

rural department that would eventually operate two existing stations, currently Garner #2 and Fairview #2 and a relocated Swift Creek station.

Cary's existing and planned stations will be able to cover the western portion of the Swift Creek Fire District within the next three to five years. Much of the Swift Creek area has already been annexed by Cary and another portion could be covered more quickly by the Fairview Fire Department. The existing Swift Creek fire station could be moved to the east to cover the area that is expected to remain unincorporated.

Falls

The district served by the Falls Volunteer Fire Department is shrinking due to annexations and a large portion of the area will be protected by the Raleigh Fire Department. There will be a residual unincorporated area to protect which will require a fire station to the west of Wake Forest. The existing station is poorly located and inadequate for long term use. The Falls Fire Department can be absorbed into a Wake Forest Municipal Fire Department with a new station to be built between the Town of Wake Forest and the Stony Hill area.

Fairgrounds, Yrac, Swift Creek

The Fairgrounds Fire Department serves an unusual area, much of which is state-owned property and partly within the Raleigh city limits. It is questionable to have a small volunteer fire department protecting large and valuable public facilities that are within or immediately adjacent to a major city with a career fire department.

Most of the unincorporated area in the Fairgrounds district lies between Raleigh and Cary and could be served by one or the other of the two cities. If the recommendation is adopted to have Raleigh and Cary protect the unincorporated areas that are within reasonable response distance of their stations. There would be no need for this fire department to exist to provide primary coverage.

The State of North Carolina contributes most of the funds that support the Fairgrounds Fire Department, however, the State would not pay a city to provide the same service. This situation needs to be resolved in developing a plan for the area.

Most of the area previously served by the Yrac Volunteer Fire Department has already been annexed by the City of Cary, leaving only isolated fragments of unincorporated territory, surrounded by incorporated areas. This situation should be addressed immediately by transferring the primary responsibility for this area to the City of Cary Fire Department.

This situation leaves two functional existing volunteer fire departments in the same general area without a mission (Fairgrounds and Yrac). The existing volunteer organizations should be recognized as valuable resources; they could be disbanded and the members could simply be encouraged to join existing volunteer organizations in other areas of the county, however this would not retain the value of the existing organizations.

It should be possible to define a modified role for these organizations that will be valuable to the system and sufficiently rewarding to the members to maintain their participation and take advantage of their training and skills. The Yrac and Swift Creek organizations could be absorbed as a back-up volunteer force for the Cary Fire Department, to provide supplementary personnel to report to working fires or to place additional units in service when needed to respond to an incident or to cover empty stations. A role could be established for the Fairgrounds organization to work in a similar role with Raleigh and/or Cary or as a countywide resource organization.

The mission of these two volunteer organizations could also be transformed to provide special services, such as operating special rescue units, a command post vehicle, a large diameter hose unit, lighting, air supply, and other special units.

The best approach to this problem could be to form a task force with members of both departments, along with personnel from Cary, Raleigh and other county departments, to consider the alternatives, and to propose a new role for the organizations.

Recommendation

Combine the rural fire departments to create a smaller number of stronger organizations to serve contiguous unincorporated areas. Restructure the fire districts to coincide with these new organizations or combine all of the unincorporated areas of the County into a single fire district. New response areas should be defined so that the closest station always responds to an emergency.

Future Structure of Fire Marshal's Office

The countywide fire protection system could be directed by a County Fire Chief or managed by a County Fire Administrator. The designation of a County Fire Chief implies that the individual would be expected to manage and direct the system and would be accountable for all aspects of system performance. The term County Fire Administrator implies that the individual is primarily a facilitator, managing services that support and contribute to the system, but not operationally accountable for the service delivery aspects of the system.

The study team believes that the Fire Administrator model fits the needs and desires of Wake County more appropriately than a Fire Chief model. The recommended system should be planned as a group of separate fire departments that have recognized the values of coordination and cooperation in providing efficient and effective service.

