

SECTION 1 - PROJECT OVERVIEW AND TOWN PROFILE

PROJECT OVERVIEW

In August 1995, the Town of Coventry contracted A. N. Patrizz, Jr. Associates to perform a comprehensive assessment of the fire protection, rescue, and emergency medical services provided by the Coventry Volunteer Fire Association and the North Coventry Fire Department. The purpose of the study was to evaluate the present level of emergency services offered by the two organizations and to make recommendations that would enhance the level of fire protection/medical services within the town. The Request for Proposal placed emphasis on six goals:

- a. Continuation of volunteer service organizations.
- b. Determining the highest level of service to be provided in the most cost effective way.
- c. Determining operating strengths and weaknesses and making recommendations that will build on the strengths and alleviate the weaknesses.
- d. Analyzing workload, work flow, work processes in each area to improve the service level, including staffing requirements.
- e. Review and analyze the annual budget, including department allocations, capital improvements, and operating budgets and recommend funding levels.
- f. Review and analyze station locations, number of stations, response times, equipment assignments, manpower in order to improve ISO rating.

In order to meet these six goals, the town requested the following Assessments be performed:

- o Facility Needs Assessment
- o Equipment Needs Assessment
- o Organizational Needs Assessment
- o ISO Rating Review
- o Emergency Medical Services Review
- o Financial Evaluation

A. N. Patrizz, Jr. Associates conducted meetings and interviews over a four month period with the officers and members of the Coventry Volunteer Fire Association, North Coventry Fire Department, and the Coventry Fire Marshal. Discussions were held with the Town Manager and Town Council members and the insurance industry. Town employees and members of each fire department made available reports and information that provided statistical data, work procedures and practices and personal observations required to formulate this report.

This report serves to document our findings and observations concerning the level of service provided by the Coventry Volunteer Fire Association and the North Coventry Fire Department. It highlights areas of acceptable practices and areas where improvements may be needed. This report, or comments in the report, should not be construed as either department not being able to fulfill their primary functions as fire or EMS providers. It is intended to make recommendations where enhancements to the overall fire/EMS delivery system can be made in a cost effective manner.

Report Outline

In order to perform the tasks listed above without reiterating information, we have combined some aspects of the assessments together where appropriate. As an example, financial aspects are discussed in their appropriate areas (i.e. equipment needs, facility needs, etc.), and not as a separate topic.

The report is organized as follows:

Section 1 - Project Overview and Town Profile

Section 2 - Facility Needs Assessment

Section 3 - Equipment Needs Assessment

Section 4 - Organizational Needs Assessment

Section 5 - Insurance Service Office (ISO) Assessment

Tables

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Attachment No. 1 - Citizen Survey (by HMA Harrell-Michalowski, Associates, Inc.)

Attachment No. 2 - Target Hazard Assessment

Attachment No. 3 - Minimum Criteria for Protected Class Grading - ISO

TOWN OF COVENTRY PROFILE

Introduction

This section of the report provides general information on the geographic and demographic features of the Town of Coventry to assist in the evaluation of the existing public fire, rescue and ambulance services provided within the town. Information will be presented which will indicate the growth potential of Coventry for use in assessing future emergency services delivery system needs. This information will be used and/or referenced throughout the report when discussing the current situation of the towns emergency services and the future needs of the town in this area.

Much of the information presented in this section has been extracted from a draft copy of a town commissioned Plan of Development Update report provided by HMA Harrall-Michalowski Associates, Inc. Additional information on the demographics of the town has been obtained from a summary report issued from the Windham Regional Planning Agency entitled: Facts and Figures for the Windham Region; A Compilation of Frequently-Requested Data from the 1990 Census and other Sources.

Geographic Details

The Town of Coventry, which covers approximately 38 square miles, is located in the Northeastern section of Connecticut within the south-central section of Tolland County. Coventry is considered a rural/suburban community located approximately 10 miles east of the City of Hartford. The town is bordered by the towns of Bolton and Vernon to the west, Mansfield and Windham to the east, Andover and Columbia to the south and by Tolland to the north.

Figure 1 shows the general location of Coventry within the State and County boundaries.

The town is divided into two census tracts which are also utilized as voting districts as shown in Figure 2. These tracts also serve as the jurisdictional territories of the two operating fire department organizations within the town. The North Coventry Fire Department covers the northern section of town in census tract 8501 and the Coventry Volunteer Fireman's Association covers the southern section of town in census tract 8502.

Demographic Features

Population

Over the thirty year period from 1950 to 1980, the Town of Coventry experienced a 120 percent increase in its population from 4,043 to 8,895. This rate of growth was more than double that of the State of Connecticut, but below the 156 percent growth rate for Tolland County. In spite of

its more than two-fold increase in population, Coventry's rate of growth was still lower than most of its neighboring communities.

From 1980 to the present, Coventry has grown from a population of 8,895 to approximately 10,500. Population projections for Coventry indicate continued population growth at an average rate of 0.9% or less than 1% per year between 1990 and 2000 and 0.6% or less than .5% between 2000 and 2010. The total projected change of 27% between the years 1980 and 2010. The projected population in 2010 is 11,300. This projected population growth is about double that of the average within the State of Connecticut and is about equal with the average for Tolland County. Figure 3 depicts the projected growth to the year 2010 as projected by the Connecticut Office of Policy and Management.

Economic Characteristics

As shown in Table 1, income levels within the Town of Coventry at the time of the 1980 Census were for the most part, lower than the State and Tolland County in the median and average family categories. Coventry's per capita income was higher than that of Tolland County, but was lower than the State and all of its neighboring communities, with the exception of Columbia, Willington and Windham.

More recent estimates (1985 and 1987) of per capita income, prepared by the Bureau of Census, showed substantial increases in relative income for area communities and the State, but per capita income growth in Coventry between 1979 and 1987 lagged slightly behind that of the State, Tolland County and most area communities.

An important characteristic in the make-up of a community is the income of its residents. Table 2 illustrates the income distribution per household in Coventry. As the table shows, in 1980, the largest cluster (36.7%) of incomes were in the \$15,000-\$24,999 range, while only 0.3% or 7 households earned incomes over \$75,000. In 1990, the largest cluster of incomes (29.1%) were between \$50,000-\$74,999 and the number of households earning more than \$75,000 increased by 507 to a total of 514 or 13.9% of the total households in Coventry. Projections for 1995 show that household incomes will continue to increase with 35.9% of the households having incomes in excess of \$75,000.

These statistics indicate that Coventry is not an affluent town relative to its neighbors but that the per capita income is on the rise although still lagging somewhat behind the surrounding towns and the State average. These statistics may be important when evaluating the potential for Coventry to look at appropriating increased expenditures for public safety improvements. There does seem to be a trend of upward movement in per capita income within the town which might indicate there is a more affluent citizen developing in Coventry. Whether this means there is a desire to channel more budget money into public protection can not be ascertained directly from these statistics.

A citizen survey (Attachment 1), prepared by HMA Harrell-Michalowski Associates, Inc. and Peter Halvorson of the University of Connecticut Geography Department, determined some interesting public opinions relative to this question.

In summary, this survey of the Town of Coventry provided an assessment of the citizens satisfaction with town services and programs and the importance of these services and programs in a relative ranking. The survey also determined which services and programs people may be willing to spend their money on which reinforced their assessment of importance.

The results of the survey indicated that the citizens of Coventry:

- Are most satisfied with the Town's volunteer fire protection service, followed by ambulance service,
- Feel that ambulance service and volunteer fire protection service have the highest degree of Future Importance for the town,
- Are most willing to spend money on police protection, volunteer fire protection, school facilities and programs and ambulance service (in that order of importance).

These results may be important in the long term planning aspects of the towns emergency services delivery system. It would appear from the results of this survey that Coventry has the support of its citizenry in pursuing improvements in the fire, ambulance and rescue capabilities. With the general increase in per capita income level in town and the perceived importance and need for these services projected from the citizen survey, town management would seem to have a general endorsement to increase expenditure levels and pursue improvements in these public protection services.

Historical Development

Coventry, incorporated in 1712, developed in the 18th and 19th centuries as a mill town dependent upon water related industrial uses. This historical development has created areas of aging industrial occupancies and residential districts of high density single family homes. Many of the original dwelling units were constructed as seasonal cottages and converted to year round use without the appropriate upgrading to building codes.

A majority of the Town's dwelling units and population are currently located in the village area and the Lake Wangumbaug (Coventry Lake) drainage basin. Residential development has occurred in the northeast section of the town in recent years. Lower density residential development occurs throughout the town which provides a geographical challenge to the town's fire protection/emergency services. Housing is predominately owner-occupied (approximately 80%).

Current Land Use Patterns

The Town of Coventry is considered to be a small, rural to suburban style New England community. Figure 8 shows the current zoning breakdown for the Town.

During the period beginning in 1950 to the present, the character of Coventry as a community has been changing from a rural farming type with some higher density population regions surrounding the lake areas to a more typical suburban type community. This change could be attributed to the development of the interstate highway system and the growth of the Hartford Metropolitan Area as a regional employment center.

The existing land use patterns of Coventry essentially reflect the Town's rural character. Most of the Town's 23,870 acres is still undeveloped (61%) as shown in Table 3. The town's 1978 Plan of Development found that 75% of the Town was undeveloped. The 14% change from 1978 to the present reflects the building boom expansion of the 1980's during which several new residential developments were created in town. Although forests and farmlands still dominate the land area of Coventry, there are substantially developed areas throughout the Town. Much of the development in the Town is concentrated around Lake Wangumbaug (Coventry Lake), including the South Coventry Village area along Main Street. The Village is Coventry's traditional "downtown". It contains many of the Town's retail businesses, as well as some public and institutional uses. Likewise, this area is the location of a large number of the fire protection target hazards and creates a high response district for the ambulance service.

Approximately one-quarter of the Town's population lives around Lake Wangumbaug (Coventry Lake). The homeowners in this area are members of associations which own and maintain roads, beaches and other community facilities. Most of the homes in this area were originally built as seasonal vacation homes, but were subsequently converted to year round dwellings. The density of development is relatively high, with many houses on lots of 5,000 square feet.

Another concentration of commercial and institutional uses is at North Coventry, around the intersection of Main Street (Route 31), Grant Hill Road and the Boston Turnpike (Route 44). The area contains several small shopping centers, free standing commercial buildings, a library, school, church and fire station. Other smaller clusters of commercial uses are located at the intersection of Daley Road and Main Street, along the Boston Turnpike near the Bolton town line and near the intersection of the Boston Turnpike, Bread & Milk Road and Swamp Road.

Residential development, aside from the lake area, is generally distributed throughout the Town. The Pine Lake Shores community, in the eastern section of town, is a former vacation home community, largely converted to year round residences, near Eagleville Lake. There are several residential subdivisions in the northern section of Town, reflecting recent growth in that area.

Future Development Potential

In planning for the future of Coventry's fire and ambulance services, it is helpful to estimate the approximate capacity of the Town for additional growth. The draft Plan of Development report prepared by HMA Harrell-Michalowski Associates, Inc. evaluated the Town's land use patterns, existing zoning and development regulations, as well as the environmental characteristics of the land which would effect development, to determine the theoretical development capacity of Coventry. The development report recognized that the amount of growth which could theoretically occur in Coventry will probably never occur, or at least not in our lifetime, it is important to use it as a guide of development potential in the foreseeable future. This will allow the fire, rescue and emergency services study the ability to evaluate the near term development potentials which could affect the emergency services delivery system.

The specifics of the land use evaluation and the methodology used to estimate the number of potential dwelling units and non-residential development potential in Coventry are provided in the draft Plan of Development and are not discussed in this report. Only summary details and conclusions are provided here.

In regards to residential development potential, the report concluded that the existing zoning and general land use characteristics could permit approximately 9,000 more dwelling units, in addition to the 3,894 counted in the 1990 U.S. Census. This would allow a saturation population of approximately 35,000 people in the Town of Coventry.

For non-residential development, it is estimated that there is the potential for the development of an additional 75,000 square feet of commercial building space in the C-1 zoning district and 225,000 square feet of industrial building space in the LI-1 district. However, most of the non-residential development potential in Coventry is within the C-2 district along Route 44. This contains enough land to accommodate the development of approximately 3.2 to 4.2 million square feet of commercial building space. As a point of reference for this development potential, the Pavilion at Buckland Hills in Manchester is 842,000 square feet.

