishing a user committee to address emergency dispatch, radio reception, or related problems.
- Providing assistance to fire departments with ISO preparation, grant writing, annual report preparation, public relations and member recruitment campaigns, budget preparation, and apparatus/equipment specifications.
- Working with the Fire Advisory Board to develop a system which establishes fire-rescue service levels (local Standard of Cover) available in the various parts of the County.
- Preparing an annual report which describes fire service activities in the County.
- Organizing additional County-wide specialized teams.

The County Fire Coordinator should be authorized to employ one additional staff person to support the volunteer fire departments. This staff person, a Fire and Rescue Technical Assistant, should be responsible for providing assistance in the development of mutual aid plans, coordinating training and assisting fire departments.

RECOMMENDATION 57: *The County Fire Coordinator should be authorized to employ one additional staff person, a Fire and Rescue Technical Assistant.*

Ideally, the new staff person should be a full-time employee. The qualifications for this new position should include:

- ▶ experience in a leadership position the fire service
- ▶ experience in a volunteer fire department environment
- ▶ writing and research skills
- ▶ knowledge of grant opportunities
- ▶ knowledge of new technologies
- ▶ communication skills

The Fire Coordinator may wish to appoint a small committee of fire chiefs, or a subcommittee of the County Fire Advisory Board, to assist in the selection of the Fire and Rescue Technical Assistant. County fire chiefs, who will be working with the Fire and Rescue Technical Assistant, should assist in the selection process.

RECOMMENDATION 58: *The County Fire Coordinator, if authorized to employ a Fire and Rescue Technical Assistant, should establish a small committee of Fire Chiefs to assist in the selection process.*

RECOMMENDATION 59: *The County should consider authorizing a small appropriation of funds to allow the employment of office personnel to be shared by several fire departments.*

PURCHASING AND OTHER SUPPORT FUNCTIONS

Each individual fire department must organize its administrative support functions independently and must make the purchase of goods and services independently. The County Fire Coordinator should assist fire departments in achieving efficiencies. This requires the review of administrative functions, such as the purchase of supplies, fuel, and equipment and the daily business operations of the fire companies. Shared purchasing could be achieved in the follow areas.

- *Purchase of common fire service materials and equipment* - Joint purchasing of protective clothing, hose, breathing apparatus, and other common products.
- *Maintenance services* - Joint purchasing of routine apparatus and vehicle maintenance services (oil changes, brake pads, and other routine maintenance).
- *Professional Services* - Joint purchasing of insurance protection, loss control services, physical examinations and screening, and other services.
- *Purchase of apparatus and major pieces of equipment* - Joint purchasing of apparatus and equipment or assistance with the development of specifications.

Fire and emergency services work requires the purchase and maintenance of expensive specialized equipment and tools. The County Fire Advisory Board should begin to develop an inventory of major equipment valued at more than \$5,000. The inventory should be compiled and purchase and replacement of specialized equipment should be based on a coordinated replacement approach.

The County Fire Advisory Board would not have authority to mandate the type of equipment to be purchased by a department. The Board should set standards to encourage compatibility of apparatus and equipment. The needs of the entire County should be considered when major purchases are made by an individual department. There will be less duplication of equipment and apparatus, since the purchase of equipment and apparatus should be based on County-wide need, not only on the needs of an individual department. The integration of resources will help minimize redundancy in equipment and apparatus.

RECOMMENDATION 60: *The County should encourage fire departments to develop inventories of specialized equipment and tools. These inventories should be consolidated by the County Fire Advisory Board.*

RECOMMENDATION 61: *The County should encourage the integration of resources to help minimize the redundancy of equipment and apparatus.*

IX. APPARATUS FLEET AND REPLACEMENT GUIDELINES

The major apparatus and vehicle fleets of the fire department are displayed in Exhibit 33. The exhibit identifies each fire department and lists the type of apparatus. Exhibit 34 lists the apparatus by fire department. The exhibit includes the average number of calls for service received in each district. There are 39 pumpers, seven aerials, and seven technical rescue trucks or rescue pumpers in the County.

EXHIBIT 33
FIRE DEPARTMENT RESOURCES
NUMBER AND TYPE OF APPARATUS

DISTRICT	DEPARTMENT	ENGINE	AERIAL	HEAVY RESCUE/ RESCUE PUMPER	TANKER	BRUSH	UTILITY	TOTAL
3	Baldwin	2			1		2	5
1	Big Flats	2		1	1	1		5
3	Breesport	1			1	1	2	5
2	Chemung	1		1	2	1	2	7
3	East Hill	1			1	1	1	4
	Elmira	4	2				6	12
4	Elmira Heights	3	1	1		1	1	7
3	Erin	1			1	1	2	5
1	Golden Glow	2			1	1	1	5
4	Horseheads	2	1	1			2	6
4	Millport	2			1	1	1	5
2	Pine City	2			1	1	2	6
2	Southport	3	1	1		1	2	8
1	Tompkins Corners	2			1	1	1	5
4	Town & Country	2	1	1	1	1	2	8
3	Van Etten	3		1		1	1	6
2	Webbs Mills	2			1	1	2	6
2	Wellsburg	2			1	1	3	7
1	West Elmira	2	1				2	5
1	West Hill	Deactivated			2	1		
	<i>Total</i>	<i>39</i>	<i>7</i>	<i>7</i>	<i>14</i>	<i>16</i>	<i>38</i>	<i>120</i>

