

**FINAL REPORT**

**COMPREHENSIVE REVIEW  
OF WAKE COUNTY FIRE PROTECTION**



**Submitted to:**

**Board of County Commissioners  
Wake County, North Carolina**

**September 28, 1994**



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**Prepared by:**

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## **EXECUTIVE SUMMARY**

The delivery of effective fire protection and public safety programs is an important responsibility of local government. In 1993, the Board of Commissioners of Wake County recognized the need for a comprehensive study of the County's fire protection services and selected TriData Corporation of Arlington, Virginia to conduct the project. This report presents the findings and recommendations that were developed by TriData, an international consulting firm which specializes in public fire protection and emergency medical services. TriData has conducted similar studies for counties and municipalities throughout the United States and Canada.

The major focus of this study is directed toward the delivery of fire services in unincorporated areas, which are directly under the jurisdiction of Wake County. The intimate relationship between incorporated and unincorporated areas and the changing boundary lines make it unrealistic to consider the protection of unincorporated areas without also considering the needs of the incorporated areas. It is also evident that some level of joint planning and coordination of fire services among all of the responsible jurisdictions will be essential for the future. There is a common desire among all of the jurisdictions to strive toward providing higher levels of service in all areas.

The study examined all aspects of the delivery of public fire protection services in Wake County. The existing fire protection organizations were observed to be doing a reasonably good job, but the overall system involves too many small fire departments, each attempting to operate as a "stand alone" organization. There is a countywide mutual aid network, however, the level of coordination among departments could be improved. There are major variations in the resources that are available to each department and the level of service that each is able to provide. As the County

continues to grow, the demand for more capable, consistent, and reliable services will have to be addressed.

The report recommends some major changes in the organization and operation of fire departments, which should be based on a master plan and a cooperative agreement among all of the political jurisdictions that are responsible for providing fire protection. The recommendations include a significant reduction in the number of separate fire departments and the conversion of several existing departments from rural to municipal organizations. There are additional recommendations relating to increased support that the County should provide to the fire departments to coordinate and unify their efforts. The coordination and unification recommendations are particularly significant as a means of providing effective and efficient services.

The recommendations are based on a premise that volunteer organizations can and should continue to provide the backbone of the emergency response network in most of Wake County. The economic benefits of a volunteer system and the existing system of capable operating volunteer fire departments justify these recommendations. There will have to be an expanding component of career personnel to supplement the volunteers and provide services that volunteers will not be able to provide. Wake County should place an emphasis on programs that support and enhance the volunteer system. The County should continue to provide training and assist with the recruiting and retention of volunteers.

The existing career personnel and any new career personnel in the fire departments should be expected to provide a full range of services, including fire suppression, emergency medical and rescue support, public fire safety education, fire prevention inspections and code enforcement. The code enforcement functions cannot be performed by employees of non-governmental fire departments, however, they can be performed by personnel who are Wake County employees or employees of an

incorporated town or city. The fire prevention programs should be managed and coordinated by the County Fire Marshal.

The report also recommends the implementation of risk reduction strategies that could have a significant impact on the number and severity of fires in the future, saving lives and property much more effectively than is feasible through the best fire suppression efforts.

Additional recommendations address the need for a closer relationship between the fire departments and the EMS/rescue squads that provide emergency medical and rescue services in Wake County. The current missions of fire departments and rescue squads are parallel in many respects. The career personnel who are needed to supplement the volunteer fire departments can also support the mission of rescue squads.

Several of the fire departments have developed technical rescue capabilities, particularly extrication of trapped patients from automobile accidents, while the rescue squads have tended to focus more on patient treatment and ambulance transportation. The fire service should officially assume the responsibility for technical rescue operations and continue to develop these capabilities.

Several of the fire departments have initiated "first responder" programs to provide rapid response to EMS patients, working with the Wake County Department of Emergency Medical Services. The first responder programs that have been initiated on a district-by-district basis should be expanded to a countywide plan. All of the fire departments should have the capability to deliver first responder medical care, as a minimum, and basic life support (BLS) with automatic defibrillation is recommended.

The report also encourages continued coordination between the fire service and Wake County's Emergency Management Office to increase the level of preparation and

planning for major emergency situations. Emergency Management is doing an outstanding job with planning and the fire departments should continue to take advantage of this valuable assistance in planning for major emergency operations.