Note: 842,000 square feet represents the building and not the parking and open space required to support the structure, which would be approximately 2 times the building space.

As stated earlier, it is questionable whether this number would ever be approached. But this is the theoretical maximum development potential which could be seen. The results of the citizens survey referenced earlier in the report indicated a current desire of the population to see controlled growth in Coventry and to maintain the rural life-style in Coventry. At the same time, there was a desire to see improvements in employment opportunities in town and a dissatisfaction with the availability of retail businesses in the town. This may be affected by the recent growth of the Buckland Hills commercial area as the first large commercial mall-type complex east of the Connecticut River, in the north half of the state. With the proximity of this commercial district to Coventry, the need for large scale development in town to satisfy this perceived need may have been minimized.

In addition, there is a general dissatisfaction with the level of industrial development in town. Currently, the lack of a municipal water and sewer system coupled with the relative inaccessibility to inter-state highway systems will probably minimize any significant industrial development in town for the foreseeable future. One potential change to this status is the proposed Route 6 highway development which is not supported by the Town of Coventry.

If the Route 6 Expressway is constructed, it will make South Coventry more accessible to the Hartford area. The highway will connect Willimantic with Hartford, but it will not be an interregional facility. Unlike I-84, it will not provide access between different metropolitan areas and states. The increased accessibility creates some economic development opportunities at or near the proposed interchange. Although current plans for the expressway are uncertain at this time, it is likely that an interchange will be placed in the vicinity of Bunker Hill Road or Parker Bridge.

ASSESSMENT OF FUTURE GROWTH POTENTIAL AND EFFECT ON EMERGENCY SERVICES

Residential Growth

It is difficult to project a residential growth rate for Coventry due to the number of factors which could affect the movement of people into the Town. Current economic conditions in the Northeast United States have caused a general slowing of population growth. Some areas, like Connecticut, have seen a reduction in population levels.

However, from the available information and past trends, it could be speculated that residential land-use growth rate will continue to follow the average population growth rate of less than 1% per year. Future town growth policies developed in response to the Plan of Development report could have a significant impact on determining the maximum growth rate. As such, it is recommended that a policy be developed within the Planning and Zoning approval process which includes an assessment of large proposed residential projects on the capability of the emergency services delivery system to accommodate that growth. Development of single family homes in any of the current residential zoning areas will not significantly impact the fire and ambulance service level objectives for the Town.

However, it should be recognized that properties located in the remote edges of the response territories of the existing fire stations will receive delayed response times. Station location will be determined by target hazard locations (large scale life loss and property loss properties) and to a lesser degree one and two family style housing patterns.

Non-Residential Growth

The following represents potential economic development possibilities for the Town of Coventry. Some may not be feasible for development within the next five to ten years, but all need to be considered in the long term planning for fire, rescue and ambulance service in the Town.

1. Route 44/Grant Hill Road/Route 31 Area

This area has developed as a small neighborhood center, serving the needs of North Coventry. It is at the confluence of two state highways and presently is the Town's largest concentration of commercial activity. There are currently several small strip commercial centers on Route 44 and 31 as well as some public and institutional uses.

This zone has a large amount of commercial land use (C-2 Zone) potential as discussed earlier. Development of this area could have a significant impact on the fire protection delivery service by the creation of a number of new target hazards. As such, controlled growth in this area is essential. The current North Coventry Fire Station provides excellent proximity to the Route 44 and 31 intersection for fire protection response. Ambulance service to this area is adequate from the Coventry Volunteer Fire Association Main Street location. However, as development moves away to the west toward the Bolton Town line along Route 44, the ability to provide adequate fire protection and ambulance response time objectives will be adversely affected. Relocation of one town ambulance to the North Coventry Station (see Equipment Needs Assessment Section) will improve the ambulance service level objective for this area. Any Planning and Zoning approval of large scale commercial development in this zone should include an assessment of impact of fire protection and ambulance services.

2. Route 6 Expressway

A large C-2 zone currently exists in the area of the proposed Route 6 Expressway. This area, virtually undeveloped at present, will presumably experience substantial development if and when the Route 6 project becomes a reality. The current emergency services coverage for this area is poor with the response times to this area over existing roadways excessive to meet the service level objectives. Development of this area would necessitate road improvements on Wrights Mill Road and South Street and the possibility of a satellite fire station location. A proposed new satellite station on the west side of Coventry Lake (see the Facilities Needs Assessment Section) would improve the service level to this area of town. This station, along with the roadway improvements mentioned to decrease the response time from the North Coventry Station, would provide a satisfactory response time service level to this area. Once again, any Planning and Zoning approval of large scale commercial development in this zone should include an assessment of impact of fire protection and ambulance services.

The assessment of potential future non-residential development is based on the current zoning breakdown for the Town of Coventry and the assessment of land use potential within those zoning categories. Any radical change in this zoning layout could have significant impact on the ability of fire and ambulance services to provide a suitable service level objective. For instance, if the Town, in an attempt to control population growth in Coventry, decided to re-zone current undeveloped R-40 land to commercial or industrial zoning use, the potential for new target hazards development within these zones could create fire service delivery inadequacies. Ambulance service would be affected to a lesser degree but could be impacted by development on the outer edges of town. Conversely, where current zoning could allow development of new target hazards, which would create inadequacies in the fire and ambulance delivery systems, re-zoning to eliminate these zones would be beneficial. The C-2 zone along the Bolton/Andover town line is a prime example of this approach.

SECTION 2 - STATION LOCATION EVALUATION

INTRODUCTION

This study will provide an overall assessment of the fire/emergency service delivery system for the Town of Coventry. Evaluation of this service will be for today's needs and the projected future needs.

The goal of the station location study was to find an optimum location for the proposed new CVFA fire station, to analyze areas of the town that may be better served by additional satellite facilities, and to address any major capital needs of the existing stations.

To better understand the needs of the Town of Coventry and each department, an evaluation criteria has been established. The following sections will address these criteria and any specific building needs of the departments.

EVALUATION CRITERIA

To perform this evaluation, it is necessary to create a set of performance goals or objectives for use in evaluating or measuring the ability of the system to perform. These objectives have been chosen by the consultants in the absence of any stated objectives currently being used by the towns fire/emergency services organizations.

A major component of this study is the determination of the effectiveness of the current station location (or proposed location) with regards to providing the optimum level of fire/emergency service to the community. Level of Service is defined as the resources needed to meet stated service level objectives. Resources for this evaluation include the fire station facilities which house the emergency equipment necessary to deal with an emergency event, as well as manpower resources. In the volunteer fire/EMS service, manpower resources must be evaluated as an off-site resource responding from private residences and factored into the response time evaluation as such.

In concept, any emergency event begins when a state of normalcy is interrupted and continues until that normalcy returns. For the purpose of describing the elements of a fire/EMS event, the event includes alarm notification, dispatch, turn out, travel time, set-up operations and fire attack or EMS activities. Station location will have an effect on two of these emergency event elements; turn out and travel time.

Turnout time is defined as the portion of response time when companies are donning personal protective clothing and boarding their apparatus. The time begins once the companies have been given their assignments and ends when they begin travel on emergency apparatus to the scene. In a volunteer organization, this time is modified to include the time for the volunteer to respond in private vehicles to the station. This time element is important where there is total reliance on response from private residences to man apparatus; either with a driver only or for full manning. This study will consider the location of the current members of the Coventry Fire Services with regard to minimizing this response time element. Figure # 4 shows the location of current active members of the Coventry town fire departments for evaluation purposes.

Travel time is defined as the portion of response time that is utilized by responding companies to drive to the scene of the emergency. Travel time begins when assigned fire companies begin to actually drive to the scene.

The key service level objective with regards to station location is the ability of that location to optimize the response time to incidents. A basic presumption for station location studies is that the closer the station is to the largest number or percentage of high hazard risks, the better the level of service. While this is an obvious and elementary statement, it is important to note because station placement should not be confused with service performance. Optimum station placement will reduce response time to high significance emergency events but does not guarantee an acceptable performance due to any number of factors. These contributing factors will be discussed in the Organizational Effectiveness section of the study (to be discussed later).

Figures No. 5 and 6 provide plots of the 1994/1995 emergency calls for the Town of Coventry.

ESTABLISHMENT OF RESPONSE TIME SERVICE LEVEL OBJECTIVE CRITERIA

Fire Service

The objective of fire station placement is to maximize the number of higher risk occupancies which can be responded to before a "flashover" condition occurs. Flashover is defined in National Fire Protection Codes (NFPA 921, 1992 Ed. Section 1-3) as the stage in the development of a contained fire in which all exposed surfaces reach ignition temperature more or less simultaneously and fire spreads rapidly throughout the space. In layman's terms, this is the point in a fire when all occupants lives are in jeopardy and the structure is in danger of being substantially damaged or destroyed. Clearly then, station location(s) which serve to minimize response time to the greatest degree are best.

The Fire Service Response Time Service Level Objective for optimum station placement is as follows:

Maintain enough firefighters and equipment which can be strategically located so that the minimum acceptable response force can reach a reasonable number of higher level target hazards before flashover is likely.

To provide the "Level of Service" noted above, the fire service must be able to provide the minimum effective response force to the target hazards in a pre-flashover time frame. Effective response force is broken up into two components; the initial attack capability and the follow-up forces. Basically described, the initial attack capability is needed at a time prior to "flashover" when occupant rescue probability is high and structure involved in fire is still minimal or contained. An effective initial attack capability would be two 1 1/2 inch diameter hose lines with two man crews with a third 1 1/2 inch backup line available. Using the standard fire response "five man" engine company, this would translate into 2 engine companies responding within the prescribed time limit. This is optimum and could be reduced to one company providing two 1 1/2 inch diameter lines (one initial attack line with a second line for backup) and the 2nd company arriving 2 to 3 minutes later with additional attack line capability.

Follow-up forces are defined as the number of personnel and engines/pumpers needed to establish and maintain the required fire flow. Required fire flow is based on overall building size and construction and is a water flow calculation which assumes a fully involved fire in the structure. This flow is intended to contain the fire to the structure and minimize and/or prevent fire spread to adjacent structures.

For the purposes of the station location evaluation, a location which best supports the "initial attack" capability will be given the highest consideration. This is dictated by the fact that initial attack capability directly satisfies the "Level of Service Objective" of dealing with the incident in a "pre-flashover" time frame. Follow-up forces will be brought in from the other Coventry stations as well as from surrounding towns as part of mutual aid support. As such, station placement is not as critical for addressing the effective response force criterion.

EMS Service

The objective of the EMS services is to facilitate response to the maximum population within the service territory so that life saving treatment can be provided before the victim reaches a stage where significant, non-reversible physical damage has occurred. A commonly used benchmark for this criterion is to respond before brain damage can occur in a victim with heart failure.

The EMS Response Time Service Level Objective for optimum station placement is as follows:

EMS response time of 4 to 6 minutes, based upon the amount of time it takes a person to experience permanent damage due to lack of oxygen.

RESPONSE TO TARGET HAZARD CRITERIA

To begin this evaluation, a determination of the community risks or target hazards was conducted. This evaluation looked at all occupancies within the town and attempted to place each in one of three Target Hazard categories; High Hazard, Moderate Hazard and Low Hazard risks. The Target Hazard assessment is shown in Figure # 7 with the location of each identified target hazard on the town map. This provides a geographical layout of the target hazards which must be responded to from any location in town. Attachment 2 discusses the methodology used in developing the target hazard listing for the town properties and describes the categorization process.

FACILITY NEEDS ASSESSMENT CRITERIA

This section of the report will look at the specific facility needs of the Coventry Volunteer Fire Association, Inc., the North Coventry Fire Department and the Town of Coventry as it prepares to meet the Fire, Ambulance and Rescue Service needs for the next two decades.

Facility Needs Assessment looked at the present structures, their location, size and utilization.

Coventry Volunteer Fire Association, Inc.

The Coventry Volunteer Fire Association, Inc. (CVFA) houses its firefighting and emergency medical equipment at 1265 Main Street (Route 31). This structure (originally built in the 1800's, with an addition built in 1955) houses two firefighting engines, two ambulances, one service vehicle, a boat and two brush trucks. In addition to apparatus storage, the building contains a small office, day room and a medium size meeting hall with kitchen facilities.