EXHIBIT 34**SUMMARY OF ACTIVITY AND RESOURCES BY CURRENT DISTRICT**

DISTRICT	AVG. ANNUAL CALLS	ENGINE	AERIAL	HEAVY RESCUE/ RESCUE PUMPER	TANKER	BRUSH	UTILITY	TOTAL
District 1	670	8	1	1	5	3	5	23
District 2	632	10	1	2	5	5	11	34
District 3	423	8		1	4	4	8	25
District 4	1,638	9	3	3	2	3	6	26
Elmira	2,995	4	2				6	12
All Districts	6,358	39	7	7	16	15	36	120

An apparatus replacement plan should consider:

- ▶ specific needs of the fire protection area covered by a fire department
- ▶ needs of the County as a whole and the relationship of response districts
- ▶ years of service of an apparatus
- ▶ cost of replacement
- ▶ cost of maintenance
- ▶ technology used in a unit in relation to more modern technology
- ▶ safety features of replacement units
- ▶ usage of apparatus
- ▶ changes in equipment standards

There are several classes of vehicles in the fleets of the fire companies, including pumpers, aerials, brush trucks, tankers, heavy rescues, rescue pumpers, and utility vehicles. The goal of the pumper (includes rescue pumper) replacement program is to replace the apparatus in a systematic manner. The useful life of a pumper in Chemung is likely to be longer in volunteer departments with low call volume. The Elmira Fire Department apparatus is likely to require replacement more frequently.

The useful life of a pumper for a volunteer fire department should not exceed 25 years in Chemung. The useful life of a pumper is illustrated below.

EXHIBIT 35
REPLACEMENT GOALS FOR PUMPERS
CAREER AND VOLUNTEER FIRE DEPARTMENTS

TYPE OF DUTY	CAREER DEPARTMENT STAGES OF PUMPER USEFUL LIFE (HIGH USAGE)	VOLUNTEER DEPARTMENT STAGES OF PUMPER USEFUL LIFE (MODERATE TO LOW USAGE)	COMMENT
Active service	First 10 years of useful life	Stage 1 (12 years)	At this stage, the apparatus is used as a front-line response unit.
Active service second-due response	Between 10 and 15 years of useful life	Stage 2 (12 years)	At this stage, the apparatus is placed into service when the primary vehicle has responded to an incident. This unit is used by personnel to assist during multiple calls or major emergencies.
Non-active reserve service	Between 15 and 20 years of useful life	Stage 3 (reserve unit)	A reserve vehicle is placed into active service only if multiple vehicles are out of service due to mechanical problems and may be placed into service at major incidents. The reserve vehicle is not well-stocked with equipment and must receive equipment before being placed into active duty.

An aerial apparatus, with high usage, generally has a useful life of 15 to 20 years. Ideally, a unit should be considered for replacement after 18 years of service. An aerial apparatus, with low usage or limited use, should have a useful life of approximately 25 to 30 years. Ideally, an aerial unit should be considered for replacement after 25 years of service, depending on its condition. A tanker should have a useful life 25 years, and a heavy rescue should have a useful life of 30 years.

A number of factors will alter a replacement plan, such as rapid changes in technology, new safety requirements, or the cost of maintenance of a unit. In summary, the County should consider the following apparatus replacement schedule:

EXHIBIT 36

APPARATUS REPLACEMENT STANDARDS FOR VOLUNTEER FIRE DEPARTMENTS

TYPE OF APPARATUS	REPLACEMENT CYCLE IN YEARS	
	HIGH USAGE	MODERATE TO LOW USAGE
Pumper	20	24
Aerial	18	25 to 30
Heavy Rescue	20	20 to 30
Tanker	20 to 25	20 to 25
Brush	15	15
Light Rescue	15	15

The fire departments have support vehicles for various functions, and own a variety of trucks and other vehicles. The National Association of Fleet Managers (NAFM) recommends replacement of cars, vans, and trucks in accordance with the following general schedule.

EXHIBIT 37

NAFM REPLACEMENT STANDARDS

VEHICLE TYPE	NAFM AGE STANDARD	NAFM MILEAGE STANDARD
Sedan	5.5 years	88,000 miles
Van	7.5 years	88,000 miles
Pick-up Truck	7.5 years	92,000 miles

These standards provide some guidance for the replacement of sedans, vans and pick-up trucks. The fire department should develop detailed records on each vehicle to identify the cost of operating a unit, including repair costs. This information will support the implementation of a formal replacement plan.

In Chapter 7 of this report, we have suggested that, with a reorganized battalion structure, it might be possible to reduce the fleet of pumpers by seven units. This would result in an overall cost savings to the County of approximately \$250,000 to \$300,000 for each apparatus not replaced, or \$1,750,00 to \$2,100,000. It would, in theory, result in the deployment of the newest, most technologically advanced units for front-line duty. It was also recommended in Chapter 7 that the County Fire Advisory Board review the number of aerials and heavy rescue or rescue pumper units required in the County.

***RECOMMENDATION 62:** The County Fire Advisory Board should encourage a systematic replacement of apparatus in the County following reasonable life cycle policies.*

***RECOMMENDATION 63:** The County Fire Advisory Board should assess the number and type of apparatus needed in the County.*

X. IMPLEMENTATION OF RECOMMENDATIONS

The recommendations in this report are intended to improve fire services in Chemung County. The volunteer fire departments in the County have many of the pressures and problems that are the concerns of other volunteer fire departments in New York. There are few resources; many volunteers now have limited time to commit to volunteer activities; and the pool of volunteers is limited in many parts of the County. Training requirements, safety requirements and modern planning practices require the commitment of a great time deal of time by the leaders of volunteer fire departments.