County Fire Administrator -- A County Fire Administrator is needed in order for the new countywide fire protection network to function effectively. The Administrator would function as a facilitator and link among the County, the Fire Advisory Board, the fire departments and the municipalities. The primary role of the Administrator would be to support the countywide system that provides fire protection services in Wake County and to ensure that the system meets the needs of the County and incorporated communities. This includes monitoring how well the individual departments meet performance objectives and standards.

The Administrator would not have Managerial or operational authority over any of the chiefs of the local fire departments, as a County Fire Chief system would have under a more centralized system. The Fire Administrator's functions would be more involved with leading the countywide coordination efforts. The Fire Administrator should be responsible for maintaining accountability within the system and advising the

Fire Advisory Board and the appropriate municipal and County officials when a department does not meet performance standards. The Fire Administrator would also be required to keep the Board of County Commissioners informed about the state of fire protection in Wake County, communicating any needs or problems.

Within the Fire Administrator's Office there should be three major divisions of duties: Fire Marshal, Support Services, and Human Services (Figure 3-1).

Fire Marshal -- The Fire Marshal would be responsible for the code enforcement, fire cause investigations, and public fire safety education programs. The fire prevention specialists in this section would manage the programs and provide the technical expertise. The career and volunteer fire fighters at the station level would assist with this mission.

Support Services -- This division would be responsible for providing services to support the operations of the rural and municipal fire departments in the County. These functions could include purchasing, coordination of apparatus and equipment maintenance, operation and upgrading of the radio communications system, and similar functions. This division would also provide administrative assistance and budget support, particularly for the volunteer departments that have volunteer administrators.

Human Services -- Human Services would assist with recruiting and retention programs and coordinate the training for volunteer and career personnel across the County. It would also manage the system to ensure that all personnel (career and volunteer) meet minimum training and performance standards.

Planner -- There should also be a position for a planner, reporting directly to the Fire Administrator. The planner should analyze emergency activity trends, determine

station location needs, plan the protection for growing areas, manage the data system, and conduct other projects that relate to the future needs for the County.

This Fire Administrator system of organization is successfully employed by several departments across the country. Its success, however, depends on accountability of all departments involved since no single person is "in charge" of the system. The study team cannot emphasize enough the importance of having all of the parties within the system hold one another accountable to meet the adopted performance standards.

Recommendation

Restructure the Fire Marshal's Office into a Department of Fire Protection Services, headed by a County Fire Administrator. The primary role of this Department would be to coordinate and support the fire departments. The Fire Administrator should be supported by a Planner and three divisions: Fire Marshal, Support Services, and Human Resources.