Adequacy of Present Facility

Location - The fire house is located on a small parcel of land located next to the Deknatel Co. properties across from the Bidwell Tavern. The CVFA owns the property upon which the building is located. However, CVFA property is limited to a one to two foot property line around the building. Parking for firefighters and ambulance technicians (approximately 20 cramped spaces) is to the west by agreement with Deknatel.

This building is located in the Village of Coventry, at the bottom of a dangerous incline and across from a busy tavern/eatery. This location presents problems of traffic congestion on and access to Main Street. The slope of the road and adjacent land allows water to build up in and around the fire house, creating a hazard to responding members. This building is located in the flood plain for Coventry Lake and has an active spillway/stream running beneath the parking lot and across the front of the building.

Size - The fire house consists of two sections joined to form a four (4) bay station. The front section is approximately 33 feet deep by 24 feet wide (792 sq. feet). The rear section is approximately 30 feet deep by 40 feet wide (1200 sq. feet), for a total of 1992 sq. feet of usable space at ground level. Each section has a second story which is utilized as an office, day room and small meeting room with kitchen. Each bay is approximately 10 feet wide and 10 feet high, limiting clearance around fire apparatus. The bay depths are shallow, barely allowing the apparatus to fit inside the station. Modern fire apparatus will not fit into this structure.

Of the eight pieces of apparatus controlled by the CVFA, only four (two engines, a service truck and one ambulance) can be housed inside the station. The remaining four (one ambulance, two brush trucks and the boat) are parked outside. Storage and office space is very limited, causing the members to store materials on the apparatus floor.

Deficiencies of Present Facility

- 1) Building is inadequate to house all firefighting equipment. Four pieces of apparatus are stored outside. The storage of an ambulance outside during cold weather is not desirable.
- 2) Modern apparatus will not fit in the bays. Door height in the 1955 addition is 10 feet. The front building door height is 8 foot 4 inches. Both are too low. The structure can not be modified to increase door sizes.
- 3) Building does not meet State Fire Code (NFPA 101 Life Safety Code):
 - o Boiler room is not cut-off from remainder of building.
 - o Open staircase to second floor is not separated from remainder of apparatus floors.
 - o Stairs to second floor does not meet tread length and riser height requirements.
 - o Limited exiting from the second floor via an open metal fire escape.

- 4) Building does not meet Occupational Health and Safety Requirements:
 - o Electrical system not proper.
 - o Open stairs to second floor.
 - o Boiler room is not cutoff from remainder of building.
 - o Apparatus exhaust removal not in place to adequately ventilate building.

- 5) Building does not meet American Disabilities Act:
 - o Limited access for handicapped persons.
 - o No handicapped restrooms available.

- 6) There is no room for expansion around firehouse. Property line is one to two feet off building.

- 7) Parking is limited and dangerous. Firefighters and ambulance technicians must enter the apparatus apron and drive area at the same time apparatus is leaving the station.

- 8) Traffic patterns on Main Street make it difficult to enter and leave the station. This increases response times.

- 9) Grading of Main Street and the surrounding area allows water to accumulate in the paved area. During winter months, the driveway becomes very slippery, endangering responding firefighters.

- 10) A ladder truck would not fit in this station. Major reconstruction of road way access would be required to be able to access Main Street with this large truck.

- 11) The rear bay floor has sign of serious structural damage. It is undermining under the weight of the apparatus. Extensive repairs are needed to re-support the floor.

- 12) Due to Fire Code and OSHA concerns listed above, the CVFA runs the risk of having the building condemned or faced with fines levied against them.

- 13) The office space (limited) is not conducive to modern day public safety department business.

- 14) The station, although provided with emergency power, is not useful for shelter during town wide emergencies.

- 15) There is limited storage space. Flammable liquids, power equipment and firefighting equipment is stored in and around the apparatus creating tripping hazards.

- 16) The station is located in the 100 year flood plain and subject to major flooding with a catastrophic breach of Coventry Lake Containment structure(s).

North Coventry Fire Department

The North Coventry Fire Department houses its firefighting and rescue equipment in two separate buildings. The first building, known as Station 11 is located at 3427 Main Street (Route 31). This structure originally built in 1949, with additions added in 1955 and 1989 is the home of two firefighting engines, one heavy duty rescue truck and one service vehicle (brush truck). In addition to apparatus storage, the building contains a small office and day room for staff members on the first floor (elevated above the apparatus floor) and a meeting hall on the second. The second floor does have a handicap lift.

The second firehouse, known as Station 211, is located on the Laidlaw Park access road off Merrow Road. This structure was built in 1984 as a satellite station. The building is a one story, 40 feet wide by 50 feet deep, two bay station with no office or meeting facilities. Parking is limited to approximately 10 cars. Located at this facility is one firefighting engine and a small light duty rescue truck.

Adequacy of Present Facility (Station 11, 3427 Main Street)

Location - The fire house is located on a large parcel of land at the intersection of Main Street and Wrights Mill Road. The North Coventry Fire Department owns the property and the building. To the east, there exists a large parking lot for firefighters and the public who may be using the 2nd floor meeting room. Just to the west, is a small parking area for first responders.

This building is located in the western section of Coventry, on a well traveled Route 31 near the Route 31/Route 44 intersection. The apparatus apron is large enough to allow the apparatus to park outside the building without impeding Main Street. Access and egress to Main Street is unobstructed. However, a clear view of Wrights Mill Road is somewhat obstructed due to the angle of the road and firehouse.

Size - The fire house consists of four (4) apparatus bays. The face of the firehouse is approximately 68 feet wide, with a depth of 45 feet (3060 sq. feet). The office is small, measuring approximately 8 feet by 12 feet. The day room is about the same size. A new addition has been added above the apparatus floor. This area is used as a meeting and recreational hall. Two handicapped restrooms exist on the second floor.

The bay depths are shallow, barely allowing the apparatus to fit inside the station. However, because of the 12 foot doors on the apparatus bays, modern fire apparatus will fit into this structure.

Adequacy of Present Facility (Station 211, Merrow Road)

Location - The fire house is located on a small parcel of land on the Laidlaw Park access Road off Merrow Road across from Goose Lane. The Town of Coventry owns the property and the building. To the north, there exists an average size parking lot for firefighters. To the south, is a small town owned park.

This building is located in the North section of Coventry, on a somewhat quiet road. The majority of traffic is from the condominium complex located just down the road and a few small residential developments off of Broadway and Merrow Road. The apparatus apron is located off the access road to Laidlaw Park which runs south off Merrow Road. Access and egress to Merrow Road is basically unobstructed.

Size - The fire house consists of two (2) apparatus bays. The face of the firehouse is approximately 40 feet, with a depth of 50 feet (2000 sq. feet). There is no office or meeting facilities at this location.

The bays are sized to allow the apparatus to fit inside the station with adequate clearance with 12 foot by 12 foot doors.

Deficiencies of Present Facility

Station 11 (Main Street)

- 1) Station is at capacity. There is no room for additional apparatus should the need arise.
- 2) Additional storage space is required to alleviate the storage of firefighting equipment in and around the apparatus floor.
- 3) Office space is poor, not conducive for conducting department business.
- 4) Meeting hall (second floor) is not conducive for meetings. Acoustics are very bad. For Public use, an area of refuge is needed for handicap access (Conn. Fire Code).
- 5) Day room does not encourage members to utilize the firehouse for social purposes.
- 6) A ladder truck would not fit in this station without providing access off Wrights Mill Road (No apron space on Main Street side).

Station 211 (Merrow Road)

- 1) Storage space is limited, requiring equipment to be stored in and around the apparatus.
- 2) Office facilities do not exist.

CRITERIA ASSESSMENT

Coventry Volunteer Fire Association

In order to address the state of the existing Station 8, a detailed evaluation of the town was undertaken to determine the most optimum location for this facility. The following three areas were considered in determining the most suitable location of a new fire station:

- 1) Main Street (Ripley Hill Road to Route 275 area)
- 2) South Street near Judd Road
- 3) Village and south Route 31

In order to properly assess the facility needs of the CVFA, many factors must be considered, including Town demographics, topography, zoning, growth potential (both fire service and town expansion), criteria assessment (Target Hazard and Response Times) and access to the public.

Zoning - Topography - Growth - Studies indicate that growth in the Town of Coventry will be somewhat slow over the next few years. The biggest potential for rapid growth would be due to the expansion of Route 6 through the southern section of town. With this thruway comes the potential for new businesses and land development.

The next largest potential for growth in town is for residential developments to spring up along the northern section of Route 31 and northern sections of Route 44. The zoning map (Figure No. 8) provides an overview of the zoning classifications and provides indications for growth potential.

Topography plays a role in the placement of fire stations. The town of Coventry basically slopes downward from the Route 31/Route 44 intersection to the Willimantic line. This factor must be considered when locating fire apparatus. Response to the incidents by members will not be influenced by grade as would larger fire apparatus. It makes more sense to have private vehicles travel up an incline than large emergency apparatus, which would significantly increase response time and present more wear and tear on the apparatus.

The Main Street area near Ripley Hill Road to Route 275 is elevated relative to the village area providing quick response to other areas of town. Apparatus responding to the village would be traveling down hill, providing for a quicker and easier response.

The South Street area near Judd Road is basically at the same elevation, but presents a more hazardous path (Cross Street/Lake Street/Monument Hill) to get back to the Main Street area.

Any other potential site in the southern area below the village would require a long climb up Route 31.

➔ **The Main Street @ Ripley Hill to Route 275 location best satisfies the needs of this criteria.**

Target Hazards - A review of the target hazard layout shows that the majority of the high hazard targets are located along Route 31 in the area of the village and the area east of Coventry Lake (near Town Hall). Several other high hazard targets are located in the vicinity of the Route 31 and 44 intersection. Only a few high hazard targets exist outside of these areas.

The two existing stations on Route 31 provide excellent coverage for these targets and meet the Response Time Service Level Objective.

The recommended location for the new CVFA station at Route 31 between Ripley Hill Road and Route 275 would also provide excellent location to a majority of the high hazard targets. In addition, this location is in an area which has shown to be a high EMS service area.

The South Street and Judd Road location does not meet the Response Time Service Level Objective in that this site is located several minutes further from the majority of high hazard targets plotted. The only high hazard target with improved response time is the G. H.

Robertson School. Response time to the village area is approximately 2 minutes longer with greater than a 4 minute increase to the Town Hall/High School area. This location is a high EMS service area and would benefit from a station located in this area. However, there is no justification for a full station in this location due to the high hazard target remoteness.

Future growth potential in Coventry can be evaluated using the current zoning regulations. The zoning for non-residential use would restrict new high hazard targets to the area of town where High Hazard targets now exist. As such, a basic assessment can be made that the recommended station location will continue to satisfy the Response Time Service Level Objective for fire service and will be adequate for future development. Only one exception appears from the current zoning map. This deals with the Business Use zone located in the western edge of town near the Bolton/Andover corner. This zone is outside any reasonable Response Time range of any existing or proposed station location. Careful Planning and Zoning review of new structures in this zone is necessary to prevent the creation of higher hazard targets which would not be adequately serviced by the fire protection delivery system.

➔ **The Main Street @ Ripley Hill to Route 275 location best satisfies the needs of this criteria.**

Future Ladder Truck Consideration - As the Town of Coventry grows, so does the need to provide fire suppression. As development continues, buildings will get larger, requiring the additional services of a ladder truck. For a ladder truck to function properly two things must be present. First, the roads upon which the truck travels must be designed to handle the weight and size of these large trucks. Secondly, the truck must be located near its primary response area to provide quick response and set up due to the slowness upon which it must travel.

The Main Street location provides good access to the major parts of town on mostly wide, well constructed roads. Travel time to fire emergencies will be reduced for most calls due to the easy access and egress from the Main Street site.

The South Street/Judd Road location is not conducive for larger apparatus. While South Street itself is adequate for ladder truck loading and access, many roads around the lake can not handle large fire apparatus. No Target Hazards requiring a ladder have been identified on the west side of the lake. Using this area as a primary fire station location, although places emergency apparatus in an area which historically has had fires, would be doing so at the risk of the rest of the town.