The volunteer fire departments in the County have responded to emerging concerns in a number of ways. Four fire departments have employed a small number of full-time employees to support the immediate response of the departments. Departments have developed more automatic mutual aid. The County's emergency communication system has contributed significantly to the ability of emergency response agencies to respond rapidly. The emergency medical dispatch procedures adopted by the County have resulted in deployment of emergency medical units in a systematic manner based on the seriousness of an incident. This approach conserves resources and contributes to the safety of firefighters and the public.

The number of firefighters in the Elmira Fire Department has decreased over time, which reflects the financial condition of the City. The Department continues to have strong capability, but that capability could be enhanced by closer working relationships with the volunteer fire departments. Likewise, the volunteer fire departments need support from the City of Elmira Fire Department.

Earlier in this report, we suggested that the current fire and rescue system in the County is likely to continue. This does not mean that the number of fire departments will remain the same, or that the boundaries of response areas will be unchanged; it means that the current system of volunteer and combination fire departments (largely volunteer fire departments with a small number of full-time employees) will continue.

Village, town and county policy-makers have limited resources and limited ability to directly influence the future of the fire services in the County; however,

the success of the fire service system is important to each jurisdiction in the County. The difficulty in implementing recommendations is that there are many fire departments and other agencies involved with the fire service in the County. The implementation process should include the establishment of an implementation committee which involves a number of participants from the fire services and other government organizations.

Several important recommendations in this report focus on developing an effective mutual aid system and coordination of responses. Some of the most important recommendations in the report relate to:

- the development and implementation of a mutual aid system in which all fire departments fully participate
- the development of mutual aid agreements which effectively link the City of Elmira and adjacent fire departments in a response plan
- the development of standards and the measurement of fire department capabilities and performance
- the implementation of a new battalion system
- the role of the County Fire Advisory Board

We have suggested a three-phase Plan of Action for the Chemung County Fire Advisory Board and the Fire Coordinator's Office. These three phases are designed to implement the most important recommendations over the course of two or three years. Other timetables are possible, but we have identified those tasks and recommendations that are essential to the long-term health and safety of the fire and rescue service in the County.

PLAN OF ACTION PHASE 1 - IMMEDIATE ACTIONS (ONE TO THREE MONTHS)

REVIEW OF RECOMMENDATIONS AND THE IMPLEMENTATION COMMITTEE

The County Fire Advisory Board should review this report and the recommendations in the report and develop a general idea of those items which should be addressed immediately. This initial review should identify those actions that can be implemented in the short-term which will support the current service delivery system and ensure the safety of firefighters and residents. This action

plan should provide some immediate actions that can be accomplished by the fire departments.

An Implementation Committee should be created to evaluate recommendations. The Implementation Committee should be closely linked to the County Fire Advisory Board. However, the Committee should also involve several key officials from the County, the City of Elmira, and one or more policy leaders representing town or village governments. A representative of the emergency medical service community should be part of the implementation process, since emergency medical services represent a substantial share of a fire department's workload. The Implementation Committee should include:

- ▶ Five representatives from volunteer fire departments (Fire Chiefs)
- ▶ A representative from the Elmira Fire Department (Fire Chief)
- ▶ A representative from the County Executive's Office (e.g., Assistant County Executive)
- ▶ A representative from the Elmira City Manager's Office
- ▶ A representative from one or more town or village governments
- ▶ A representative from the emergency medical community
- ▶ A representative from the County Fire Coordinator's Office

The County Fire Coordinator's Office should coordinate the committee process by providing staff support. It is suggested that the County Fire Advisory Board select the Chair of the Committee.

The primary responsibility of the Implementation Committee is to review some of the primary policy issues presented in the report, develop major policy goals for the fire and rescue service, and periodically review implementation results. It should be noted that many of the recommendations in the report do not require a great deal of discussion concerning the merits of a policy, for example, the development of strong mutual aid response system. However, the organization of a new mutual aid system requires a great deal of planning.

RECOMMENDATION 64: *The County Fire Advisory Board should review report recommendations and create a Project Implementation Committee. The County Fire Advisory Board should provide the Implementation Committee with areas where recommendations, if*

implemented, will support the fire service and ensure the safety of firefighters and the public.

RECOMMENDATION 65: *The Project Implementation Committee should be composed of representatives from the fire service and several other key officials or their representatives.*

IMMEDIATE FIRE SERVICE SAFETY OR EFFECTIVENESS ISSUES

Recommendations relating to the safety of emergency responders should be considered a priority and addressed immediately. These actions require that the City of Elmira Fire Department and adjacent departments, such as Southport, West Elmira, Elmira Heights, and the County Fire Coordinator confer and develop an acceptable mutual aid response strategy which considers the following issues:

- The Elmira, Southport, West Elmira, Elmira Heights, and other fire departments should establish automatic mutual aid agreements.

- The Southport, West Elmira, Elmira Heights, and Elmira Fire Departments should develop a mutual aid agreement which requires the deployment of a Rapid Intervention Team when all on-duty Elmira Fire Department firefighters are committed to firefighting operations. An adjacent volunteer fire company should be dispatched to the assignment within the City.

- The City of Elmira should develop a mutual agreement with volunteer fire departments adjacent to the City which requires the City to deploy a Rapid Intervention Team when volunteer firefighters are committed to firefighting operations.