## **Current Situation**

The current fire protection situation in Wake County can be described as complex and moving in several different directions at the same time. Fire protection is provided by a mixture of 24<sup>1</sup> municipal, rural, and combined municipal/rural fire departments. The responsibility for fire protection is divided among the 12 incorporated cities and towns and 23 fire districts that have been established in the unincorporated areas of the County. A property tax is levied in each fire district to support the fire department that serves the area. Wake County contracts with an individual fire department or municipality to serve each fire district and turns the tax revenues from the district over to the designated fire department. There are some unincorporated areas that are not included in any fire tax district and do not pay taxes to support a fire department, however, all areas of the county are within the response district of a fire department.

Only three of the incorporated communities have their own municipal fire departments, while one additional town is in the process of transforming a rural department to a municipal department. Most of the incorporated communities contract with rural or combined rural/municipal fire departments to provide fire protection.

The Wake County Board of Commissioners oversees all of the fire districts and the County Fire Marshal is assigned to coordinate the County's relationship with the individual fire departments that serve the districts. The Fire Marshal is also responsible for fire prevention and investigation functions in the unincorporated areas and contracts

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<sup>1</sup> This does not include the career fire department which provides aircraft rescue and fire fighting (ARFF) services to RDU airport. This special purpose fire department is operated by the RDU Airport Authority.

to provide these services to some of the incorporated towns. The County also operates a Fire Training Academy, which serves all of the fire departments in the County, and contracts with the City of Raleigh to provide emergency 9-1-1 dispatch services for the fire districts.

Only the cities of Raleigh and Cary are served by full-time career fire departments; 22 volunteer fire departments operating from 29 fire stations protect the remainder of Wake County. Some parts of the County are served by well-funded and well-equipped volunteer fire departments. The population and the commercial and industrial development of the County are increasing, placing new and significantly greater service demands on some of the volunteer departments, causing several of the volunteer fire departments to begin utilizing career personnel for daytime coverage. Approximately 70 career personnel have been hired to supplement the 700 plus volunteers in the County. The growth has increased the tax revenues of the districts where the most rapid growth is occurring, which is funding the added expenditures to pay for career personnel.

Several of the municipalities have annexed areas that were previously part of the rural fire districts, which has reduced the service areas and tax bases of those districts. When an area is annexed, the municipality may contract with the same fire department to serve the area, or contract with a different department, or provide the service through a municipal department. The annexations have left a few of the volunteer fire departments with very fragmented areas to serve and severely reduced their revenues.

## **Future Direction**

The most significant contribution to the objective of providing effective and efficient fire protection and emergency services to all parts of Wake County would be the development of a single master plan to unify the efforts of all jurisdictions and

organizations toward a set of shared goals and objectives. This can be accomplished if all of the responsible officials recognize the value of coordination and cooperation, and the contributions they can make to the effective delivery of emergency services. The master plan should define the services that will be provided and the approaches that will be used to establish performance goals and objectives. All of the jurisdictional entities and individual agencies should agree to work together toward those common goals.

The roles of the County, the individual municipalities, and the fire departments in the overall fire protection and emergency service system need to be better defined and officially adopted within the planning process. This should result in a joint agreement, linking the County and all of the incorporated municipalities to the goals and objectives. The master plan should also define the structures, relationships, and decision making processes that need to be incorporated in the agreement. This spirit of cooperation among jurisdictions and service providers should direct the overall mission of fire protection in Wake County in the future.

The agreement should facilitate unencumbered mutual aid and automatic response agreements (closest station to an emergency always responds) among all of the participants and ensure that all areas are served. Continuing cooperation and coordination among Fire Services, Emergency Medical Services, and Emergency Management should support the development of an efficient and capable emergency response system for Wake County. The fire service should be directly involved in the support of the EMS/rescue system on a consistent and coordinated basis throughout the County.

The plan should identify fire prevention and public fire safety education as equal priorities with fire suppression. The long term safety and welfare of the County's residents can be provided more effectively and efficiently through a proactive approach to fire prevention and risk reduction than through fire suppression. Fire suppression and

effective response to other types of emergencies will continue to be essential services with a very high priority for the County and the municipalities.

*Fire Departments* -- An efficient and well coordinated combination of municipal and rural fire departments should be able to meet the needs of Wake County and the incorporated cities and towns, using a combination of career and volunteer personnel. The number of fire departments (organizations - not stations) should be reduced and their service levels should be defined with specific performance objectives for suburban areas and for rural areas.

The concept of a single countywide fire department could be considered, however, this does not appear to be the best approach for Wake County at the present time. Several of the rural fire departments should become municipal fire departments, while continuing to function as primarily volunteer organizations within the countywide system model. As municipal fire departments, the respective towns would contract with Wake County to serve the adjacent unincorporated areas. It is difficult to maintain strong volunteer participation within a very large organization.