Locating a fire house near the existing station or further down on Route 31 would further remove the apparatus from the target hazards and place the station within the flood plain of Coventry Lake.

➔ **The Main Street @ Ripley Hill to Route 275 location best satisfies the needs of this criteria.**

Ambulance Consideration - Similarly, as the town grows, so does the population and the need for medical services.

Locating a fire station on Main Street near the Town Hall, provides fast response to large population centers (i.e. schools, business and elderly housing). Again, from this location, an ambulance would have access to many areas of town, including the south and west side of the lake where a high frequency of the calls occur (see Figure # 5). Locating the town ambulances in this location would improve the response time to the north end of town while maintaining good coverage for the remaining sections of town with high population density. This location would satisfy the Response Time Service Level Objective for EMS Service.

The South Street site is located in an area that historically has a high demand for ambulance service. This site also provides good ambulance access to other areas of town, due to the fact that ambulances are generally smaller and more maneuverable. By locating the ambulance service in this area of town, there would be a trade-off in response times between the east and west sides of the lake over the Main Street @ Ripley Road to Rt. 275 area. This site would also serve as a location which would satisfy the Response Time Service Level Objective for EMS Service.

- ➔ **The Main Street @ Ripley Hill Road to Route 275 and South Street /Judd Road locations best satisfies the needs of this criteria.**

Access to the Public - Hard economic times require towns to look for way to reduce capital expenditures. One item that has worked well in other town is combining building uses. One such example is in the Town of East Windsor where they have utilized the firehouse as a Senior Center. A multi-use building could serve many functions for the Town of Coventry.

Access to Main Street best serves this purpose.

Firefighters need a place to hold meeting, drills and training classes. There is no better place for these function than at the firehouse. Firefighting equipment is right on the premises, reducing the time to set up drills and meetings. And, if a emergency call arises, they can respond quickly. Having a group like senior citizens in the same building could also help manpower situations. Retirees, although not enthusiastic about fighting fires, may like to volunteer their time administratively reducing the burdensome task volunteer firefighters are facing.

- ➔ **The Main Street @ Ripley Hill to Route 275 location best satisfies the needs of this criteria.**

North Coventry Fire Department

This study has concluded that the present two facilities (Route 31 and Merrow Road) are situated properly to provide the optimum coverage for the north end.

Improvements in space allocation could greatly improve the work environment, reduce the potential for lost time accidents and increase station manning (people wanting to spend more recreational time at the stations)

RECOMMENDATIONS

The recommendations concerning the facilities for the CVFA and the North Coventry Fire Department will be presented in terms of "Current State" and "Merged State". Current State represents the needs of the two departments based upon present organizational structure. Merged State will address the needs of the department should the two departments merge into one organization.

Note: At the end of the section, we have provided the delta of the two states for your review.

Current State

PRIORITY NO. 1 - Coventry Volunteer Fire Association

Construct a new three bay (2 bays deep) fire station to replace the existing Station 8. This station should provide the following features (as shown Figure # 9 from Alan C. Wiedie, Architect):

- o Chief's Office, Staff Office, Conference Room and Watch Room/Radio Room.
- o Meeting Room, kitchen and day room. Meeting room should be sized to accommodate department training needs, meeting and public (town sponsored) events.
- o Bunk Room, and men's and women's sanitary/shower facilities.
- o Storage space for medical supplies, firefighting equipment, and mechanics.
- o 3 Bays, approximately 80 feet deep to accommodate 6 pieces of fire apparatus (3 bays is less than what is shown on attached drawing).

PRIORITY NO. 2 - Coventry Volunteer Fire Association

Construct a new two bay (2 bay deep) satellite station near the intersection of South and Judd Road. This station should be designed to house a fast attack mini pumper/first aid vehicle designed to travel the small roads around the lake. The remaining area could be used to store the boat.

The present Station 8 is inadequate to serve the Coventry Volunteer Fire Association. The optimum way to address the firefighting and EMS needs of the Town of Coventry, is to build two smaller stations in the high use areas. The South and Judd Road will improve coverage to the C-2 commercial zone located at the western edge of town along the Andover/Bolton line.

The Main Street at Ripley Hill Road to Route 275 location should act as the center station with the South Street satellite as the first responder to the lake area.

New quarters are needed to allow the housing of fire apparatus and both CVFA ambulances. The station should be sized to accommodate seven of the eight present CVFA's fleet (2 fire engines, 2 ambulances, 2 brush trucks, and the service vehicle). The boat can be stored outside if needed. This station should also be sized to accommodate the future needs of the department (i.e. a ladder truck), should town growth require it.

PRIORITY NO. 3 - North Coventry Fire Department

Construct Offices and a day room on the second floor of Station 11. Move from the present office and day room on the first floor and turn these areas into storage space to reduce the storage materials on the apparatus floor.

The upstairs meeting room should be retained to allow department meetings and training to take place. Some sound proofing should be installed to correct the acoustics problem.

PRIORITY NO. 4 - North Coventry Fire Department

Construct an additional bay to the rear of Station 11. This item should be considered as a long term improvement to the station as town growth is experienced.

PRIORITY NO. 5 - North Coventry Fire Department

Construct a storage area at Station 211. This item should be considered as a long term improvement to the station as town growth is experienced. This would help alleviate the store problem and enhance personnel safety.

Merged State

PRIORITY NO. 1 -

Construct a new three bay (2 bays deep) fire station to replace the existing Station 8. This station should provide the following features (as shown on Figure # 9 from Alan C. Wiedie, Architect):

- o Chief's Office, Staff Office, Conference Room and Watch Room/Radio Room.
- o Meeting Room, kitchen and day room. Meeting room should be sized to accommodate department training needs, meeting and public (town sponsored) events.
- o Bunk Room, and men's and women's sanitary/shower facilities.
- o Storage space for medical supplies, firefighting equipment, and mechanics.
- o 3 Bays, approximately 80 feet deep to accommodate 6 pieces of fire apparatus (3 bays is less than what is shown on attached drawing).

This station would act as the center station for the town. Staff offices would be located here, reducing the need for additional redundant offices at the other fire station.

PRIORITY NO. 2 -

Construct a new two bay (2 bay deep) satellite station near the intersection of South and Judd Road. This station should be designed to house a fast attack mini pumper/first aid vehicle designed to travel the small roads around the lake. The remaining area could be used to store the boat and as a central supply. The benefit to this approach is that it alleviates the need for major equipment storage space at other location. Purchasing and delivery of supplies would be easier at one location. Safety would be enhanced at the stations by removing the excess storage of material in and around the apparatus.

PRIORITY NO. 3 -

Construct Offices and a day room on the second floor of Station 11. Move from the present office and day room on the first floor and turn these areas into storage space to reduce the storage materials on the apparatus floor.

Company meetings can be held upstairs. Department meetings and larger social events could be held at the new Main Street Station.

Station 211 and the new South Street/Judd Road site would be utilized as satellite stations with no other amenities. Department meetings and social events would be held at the new center station. Storage would be combined to a central location. Training could be conducted at either the new center station or Station 11.

Delta Between Current State and Merged State

Significant capital dollars can be saved by not requiring the addition of a bay at Station 11 and the need for additional storage at Station 211. By constructing a new center station and a new small satellite station to address response issues west of the lake along with relocating existing apparatus in the town (to be addressed later in main report), the town can provide optimum fire/EMS service at a reduced cost.

SECTION 3 - EQUIPMENT NEEDS ASSESSMENT

INTRODUCTION

Section 3 of this report will provide an assessment of the major firefighting and EMS equipment operated by the Coventry Volunteer Fire Association and the North Coventry Fire Department. The evaluation of this equipment will include the status of present equipment, the ability of the present equipment to meet performance goal objectives established for the town and a schedule for normal replacement of needed equipment.

EVALUATION CRITERIA

As discussed in Section 2 - Facility Needs Assessment, performance goals are required to set a bench mark against which a department is evaluated. In terms of firefighting apparatus and EMS equipment, the objectives remain the same. That is, to be able to deliver adequate firefighting water (and support equipment) at a fire scene pre-flashover stage or provide EMS service within four to six minutes from the time the need arises (see Section 2, Establishment of Response Time Service Level Objective Criteria).

The primary objectives of the Coventry Volunteer Fire Association are to provide:

- 1- Effective fire ground personnel, water and equipment, pre-flashover stage within their service territory,
- 2- "1st Responder" medical service within four to six minutes, in their service territory,
- 3- Transport Service (medical) to local hospitals and trauma centers for the Town of Coventry,
- 4- In a reciprocal agreement, other mutual aid services to North Coventry and to other neighboring towns as requested.
- 5- Other emergency and non-emergency services (i.e. haz-mat, search and rescue, water rescue, roadway incidents, storm duties, etc.) needed within their service territory.

The primary objectives of the North Coventry Fire Department are to provide:

- 1- Effective fire ground personnel, water and equipment, pre-flashover stage within their service territory,

- 2- "1st Responder" medical service within four to six minutes, in their service territory,
- 3- In a reciprocal agreement, mutual aid service to South Coventry and to other neighboring towns as requested.
- 4- Other emergency and non-emergency services (i.e. haz-mat, search and rescue, water rescue, roadway incidents, storm duties, etc.) needed within their service territory.

For the sake of this evaluation, we will utilize the facility locations discussed in Section 2 of this report. We will evaluate the needs of the areas each station serves and address apparatus effectiveness from those locations to meet the service objectives discussed above.

PRESENT APPARATUS INVENTORY - See Tables No. 4 and 5

Coventry Volunteer Fire Association, Inc.

All equipment is housed at Station 8 unless otherwise noted.

Engine Tank 108 is a 1975 Mack pumper outfitted with 1200 gallons of water, a 1250 gpm pump, 1500' of 4" hose and 6 self-contained breathing apparatus. The truck is first due responder to any structure fire and is back-up to other lesser calls. This truck responds mutual aid (out of its district) when requested and can be utilized in an ISO evaluation.

This truck was refurbished in 1989 and is approaching the end of its useful life.

Engine 108 is a 1969 Mack pumper outfitted with 500 gallons of water, a 1000 gpm pump, 1500' of 4" hose and 4 self-contained breathing apparatus. This truck is 2nd due responder to structure fires and is primary responder to lesser type calls. This truck responds mutual aid when requested and can be utilized in an ISO evaluation.

This truck was refurbished in 1985 and is approaching the end of its useful life.

Service 108 is a 1984 GMC fast attack pumper/service vehicle outfitted with 250 gallons of water, a 450 gpm pump, 300' of 3" hose and 2 self-contained breathing apparatus. This truck is 1st due responder to brush and other type of minor fires and last responder to structure type fires. This truck typically does not respond mutual aid, unless it a brush type fire, not requiring the other larger apparatus (ET-108 or E-108). This vehicle can not be utilized in an ISO evaluation.

This truck can still function as a primary firefighting tool.

Service 208 is a 1972 Dodge army surplus 4 x 4 vehicle outfitted with 100 gallons of water, 150 gpm pump, 100' of booster hose (brush hose) and other hand tools. This truck responds to brush fires. This truck typically does not respond mutual aid, unless it a brush type fire, not requiring the other larger apparatus (ET-108 or E-108). This vehicle can not be utilized in an ISO evaluation.

This truck can still function as a primary firefighting tool.

Service 308 is a 1978 Dodge army surplus 4 x 4 pickup truck outfitted as a utility vehicle. This truck is utilized to transport equipment to and from the fire station. This vehicle can not be utilized in an ISO evaluation.

This truck can still function as a primary transport vehicle.

Rescue 508 is a 1995 Ford Type III ambulance. This vehicle is utilized as the primary medical transport vehicle for the town. This vehicle will respond mutual aid when requested.

This vehicle is brand new and is expected to last 5 to 6 full years before requiring replacement.

Rescue 608 is a 1986 Ford ambulance. This vehicle is utilized as the secondary medical transport vehicle for the town. This vehicle will respond mutual aid when requested.

This vehicle has been replaced once by the new Rescue 508. For the amount of service this vehicle is expected to see, it could function as a back-up unit for the next three to five years if properly maintained and State Medical regulations do not drastically change.