- The Fire Coordinator's Office should work with departments to ensure that appropriate dispatch procedures are put in place to support the new agreements.

The Fire Departments should consider other response strategies as deemed appropriate. Firefighter safety requirements should also be explored.

RECOMMENDATION 66: *The Chiefs of the Southport, West Elmira, Elmira Heights, and Elmira Fire Departments, in coordination with the Fire Coordinator, should meet to establish a new automatic mutual aid response policy.*

PLAN OF ACTION PHASE 2 - SHORT-TERM ACTIONS (THREE TO SIX MONTHS)

There are a number of actions which must be accomplished if recommendations are to be implemented.

ROLE OF THE COUNTY FIRE ADVISORY BOARD

An expanded role for the County Fire Advisory Board has been suggested in this report. The Board should discuss the proposed role and prepare a document which outlines the responsibilities of the Board. These responsibilities, while important, will likely be advisory because of the current fire and rescue framework in the County.

COUNTY SAFETY OFFICER

The County Fire Coordinator, working with the County Fire Advisory Board, should implement a County Safety Officer Program. There should be several safety officers with specific responsibilities and response areas. Ideally, there should be one or more in each battalion.

ADMINISTRATIVE COORDINATION/FIRE AND RESCUE TECHNICAL ASSISTANT

It is recommended that the County consider employing the Fire and Rescue Technical Assistant as suggested in the report as soon as possible. The Fire and Rescue Technical Assistant should be employed with the specific mission to help prepare and organize an automatic mutual aid system. The position should be filled as soon as possible.

PLAN OF ACTION PHASE 3 - MEDIUM-TERM ACTIONS (SIX TO 18 MONTHS)

The third phase of the action plan requires the implementation of the new mutual aid and automatic mutual aid system. A comprehensive response plan requires that a range of concepts be explored.

REORGANIZED DISTRICT STRUCTURE/NEW BATTALION ORGANIZATION

The development of a new battalion organization will require a complete review of all shared response duties and mutual aid. The proposed battalion

structure provides a system through which an expanded mutual aid system may be implemented. Several models are suggested in this report. The proposed Battalion Organization Model 1 should be explored as a desirable model.

CLOSEST UNIT AVAILABLE RESPONSE SYSTEM

The closest available unit should be deployed. This may not be possible in all instances. Boundary lines for fire districts, contract response areas, and other factors should not discourage the development of the closest available unit concept.

FIRE DEPARTMENT PERFORMANCE STANDARDS

Officials should begin the process by reviewing NFPA Standard 1720. A variety of data is required to measure the performance of fire departments. Some examples of data which can be used to evaluate response include:

- ▶ Minimum number of personnel on first-out pumper
- ▶ Weekday get-out time for first- due unit
- ▶ Weekday get-out time for second-due unit
- ▶ Evening get-out time for first-due unit
- ▶ Evening get-out time for second-due unit
- ▶ Weekend get-out time for first-due unit
- ▶ Weekend get-out time for second-due unit
- ▶ Number of qualified firefighters and incident commander to be at the scene of an incident at time parameter desired
- ▶ Mutual aid response

Note: It is expected that this information will not be available for several years.

PRIORITY OF RECOMMENDATIONS

While we consider all of the recommendations contained in this report to be important, this section is intended to place the recommendations into a framework which provides a sequential methodology of implementation. The recommendations contained in this report have been assigned priorities. Additional comments have also been made. The recommendations have been categorized as follows:

Priority 1: Recommendations which directly affect the safety of personnel or the public, or establish the framework for other recommendations. These recommendations should be addressed immediately.

Priority 2: Recommendations which should be implemented without delay, since they may bear directly on safety, productivity, cost and efficient operation of fire and rescue services in Chemung County.

Priority 3: Recommendations which are important to the efficient provision of fire and rescue services in Chemung County. These recommendations should be implemented as soon as reasonable and practical.

Priority 4: Recommendations which can contribute to the continued improvement of fire and rescue services in Chemung County. These recommendations should be implemented as soon as resources and operating conditions permit.

EXHIBIT 38
PRIORITY OF RECOMMENDATIONS

	RECOMMENDATION	PRIORITY	COMMENT
1	County elected and appointed officials should make a systematic effort to support the effective volunteer fire departments in Chemung County.	1	It is in the interest of officials to maintain viable volunteer departments.
2	The County Fire Advisory Board should have a stronger role in the coordination of fire and rescue services.	1	The Board has the ability to encourage cooperation.
3	The County Fire Advisory Board should seek to: establish an effective response system which maximizes automatic mutual aid; develop mechanisms which help ensure firefighter safety; identify response, equipment, communication or other problems with the emergency response system and suggest solutions to identified problems; provide information and data to the public and elected officials concerning the effectiveness of the fire and rescue system and potential problems within the system.	2	Automatic mutual aid is essential in the County.
4	The County Fire Advisory Board, working with the County Fire Coordinator, should be responsible for establishing standards and measures for fire departments to follow.	2	Measuring performance is the first step in the improvement process.