Wake County has recently reestablished written contracts with the individual fire departments that protect unincorporated areas. These contracts should be increased in scope and in the responsibility they place on the fire departments to provide consistent levels of service and to adopt countywide standard operating procedures. The contracts should also define the fiscal relationships and the services that the County will provide to support the fire departments. Realistic and consistent training standards and qualifications for different positions should be adopted and the training should be provided to support the attainment of these objectives. The system of contracts should address all forms of relationships among the County, the municipalities, and the rural fire departments that are necessary to provide protection for all areas, however the operational procedures and performance standards should be consistent countywide.

The contractual relationships should require the fire departments to cooperate on issues such as joint planning of fire station locations and apparatus purchases, training programs, training requirements for different ranks, standard operating procedures, and incident management procedures. Joint purchasing of apparatus, equipment and supplies should be strongly encouraged to reduce costs for all of the departments.

## **County Fire Marshal**

The responsibilities assigned to the County Fire Marshal have increased rapidly in the past three years. The Fire Marshal's Office does not have the necessary resources to perform its full range of code enforcement inspections and other functions that are required at the present time. To meet immediate needs, one or two additional code enforcement personnel are needed, however, in the longer term a substantial part of the code enforcement workload should be turned over to the local fire departments as they become better established with career personnel. The expansion of the County Fire Marshal's staff should be directed toward coordinating and supporting the efforts of the individual fire departments and performing those functions that are not feasible to delegate.

The long range plan should involve a cooperative agreement among the county and the incorporated towns. The County Fire Marshal's staff would provide the staff expertise and program support, while fire fighters would perform many of the routine inspections.

*Fire Administrator* -- The duties of the County Fire Marshal and the Fire Marshal's Office have been expanded far beyond the traditional role as the primary enforcer of fire related laws and investigator of fire origin and cause. The Fire Marshal is actually functioning as a County Fire Administrator and the Board of County

Commissioners should restructure the position and the organization to reflect the full scope of duties and responsibilities which have been assigned to the office.

The County Fire Administrator would report directly to the Assistant County Manager and would work closely with the Fire Advisory Board. The Fire Marshal should report to the Fire Administrator and would direct fire prevention, code enforcement and public fire safety education programs.

This structure would also include:

- A Human Resources Manager to support all of the functions related to staffing, including the recruiting and retention of volunteers and the management of full-time County employees. The County Fire Training Coordinator would report to the Human Resources manager.
  
- A Support Services Manager, who would be responsible for the budget and administrative support functions. The Fire Administrator's responsibilities would include planning and coordination of emergency services functions among the individual fire departments that would actually deliver the majority of the services. A staff planner position should report directly to the Fire Administrator.

***Fire Advisory Board*** -- A County Fire Advisory Board (or Fire and Rescue Advisory Board) should be established as an oversight and advisory body. The Fire Advisory Board would submit a recommended consolidated budget for fire service operations and capital expenditures to the Board of County Commissioners. It should also be the approving authority for policies and procedures involving the fire departments and would make the recommendation to the County Commissioners on issues such as which fire department should be authorized to build a new station to cover

an unprotected area, which types of specialized apparatus should be purchased, and where career personnel are needed.

The Fire Advisory Board should have five to seven members who should be appointed by the Board of County Commissioners. The Board members should include one of the County Commissioners, and the Fire Administrator's Office should support the administrative functions of the Fire Advisory Board. The Fire Administrator could be a voting or non-voting member of the Fire Advisory Board.

### **Fire District Restructuring**

The report recommends the consolidation of the County's 23 existing fire tax districts into one tax district, which would include the unincorporated areas that are not currently included in a fire district. (If the single district plan is not adopted, the districts should be reconfigured into a smaller number of units.)

The cities of Raleigh and Cary should be encouraged to expand their service delivery areas for fire protection and other emergency services to include all of the surrounding unincorporated areas where their municipal career fire departments can respond most quickly. This would form a band around the two cities to encompass all of the fragmented areas that have been created by annexations. The main objective of this plan would be to provide the primary emergency response to these areas from the closest available fire station(s). If a single fire district plan is not adopted, the unincorporated areas that would be served by the two major fire departments should be consolidated as two fire districts; an expansion of the Raleigh Suburban Fire District and a new Cary Suburban Fire District.

The consolidation of all remaining unincorporated areas into one fire district and the "levelling" of the fire tax rate would be the best overall approach. Under this model

all of the fire tax revenue would be distributed from one account based on countywide priorities, needs, and following the recommendations of the Fire Advisory Board. (The Raleigh and Cary suburban areas could be included or excluded.) The current system perpetuates an imbalanced distribution of resources between districts with the low valuations and high tax rates and high valuation districts with lower tax rates.

The availability of an effective functional fire department is a benefit to the entire population, whether or not the services are ever used. The major benefit of a single district plan is that it allows all needs throughout the County to be weighed and prioritized on an equal basis. Moving from the existing system to a single district plan is likely to encounter resistance, because taxpayers and service providers are likely to be suspicious that revenues from their area will be used to subsidize some other area. This concern can never be eliminated and it is very difficult to define where the equitability line should be drawn in any situation, however, the countywide tax system is used to fund most other services. The existing system of 23 fire districts is far too many to be managed efficiently and is very cumbersome to keep up to date with changing circumstances.

An alternative to the single district plan would be to reduce the number of districts by abolishing those that are no longer viable as independent districts and merging or restructuring the unincorporated areas as larger districts. The "new" districts should be defined by logical geographic areas and could also be defined as high and low service level areas according to the density of development and the response capabilities that the fire departments can provide.

Where a rural and a municipal fire department currently operate in parallel, they should be merged into one organization to serve both incorporated and unincorporated areas. The single department could be a municipal fire department or a rural fire department.

The overall objective of this part of the plan should be to reduce the number of individual organizations that are responsible for delivering fire and emergency services and to create larger organizations that can function more effectively and efficiently. The Master Plan Agreement should also establish the policy that the closest available responder(s) will always be dispatched to any fire or other emergency, regardless of the political jurisdiction. This would eliminate a problem in the existing system, where fire fighters from one jurisdiction must drive past another fire department's station en route to a fire in their own district.

### **Regional Planning and Coordination**

All of the responsible agencies and jurisdictions in Wake County should work together to plan fire station locations, apparatus purchases and other capital improvements to reduce duplication and ensure that needs are addressed in an efficient and timely manner. A regional planning and coordination system is needed to ensure that all needs are addressed and the limited available resources are utilized efficiently. The recommended Master Plan agreement should extend this concept to the incorporated municipalities as well as the unincorporated areas.

Similarly, the individual fire departments should operate as one combined system for response to emergency incidents. The fire departments should all work together on a routine basis. The response to any emergency situation should automatically bring the closest available resources that meet the needs of the situation, without regard to district lines. This "seamless" approach would require a much higher level of coordination and standardized training than is currently in place. The coordination and training support should be provided by the County Fire Administrator's Office.

The citizens of Wake County should be able to expect a standard and consistent level of performance and fully integrated operations from whichever fire department or

departments respond to their emergency incident. The approach to every emergency or non-emergency service should be consistent. The same should apply to specialized resources, such as Hazardous Materials and Technical Rescue Response Teams.

## **Fire Prevention**

There is a new emphasis on fire prevention in all parts of North Carolina, as a result of state legislation mandating the enforcement of a State Fire Code in commercial occupancies. State legislation requires the County and the municipalities to conduct inspections and to enforce the Fire Code on a mandatory schedule, depending on the occupancy classification. The Wake County Fire Marshal has been working quickly and effectively to establish and implement the necessary enforcement programs and record keeping systems.

In many cases the Fire Code is being applied for the first time to existing occupancies and must address an accumulation of previously unidentified hazards. This should result in a significant reduction in obvious fire risk problems in a relatively short period of time and a continuing trend toward risk reduction. The occupancies in the County can be divided among those that were built in the past with lower fire protection standards and those that have been built to meet current standards. The current prevention efforts will reduce the gap, but cannot be expected to eliminate all of the differential between these categories.

The most efficient element of fire protection would be to ensure that every residential occupancy in the County is provided with functional smoke alarms. Smoke detector promotion and installation programs should be a major emphasis in the areas of fire prevention and public fire safety education programs.

One of the major objectives for the future should be to try to limit the level of fire risk in new construction to the lowest possible level. This can be accomplished very effectively in an area that is expecting major growth over the next decade by requiring the installation of automatic sprinklers and other forms of built-in fire protection in new construction. This approach has effectively limited growth in the demand for additional fire protection in areas where it has been applied.

The lack of good data for past years makes it difficult to provide a good analysis of fire department performance and fire experience trends for the County. Data collection and analysis should be provided by the County Fire Administrator. New data collection systems have recently been developed by the County Fire Marshal and the individual fire departments to track fire experience and loss data and maintain fire response records. These systems are needed to support the analysis of fire experience in Wake County, however the existing data is incomplete and unreliable. The new systems should significantly improve the ability of the County to implement plans and programs in the future, based on good experience data.