Marine 108 is a 1989 pontoon boat. This boat is kept on Coventry Lake during the summer and at Station 8 during off seasons. This boat does respond to mutual aid requests.

This boat is expected to last for many years.

North Coventry Fire Department

Engine Tank 311 is a 1993 Emergency One pumper outfitted with 1000 gallons of water, a 1500 gpm pump, 1500' of 4" hose and 6 self-contained breathing apparatus. The truck is first due responder to any structure fire in its primary district and is back-up to other lesser calls. This truck does respond mutual aid when requested and can be utilized in an ISO evaluation. This truck is housed at the Main Street Station.

This truck is relatively new and is expected to last until the year 2013.

Engine Tank 211 is a 1992 Emergency One pumper outfitted with 1000 gallons of water, a 1500 gpm pump, 1500' of 4" hose and 6 self-contained breathing apparatus. The truck is first due responder to any structure fire in its primary district and is back-up to other lesser calls. This truck does respond mutual aid when requested and can be utilized in an ISO evaluation. This truck is housed at the Merrow Road Station and is similar to ET-311.

This truck is relatively new and is expected to last until the year 2012.

Engine 111 is a 1982 Continental pumper outfitted with 600 gallons of water, a 1000 gpm pump, 3000' of 4" hose and 3 self-contained breathing apparatus. This truck has a large hose reel, is 3rd due responder to structure fires and acts as a water supply vehicle. This truck does respond mutual aid when requested out of the Main Street Station and can be utilized in an ISO evaluation.

This truck is relatively good shape and is expected to last until the year 1999 or beyond, depending on actual usage.

Service 111 is a 1984 Dodge Utility/Brush outfitted with a forestry pump, 75 gallons of water, , 600' of brush hose and other hand tools. This truck responds to brush fires. This truck typically does not respond mutual aid, unless it a brush type fire, not requiring the other larger apparatus (ET-211 or ET-311). This vehicle can not be utilized in an ISO evaluation.

Rescue 111 is a 1989 International Ranger heavy duty rescue truck. This vehicle is housed at the Main Street station and is the primary first aid responder in the north end and the primary heavy duty rescue truck for the town of Coventry. This truck carries 5 self-contained breathing apparatus.

This vehicle is in good shape and is expected to remain in service until the year 2009.

Rescue 211 is a 1972 Chevrolet pickup truck with a utility body. This vehicle is housed at the Merrow Road Station and responds to all medical calls north of Route 44. This truck carries 2 self-contained breathing apparatus.

This vehicle has been in service over 23 years and requires immediate replacement.

EQUIPMENT ASSESSMENT

The Facility Needs Assessment - Response to Target Hazards Criteria established a basic philosophy that identified locations within the town that were best suited for fire station placement. Following the same guidelines (ability to reach target hazards pre-flashover stage), fire apparatus needs are analyzed and equipment placement is optimized.

Coventry Volunteer Fire Association

As stated above, the present Coventry Volunteer Fire Association Station on Main Street, is not able to house new modern fire apparatus. For that reason and to better address the needs of the town, we will discuss apparatus needs and placement based upon the recommendations set forth in the Facility Needs Evaluation Report. For the larger apparatus, we will limit our discussion to structure type fires, since the response to these types of calls bounds all other type of fire incidents.

Fire Engines - Both Engine Tank 108 and Engine 108 are reaching the end of their useful life as primary attack engines. These engines qualify as pumpers in the ISO evaluation process. Service 108 is still able to provide fast response to certain type calls but is not sized to be a primary attack piece. This unit does not qualify as a pumper per ISO standards.

Together, the three structure fire response engines do not carry enough equipment to properly man attack lines for most structures in their response district. As an example, the total compliment of self contained breathing apparatus carried on the apparatus is 10. This would not provide enough protection (breathing air) to place two attack lines with back-up safety crews and a search crew in service without the help of mutual aid. The delay in fire hose deployment and primary search capability could mean the difference in saving lives and property.

Water carrying capability is very limited. The total 1st response compliment carries less than 2100 gallons on board. Placing two attack lines in service each flowing 125 gallons a minute, would provide for less than 9 minutes of fire fighting water. This supply is marginal when considering the distance mutual aid companies must respond to provide back up water or lay lines from the nearest water supply.

There are no spare or reserve pieces of apparatus.

Rescue / 1st Aid - The primary ambulance was replaced this past year with a new vehicle. The old vehicle (1986) was retained as a back-up vehicle.

Both vehicles are justified for the following reasons:

- 1) The fire service runs to approximately 400 ambulance related calls each year. This represents three medical calls for every fire call.
- 2) The Coventry Volunteer Fire Association is also the primary medical transport for the North Coventry district. The ambulance spends a significant amount of time outside the district and the town transporting patients to the hospital.

- 3) As of October 1, 1995, the State of Connecticut has adopted new trauma regulations that require ambulance services to transport trauma patients to Level One Trauma Centers. The closest Level One Trauma Center is located in Hartford. What was once a short trip to either Willimantic or Rockville/Manchester, will now require the ambulance to be out of town and unavailable more of the time.

Both Rescue 508 and Rescue 608 are valuable to the successful fulfillment of the medical objectives of the Coventry Volunteer Fire Association.

Rescue 111 (North Coventry) provides the primary heavy duty rescue service for the South end. North Coventry is dispatched with the CVFA and has good access to the South end.

Ladder Truck (Both CVFA and North Coventry Fire Department) - At the present time the town does not have a ladder truck. A ladder truck serves three major purposes:

- 1) Reach Elevated Heights - Allows firefighters to reach roof areas and windows safely without relying upon the structure for support.
- 2) Supports Building Search & Rescue - A primary duty of the truck company is to perform forcible entry and search and rescue.
- 3) Ventilation - A secondary duty is for the truck company to perform ventilation of the structure to relieve the building of heat and hot gases to allow fire attack crews to get to the seat of the fire.

Of the three tasks listed above, Building Search and Rescue and Ventilation can be performed without the services of a ladder truck.

In the Town of Coventry, most buildings are limited in height to two stories or less. For these structures, roofs can be accessed by ground ladders. For the most part, a ladder truck would not be a necessity for successful fire attack. However, there are some larger structures that are three stories or more depending on how the building is situated on the land. For these buildings, a ladder truck could greatly enhance fire suppression capabilities.

ISO provides credit for ladder trucks that are within 2.5 miles of built-up areas of the town with buildings over 35 feet in height.

The Town of Coventry is unique in that it is surrounded by eight available ladder trucks that could respond mutual aid. They are as follows:

Manchester	Ladder 1	100'
Manchester	Engine 5	75'
Manchester	Tower 1	75'
Tolland	Truck 240	75'
Willimantic	Truck 101	100'
Vernon	Tower 141	75'
Vernon	Truck 541	100'
UConn	Truck 122	100'

Of the departments listed above, Manchester, Willimantic, UConn and Tolland (daytime) have paid staff that could respond and arrive in most areas of Coventry simultaneous with the Coventry equipment. For ISO to recognize the service of a ladder truck, it must be within 2.5 miles from the built up area. Some of the trucks listed above meet the distance requirements for some areas of town.

A ladder truck is a very expensive piece of apparatus that requires special training and dedicated manpower to support its operation. At the present time, both departments could have problems supporting the manpower requirements needed to be proficient in ladder truck operations. Dedicating teams to a ladder truck would reduce available manpower for other important fire ground tasks.

Purchasing of a ladder truck should not be a priority of the Town at the present time.

Miscellaneous Equipment - The CVFA also operates Service 208, Service 308 and the Boat. Each of these provide support to the overall operation of the department but do not enhance structural firefighting.

Coventry is susceptible to brush type fires. Service 208, Service 308 and even Service 108 (listed under Fire Engines) are smaller trucks that provide more maneuverability and help reduce wear and tear on the larger apparatus that would need to respond more frequently if the smaller trucks were not available.

Marine 108 is kept on Coventry Lake and supports water rescue.

North Coventry Fire Department

Fire Engines - Both Engine Tank 311 and Engine Tank 211 are new modern fire apparatus each carrying 1500' of 4 inch hose, six self-contained breathing apparatus and 1000 gallons of water. With Engine 111, the fire department's compliment of hose increase to 6000' feet of large diameter hose and on board water to 2600 gallons. All three engines meet the requirements as ISO engine companies.

In comparison to CVFA which carries 10 self-contained breathing apparatus on its fire trucks, No. Coventry has 22 units available.

Water carrying capability is also limited in the north end. The total 1st response compliment carries approximately 2600 gallons on board. Placing two attack lines in service each flowing 125 gallons per minute, would provide for less than 11 minutes of fire fighting water. This supply is marginal when considering the distance mutual aid companies must respond to provide back up water or lay lines from the nearest water supply.

There are no spare or reserve pieces of apparatus.

First Aid / Rescue - The North Coventry Department operates Rescue 111 which is a heavy duty rescue truck. This truck is first due responder to medical emergencies out of the Main Station and to auto accidents in the South end. This vehicle also provides back-up to Rescue 211 out of the Merrow Road Station and carries support equipment for structural firefighting.

Rescue 211 is a small utility truck which has reached the end of its useful life. This vehicle provides primary medical service around the Merrow Road section of town.

Due to the fact that both town ambulances are housed in the South End, response time to medical emergencies would exceed that which is considered crucial to life support. In an effort to enhance medical response, North Coventry responds with equipment and personnel to initiate first aid until the ambulance arrives for transport.

Both Rescue 111 and Rescue 211 are necessary for the successful fulfillment of the medical objectives of the North Coventry Fire Department.

Ladder Truck - See Discussion Under Coventry Volunteer Fire Association.

Miscellaneous Equipment - The North Coventry Fire Department also operates Service 111 as a utility/brush vehicle. This vehicle provide support to the overall operation of the department but do not enhance structural firefighting.

Coventry does experience many brush type fires. As with Service 208, Service 308 and even Service 108 (listed under Fire Engines), S-111 is a smaller truck that provides more maneuverability and helps reduce wear and tear on the larger apparatus that would need to respond more frequently if the smaller trucks were not available.

EQUIPMENT RECOMMENDATIONS

The recommendations concerning the equipment for the CVFA and the North Coventry Fire Department will be presented in terms of "Current State" and "Merged State". Current State represents the needs of the two departments based upon present organizational structure. Merged State will address the needs of the department should the two departments merge into one organization.

Current State -

PRIORITY No. 1 - Coventry Volunteer Fire Association, Inc.

Replace Engine 108 with a new modern Engine Tank. This truck should have a large capacity pump (1250 gpm or 1500) and a minimum water capacity of 1000 gallons. This truck should as a minimum meet National Fire Protection Association Standard 1901.

Some consideration should be given to a larger tanker type truck of 2000 to 2500 gallons of water depending upon how the Town proceeds with the water hole/supply recommendations listed in Section 4 of this report.

This truck should be housed at the proposed Main Street Station.

Engine 108 should be retained, for the short term as a reserve/spare pumper.

PRIORITY No. 2 - Coventry Volunteer Fire Association, Inc.

Replace Engine Tank 108 with a new modern Engine Tank. This truck should have a large capacity pump (1250 gpm or 1500) and a minimum water capacity of 1000 gallons. This truck should as a minimum meet National Fire Protection Association Standard 1901.

This truck should be housed at the proposed Main Street Station.

Engine Tank 108 should be retained as a reserve/spare pumper, at which time Engine 108 should be retired from service.

PRIORITY No. 3 - North Coventry Fire Department

Replace Rescue 211 with a new small utility type vehicle designed as a first aid/medical responder. This truck should provide service out of the Merrow Road Station.

The old Rescue 211 should be retired.

PRIORITY No. 4 - North Coventry Fire Department

In the 5 to 10 year range, purchase a third Engine Tank to replace one of the two Emergency One presently being run as a first responder. The replaced truck should be used as a third due/reserve truck. The benefit to this would be to remove the old ET-108 from reserve service, provide more reliable back-up and split the purchasing needs of the department later down the road. Having two Engine Tanks needing replacement back to back will be a continuing financial burden.

Other Consideration -

Other apparatus should be purchased on a 20 year replacement schedule. Table Nos. 6, 7, 8 provides the recommended replacement schedule. This plan can be adjusted depending on quality of apparatus and wear and tear over its duty cycle.