Proposed Organization
Wake County Department
of Fire Protection

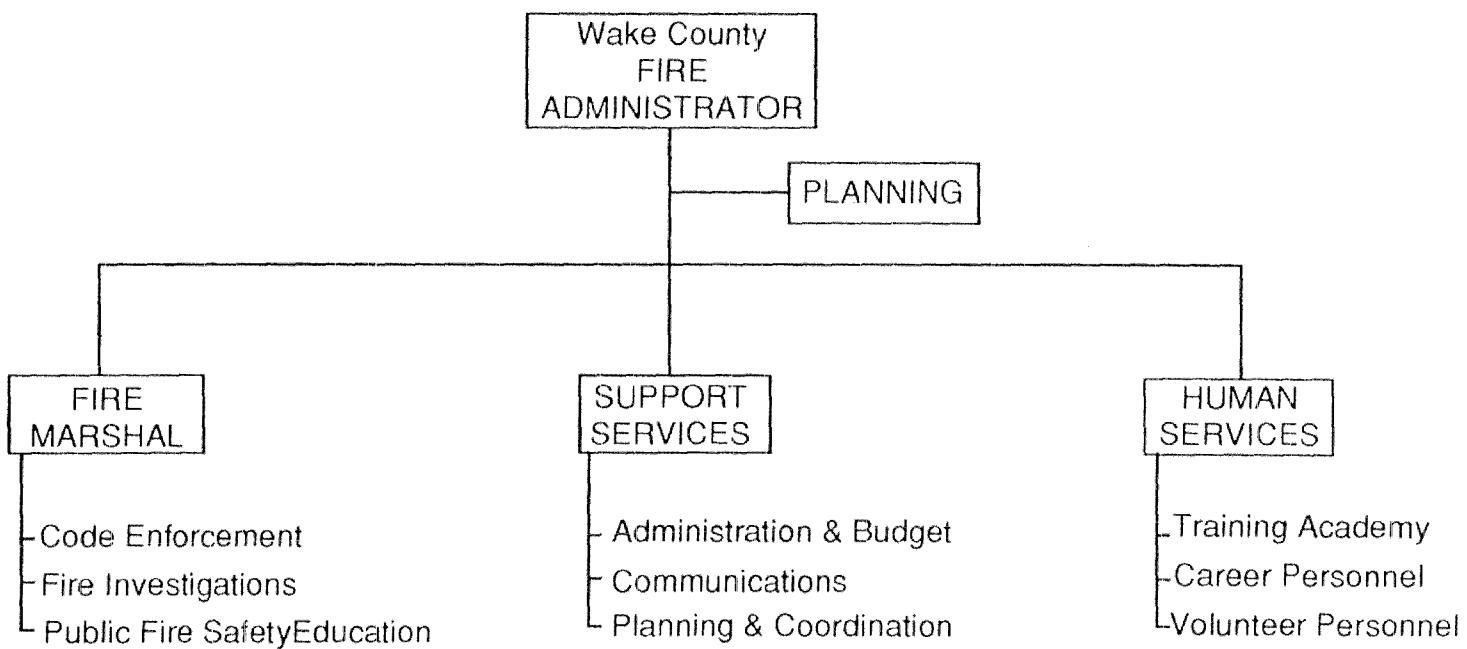


Figure 3-1

Consolidated Fire Tax and Response District

The unincorporated areas of Wake County should be consolidated into a single fire district with a uniform tax rate. The unincorporated areas are currently divided among 23 individual fire districts, which are served by 22 different fire departments (21 volunteer and 1 municipal). A different property tax rate is approved by the Board of County Commissioners each year for each district and the revenue that is collected is turned over to the fire department that is contracted to serve the area. Some areas within Wake County are not included in any of the fire tax districts and do not contribute to the cost of providing fire protection, however, all areas are included in the response area of one of the fire departments.

Imbalance -- There is a major imbalance in the existing fire district taxation system. Each rural fire department is supported by an individual tax district and its revenue is primarily determined by the total property valuation in that district. This system provides much more revenue to the fire departments serving areas that are more densely developed and have higher property valuations. The fire departments in the higher revenue areas have more apparatus, which is generally newer and more sophisticated, more and larger fire stations, and more career employees than the fire departments protecting areas with smaller tax bases.

Property valuations reflect only one dimension of the demand for public fire protection services. Fire departments do not protect only buildings and contents, which are the primary constituents of the property tax base; they also protect people and their homes (without regard to their value), undeveloped areas, vehicles, and all kinds of things that do not appear on the tax rolls. An area that has a few high value commercial properties can generate much more revenue than an area that is primarily residential and agricultural and can usually justify a higher level of fire protection, however, it is in the best interest of all parties to provide an appropriate level of fire protection to all

areas. The areas that are currently beyond the 5 mile range of tax districts should contribute to the cost of the protection they currently receive.

Some of the sparsely developed areas do not generate enough revenue to support minimal fire departments, even with their tax rates set at the highest allowable level (10 cents per \$100). The fire departments in these areas have to supplement their revenues with fund-raising events just to stay in business. The fire tax rates in the high value districts are generally lower than the rates in lower valuation areas, while the total revenue is much greater.

Level of Service -- It can be argued that the individual fire districts provide the opportunity for the property owners in each area to decide how much they want to spend on fire protection, based on the level of service they desire. The actual practice, however, is that each fire department prepares and submits a budget based on the revenue it desires for the following year and the amount it can expect from its tax base. The Board of County Commissioners then sets the tax rate for each district, based on the budget request and the recommendation of the County Manager.