	RECOMMENDATION	PRIORITY	COMMENT
5	The County Fire Coordinator should be a full participant with the County Fire Advisory Board in creating a strong fire and rescue system.	1	
6	The Chemung County Fire Advisory Board should appoint a subcommittee composed of four or five members of the Board and the Fire Coordinator, to develop a document describing the goals and role of the Board.	1	The County Fire Advisory Board needs to articulate its role
7	The Chemung County Fire Advisory Board should circulate a draft of the document to the leadership of each fire department.	2	
8	The Chemung County Fire Advisory Board should circulate a draft of the document to elected and appointed officials.	2	It is important to develop and maintain strong support among elected and appointed officials.
9	The Chemung County Fire Advisory Board should officially vote to adopt the document.	2	
10	The County should develop a long-term plan to relocate the current emergency communication center.	4	The current facility has limited space.
11	The County should conduct a space needs analysis for the emergency communication center.	3/4	
12	The County should evaluate software which is designed to generate detailed fire and rescue response reports.	2/3	Response reports will assist in the measurement of performance.
13	The County should continue to use an Emergency Medical Dispatch system and dispatch departments and personnel in accordance with protocols.	1	Dispatch protocols help emergency response agencies manage resources effectively.
14	The County Fire Coordinator should establish a user committee to address emergency dispatch, radio reception, or related problems.	3	
15	The County should conduct a technical staffing review of the emergency communications system to assess staffing needs.	3	
16	The Fire Advisory Board should conduct a detailed review of automatic mutual aid and regular on-call mutual aid arrangements.	1	This should be accomplished as soon as possible.
17	The County Fire Advisory Board should ensure that mutual aid practices are formalized in writing. The agreements should be reviewed periodically and adjusted as needed.	1/2	Mutual aid agreements must be in writing.

	RECOMMENDATION	PRIORITY	COMMENT
18	The review of mutual aid agreements should include mutual aid arrangements involving departments from other New York counties and Pennsylvania.	2	
19	The County fire departments should establish specialized teams.	2/3	
20	The County fire departments should develop standardized, County-wide preplanning forms for all target hazards.	2	
21	The County Fire Advisory Board should consider implementing a strategy which uses the concept of nearest station response.	2	The nearest station response concept ignores district boundaries.
22	The County fire services should ensure that each fire department and each district conduct a hazard analysis of its service area.	3	
23	The minimum Standards of Cover assignment should be established for each target hazard identified. A Standard of Cover should consist of: The minimum number of site-trained, certified responders, together with the number and types of apparatus needed for a specific target or target area and the maximum response times allowable for the arrival of the first-due engine company, followed by the entire first-due assignment.	3	Establishing Standards of Cover assignments is essential to the planning process.
24	The Elmira Fire Department should provide an RIT mutual aid response to adjacent volunteer fire departments.	1	Firefighter safety should always be a priority
25	The volunteer fire departments adjacent to the City of Elmira should provide an RIT mutual aid response to the Elmira Fire Department.	1	Firefighter safety should always be a priority.
26	The City of Elmira and adjacent volunteer fire departments should establish comprehensive mutual aid agreements.	1	Mutual aid agreements will benefit residents in the urban core of the County.
27	The County dispatch protocols should require the deployment (pursuant to an agreement) of a volunteer engine company to the City of Elmira, when the Elmira Fire Department's response capability is reduced to one engine and a ladder, and a simultaneous call for a structure fire is received.	2/3	Deployment policies must be based on agreements and clearly defined.

	RECOMMENDATION	PRIORITY	COMMENT
28	The City of Elmira and adjacent volunteer fire departments should systematically work to strengthen relationships.	1/2	
29	The County Fire Department should develop an aggressive volunteer recruitment program.	1	This should be a priority of the County.
30	The Chemung County Fire Advisory Board, working with the County Fire Coordinator, should define the essential elements of a volunteer fire department.	2	
31	The Chemung County Fire Advisory Board and the County Fire Coordinator should help fire departments meet locally developed standards.	2	
32	The County Fire Advisory Board should review NFPA Standard 1720 and apply the standard to each volunteer fire department.	2	
33	The County Fire Advisory Board should include NFPA Standard 1720 within the performance guidelines developed by the Board.	2	
34	The County Fire Advisory Board, working with the County Emergency Communication Center, should develop an approach or recommended practice which allows tracking of the number of personnel and apparatus that arrive at the scene of major incidents.	3	
35	The County Fire Coordinator should be responsible for compiling performance information and reviewing these data with the County Fire Advisory Board.	3	This will require software.
36	The City of Elmira should measure its performance in several ways, including application of NFPA Standard 1710. Application of this standard should consider a combination of on-duty personnel, call-back personnel, and mutual aid. The development of a new battalion organization requires officials to consider factors, such as geography, road network, demand for service, apparatus and location of key apparatus types (aerial and heavy rescue), apparatus needed in the County, location of full-time deployed personnel, volunteer fire personnel resources, and firefighter safety.	2	The purpose of measurement is to provide information from which improvement plans may be developed.

	RECOMMENDATION	PRIORITY	COMMENT
37	The County Fire Advisory Board should consider the safety of personnel when developing standards and measures of department capability.	1	
38	The Fire Coordinator, working with the County Fire Advisory Board, should coordinate the development of a new battalion structure.	2/3	A new battalion structure is important to a mutual aid plan.
39	The development of a new battalion organization requires officials to consider factors, such as geography, road network, demand for service, apparatus and location of key apparatus types (aerial and heavy rescue), apparatus needed in the County, location of full-time deployed personnel, volunteer fire personnel resources, and firefighter safety.	2/3	
40	The County fire response district structure should be reorganized.	3	
41	The County Fire Advisory Board should consider alternative battalion deployment plans.	3	
42	The County Fire Advisory Board should consider Proposed Battalion Organization Model 1, a five-battalion organization plan.	3	This model links resources.
43	The County Fire Advisory Board should consider the location of fire stations, available resources, road networks, and the capability of fire departments when adopting a new battalion structure.	3	
44	The County Fire Advisory Board should select a headquarters station for each battalion.	4	
45	The County Fire Advisory Board should ensure that periodic battalion meetings are held.	3	Communication among departments is essential.
46	The County Fire Coordinator should develop programs to ensure that battalions train together.	3	Operational improvements require training.
47	The County Fire Coordinator should assign a Volunteer Deputy Fire Coordinator to assist each battalion with the development of formal mutual aid agreements for regular and automatic response within each battalion area and among battalions.	2	Deputy Fire Coordinators should have standard agreements from which to work.

	RECOMMENDATION	PRIORITY	COMMENT
48	The volunteer Deputy Coordinators should be assigned specific responsibilities for activities, such as: County-wide training; standardized preplanning and plan dissemination to mutual aid units; joint purchasing of goods and services; and special operations.	2	
49	The County Fire Advisory Board should establish battalion and County-wide working committees for training, emergency communication, joint purchasing, special operations, preplanning, master resource lists, etc.	3	
50	The County volunteer Deputy Fire Coordinators should be paid a reasonable annual stipend of between \$2,500 and \$3,500.	3	The work of the Deputy Fire Coordinators will be extensive in the next several years.
51	The County Fire Advisory Board should establish dispatch protocols linked to the battalion organization structure and require the dispatch of three engines, one aerial/ladder, and one heavy rescue unit to all reports of a structure fire. Appropriate tanker resources should be deployed in non-hydrant areas.	3	
52	The County should develop criteria for the deployment of a Rapid Intervention Crew.	1	This is an essential part of firefighter safety.
53	The County should develop criteria for the deployment of a County Safety Officer to a working fire.	1	There should be a number of trained safety officers in the County.
54	The County apparatus fleet should reflect the needs of each department and the County. A County-wide fleet deployment plan should be developed.	4	
55	The fleet of pumpers in the County should be adjusted to reflect the redeployment plan.	4	The fleet should be appropriately adjusted over time.
56	The County Fire Advisory Board should review the number of heavy rescue units and aeriels needed in the County.	3	
57	The County Fire Coordinator should be authorized to employ one additional staff person, a Fire and Rescue Technical Assistant.	1	This should be accomplished as soon as possible.
58	The County Fire Coordinator, if authorized to employ a Fire and Rescue Technical Assistant, should establish a small committee of Fire Chiefs to assist in the selection process.	1	

	RECOMMENDATION	PRIORITY	COMMENT
59	The County should consider authorizing a small appropriation of funds to allow the employment of office personnel to be shared by several fire departments.	3	
60	The County should encourage fire departments to develop inventories of specialized equipment and tools. These inventories should be consolidated by the County Fire Advisory Board.	3	
61	The County should encourage the integration of resources to help minimize the redundancy of equipment and apparatus.	3/4	Knowledge of available resources is a benefit to all departments.
62	The County Fire Advisory Board should encourage a systematic replacement of apparatus in the County following reasonable life cycle policies.	2	
63	The County Fire Advisory Board should assess the number and type of apparatus needed in the County.	3	This will be a controversial process, but the needs of the County require such an analysis.
64	The County Fire Advisory Board should review report recommendations and create a Project Implementation Committee. The County Fire Advisory Board should provide the Implementation Committee with areas where recommendations, if implemented, will support the fire service and ensure the safety of firefighters and the public.	1	
65	The Project Implementation Committee should be composed of representatives from the fire service and several other key officials or their representatives.	1	The Committee should be composed of fire service professionals and other officials.
66	The Chiefs of the Southport, West Elmira, Elmira Heights, and Elmira Fire Departments, in coordination with the Fire Coordinator, should meet to establish a new automatic mutual aid response policy.	1	There is a need to assess the mutual aid requirements of the urban core of the County.

XI. FUTURE FIRE/RESCUE PROTECTION NEEDS IN CHEMUNG COUNTY

A decline in the population of the County and the number of volunteers, along with limited financial resources, may require Chemung County fire departments to evaluate the methods by which they provide services. A continuing evaluation of County protection demands and the need to consider new approaches to service delivery is essential if the County is to receive adequate and cost-effective protection in the future. There are a number of concepts presented in this chapter which should be considered.

MERGE SELECTED DEPARTMENTS

There are several merger possibilities in Chemung County.

Merge the Baldwin and East Hill Fire Departments - The Baldwin Fire Department and the East Hill Fire Department cover relatively large geographic areas and each has a relatively small number of volunteers. The two departments, while organizationally independent, operate under automatic mutual aid policies designed to support one another. Thus, the current operating practices of the departments suggest that a merger of departments is a reasonable alternative.

Merge the Baldwin, East Hill and Chemung Fire Departments - The Baldwin, East Hill and Chemung Fire Departments could be merged into one department. This merger would simplify command structure and encourage the sharing of resources.

Merge the Baldwin and Chemung Fire Departments - This proposal would merge the Baldwin Fire Department and the Chemung Fire Department into a one department. Under this approach, the East Hill Fire Department would have to be consolidated into the Elmira City Fire Department, or an automatic mutual aid system would have to be developed in which East Hill would receive an automatic response from the City of Elmira and a merged Chemung/Baldwin Fire Department.

Merge the East Hill and City of Elmira Fire Departments - Under this approach, the East Hill Fire Department would cease to exist and would become part of the Elmira Fire Department. Initially, the City of Elmira would deploy one

City firefighter and one officer to staff the station 24/7. Alternatively, the City would initially staff the station with one firefighter/driver.

Merge the Southport, Pine City and Webbs Mills Fire Departments - Under this approach, the Southport, Pine City and Webbs Mills Fire Departments would merged. A new fire department would be established with a new organization structure and command arrangement.

Any of the suggested mergers would require the participants to consider the consolidation of fire stations and the development of a new apparatus deployment plan. Moreover, a new governance structure and methods of cost allocation cost would need to be established.

VOLUNTEER DEPARTMENTS EMPLOY ADDITIONAL PERSONNEL

Four volunteer fire departments in the County deploy one full-time firefighter 24/7. In the proposed Battalion Model 1 discussed in this report, it was recommended that each of the battalions have at least one fire department with one firefighter on-duty 24/7. The response capability within the County could be improved with the strategic deployment of full-time or part-time personnel. For example, the employment of one full-time firefighter 24/7 in the Southport Fire Department could contribute to improved response capability.

FIRE STATION LOCATION

The Horseheads Fire Department and the Town and Country Fire Department have fire stations which are close to one another. The close proximity of the two fire stations suggests that the fire stations should be consolidated into one station. Some consideration should be given to either merging fire service areas or merging the departments.

If consolidation of stations does not occur, we recommend that the service areas of each department be adjusted to reflect the needs of the public. An adjustment in service areas could result in the relocation of the Town and County Fire Station to a location more appropriate for serving its residents.

REDUCTION IN CALL VOLUME

The number of active volunteers may be affected by high call volume. If the volume of calls is too great, volunteers may become stressed and ultimately

become inactive. One approach to address excessive call volume is to reduce the number of responses. All departments in Chemung County currently respond to EMS incidents. Southport has substantially reduced the number of EMS responses in order to decrease the burden placed on volunteers.

EMPLOYMENT OF COUNTY STAFF

One approach to support volunteer fire departments is for the County to employ one or more teams of career firefighters/EMTs. Under this approach, the County would deploy two-person teams in selected parts of the County to respond to serious fire or EMS emergencies. These units would not have EMS transport capability, but would be designed to provide support in areas where volunteers may have difficulty responding in a timely manner. These units would contribute to improved volunteer response capability.

These units may not be needed 24/7, but could be deployed during times when volunteer response may be limited. These crews could be deployed 10 to 12 hours per day, Monday through Friday. For example, response teams could be deployed 10 hours per day, from 7:00 a.m. to 5:00 p.m., or 6:00 a.m. to 4:00 p.m. Alternatively, personnel could be deployed 12 hours per day, from 6:00 a.m. to 6:00 p.m., or 7:00 a.m. to 7:00 p.m. These crews would be able to provide an immediate response to a fire or an emergency. However, these units would not be able to act as an effective fire suppression team until volunteers arrived at the scene of an incident.

This type of response system may be reasonable in the urban and suburban parts of the County. In the County's rural areas, long travel distances and the limitations of the road network may limit rapid response.

The deployment of two, two-person crews 12 hours a day, five days a week is relatively costly. Two firefighters/EMTs would be required on each crew. Assuming that the crews would be assigned to cover 12 hours per day, five days per week, crews would have to be activated 120 hours per week; assuming that two crews are created, it would be necessary to fill 240 hours of work time. Filling 240 hours of work each week, assuming personnel work 40 hours per week, requires six personnel, not including authorized leave time. The County would need to employ eight personnel, to account for authorized leave, and to provide coverage by two, two-person crews. A supervisor would also be necessary. In

summary, the County would have to employ approximately nine personnel to support two, two-person fire/EMS crews, 240 hours per week.

In addition to employing full-time personnel, it would be possible to consider employing paid on-call personnel. Personnel are typically paid by the hour or by the incident. Call firefighters are often employed in New England and in other states. An on-call fire department has many of the characteristics of a volunteer department, but personnel are compensated in a direct manner. On-call personnel are generally required to participate in training and meet certain standards and qualifications to be allowed to work. Typically, call personnel must respond to a set number or percent of calls for service annually to be considered active.

CONTRACTING FOR SERVICES

Another alternative that should be considered is contracting for services. It may be possible for one of the volunteer fire departments that employ several personnel to provide services to another volunteer department on a contractual basis. These services could be designed to address specific problems, such as lack of available daytime personnel. For example, the City of Elmira has entered into an agreement to provide services to West Hill. Alternatively, a volunteer fire department could employ a contractor to provide supplementary services.

URBAN CORE FIRE DEPARTMENT

An examination of the population centers of the County and the location of the demand for fire and rescue services indicate that the majority of calls for service occur in the *urban core* of Chemung County. Approximately 70,000 residents of the County live in the areas serviced by the Elmira, Elmira Heights, Horseheads, Southport, Town and Country, and West Elmira Fire Departments. These fire departments respond to approximately 75 percent of calls for service which occur in the County each year. In Exhibits 39 and 40, we have established, for purposes of illustration, two theoretical fire department models. One theoretical department is composed of six departments and the other theoretical department is composed of four departments. These departments would protect the urban areas of the County. The Town and Country Fire Department is included in the six-department urban core model because it services a relatively large area and because its fire station and the Horseheads fire station are very close to one another.

Exhibit 39 shows two urban core fire department models and displays the estimated population served and the estimated number of calls each model department could be expected to respond to annually.

EXHIBIT 39**POPULATION OF URBAN CORE OF CHEMUNG COUNTY**

FIRE DEPARTMENT	URBAN CORE DEPARTMENT SIX-DEPARTMENT MODEL		URBAN CORE DEPARTMENT FOUR-DEPARTMENT MODEL	
	ESTIMATED POPULATION	ESTIMATED % OF CALLS IN RELATION TO TOTAL CALLS IN THE COUNTY	ESTIMATED POPULATION	ESTIMATED % OF CALLS IN RELATION TO TOTAL CALLS IN THE COUNTY
City of Elmira	30,940	46.1	30,940	46.1
Horseheads	6,452	7.5		
Elmira Heights	6,945	6.9	6,945	6.9
Southport	8,687	2.0	8,687	2.0
Town & Country	14,471	9.7		
West Elmira	4,819	2.8	4,819	2.8
Total	72,314	75.0	51,391	57.8

*The percent of calls for service is estimated based on the average number of calls from 2006 to 2008.

The maps in this report demonstrate the response which is possible from the various fire stations. An analysis of computer mapping indicates that it is possible to construct an urban core fire department and reduce the number of operating fire stations.

The urban core fire department could be a combination fire department or a career fire department. The core personnel of the department would be the full-time (FTE) personnel employed in the County and the active volunteers in the departments that would be consolidated into the urban core department.

This approach would require a merger of the volunteer fire departments and the Elmira career fire department. The merger of career and volunteer operations to create a large combination fire department would be difficult, but the combination system offers improved response capability.

The combination fire department model would result in the closing of several fire stations and the current location of deployed full-time fire units would require realignment. As noted in this report, there are 14 full-time firefighters on-duty at any time in the County. Exhibit 40 shows the deployment, by department, of full-time personnel within the County. Although the Big Flats Fire Department employs full-time personnel, it has not been included in the urban core department.

EXHIBIT 40

CURRENT DEPLOYMENT OF FULL-TIME FIREFIGHTERS IN CHEMUNG COUNTY

FIRE DEPARTMENT	ESTIMATED POPULATION SERVED	PERSONNEL ON-DUTY DAILY
City of Elmira	30,940	10
Elmira Heights	6,945	1
Town & Country	14,471	1
West Elmira	4,819	1
Total	57,175	

The combination fire department would likely deploy fewer than four full-time personnel on each fire unit. These companies would be augmented at the scene of an incident with volunteer personnel. Alternatively, paid on-call personnel could be employed, rather than volunteers.

The combination department could be established using current financial and personnel resources. It would be necessary to redeploy personnel and apparatus to provide appropriate coverage in the urban core area. This would likely result in the shifting of personnel resources among four or five fire stations. We suspect that this would result in the reduction of the apparatus fleet.

It is possible to establish a fully career fire department to serve the urban core of the County. The development of a fully career department to serve an urban core would require a decision on location of personnel. It would be necessary to close a number of stations and redeploy personnel, as appropriate. We assume that the career department would operate from four or five fire stations. Assuming that the urban core department would deploy five companies, and the companies would be composed of four personnel 24/7, it would be

necessary to employ approximately 100 full-time personnel. To fill one position 24/7 requires the employment of five personnel. Deploying five companies with four personnel would require 20 personnel on-duty, and a chief officer. Thus, five companies x four firefighters = 20 firefighters, x 5 (number of personnel required to fill one position 24/7) = 100 full-time firefighters. Command and support personnel would also be required in a fully career department.

The organization and governance of an urban core fire department would require a careful review and analysis. It may be possible to: develop a contractual agreement among those responsible for providing fire services; create a large, more comprehensive fire district; or establish a County department. These alternatives may require special legislative action by the State.

The costs associated with creating a combination fire department or a fully career fire department would have to be allocated in some manner. Most regional or interlocal service delivery agencies consider factors such as calls for service, population, or assessed valuation (or another measure of wealth). In Exhibit 41, we have allocated costs among the six fire departments which could constitute an urban core fire department. Under the approach shown, costs are allocated assuming that 50 percent of costs are based on population and 50 percent of costs are based on the number of calls for service. For example, the City of Elmira fire service area would be responsible for 42.8 percent of the department's budget based on population (42.8 percent of 50 percent of the total budget) and 61.5 percent of the budget based on calls for service (61.5 percent of 50 percent of the total budget) which means that the City would be responsible for 52.1 percent of the total budget of a new urban core department. Southport, which has 12 percent of the population, but only 2.7 percent of the calls for service, would pay 7.4 percent of the total budget. Please note that the percent of budget share allocated to each department service area is rounded for illustration purposes.

EXHIBIT 41**ALLOCATION OF COSTS****(50 PERCENT BY POPULATION AND 50 PERCENT BY NUMBER OF CALLS FOR SERVICE)**

FIRE DEPARTMENT	ESTIMATED POP.	% OF TOTAL POP.	AVERAGE NO. OF CALLS	PERCENT OF CALLS	BUDGET SHARE ALLOCATED TO EACH SERVICE AREA
City of Elmira	30,940	42.8%	3,003	61.5%	52.1%
Horseheads	6,452	8.9%	489	10.0%	9.5%
Elmira Heights	6,945	9.6%	450	9.2%	9.4%
Southport	8,687	12.0%	132	2.7%	7.4%
Town & Country	14,471	20.0%	631	12.9%	16.5%
West Elmira	4,819	6.7%	181	3.7%	5.2%
Total	72,314	100%	4,886	100.0%	100%

The actual amount to be paid by each service area would be a function of the type of department established. It is important to note that other cost allocation models are possible.