Neither department has any spare equipment that could replace a first line pumper should one of them become disabled. Consideration should be given to keeping one of the older CVFA trucks available spare/reserve should either CVFA's or No. Coventry Fire Department's major pieces of equipment go out of service for maintenance.

To best serve the fire protection and EMS needs of each department, equipment locations should be as follows:

STATION 8 New Station - Main Street Area

ET-108	New
ET-208	New
R-508	
R-608	*
S-308	
Reserve Engine	

STATION 108 New Station - South Street Area

S-108	
S-208	
R-608	*
Marine 108	

* There has been some discussions about the advantage of keeping both ambulances housed at the same location. This should be an internal decision based upon operational requirements and work load.

STATION 11 Main Street

ET-311
E-111
R-111
S-111

STATION 211 Merrow Road

ET-211
R-211 New

More emphasis should be placed upon firefighting equipment and less on electronic equipment. Although we support computers, cellular phones and message pagers, priority should be given to self-contained breathing apparatus and other firefighting tools.

Notification of, or communication with members is important, and does help maintain good response. However, other less expensive means are available to accomplish the same task. It is recommended that future acquisitions consider wider usage at less cost (Example - central tone frequency radio to replace department rental of personnel pagers).

Merged State

In an effort to reduce financial exposure to the taxpayers, the town should consider focusing its primary firefighting force out of the Main/Center Station (new Main Street Location). This location provides good coverage for the overall town. This concept would allow the town to limit the duplication of equipment in each response quadrant to a primary 1st engine or EMS provider with back-up support coming from the Center Station.

The purchasing priorities (see Table No. 9) remain basically the same (some variation) due to the limited equipment available in the South End, however equipment location could be optimized to best serve the firefighting and EMS needs of Coventry, equipment locations should be as follows:

New Station - Main Street Near Ripley Hill Road

ET-108 New
ET-208 New
R-508
S-308
E-111 Moved from Station 11
Reserve Engine

New Station - South Street Area

S-108
S-208
Marine 108

Main Street below Route-44

ET-311
R-111
S-111
R-608

Merrow Road

ET-211
R-211 New

The major difference between the Current State and Merged State is the location of the second ambulance. Due to the fact that approximately 1/3 of the town's ambulance calls are in the North end and the travel time to get to the North End from the South, the second ambulance should be relocated to Station 11. Combining the departments provides an increase in EMTs and a reduced need to send Rescue 111 to medical calls. Depending on the type of medical calls, and the response time of the ambulance out of Station 11, Rescue 211 could also reduce its responses, saving wear and tear on equipment and reducing the burden on staffing. Basically, Coventry wouldn't have to respond two departments with three pieces of apparatus to every medical call in the north end.

Concerning Rescue 111, it is felt that it should remain in the North end of Town for now. The majority of accidents occur there with Route 31 and Route 44 dissecting the district. Station 11 also provides good access to the South End when it is called upon. Should traffic patterns change over time, consideration could be given to relocating the Heavy duty rescue to the new Main Station.

A merged department would allow central purchasing (although it is not prohibited now) of major equipment and standardization of fire firefighting gear.

Although, manpower has been somewhat of a problem (one that fluctuates), it is expected to get worse as the economy worsens. Standardization of equipment across the two departments would help reduce training time and effectiveness as members work together at emergency scenes.

SECTION 4 - ORGANIZATIONAL NEEDS ASSESSMENT

INTRODUCTION

This section of the report will provide an organizational and operational needs assessment and make recommendations that both streamline the two departments and enhances their operational characteristics to better meet their stated objectives.

EVALUATION CRITERIA

Evaluation criteria for Organization Needs is not as straightforward as it is for Station and Equipment Needs. For those two areas, there is a stated objective to extinguish fires and provide medical treatment were needed based upon past history and projected town growth. Organizational needs are less definitive. It is simple to state that one must maintain some type of organization, provide training and motivate people to donate their time. However, the way this is accomplished varies based upon personalities, skills, knowledge level and the degree of professionalism toward which the organization strives.

National Fire Protection Codes and Standards relating to fire service delivery and management and OSHA requirements were used as benchmarks. Where appropriate, the standards are referenced .

Having an organization that has been around and functioning for the last 30 to 50 years, one can argue that the Organization is working. The study's objective was not to criticize past practices or nit-pick the present ones. The Departments should strive for a mode of operation and department structure that is well defined, not varied, unless under due process, and applied to all fairly and evenly. An organization that can communicate its goals, objectives and expectations to each member, is a department with good foundation. Fine tuning the process is one that each member should strive for and work to make a reality.

The following provides an outline of items that the departments and the town should focus upon to continue to provide Volunteer Fire/Rescue/EMS service in the Town of Coventry. These recommendations are not intended to indicate that there are significant deficiencies in any of the agencies providing service to the community. These recommendations are offered as observations that can be implemented to increase the overall effectiveness of the departments. These recommendations can be accomplished selectively by the individual departments or collectively (if appropriate) as allowed by time, funding and resources.

This section of the report will address both CVFA and North Coventry Fire Department needs without making a distinction of which department excels or lacks in the particular area.

PRESENT ORGANIZATION STRUCTURE

The Coventry Volunteer Fire Association, Inc. and the North Coventry Fire Department are private associations that solicit, on a yearly basis, funds from the Town of Coventry to support their operation. In return for these funds (Grants), the two organizations provide emergency fire, rescue, medical and transport services (CVFA only) to the town.

Other than a yearly contract between the Coventry Volunteer Fire Association, Inc. and the Town of Coventry for ambulance service, there is no other formal agreement between the town and the fire/medical services.

The apparatus and fire stations are in different states of ownership, which has been the source of much discussion over the past years. For the most part, funding comes from the town, but some facilities/land and equipment is owned by the departments. There is no clear policy or practice for how apparatus or fire stations are purchased. However, it has been the present practice for the town to make major purchases.

Being private organizations, each department does maintain their own treasury and fund raising activities. These activities are not subject to town scrutiny.

Both Departments are basically operated the same way. They have a nine member Board of Directors which handle the financial aspects of the department and a Board of Fire Officers which control the firefighting operations. See Figures 10 and 11 for organizational charts of both departments.

ORGANIZATIONAL ASSESSMENT AND NEEDS - Current State

- 1) There is no formal agreement between the Town of Coventry and the CVFA and North Coventry Fire Department for Fire and Rescue services. Ambulance service is by written contract.
- ➔ This appears to present a legal issue that should be addressed with the Town and both department's attorneys. Although the departments have the legal presence as a fire department as granted through a Charter (Charters have not been evaluated by A. N. Patrizz, Associates), it is not clear from a liability and responsibility standpoint who is required to provide fire protection to the residents of Coventry. Should either department fail in their duties, the town may ultimately be the responsible party.

- 2) Funding of each department is through yearly grants and other funding means. Department spending is not under the authority of the Town Manager.
- ➔ On a yearly basis, each department submits separate budgets to the Town Manager for his review and submittal to the Town Council. Upon receiving a Town "Grant", moneys go unchecked by the town. Although we feel that the town is getting a great service for the money budgeted for fire and ambulance services, we believe some efficiencies can be gained by having a formal budget process and central purchasing of equipment and other services. Some examples are:
 - a) Standardization of large apparatus (purchasing) and service agreements with local repair vendors.
 - b) Bulk purchase of hose, firefighting equipment and protective gear.
 - c) Insurance Coverage. It appears that all three entities have the same and overlapping insurance coverage.
 - d) Standard line item budget which track expenditures and year to year requests. Attachment No. 5 contains the latest budgets for the two departments and recommendations on budget improvements.

There should be some accountability to assure town funds are being utilized for the purpose they were specified.

Concerning the yearly budget process, the departments should be more definitive in their needs and expenditure process. A standardized format should be developed by the Town which is followed by the departments. Line item development should come from the membership through their officers, approved by the Board of Directors and Fire Chief and submitted to the town for approval and granting of funds. The departments should be held accountable for the approved line item accounts. Variations should be approved by the Town Manager or Council. The Town should have auditing authority.

If the town is to continue to purchase apparatus, including the ambulances, it may be appropriate to establish a fund where revenues (or some portion thereof) generated by medical services be deposited for ambulance replacement. Note: Ambulances are purchased by the CVFA.

- 3) The town, and each department maintain their own insurance coverage.
- ➔ Investigate blanket coverage for all firefighters, equipment and liability coverage. There appears to be some overlap in coverage, which if consolidated, could represent significant dollar savings.

- 4) Water supply is a major concern that effects the ability of each department to meet its fire suppression objectives.
- Initiate a Water Supply Program which identifies, monitors and maintains water supplies in the Town of Coventry. A water supply officer should be selected for each department, or the town. This person should work with the fire officers to identify, monitor and maintain access (with the help of the Town) to assure water supplies are available and identifiable by firefighters when needed. Program should include:
- a) a method to identify (at the street) water holes,
 - b) pre-plan document available in each apparatus identifying water holes
 - c) formal agreement with private water hole owners, and
 - d) if required, supporting town ordinances to assure water holes are made available and maintained.

The establishment of a successful water hole program is the single most cost beneficial improvement the town can make in its overall fire protection program

- 5) Pre-planning of target hazards are not performed to the fullest extent to achieve maximum benefit. See Attachment No. 6 for basic pre-plan forms.
- The knowledge and experience of a few individuals are relied upon for many of the target hazards within the Town. Accurate pre-plans are not performed, documented and made available to all members of the department. No one person can be fully knowledgeable of all town structures, water holes and available resources. This information should be documented and easily understood by junior members who at times may be in charge of fire incidents.

There is a tendency in the fire service by senior firefighters and officers to keep information "close to the vest". They feel the more they know, the more valuable they are to the department. Although it may be true, a knowledgeable person who can teach others is much more valuable. In addition, that person may not be able to respond to each and every call. Documented pre-plans which provide hazard descriptions, pertinent mechanical system information, water supply information and resource assessment available in each apparatus for all to use, is much more valuable to the success of the department. NFPA 1231, "Water Supplies for Suburban and Rural Firefighting" should be followed as appropriate for pre-planning of water supplies to structures.

- 6) An Incident Command System is not widely used throughout the Town.
 - A standard Incident Command system provides a structure with which each firefighter can work no matter who is in charge of the incident. Incident Command Systems are flexible and can expand and shrink as the incident changes. Job functions are independent of personalities. Anyone can be assigned to a specified task/duty. The benefit is that firefighters from each department can work together under a chain-of-command without relying on who the individual is. The incident commander is the incident commander without consideration of actual rank. NFPA 1561, "Fire Department Incident Management System" should be followed as appropriate.
- 7) The departments should work together to develop standardized Operating Procedures/Practices.
 - Fighting a fire in the North End should not be different than in the South End, and vice versa. The departments should work together to develop standard consistent practices which will be followed by both departments. One thing that is unique in Coventry is that for large fires the two departments responds automatically, basically as one. However, they perform tasks differently, and most times without written guidance. This is not the most efficient work environment. If an officer from one department requests a member from the other department to perform a task, that officer has a perception on how that task will be done. Without standardized practices, he may not get the results that he expects. In firefighting you only get one chance.
- 8) Departments do not meet consensus standards concerning the utilize of department safety officers.
 - Safety should be the number one goal of the department. The role of safety officer has not been delegated in either department nor has procedures been established to name a safety officer at the scene as required by NFPA. This position is crucial in loss prevention around the fire station, training ground and fire scenes. NFPA 1521, " Fire Department Safety Officer" should be followed as appropriate.
- 9) Mutual Aid Running Cards should reflect proper apparatus response based upon pre-plans.
 - Due to the limited resources available to the Coventry's fire departments, mutual aid is required for first alarm assignments. Selecting the right departments and right apparatus will improve the success of firefighting efforts. Identification of needs and resources by street and even target hazards will greatly improve response times, delivery of back-up water and use of mutual aid ladders. This item can be performed along with item 5, pre-planning of target hazards.

We have to accept the fact that mutual aid departments are closer to some areas of Coventry, or have paid staff. They will arrive before some Coventry units. The departments should strive to provide the best fire protection utilizing all available resources, even mutual aid. A good example of sharing resources is the EMT agreement between Andover and Bolton.

Tolland County Mutual Aid Fire Service should retain a current copy to assist in dispatching the departments.