Once the tax rate is approved by the County, the revenue goes to the fire departments with few restrictions on how the funds can be spent. There is no functional process for the local taxpayers to influence the tax rate or the level of service that is expected and very little accountability for the expenditure of funds or the level of service. The first County-required audits have just been completed for FY 93-94. The contracts that have been established with the individual departments provide the foundation for establishing a higher level of accountability in a more performance based system.

The countywide system should be equitable, in the sense that recipients of the equivalent levels of service should pay an equivalent price. While it not possible to measure cost and benefit ratios for every individual taxpayer, the system should reflect a reasonable balance between the taxes that support the fire service and the level of

service that is provided. The existing system is inequitable, because the areas with the highest tax rates tend to have the lowest service levels (and vice versa). The tax rate must be set at the high end of the scale in the sparsely developed areas to generate enough revenue to operate. In high valuation areas, the needed revenue can be obtained with a lower tax rate.

Some of the volunteer departments also conduct their own fund raising activities, to supplement the tax revenues. Fund-raising events are a necessity for the volunteer fire departments that do not receive sufficient tax revenues to cover their operating costs.

The rural fire departments that service incorporated areas also receive funding from the municipal budgets, however this is not necessarily paid at an equivalent rate when compared with properties in the surrounding unincorporated area. In a coordinated countywide system it would be desirable to have properties in incorporated and unincorporated areas taxed at an equivalent rate for fire protection. This would have to be negotiated between the County and the municipalities.)

The areas that are not included within an existing fire tax district should be included in a consolidated tax district and the level of service to these areas should be improved within a short time period.

Service Areas -- The fire districts do not necessarily reflect the most appropriate response area for each rural department. The districts were originally established on the basis of a four mile response distance from each volunteer station and each district is closely associated with a particular station or fire department. The districts were later increased to five mile response areas, the maximum recognized for fire insurance premium reductions, and the districts were split approximately half way between stations when adjacent five mile areas overlapped. The split points were agreed upon by the fire chiefs and are not necessarily at the mid-points between fire stations. Since the last major realignment, some of the rural fire departments have built second stations which are

close to the edges of their districts, however, the tax districts and response areas have not been readjusted.

Several of the districts have been reduced by the annexation of portions of their areas into the incorporated cities and towns. Most of the towns contract with the same fire department to serve areas after they are annexed, however the Raleigh and Cary fire departments protect the areas that are annexed by the cities. Some areas have been annexed by towns that contract with a different fire department to provide the service¹.

The consolidation of all 23 existing fire tax districts into one is not essential, however, it would result in a much less complicated system and provide more discretionary power to the Board of County Commissioners to distribute the funds to address identified needs and priorities.

Tax Rates -- The existing fire district tax rates range from 6 cents to a maximum allowable rate of 10 cents per hundred dollars assessed valuation. The tax rate that is approved for each fire district is based on a budget submitted by the contracted fire department. The revenues for individual districts range from less than \$100,000 to more than \$500,000 because of the tremendous variations in the assessed valuation of the properties in the districts.

As noted in the previous section, the tax rate must be set higher in less developed areas to obtain needed revenues, while the tax base in highly developed areas generate more than adequate revenues with lower tax rates. The total tax levy from the unincorporated areas for the current year is approximately \$4.5 million; the same amount could be derived from a countywide rate of approximately 7.5 cents per hundred dollars assessed valuation.

¹ The fire districts were established to support individual rural fire departments, however it is theoretically up to the Board of County Commissioners to decide each year which particular fire department should be contracted to serve each fire district. This option has never been seriously considered.

A small upward adjustment in the countywide tax rate could provide the funds that will be needed for the capital improvement projects that have been identified. A uniform tax rate of 10 cents would generate more than \$6 million from the unincorporated areas. Changing to a uniform rate would have a minor impact on any individual taxpayer and would expand the tax base to include the areas that are currently outside the districts.