10) The departments do minimum cross training.

➔ Training is essential in the fire and ambulance services. Since both departments work together at large fires, auto accidents and medical calls (in the north end), they should train together to improve interaction and effectiveness. Yearly training schedules should be developed and followed for both departments. Training can be provided by any knowledgeable individual. However, the departments should strive to have people available who meet the requirements of NFPA 1041, "Fire Service Instructor Professional Qualifications". NFPA 1201, "Developing Fire Protection Services for the Public", Chapter 8, should be followed for training of fire department members.

11) Personal skill training should be expanded.

➔ Members feel that they are not treated fairly on certain issues or that the officers are not consistent in dealing with members. There is an overriding feeling that officers treat friends better than non friends. It is also felt that older members "dump" on newer members.

Interpersonal skills need to be worked on at all levels. Each member must learn to respect each other. They all bring some knowledge or skills to the department. The fire chief can not do it all and he must rely upon other members to carry the work load. The chief and other officers should coach and guide younger members. Certain organizational practices must be established and followed. Disciplinary action and sexual harassment procedures are a good example of what should be developed and followed.

12) Departments should expand their formal Fire Prevention Educational Programs.

➔ Although each department does some fire prevention activities, it is on an as needed basis (usually around Fire Prevention Week). There is much benefit to having a formal program. Not only do you gain fire prevention awareness, you also establish good public relations. Going into the schools, educates the youth in fire prevention and may help create future volunteers.

NFPA 1035, "Public Fire and Life Safety Educator Professional Qualifications" should be followed as appropriate. Adoption and implementation of the NFPA "Learn Not to Burn" program is recommended as a initial program starting point.

13) Departments have little or no knowledge concerning the Town Emergency Plan.

➔ As with pre-plans, the Town Emergency plan is an important and valuable tool. Interfacing with other town agencies during emergency can be very trying. Having established roles and responsibilities can be very helpful.

Emergency Plans should be kept up-to-date and discussed within the departments. Other town agencies, can provide valuable resources to the fire departments when emergency strikes. Knowing what's available for emergency operations resources and how to obtain those services (by pre-arrangements) can help the fire service achieve it performance goals.

Emergency Plan participants should meet yearly to review the plan and update as necessary.

14) Fire Protection is done on a volunteer basis.

➔ Volunteer organizations have worked and will continue to work in Coventry. However, call load, training requirements and state and federal mandates (paper work and record keeping) have overburdened the volunteer staff. What was once fun and exciting work, has now become a complicated job requiring more hours in the office than out of the office. As time goes on and demands increase, the desire to volunteer will more than likely decrease.

In order to reduce the burden on the volunteers, it is suggested that some part-time or full time staff be utilized. The following options are available for consideration (not in any order).

- a) Elevate the Chief's position to part-time paid. Remuneration will allow the chiefs to focus on required paper work and away from other income sources.
- b) Hire full time/part time EMTs/Firefighters to man the ambulance (highest call demand) during the day. Assign administrative duties that would reduce work load of volunteer officers.

- c) Increase the responsibility of the Town Fire Marshal to assist the Fire Departments in administrative duties.
- d) Utilize either existing town staff or available retirees to assist in department administrative duties.

There is an opportunity to consolidate administrative work load and free up fire officers to develop training and other operational needs. Day-to-day recordkeeping and paperwork can be delegated to others.

15) Develop Roles and Responsibilities for the Board of Director and the Fire Officers.

➔ Although each body respects the other, there appears to be authority conflicts over business interest and fire department line duties. It is clear that the fire officers run the incidents. However, when it come time to budget equipment, improve fire house conditions and discipline firefighters, it is not clear who has control and authority. Some examples were related to us that indicate that similar disciplinary incidents were handled differently, which promotes confusion among the members. In addition, it seems that the Fire Chief who has statutory authority to provide fire protection does not control the operation budget of the department. It is suggested that clear division of responsibilities be developed that outline Board of Director functions verse the Fire Chief/Officers authority.

16) Officer qualifications need to be better defined.

➔ There are no minimum educational standards for fire officer positions. Anyone can be nominated and voted into office, possible by popularity and not fire or ambulance service competency.

Minimum standards should be developed for each level of fire officer. The standard should include a combination of years of line experience and successful completion of certain training.

NFPA standards provide excellent guidance on officer qualifications. NFPA 1001, "Fire Fighter Professional Qualifications" and NFPA 1021, "Fire Officer Professional Qualifications" outline knowledge and skill levels for each nationally recognized position.

Attachment No. 4 provides a listing of OSHA required training.

It is recommended that fire officers be able to meet the job performance requirements of the following standards to be eligible to hold office.

Fire Lieutenants - NFPA 1001 - Firefighter Two

Captains - NFPA 1021 - Fire Officer One

Chief Officers - NFPA 1021 - Fire Officer Two and Three

The departments should continue to offer training for the advancement of its members:

- o Firefighter One
- o Firefighter Two
- o Firefighter Three
- o Fire Officer
- o Advanced First Aid Training
- o Basic Haz-mat Training
- o Haz-mat Operational Training
- o Fire Service Management Training
- o Confined Space Training
- o Bloodborne Pathogen Training
- o Basic Building and Fire Codes
- o Sprinkler and Detection System Operations
- o Rural Water Supply
- o Vehicular Rescue
- o Rescue from Heights
- o Water Rescue
- o Written Skills Classes
- o Volunteer Fire Service Management
- o Public Relations

Job descriptions should be developed for each position.

17) Maintenance Schedules, including pump testing, needs to be better defined, performed and documented.

➔ Routine maintenance schedule should be developed based upon manufacturers recommendations. Each department should perform regular maintenance to assure fleet is ready when needed. Documentation must be maintained of maintenance activities.

Pump tests should be performed and trended to determine the status of fire pumps. NFPA 1911, "Service Tests of Pump on Fire Department Apparatus" should be followed as appropriate. This is required by ISO for acceptance of the Water Supply Delivery Method which is recommended in Section 5 of this report.

18) Standard Incident Reporting System, including personnel and equipment records, should be developed.

➔ The town should standardize the reporting system for the two departments. Fire incident reports are forwarded to the fire marshal. These reports should be generated the same by both departments following State of Connecticut standard incident reporting format. Documentation should be maintained that document that basic OSHA requirements are being met. Examples are as follows:

- o Member Physicals
- o Pump Tests
- o Ladder Tests
- o Self-Contained Breathing Apparatus Inspections
- o Membership Rosters
- o Bloodborne Pathogens Training
- o Haz-mat Training
- o General Training
- o Equipment Inspection Maintenance
- o Water Hole Inspection
- o Fire Apparatus Maintenance
- o First Aid Training and Certification

The use of computers can greatly reduce the paper work burden on volunteers. See Attachment No. 4 for OSHA Training/Reporting Requirements.

19) Adopt town wide administrative procedures/practices/ordinances (as appropriate) to support the fire service.

➔ o Implement Town Ordinance that assess a civil forfeiture for false fire alarms that occur frequently.

This provides an incentive for owners of alarms systems that continually present false alarms to have the system fixed.

o Adopt zoning policies which require fire department review and approval of major development projects. This review would evaluate the impact of the new development on the service level objectives of the fire and ambulance service delivery system.

o Implement a practice that ensures driveways and building sighting accommodate emergency response vehicles.

This practice should include receiving input from the fire marshal and a representative of the fire departments.

- o Develop a site for the Town Emergency Operations Center for civil preparedness operations. Consideration should be given to establishing a town wide operation center in the newly proposed Main Street Fire Station.

A single location where all town department heads can gather during emergencies should be considered. The new main could serve as a central location with phone, radios, emergency power, and food and shower facilities.

- o Strive for consistency in the budget process with the two departments.

See Item No. 2.

- o Promote volunteerism within the town.

Consider providing additional incentives beyond the Pension Program for members of volunteer fire and ambulance service. This may include:

- o small tax incentive
- o recognition day for volunteers
- o school credit for youth volunteers

20) EMS Service

➔ Medical services are provided by both departments. It is suggested that the two department work closer together to provide the optimum service to the town:

- o Cross train so that any member can work in the ambulance.
- o Open up department sponsored training (D-fib, etc.) to members of both departments. Working side-by-side during training exercises will increase performance in the field.
- o Consider "toning out" both department's EMTs during hours when limited manpower is available.
- o Consider relocating the second ambulance to the north end. Providing an ambulance in the north end will greatly reduce response time and the need for the north end to send a rescue truck to most medicals.
- o Continue to utilize the available paramedic services and Lifestar for advanced life support functions.

21) Involvement in County Organization

➔ Participate in County Fire Meetings, drill and emergency exercises. The biggest resource available to Coventry is its mutual aid departments. Establishing a good working relationship with neighboring departments will enhance Coventry's fire service delivery service.

MERGED STATE

Both departments are proud organizations that like to maintain their own identity. People within each organization pride themselves on what has been accomplished to-date and the service they provide to the community.

Although there are mixed feeling (approximately 50/50) concerning consolidating the two department, there is a significant benefit to the town in reduced cost for equipment and increased effectiveness in the services provided by combining the resources of each department. Most people who we have talked to recognize the benefit but seem to be reluctant to change because of the uncertainty which change creates, i.e. losing influence, power or position.

The following highlight the pros and cons of having a larger consolidated department vs. two smaller organizations as is the present case.

PROS

- ☺ Better use of available manpower resources. More goals can be accomplished since most are not being duplicated by different people in each department.
- ☺ Streamlining of budgets. One concise town wide budget.
- ☺ One Command Structure for every firefighter in the town to follow.
- ☺ Larger pool of personnel from which to draw the most qualified people to fill key line and administrative positions.
- ☺ Better utilization of equipment.
- ☺ Flexibility to move equipment within the town as needed to support equipment failures (downtime) or increase in hazards/calls without the need to purchase duplicate equipment for separate departments.
- ☺ Reduced call load for members.
- ☺ Better/Stronger mutual aid support in the County without reducing fire protection features within town. Sending equipment out to other towns for mutual aid would not strip the town of its fire protection apparatus, thus reducing the need to bring in others not so familiar with Coventry. This would support ISO town grade improvement.
- ☺ Increased training effectiveness.
- ☺ Reduces the "Them vs. Us" syndrome. Members of each department spend much time criticizing the other department. This is not a healthy environment, since it can carry over to fire and medical emergency incidents.

- ☺ Improve ISO rating by streamline and improving fire service management practices.
- ☺ Creates an administrative environment that promotes improved OSHA compliance.
- ☺ Improves the ability of the Town Manager and Town Council to deal administratively with the fire service.
- ☺ Improves the ability of the other department heads to provide services to the fire department during emergency situations.
- ☺ Allows the town to better prioritize its fire protection needs.
- ☺ Could improve the moral of the members (over a number of years) for being members of a larger, stronger, more effective organization.
- ☺ Reduces the need for Capital expenditures for duplicate facilities and equipment.
- ☺ Reduction in operating cost (i.e. Finance and Accounting Account cost).
- ☺ Increase in knowledge level as people come together and share acquired knowledge, experience and talents. This will lead to an improvement in overall quality of service
- ☺ Decrease in ambulance response times in the north end of town (if one ambulance was moved to Station 11).
- ☺ Better coordination of small equipment purchases including hand tools, firefighting equipment and gear.
- ☺ Eliminates the "Keep Up with the Jones" syndrome, i.e., one department has to have it because the other department does.

CONS

- ☹ Short term decrease in moral.
- ☹ Loss of identity for one or both departments depending on how the new department is identified.
- ☹ May lose some members (although our experience indicates that this effect is short term and of minimal impact on manpower resources).
- ☹ Not all present officers will be officers in new department.
- ☹ May require the assistance of outsiders (oversight board) to help transition.

Merge Plan

If the town and the two departments agree to merge, a transition plan should be developed. The following are items that should be considered.