Recommendation

Consolidate the 23 fire service districts into one countywide district which would have one tax rate and provide a more equitable cost for fire protection. A uniform tax rate of 10 cents per \$100 of assessed valuation is recommended for the initial period.

Allocation of Funds -- The Fire Advisory Board should advise the Board of County Commissioners on the appropriate allocation of funds to the fire departments. The majority of the allocation should come from the revenue produced by the primary service area of the fire department, however a significant portion should be set aside for capital expenditures and discretionary allocation within the overall system according to countywide priorities and objectives.

Funds that are allocated to individual volunteer corporations should not become the "property" of the corporations. Future contracts between the County and the volunteer corporations should stipulate that equipment and property purchased using County tax funds would revert back to the County should the volunteer corporation close. All future capital expenditures that are funded with tax revenues should become County property.

As more responsibility is assumed by the County for providing shared support services and the countywide approach is moved in the direction of a "seamless emergency response system," it is necessary to provide some redistribution of the revenue to reduce

the gross imbalance. There should still be a larger proportion of the revenue directed toward the higher valuation areas than toward the lower valuation areas.

One of the principal advantages of forming a single tax district is to allow the total fire tax revenue from the unincorporated areas to be distributed to meet the overall needs of the County. The distribution formula should be worked out by the Fire Board and recommended to the Board of County Commissioners. The municipalities would also have to be involved in this process, as they would be partners with the County in the overall system.

A conceptual example of a distribution formula could be:

50% to directly support the operations of the Fire Departments based on their areas of primary responsibility for the area

20% for redistribution according to the needs of the individual fire departments

10% for Capital Expenditures (Countywide)

10% to support the functions of the County Department of Fire Protection Services.

5% for apparatus and equipment replacement reserve

5% for special projects

Note: This formula is presented as an example for discussion purposes only. It would be essential to have all of the parties participate in a detailed discussion of the items that should be included in each area and the individual and overall needs of the service providers.

Recommendation

The Fire Advisory Board should evaluate and prioritize budget requests on a Countywide basis and present the Board of County Commissioners with a recommended consolidated annual budget and revenue allocation plan.

All apparatus and facilities obtained through future capital expenditures which use tax revenues should become County property.

Establishing Performance Standards

The current standard contract between Wake County and the rural volunteer departments does not establish minimum performance standards for organizations, individuals, or ranks. Although response time and numbers are referenced, there is no performance evaluation program in place to measure a department's strengths or weaknesses. Twenty-one individual fire departments are providing 21 separate fire protection deliverables to 22 separate districts. The performance of the overall system can be improved by bringing the performance of the individual organizations up to the level of the strongest departments and coordinating their efforts to work together as one service delivery system.

The fire departments currently determine their own levels of performance. They tend to have adopted a stand-alone posture with minimal reliance on automatic mutual aid. They have their own entry and training programs, and there are no consistent requirements that could be utilized to determine individual or department performance capabilities throughout the county. A countywide set of performance objectives and standards should be the foundation for the restructuring that must occur to maintain and strengthen the volunteer system. The County must realize that the success of performance standards hinges on the extent to which organizations are held accountable to maintain the standards. Valid performance standards within the contracts with volunteer organizations should be used to plan and measure the level of fire protection in Wake County. (Appendix C contains a sample of contractual performance standards).

Service Level Objectives through Insurance Ratings -- The minimum short-term service level objective should be to provide "Level 9S" service to every part of the county. Higher levels of service should be provided in more developed areas:

At least Class 3 service and preferably Class 2 in Cary, Raleigh, and (in the future) Morrisville.

At least Class 5 and potentially Class 4 in incorporated towns and highly developed areas (where hydrants are provided).

At least Class 8 or better in moderately developed unincorporated areas.

(Additional discussion of these objectives can be found in chapter four under the heading "Insurance Protection Classifications.")

Recommendation

Establish a Class 9S rating as the minimum service level for the entire County for the immediate future. Higher service levels should be provided in developed areas and gradually implemented in all areas.

Basic Fire Suppression Response Capability -- The classification system that is used by the insurance industry does not consider the entire role of a modern fire department. The response capability of the fire departments should be measured in terms of the ability to respond to a given location with an adequate number of properly trained personnel and the appropriate apparatus and equipment to conduct a standard interior fire attack operation.

The performance standard should ultimately be based on the capabilities of all the individual fire departments working together as a countywide system, using an automatic mutual aid response plan and a single set of standard operating procedures. It should also consider the ability to respond to rescue incidents, medical emergencies, and other types of incidents that can be anticipated. The standards for rural fire protection do not contemplate fast response. Often, rural response times are too long to plan to conduct effective interior search and rescue or fire suppression for most structure fires.

Recommendation

Establish a more reasonable basic standard for initial response that would include:

- *At least one attack unit with at least four trained and equipped personnel at the scene within 5 minutes, and*
- *A full structure fire response team of 12 to 15 personnel assembled on the scene within 8 to 10 minutes.*
- *A full response team should have the capability to establish and maintain a fire attack flow of at least 350 gallons per minute by the 10 minute mark, while conducting interior search and rescue and fire suppression operations.*

These objectives are reasonable in the one to five year time period for the areas where fire stations already exist or are planned - generally in and around the built-up towns. The first stage of working toward this set of objectives would be have at least one crew of four personnel on duty or ready to respond from each station at all times. This crew could include a mixture of career and volunteer personnel, as long as they can respond without delay, who are trained to work together as a team, and follow standard operating procedures.

There are major cost advantages if the staffing can be provided with volunteers at night and on weekends. Facilities for volunteer personnel to "sleep-in" at the fire stations could allow for the immediate response of an initial attack force at night and on weekends. Some of the stations might be able to provide "live-in" facilities for college students or others who have an interest in the fire service.

The four-person crew would be a first-out immediate response company. It could be backed-up by additional staffed units from surrounding stations and/or units from the

same station staffed by more volunteers. A few stations in key locations could house additional personnel for additional units.

It would take several years to bring the entire county up to this level of response capability, however it is feasible to start with the stations in more built-up areas and gradually extend the service level out to more stations as the population and commercial development increase in these areas. Approximately 20 stations would have to be staffed with daytime crews of career personnel within the first five years.

To meet the five minute response time objective in all built-up areas would require several more stations to be added to reduce first-due response distances to around 2.5 miles. These stations could be added gradually in growth areas over a period of 10 or possibly more years.

Fire Prevention and Public Fire Safety Education

The greatest impact on reducing the fire problem should result from public fire education and fire prevention programs. Communities across the nation have found that aggressive public fire safety education can reduce the fire problem. As mentioned previously, both career and volunteer personnel should be utilized in the future to strengthen public fire safety education and prevention efforts.

All of the fire departments that currently employ career personnel should utilize those personnel to perform fire prevention inspections and develop pre-fire plans within their first-due areas. Career personnel should focus their prevention efforts on businesses and schools, which are areas that volunteers who work during normal business hours cannot usually handle. Volunteer personnel, however, should concentrate on residential fire prevention. This includes ensuring that all homes have functional smoke detectors and performing home fire safety checks.

The most cost-effective investment in public fire protection is probably to ensure that every dwelling unit is provided with working smoke alarms. This objective should be adopted and supported as a major effort for the entire fire safety system. The accomplishment of this objective would probably save more lives and property in any particular year than all of the fire suppression forces combined. It would be appropriate to task volunteers with this objective since it could be accomplished during the evenings and weekends. Volunteers could also offer home fire safety checks during these timeframes, when they are not working, and residents are generally at home. The career fire fighters at the stations should also be used to perform basic inspections, especially of commercial buildings and occupancies, and to deliver public fire safety education programs.

The County Fire Administrator's Office should coordinate Countywide fire prevention and public fire safety education programs. This would include training fire fighters on performing inspections about the Fire Code. Utilizing line personnel to perform inspections will allow the Fire Marshal's staff to concentrate on complex occupancies and enforcement problems, and plans review. The entire program should be coordinated through the Fire Marshal and the County Fire Administrator.

A countywide coordinated approach to fire protection and education will create a consistent level of prevention throughout Wake County. It could ensure that public fire safety education is delivered to all schools, and that all businesses are inspected annually.

Recommendations

When feasible, utilize line fire fighters to perform fire inspections and to conduct public fire education coordinated by the Fire Administrator on a countywide basis. Assign specific inspection and education roles to career and volunteer personnel.

Five-Year Plan for the Fire Service

Below is a list of changes and actions that the study team recommends for the next five years. They are assembled in a logical order, but do not have to be accomplished in this order. Within a five year period, the system described thus far in this chapter should be fully functional and implemented.

1. Structure the fire service as a countywide system with fewer separate entities.
2. Continue to operate as a primarily volunteer fire service, with the exceptions of Raleigh, Cary, and Morrisville. Utilize career personnel for daytime weekday staffing and to perform other functions that support the volunteer system. Establish organizational standards and performance objectives for the volunteer organizations.
3. Restructure the County Fire Marshal's Office around the County Fire Administrator model. Develop the Department of Fire Protection Services.
4. Establish the Fire Advisory Board as an advisory body to guide the fire service, review the budgets submitted by individual fire departments, prioritize budget allocations among alternatives, and submit a consolidated budget to the Board of County Commissioners for approval. The Fire Advisory Board would also develop capital improvement plans, review and approve standard operating procedures, and provide oversight for the fire service in the County.
5. Consolidate all of the unincorporated areas of Wake County into a single fire district and establish a uniform tax rate.

6. Restructure the fire departments by reducing the number of separate, independent organizations; convert to municipal fire departments where appropriate; redirect resources, including personnel, where their mission has been displaced. Provide a small administrative support staff within the Fire Administrator's Office to assist with coordination.
7. Restructure contracts with fire departments to reflect new organization and standards of performance.
8. Establish uniform entrance and training standards for volunteer personnel, including requirements for promotions. This is an extremely important step for making the system function.
9. Establish uniform hiring standards, job descriptions, and position/rank requirements for all career personnel (including municipal fire department personnel, if the cities and towns agree.) A unified recruiting and hiring process would be very efficient.
10. Increase the County's commitment to training fire departments members in order to meet the objectives of #8 and #9. Work with Raleigh and Cary to form a single consolidated training program if possible.
11. Provide sufficient personnel in the new County Fire Administrator's Office to meet inspection requirements or manage programs using career fire fighters as inspectors.
12. Establish a program to check all residential smoke alarms annually and offer "home fire safety surveys" by volunteer personnel.

13. Standardize equipment, operations, and command procedures on a Countywide basis.
14. Redraw response boundaries so that the closest station is dispatched to an emergency. Utilize automatic mutual aid where necessary.
15. Create volunteer "sleep-in" or "live-in" programs at stations to improve staffing and response times.
16. Develop a plan for the integration of fire departments and rescue squads on a countywide basis -- or a clear, agreed-upon definition of responsibilities between fire departments and rescue squads.
17. Develop three confined space rescue teams, each based within a volunteer or career fire department, in addition to the existing Raleigh and Cary teams.

Ten-Year Plan for the Fire Service

The following list of ideas and goals should be considered for ultimate long-term planning purposes.

1. Provide a maximum five minute response time to all built-up areas, with a minimum of four personnel (career or volunteer) arriving on or with the first unit.
2. Provide an eight to ten minute response time for rural areas.
3. Institute a countywide distribution of career-staffed fire suppression companies as needed to supplement volunteer response.
4. Consider the establishment of a unified career force to cover Raleigh and Cary, (and possibly Morrisville), and adjoining areas as one fire department. Also, consider the amalgamation of fire departments in surrounding areas as a County fire department with multiple volunteer companies supported by career companies.
5. Work toward full integration of fire/rescue/EMS countywide.
6. Regularly evaluate progress, results, and circumstances, keeping the five-year plan and ten-year plan regularly updated.