- 1) Set a date for consolidation to be complete.
- 2) Decide if the new department will be a private organization or a town agency.
- 3) Develop formal agreements with the Town for fire and ambulance service (if maintained as private organizations).
- 4) Select a name for the new department.
- 5) Create a Consolidation Board to oversee the transition.
- 6) Develop standard by-laws.
- 7) Develop standard operating procedures/practices.
- 8) Set budget standard.
- 9) Agree on the selection process of the new chief and how officers will be selected.
- 10) Agree on Roles and Responsibilities of Board of Directors.
- 11) Address equipment and building ownership concerns.
- 12) Develop a method to review consolidation process over time.
- 13) Develop job descriptions and standards for officer positions.
- 14) Develop Organizational Chart (See Figure No. 12).

SECTION 5 - INSURANCE SERVICES OFFICE (ISO) ASSESSMENT

INTRODUCTION

In response to Study Objective 6 and Task Item 4 (ISO Rating), this section will address the current ISO Rating status and will evaluate improvements which could be achieved in the ISO grading if enhancements are made in the fire protection delivery services provided by the Coventry Fire Departments.

Some information and text provided in the background section was obtained from a document titled: ISO Fire Suppression Rating Schedule Handbook (all underlined); H.E.Hickey, Ph. D., 1993, Professional Loss Control Educational Foundation.

BACKGROUND INFORMATION ON THE ISO RATING PROCESS

Over the past century, the United States insurance industry has rigorously evaluated and graded the fire defenses of communities throughout the country. Today, the Insurance Service Office/Commercial Risk Services (ISO/CRS) continues this city Public Protection Classification (PPC) process by application of a document titled, The Fire Suppression Rating Schedule (FSRS).

The basic objective of the FSRS is to provide a tool for the insurance industry to measure quantitatively the major elements of a city's fire suppression system. By evaluating various aspects of the overall fire protection system in a given city, ISO/CRS is able to develop a relative ranking of a city fire suppression capability which is used by the insurance industry as a measure of relative risk for insuring property within that particular jurisdiction. The better the rating, the better the insurance risk and vice versa. The determined protection class assigned to a city can significantly impact on the amount of insurance premium paid by both commercial and residential property owners.

The three basic fire protection delivery system elements considered in the Grading Schedule are;

- Receiving and Handling Fire Alarms
- The Fire Department
- Water Supply

Measurements for these elements are developed into a Public Protection Classification number on a relative scale from 1 to 10, with 10 representing less than the minimum recognized protection and 1 being the highest level of protection. A city with a classification of 10 is considered to be "unprotected" as minimum requirements for fire protection are not being provided. If a city meets the basic requirements for providing minimum fire suppression capability, a grade of 9 is assigned: the lowest grade in the protected class. Based upon the initial ISO review, if it appears to ISO that a given city's fire suppression delivery system is capable of meeting a higher grading level, a complete evaluation will be undertaken and the detailed Fire Suppression Grading Schedule will be processed. This evaluation will review in detail the major protection categories noted above and will assign credits for each against established performance criteria.

These three grading elements are combined to determine the overall grading of a city's fire suppression capability. The elements are weighted as follows:

<u>Feature</u>	<u>Maximum Credit</u>
- Receiving and Handling Fire Alarms	10.0%
- Fire Department	50.0%
- Water Supply	<u>40.0%</u>
Total	100%

A city which achieves 90 to 100% credit receives a Class 1 rating. A city which achieves 0 to 9.9% credit receives a Class 10 rating. For each 10% increment range achieved the rating increases by one class. When complete, the final rating is published and can be used by individual insurance companies to set the property insurance rate charged within that city. Once established, the rating will stand for approximately 10 years at which time ISO will consider reviewing the grading and performing a new FSRs if there appears to have been substantive improvement since the last evaluation.

It should be understood that the FPRS is one important tool for documenting needed components of the city fire suppression delivery system. Furthermore, it should be recognized that an ISO/CRS city grading survey could have either a positive or negative impact on fire insurance rates in the city. A city which can improve the classification in a future ISO/CRS survey with proper preparation and planning is likely to achieve significant benefit in the form of lower insurance premium charges on protected property within the city jurisdiction. On the other hand, a city which stands with a low rating and is unable or unwilling to improve could be in a situation which stifles future economic development as the city could be bypassed as a new home for business and industry due to the high insurance premium charge within their borders.

As such, the ISO/CRS Public Protection Classification could be used as an indicator of a city's commitment to providing public fire protection services.

CURRENT ISO GRADING STATUS IN THE TOWN OF COVENTRY

The Town of Coventry currently has a Public Protection Classification of 9. The last ISO/CRS grading evaluation was performed by in 1985.

A.N. Patrizz, Associates contacted ISO/CRS directly to discuss the current classification for Coventry. The details of the discussions are presented in the following.

In the 1985 survey, ISO/CRS evaluated Coventry's fire protection delivery system to determine if it was capable of meeting the minimum requirements for a protected class (Class 9) town. Coventry, being a rural/suburban type community with a well established volunteer fire service and good capabilities relative to receiving and handling alarms (as part of the Tolland County Dispatch System) did meet the minimum requirements as noted in Attachment No. 3.

ISO/CRS did not perform any detailed evaluation beyond the basic review due to the lack of water supply in the Town. ISO/CRS's position is to defer any detailed evaluation of a town's fire protection services if there is no water supply which can be relied upon to support fire fighting operations. The basis for this is that even the best organized and equipped fire department (Fire Department Category), in spite of receiving adequate notice of a fire and responding effectively (Receiving and Handling Alarms Category), will not succeed in minimizing fire damage and confining a fire to the building of origin without an adequate water supply. ISO/CRS will not consider reevaluating Coventry until such time as significant improvement is made in the water supply capabilities available to support fire fighting operations in the built-upon areas of the town.

The problem with improving the grading beyond the Class 9 level is the lack of a fixed water supply for use in supplying fire department pumpers at the fire scene. The traditional requirement for this category is a municipal water supply system. Coventry is like many town's in the rural/suburban category which have not developed to a point where municipal water supply capability is needed and/or justified. Installing an adequate traditional water delivery system to satisfy fire protection needs only is not cost justified. Coventry's fire protection delivery system places reliance on fire department generated water supply capabilities such as tanker shuttles and direct pumping from surface water sources.

Traditionally, town's with this water supply situation would not be able to pursue ISO/CRS grading improvement. However, ISO/CRS has developed a method which can be applied in town's without a fixed water supply for which some partial Water Supply Category credit can be achieved. The method is achievable for Coventry with some planning, coordination and minimal expenditure.

Provisions of the current FSRS are designed to credit the delivery of water to a fire scene by other than conventional water mains. This means that selected property can earn a protected classification based on the town's fire protection delivery service demonstrating to ISO/CRS that there is a reliable capability to suppress a fire with the first alarm assignment. This requirement does not specify a method of supplying water for that suppression capability; it simply requires that the method of delivery meet a minimum specified ISO/CRS delivery rate.

In summary, to meet the ISO/CRS for evaluating municipalities without water mains, the minimum water supply capability criterion is the delivery of at least 250 Gallons per Minute (GPM) within five minutes of arrival of the first fire apparatus, and the continual delivery of at least 250 GPM for two hours.

Water delivery at a fire site may be achieved by any one of the following alternatives:

- By the use of tankers shuttling water from a recognized fire hydrant or a recognized suction point. This technique is referred to as "water hauling".
- By long hose lines, sometimes with relay pumpers, from a recognized fire hydrant or a recognized suction point.
- Partly from a conventional recognized water system, supplemented by a water tanker shuttle or water relay from a recognized water suction point.
- Any combination of the above that will provide the minimum of 250 GPM at the fire site for a minimum of two hours.

This method developed by ISO/CRS gives cities without water mains a mechanism to establish or improve their rating classification. Credit may now be earned for delivery of water to a fire scene by tanker or by pumper relay. Careful attention to the requirements, including those for personnel, equipment and training would allow Coventry to obtain an improved rating classification.

As stated earlier, ISO/CRS will not pursue the performance of a detailed FSRS unless there is a demonstrated water supply which can be relied upon to support fire department operations. At this stage of the improvement in the fire protection delivery system in Coventry, it is vital that the water supply capability be addressed. By taking the necessary actions to establish and document a minimum water supply capability, Coventry will then be able to receive some credit in the important category of "Water Supply" which carries a 40% weight in the overall FSRS Grading System. At the present time, Coventry receives no credit in this category and, with the deficiency in water supply, ISO/CRS will not even consider the positive aspects of the Alarm System or the Fire Department organization. By taking the initiative to establish a recognized water supply, Coventry will potentially open the door to a new ISO/CRS rating. Once the water supply capability has been established, ISO/CRS would consider reevaluating the Fire Department beyond the basic "Protection Level" which now applies.

There are several areas for improvement in the Fire Department operation which ISO/CRS would need to see to enable credit to be gained in this category. With a combination of fire protection delivery service enhancements gained by pursuing the recommendations in this report, Coventry could realize a change in its present Public Protection Classification of 9 to a classification of between 6 and 8.

RECOMMENDATIONS

Water Supply

The Town of Coventry should immediately pursue the development of a water supply capability which meets the minimum requirements for the ISO/CRS "Evaluation of Municipalities Without Water Mains".

The Town should appoint a "Water Supply Officer" who has the responsibility for working with the town fire departments and interfacing with ISO/CRS to develop the minimum ISO/CRS water supply capability. This individual could be someone involved with the town fire department(s), a municipal official or an outside consultant. The individual should be familiar with the water supply requirements and evaluation methods of ISO/CRS and National Fire Protection Association (NFPA) Standard 1231, Water Supplies for Suburban and Rural Firefighting. The individual should be familiar with fire department operations in order to develop a working plan for meeting the minimum fire water flow requirements.

Fire Department Operations

Survey all structures within the Town and determine the Needed Fire Flow using the ISO/CRS calculation methods. This survey will provide information which will be used to determine the Basic Fire Flow which is the determining factor in establishing the minimum number of Engine Companies needed in Coventry.

Develop a policy for fire response to structure fires which requires that at least two Engine Companies respond on the first alarm of fire to buildings.

Develop a Mutual-Aid policy which ensures that at least 50% of the minimum number of Engine Companies needed in Coventry (as determined by the Needed Fire Flow Survey) will always remain in town available for first alarm dispatch to town properties.

Develop automatic mutual aid response plans for buildings over 35 foot height or buildings with a Needed Fire Flow over 3500 GPM (as determined by the Needed Fire Flow Survey).

POTENTIAL BENEFITS OF PUBLIC PROTECTION CLASSIFICATION IMPROVEMENTS

To help illustrate the benefit of an improved ISO/CRS Public Protection Classification (PPC) in the Town of Coventry, A. N. Patrizz, Jr., Associates contacted several insurance carriers and agents in the area. The purpose of our inquiries was to try to obtain some idea of the property insurance premium reduction which might be achieved if the ISO/CRS Grading classification for the Town of Coventry was improved from the existing Grade 9 level to something less.

The insurance industry is set up to provide property insurance coverage against the peril of fire in both the residential and commercial/industrial sectors. Within the residential insurance markets, the ISO rating is more widely utilized. In the commercial and industrial markets, especially the high value property situations, the ISO grade is used to a lesser degree or not at all. In these markets, an insurance carrier is likely to have developed their own methodology for determining property loss potential based on features other than the available fire protection capability of the public fire department delivery service. These features include the building construction, size, height, fire exposures, occupancy, special hazards and private fire protection features of a specific risk.

Within the residential insurance market, insurance companies have the option of using the ISO/CRS Public Protection Classification as a quick reference point of the relative risk of insuring property in a given town. In general, the higher the number rating, the higher the relative risk of suffering losses in that town. As the classification goes down toward the best rating of Class 1, the risk of loss is considered to go down as well. Risk assumption directly relates to premium level. The higher the risk, the higher the premium charged to a customer and vice versa. From this it is easy to see that there is an inherent benefit to achieving a lower (or better) ISO/CRS Public Property Classification.

In general terms, an improvement from a ISO Class 9 to Class 5 through 8 (the range of improvement Coventry could be expected to achieve) could result in up to a 30% rate reduction for residential fire insurance. This percentage is an average number used for discussion purposes within the insurance industry.

To verify if this would be true for property in Coventry, we solicited information directly from local insurance agents and insurance companies on the current cost of a typical Homeowners Insurance Policy on a \$150,000 property being insured in Coventry. The results we found were interesting and did indicate that significant benefit would be realized with lower ISO Class applying to property in town. Four insurance companies were solicited and the following information obtained:

