

CHAPTER II. Existing Fire Protection Capabilities

The existing system of fire protection in Wake County divides the responsibility for providing fire protection between the County and the incorporated municipalities. The County's responsibilities are managed primarily by the County Fire Marshal and the Fire Marshal's Office. Municipalities and rural volunteer fire departments are responsible for the provision of fire suppression. This study was commissioned by Wake County and is primarily directed toward the County's areas of responsibility, both organizational and geographic. Because of the close relationship between the County and the municipalities, however, the report also takes some of the needs of the municipalities into account.

There are a variety of different arrangements between the County and individual municipalities that define working relationships and service agreements for emergency and non-emergency services. This chapter examines the current organization of fire services in Wake County, describes the resources, activities, workloads, and capabilities of the existing fire departments, and provides an assessment of the adequacy of the existing system for current and short-term requirements.

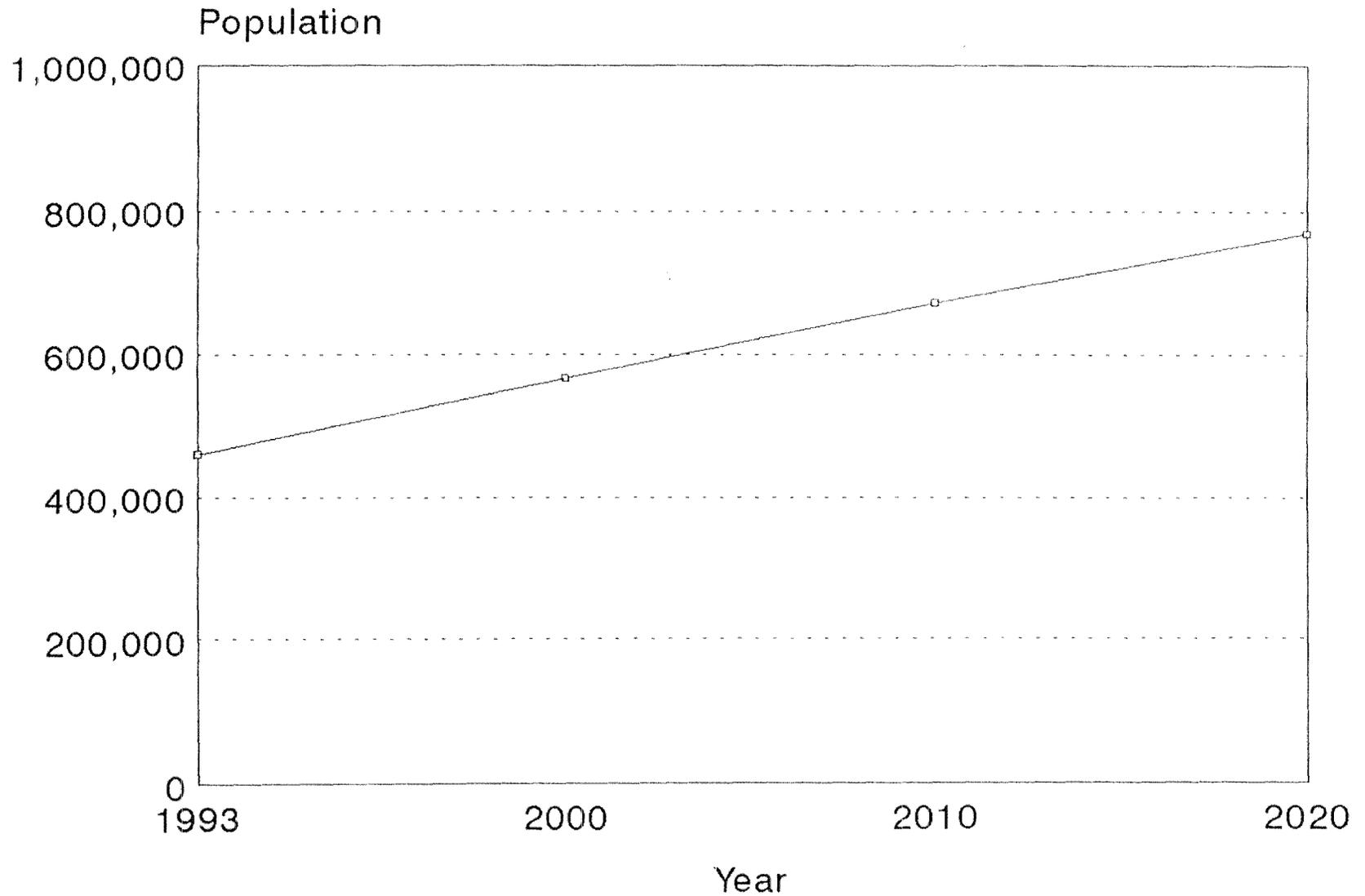
Service Area

Wake County surrounds and includes the cities of Raleigh and Cary, and the incorporated towns of Apex, Fuquay-Varina, Garner, Holly Springs, Knightdale, Morrisville, Rolesville, Wake Forest, Wendell and Zebulon. The County covers 858 square miles with a population of 477,000. The entire Raleigh-Durham metropolitan

area is experiencing rapid population and business growth, and several of the incorporated communities are in the process of rapidly expanding their areas and populations through annexation. Estimates from the Wake County Planning Department indicate that the population will grow by nearly 100,000 persons by the year 2000, and by 300,000 by the year 2020 (Figure 2-1). The incorporated areas are predominantly suburban communities, however, there are areas of commercial and industrial development, particularly around RDU Airport and Research Triangle Park.

The population growth can be described as a mixture of suburban and rural. The cities and towns are growing, with new developments in and adjacent to their incorporated areas. The cities and towns control the access to water and sewer systems, which promotes growth within the incorporated areas and annexation of developing areas to the established communities. There are also large areas of rural land in the County, much of which is expected to remain unincorporated, however, residential growth is also occurring in these areas.

Figure 2-1: Wake County Population Projection



Source: Wake County Planning/GIS Departments

Overall Organization of Fire Protection

Fire protection services are generally broken down into two main categories: fire suppression and fire prevention. Fire suppression services are delivered to the citizens of Wake County through a complicated network of municipal and rural fire departments. The Wake County Fire Marshal's Office provides some coordination and support for the fire departments and has the responsibility for fire prevention in the unincorporated areas of the County.

Most of the 21 rural volunteer fire departments in Wake County are independent, non-governmental organizations, supported by special fire tax districts that are established by the County. The process of establishing volunteer fire departments and rural fire tax districts is defined under North Carolina statutes. Several of the volunteer departments employ career fire fighters to provide daytime weekday staffing.

Most of the incorporated towns within Wake County also contract with rural volunteer fire departments to provide fire protection for the incorporated areas. Only three municipalities operate municipal fire departments: Raleigh, Cary, and Zebulon-Municipal. Morrisville is in the process of establishing a municipal department to take over from the rural volunteer department. The City of Raleigh (municipal) Fire Department contracts with Wake County to serve one of the County fire districts.

The existing system has evolved over several years, without a long range plan for the overall system. Wake County has not adopted a formal plan for the organization and delivery of fire protection services. In the face of a changing environment that is associated with rapid population growth, this is an essential time to engage in a planning process to determine where the fire service delivery system should be headed and to plot a course toward the most desirable destination.

County Functions and Responsibilities

Counties in North Carolina have specific responsibilities in the area of fire prevention and code enforcement. Wake County has also assumed limited responsibilities for the delivery of fire suppression services. The County establishes the rural fire districts, contracts with the volunteer departments to serve the districts, authorizes the fire tax rates, and collects the revenue for the fire departments. It also provides centralized communications through the Raleigh Emergency 9-1-1 Communications Center and a fire training facility which is available to all of the rural departments, as well as the municipal fire departments in Wake County. The County also encourages and supports mutual aid among the departments by providing small grants to the participating departments.

Wake County does not have a specifically defined statutory responsibility for the delivery of fire services, but it is an important function of county government to ensure that its citizens are well protected, that emergency services are provided effectively and efficiently, and particularly that the organizations it funds are well managed. Moreover, it is a compelling interest of the County to encourage cooperation, planning, coordination and efficiency, where they serve the best interests of the citizens and taxpayers.

County Fire Marshal -- The statutory functions of the County Fire Marshal relate to fire prevention, fire code enforcement, and fire cause determination. The State of North Carolina assigns these responsibilities to each County and the specific requirements have been greatly expanded with the adoption of a mandatory State Fire Code.

The County Fire Marshal is also assigned the responsibility for coordinating and supporting the operations of the fire departments. The Fire Marshal's Office has a small, but very capable staff to address its wide range of responsibilities. The individuals

have very good training in several different areas and are able to perform many different functions as emergency responders, as well as inspecting occupancies and determining the cause and origin of fires. This small group of individuals is extremely valuable to the overall system.

The process of establishing fire tax districts to collect tax revenues for the volunteer fire departments and contracting with individual fire departments to serve the districts has existed for many years, however, it is only within the past two years that the County has developed performance contracts with the volunteer organizations. The specific requirements that are included in the current contracts are not highly demanding, but the relationship has been established to move in the direction of more performance-oriented contract requirements as a condition for obtaining the tax revenue.

The County Fire Marshal is responsible for assisting the volunteer fire departments with their contracts and budget submissions to the Board of County Commissioners. This has become a much more complicated and time consuming process since the contractual relationship has been more formally established and the fire departments have been required to participate in the annual budget process. Additional responsibilities assigned to the County Fire Marshal's Office include fire fighter training, on scene coordination of major incidents, and liaison with other public safety agencies and offices, and the supervision of three career fire fighters who are currently assigned to the Fairview Fire Department.

Fire Prevention -- Wake County is responsible for the enforcement of the State Fire Code in the unincorporated areas of the County. The incorporated municipalities are responsible for enforcing the Fire Code in the towns and cities, however, several of the towns contract with the County for fire prevention and code enforcement.

The State of North Carolina has placed new mandatory requirements on counties to enforce the State Fire Code in several classes of occupancies, most of which were not

previously inspected. There is an increasing recognition of the need to prevent fires through code enforcement and to reduce the level of fire risk through public fire education and awareness programs. The County Fire Marshal's Office has the primary responsibility for these programs. Because of the new fire code requirements, the enforcement group within the Fire Marshal's Office has experienced a dramatic rise in its workload and responsibilities in the past three years.

The Fire Marshal's Office has 11 authorized positions to perform all of its assigned tasks (Figure 2-2). Ten of these positions are currently filled and one of these has shared responsibilities between training and code enforcement.

Two of the authorized positions are clerical employees and two others are primarily assigned to inspect schools for fire code and electrical code compliance and also assist with fire cause investigations.

The Fire Marshal's Office also supervises three career employees who were hired to provide daytime staffing for the Fairview Fire District and who are funded from the District's revenues. This is a new program which may be a model for some of the other fire departments to provide their daytime staffing.

School Inspections -- All of the 105 public schools in the County (including those in incorporated communities) are required to be inspected semi-annually for compliance with the State Fire Code and the National Electrical Code. The two inspectors assigned to this duty work closely with the school system and the local fire departments to accomplish this objective. Because they are also certified as electrical inspectors, the two individuals have been instrumental in the investigation of some fires.

Public Fire Safety Education -- The Fire Marshal's Office also attempts to reach the community through public fire safety education programs. These programs are not

Existing Organization Wake County Fire Marshal's Office

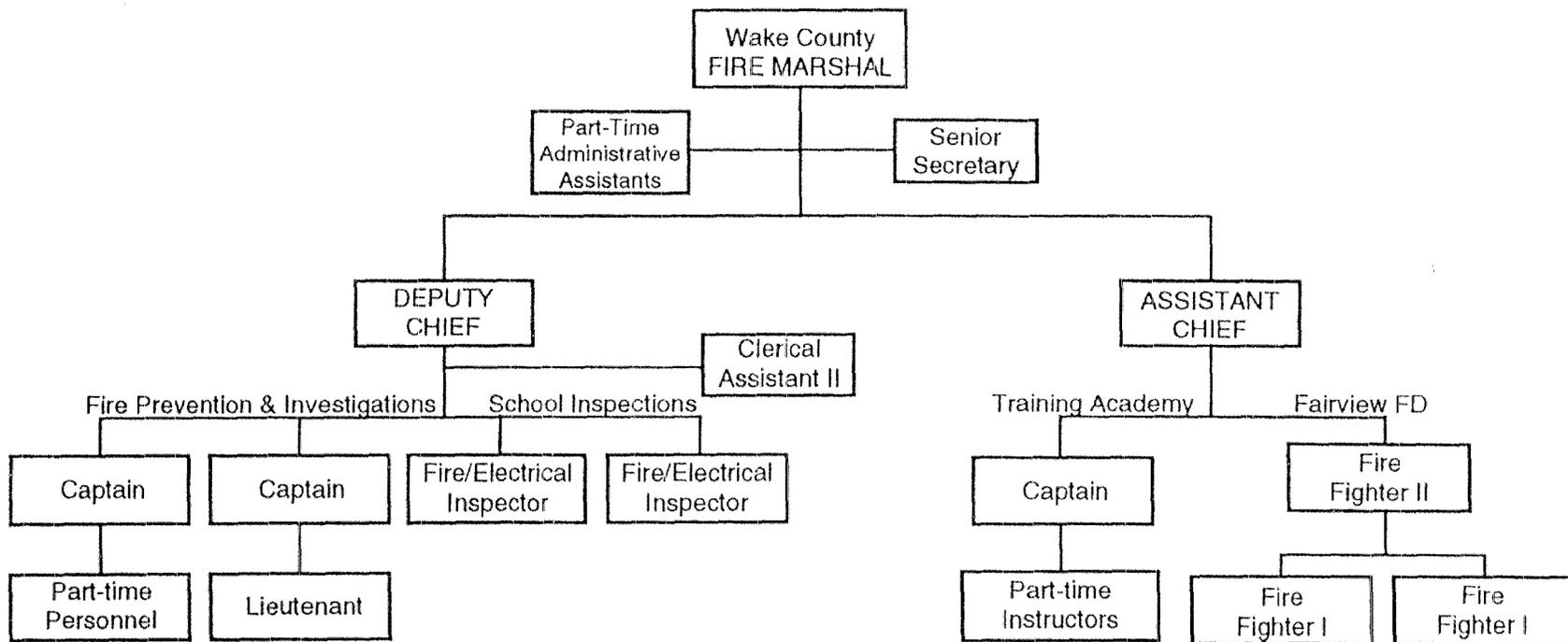


Figure 2-2

funded and must be addressed with available personnel as the opportunity presents itself. Some of the volunteer fire departments assist in these efforts. A public fire safety education trailer, designed to teach fire safe behaviors to pre-school children, is used by several of the fire departments jointly with the County Fire Marshal's staff. The trailer was donated to the County in 1993.

Fire Service System Evolution and Accountability

Fire service delivery systems usually evolve over a period of time, usually tracking the evolution and development of the communities they serve. The current situation in Wake County can be described as moving from the second stage to the third stage (described below). The concepts of accountability and performance expectations must be considered in an appropriate context relating to the four evolutionary stages:

First Stage -- The origins of the volunteer fire service date back to a time when members of the community organized themselves for mutual protection from fires. From this origin, many volunteer fire departments evolved as capable and sometimes powerful autonomous organizations, which performed a valued public service without compensation to the members. These fire departments tended to be self-motivated, self-directed, and self-regulated; in most cases the members themselves raised the funds to obtain the equipment and build the fire stations. In this context it is difficult to place performance expectations upon the volunteer organization or to consider accountability as an issue.

Second Stage - The establishment of fire tax districts to fund volunteer fire departments in Wake County is related to the increasing involvement of fire insurance in the economic equations that relate to fire protection. Fire insurance companies offer reduced insurance rates to properties that are served by fire departments that meet minimum performance requirements. Special tax districts were created to fund the operations of existing fire departments or the establishment of new ones, with the expectation that the savings in insurance premiums would at least equal the tax burden to the individual taxpayer. (In most cases, the savings in insurance premiums are greater than the tax paid to the fire district.) The fire tax districts are defined by the distance from a fire station that is recognized by insurance companies as being "protected" by that fire department -- generally five road miles.

The economic benefits of providing organized fire protection should also include the savings in property loss due to fires, both insured and uninsured. Some values, such as lives saved or injuries averted, cannot be expressed in simple economic terms.

The Board of County Commissioners represents the interests of the citizens and taxpayers by establishing the fire districts and contracting with a rural volunteer fire department to serve each district (Figures 2-3 and 2-4). (The County also has the option of contracting with a municipal fire department to serve a fire district -- just as a municipality may contract with a rural fire department or a municipal fire department from another municipality or establish its own fire department.) The only performance requirement that is implied in the contract is that the fire department will meet the requirement for Class 9S service -- the minimum level recognized by insurance companies. Several of the rural fire departments provide higher levels of service on their own initiative. Accountability at this stage usually refers to accounting practices and not to performance levels.

Third Stage -- Wake County is at the threshold of a third stage in its approach to providing fire protection. This stage can be related to the County's continuing evolution from rural to suburban and a growing population that expects a standard and predictable level of fire service. Wake County is beginning to accept the responsibility for ensuring adequate services are provided to all parts of the County, as well as ensuring that the expenditure of tax dollars supports effective and efficient service delivery. This process began when the County developed written service contracts with the volunteer organizations and required the fire departments to submit their budgets to the County's regular budget preparation and review process. The performance requirements in the contracts at the present time are simple and should not be difficult to meet, however the relationship has been established to impose more demanding performance requirements in the near future.

Wake County Government Structure

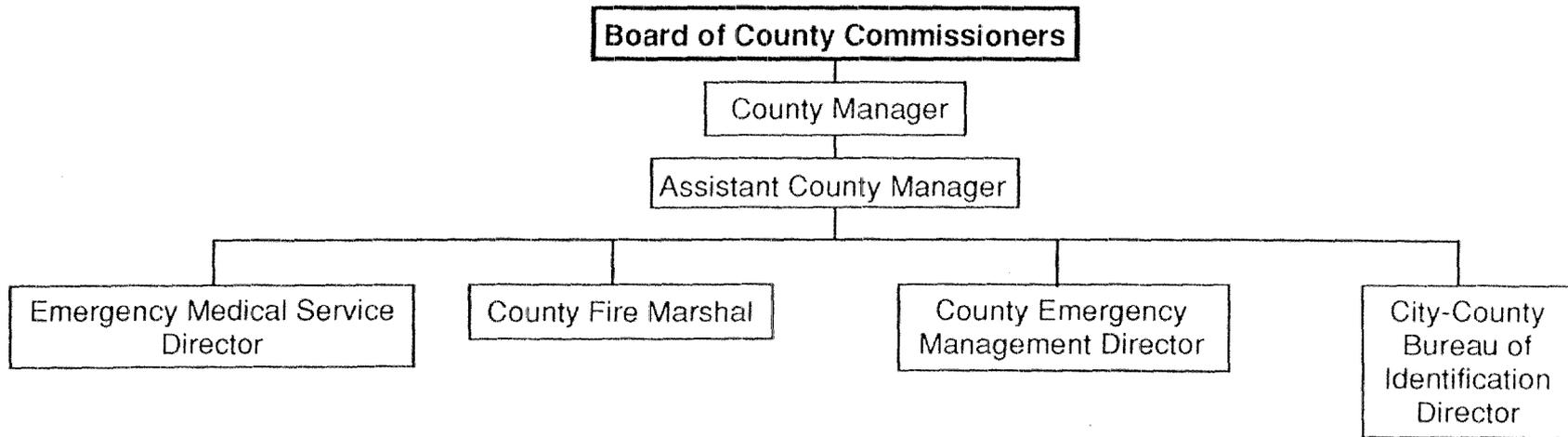


Figure 2-3

Relationships of Fire Service Agencies and Jurisdictions

(EXAMPLES for ILLUSTRATION ONLY)

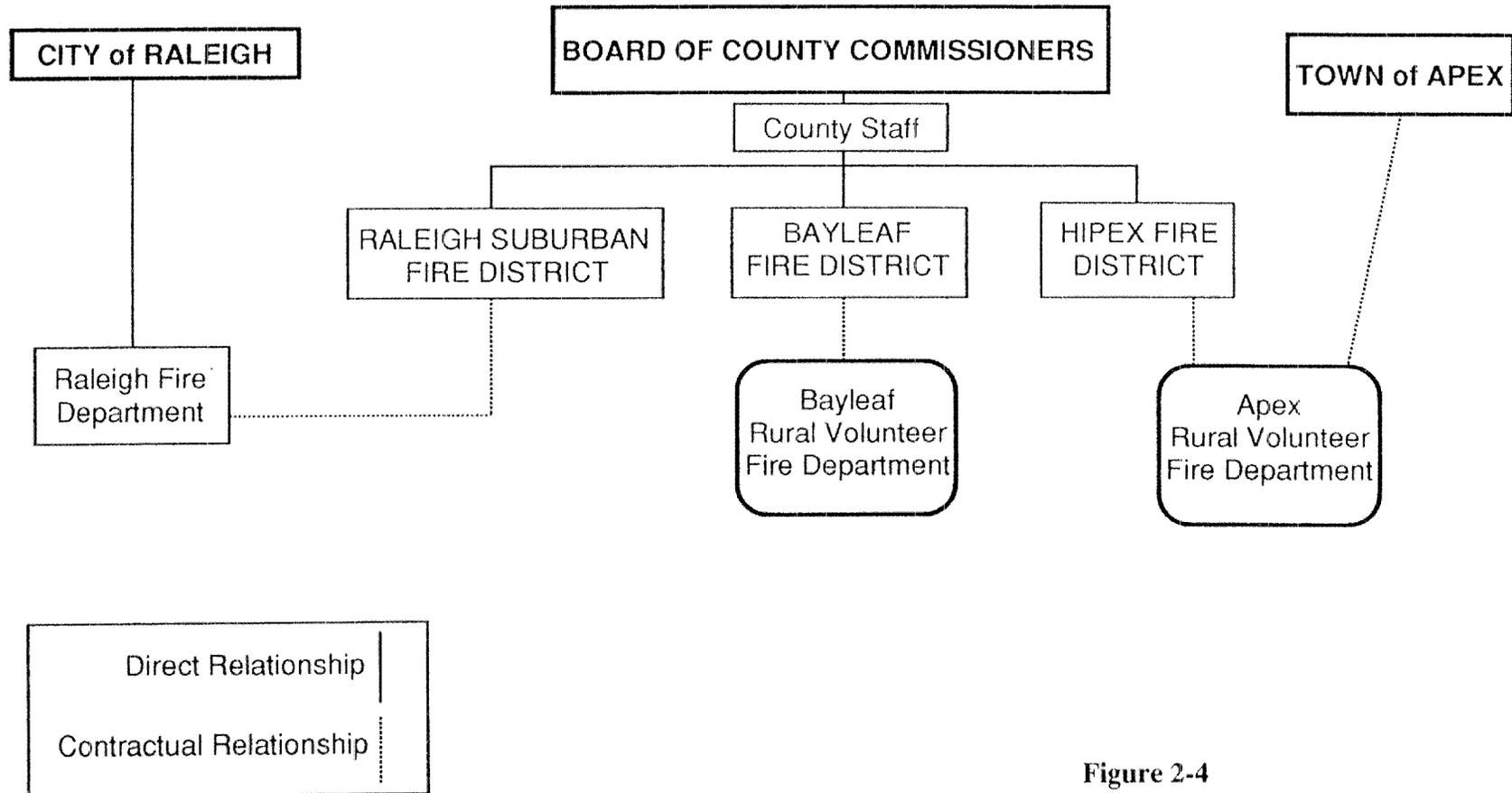


Figure 2-4

The volunteer organizations are also recognizing that it is increasingly difficult to meet the needs of the growing community. The frequency of calls is increasing rapidly, while the ability of volunteers to respond from home or from places of business is diminishing. The volunteer system may be able to provide adequate numbers of personnel for night and weekend responses, while daytime weekday coverage is decreasing. Most of the volunteer organizations have begun to provide their own career personnel for daytime coverage.

Fourth Stage -- The system in Wake County may develop to a fourth stage, in which the County could be protected by a predominantly career force. The County could be the direct service provider in this type of system. This does not appear to be required in the next five years, but it could begin to evolve within ten years.

Current Considerations -- As the fire service system continues to evolve, the Board of County Commissioners must consider the level of service that is provided and that taxpayers desire and are willing to pay for in all parts of the County. The County Commissioners must also decide if and when it will be appropriate to extend "rated" coverage to the areas that are outside the existing fire tax districts. To fund the expansion of services, it will be necessary to expand the tax districts to include the entire geographic area of the County. It will also be necessary to decide where the basic minimum level of protection is adequate (or all that can be afforded) and where higher levels of protection should be provided.

Decisions will have to be made on funding distribution that are more sophisticated than taxing all of the property within a five mile radius of a fire station to support the operations of that station. Because the unprotected areas have relatively small tax bases, the expansion of services can be funded much more easily if the entire unincorporated area of Wake County is included in a single fire tax district. Several existing fire stations will have to be replaced or renovated and stations will have to be added to provide faster response times in rapidly growing areas. Increasing performance

expectations and salaries for career personnel will require a higher expenditures in the future.

The County will be accountable for the quality and reliability of the service that is provided to the public. The accountability factor, however, is a two-way street: the County must also be accountable to the fire departments and fire fighters to provide the funds and system support that will allow them to operate safely and effectively. Both of these purposes are served if the County supports the individual fire departments, assists them in working together as a coordinated system, and provides overall support to the system through the County Fire Administrator.

Organization of Fire Departments

There are 37 established political subdivisions within Wake County that have a role in the organization and funding of fire services (Table 2-1) (Refer to Table 2-2 for a definition of districts):

Incorporated Cities	2
Incorporated Towns	10
Rural Fire Districts	23
Special Districts	2

These subdivisions are served by 25 fire departments:

Career Municipal Fire Departments	2	(Cary, Raleigh)
Volunteer Municipal Fire Departments	1	(Zebulon Municipal)
Rural Volunteer Fire Departments	21	(All Others)
Special Fire Departments	1	(Airport)

The 25 departments operate a total of 29 fire stations in the County. The cities of Raleigh and Cary are served by career municipal fire departments, while the remainder of the County is served by 22 fire departments that are fully or primarily volunteer organizations. Raleigh Durham Airport is served by a career fire department.

Most of the rural fire departments are autonomous organizations that receive their funding through contractual relationships with the County and/or a municipality. The rural fire departments that serve unincorporated areas are funded by special fire district property tax levies, while the fire departments that serve incorporated towns and cities are funded by their general fund revenues. The rural fire departments also serve unincorporated areas that are outside the tax districts, although they receive no revenue from these areas. Table 2-3 summarizes the four basic types of fire departments in Wake County.

Table 2-1. Incorporated Areas, Districts, and the Associated Fire Department.

Fire Department	Incorporated Areas	Rural Fire Districts	Special Districts	Fire Dept. Type ¹
Raleigh FD	City of Raleigh	Raleigh Suburban		Municipal
Cary FD	City of Cary			Municipal
Apex	Apex	Hipex		RCFD
Fuquay Varina	Fuquay Varina	Furina		RCFD
Garner	Garner	St. Mary's		RCFD
Garner		Panther Branch		RCFD
Holly Springs	Holly Springs	Holly Springs		RVFD
Knightdale	Knightdale	Alert		RCFD
Morrisville	Morrisville	Morrisville	Rsrch. Triangle Park	RCFD
Rolesville	Rolesville	Rolesville		RVFD
Wake Forest	Wake Forest	Wakette		RCFD
Wendell	Wendell	Wendell-Holmes		RCFD
Zebulon Municipal	Zebulon			Municipal
Zebulon Rural		Wakelon		RVFD
Bayleaf		Bayleaf		RCFD
Durham Highway		Durham Highway		RCFD
Falls		Falls		RCFD
Fairgrounds		Fairgrounds		RCFD
Hopkins		Hopkins		RVFD
Six Forks		Six Forks		RCFD
Stony Hill		Stony Hill		RVFD
Swift Creek		Swift Creek		RCFD
Fairview		Ten-Ten		RCFD
Wake-New Hope		Wake-New Hope		RCFD
Yrac		Yrac		RVFD
RDU Airport			RDU Airport	CFR

¹ Fire Department Types: RCFD=Rural Combination Fire Department; RVFD=Rural Volunteer Fire Department; CFR=Crash Fire and Rescue

Table 2-2. Types of Districts.	
District Type	Definition
Fire Tax District	The geographic area that is established by the Board of County Commissioners to pay a special tax to support the operations of a fire department. The limits of a fire tax district in Wake County are established as five road miles from a fire station; areas beyond this distance do not pay the fire tax. If the five mile response areas of adjacent districts overlap, the areas are split at the approximate mid-point between the fire stations. Incorporated areas are excluded from the fire districts. The Board of County Commissioners may set a tax rate of up to 10 cents per \$100 of assessed valuation in each area.
Insurance District	The geographic area that is recognized by property insurance companies as being within the service area of a fire department (using the same criteria as are used to establish a fire tax district). The level of fire service provided within an insurance district is rated on a scale from 1 to 10, with Class 9S as the minimum recognized level of service for insurance rate credit. A district may have split ratings to describe two or more levels of protection provided in different areas.
Fire Department Response Area	The geographic area to which a particular fire department responds as the primary service provider. The response area may include areas beyond the limits of the fire tax district, or the insurance district; it is usually the entire area to which the fire department is closest. All parts of Wake County are within a response area.

**Table 2-3. Four Types of Organization of Fire Departments
in Wake County.**

Organization Type	Description
Municipal-Career	Raleigh and Cary operate their fire departments within the structure of the municipal government. Both are fully staffed by career fire fighters. (Raleigh-Durham Airport also operates a career fire department as part of the airport authority, however, this organization does not provide structural fire protection.)
Municipal-Combination	The Zebulon Municipal Fire Department operates within the structure of the municipal government, and is staffed by a combination of career and volunteer (or part-time paid) employees. Morrisville is in the process of converting its rural fire department to this structure, and may eventually become an all career municipal fire department.
Rural-Volunteer	Most of the fire departments in Wake County are independent volunteer organizations that serve individual fire districts. Wake County manages the collection of property taxes from the unincorporated areas and awards a contract to a volunteer department to serve each district. The same volunteer departments may also contract with municipalities to provide protection for incorporated areas. Six of these departments are still all-volunteer organizations.
Rural-Combination	Fifteen of the rural fire departments employ enough career or part-time paid personnel, including daytime paid fire fighters and full-time or part-time paid fire chiefs. The majority of the members of these departments are volunteers.
Rural-Municipal Combination	Some of the incorporated towns in Wake County support volunteer fire departments that are intimately linked to the rural departments that serve the surrounding areas, but exist "on paper" as separate organizations. (For example, in Fuquay-Varina, there are two separate fire department organizations with individual budgets, however they function as a single fire department for operational purposes.) All of the rural-municipal departments utilize a combination of career and volunteer personnel.

Levels of Service

The levels of service provided by the current rural volunteer fire departments vary significantly. Each fire department provides a different level of service, partly due to the differences in tax bases and tax rates which determine their funding, but also because of their leadership, organizational capabilities, local preferences, and circumstances. There has been little structure, organization or regulation to cause them to be similar or to operate as a unified system and they have evolved to be quite different from one another.

Personnel -- Most of the rural fire departments in Wake County are operating with relatively low service levels, when compared to urban fire departments. All of the rural departments are fully volunteer or primarily volunteer organizations. Unless they have career personnel on duty or an assigned crew of volunteers standing-by, volunteer fire departments cannot ensure that any specific number of personnel will be available to respond at any particular time. The actual capabilities of the individual departments vary considerably.

Each of the departments that has hired career personnel has taken a somewhat different course, again resulting in quite different outcomes. None of the rural departments has hired enough career personnel to fully staff its daytime weekday operations, however, at least two of the rural departments are almost fully dependent on full-time or part-time paid personnel during these periods. The overall staffing provided by paid personnel is very thin and widely distributed, so there is still a strong reliance on volunteer personnel to respond to working incidents at all times of the day. Several of the departments have difficulty mustering more than a handful of volunteers during normal work hours (Table 2-4).

Table 2-4. Fire Department Staffing Levels.

Department	Vol. Personnel	Full-time Paid Personnel	Part-time Paid Personnel	No. of Stations
Apex	46	5	0	1
Bayleaf	40	5	0	2
Durham Hwy.	40	5	0	2
Fairgrounds	22	2	1	1
Fairview	38	3*	0	2
Falls	25	2	0	1
Fuquay Varina	68	8	0	2
Garner	67	8	0	2
Holly Springs	26	0	0	1
Hopkins	30	0	0	1
Knightdale	36	5	0	1
Morrisville	22	2	8	2
Rolesville	32	0	0	1
Six Forks	34	6	1	1
Stony Hill	32	0	0	1
Swift Creek	25	1	4	1
Wake Forest	36	3	0	1
Wake/New Hope	39	5	1	2
Wendell	44	2	2	2
Yrac	24	0	0	1
Zebulon-Rural	23	0	1	0
Zebulon-Municipal	23	2	0	1
TOTAL	772	64	18	29

*Career daytime staffing for Fairview are County employees under the supervision of the Fire Marshal. Their positions are funded by Fairview F.D. funds (this is a new staffing approach).

There are no paid crews on duty in any of the volunteer stations at night or on weekends. During evenings and on weekends it is not unusual to find several volunteers at their stations, however only a few departments provide accommodations for their members to sleep overnight in the stations to provide immediate response crews. Very few calls occur during the late night hours, but calls during these hours tend to be more severe than the average. All of the volunteer departments currently rely on members to respond to the station before they can actually respond to a call during the late night/early morning hours. All of the departments could benefit greatly from members who would "sleep-in" or "live-in" the stations, and eliminate the delay of responding from home to the fire station.

Current Budgets

Each rural fire department receives funds from the property tax that is levied in the area it serves. The amount depends on the property tax rate and the assessed valuation of the property in the district. In addition, the departments that protect incorporated areas receive funds from the respective towns. Some of the towns provide funding equivalent to the fire district tax rate applied to the property in the incorporated area, while others have negotiated different rates or lump sum payments. Wake County also gives each department a lump sum of \$3000 annually for each station to compensate them for participating in the mutual aid system. The individual departments manage these funds and make their own decisions on expenditures. The departments may establish reserve accounts and set aside funds in reserve accounts for future expenses.

The tax levies are based on budgets submitted by the fire departments to the County for approval. The process of preparing and submitting budgets has become much more complicated in the past two years. The county imposed new requirements which placed a new administrative burden on the fire departments, and particularly on the County Fire Marshal to manage and coordinate the process. Once the budget is approved, the tax rate is set to raise that amount of revenue from the assessed valuation that is on the tax rolls for that district at that time. In recent years, the assessed valuation of several of the districts has increased significantly after adoption of the budget, which has increased the revenue above expectations. The fire departments have received all the funds that were generated by the increased valuations.

In adopting the 1994-95 budgets for the fire departments, the County decided to appropriate only the amounts that were generated in the 1993-94 fiscal year and to place the "new revenue" (from tax base growth and rate adjustments) into a reserve account for each department that would see an increase. The extra funds are being held for appropriation to specific purposes. A special advisory committee of fire chiefs has been

established, reporting to the County Manager through the Fire Marshal, to evaluate and recommend the allocation of these funds for specific purposes. This process has only been in place for a few weeks, however it appears to be a good interim plan for managing the unappropriated funds more closely. Table 2-5 shows the tax base, approved tax rate, and anticipated revenues for each district for the 1994-95 fiscal year. A total of \$307,048 is projected to be placed in the reserve accounts.

TABLE 2-5. 1994-95 WAKE COUNTY FIRE DISTRICT APPROPRIATIONS.

<u>District</u>	<u>Assessed Value</u>	<u>Rate</u>	<u>Appropriat.</u>	<u>Reserve</u>
Apex	\$259,801,517	0.100	\$220,831	\$38,970
Bayleaf	\$857,279,113	0.065	\$471,504	\$85,728
Cary	\$144,845,947	0.080	\$115,877	\$0
Durham Hwy	\$707,988,522	0.060	\$424,793	\$0
Fairgrounds	\$158,243,588	0.090	\$142,419	\$0
Fairview	\$444,282,898	0.070	\$310,998	\$0
Falls	\$89,377,982	0.100	\$84,871	\$4,467
Fuquay Varina	\$390,937,529	0.085	\$332,297	\$0
Garner	\$579,113,083	0.070	\$347,468	\$57,911
Holly Springs	\$50,623,313	0.095	\$48,092	\$0
Hopkins	\$72,354,036	0.075	\$54,265	\$0
Knightdale	\$300,406,922	0.080	\$210,285	\$30,041
Morrisville	\$131,137,428	0.100	\$131,137	\$0
Raleigh Suburban	\$1,593,370	0.095	\$1,514	\$0
Rolesville	\$258,542,581	0.070	\$168,053	\$12,927
Six Forks	\$276,355,843	0.060	\$165,802	\$0
Stony Hill	\$88,912,025	0.100	\$84,466	\$4,446
Swift Creek	\$349,715,435	0.055	\$157,372	\$34,972
Wake-New Hope	\$564,346,321	0.075	\$423,260	\$0
Wake Forest	\$144,179,315	0.075	\$93,717	\$14,418
Wendell	\$183,752,830	0.080	\$147,002	\$0
Zebulon Rural	<u>\$115,841,223</u>	0.095	<u>\$86,881</u>	<u>\$23,168</u>
TOTAL	\$6,169,630,821		\$4,222,904	\$307,048

Activities and Workload

The following information describes and categorizes the emergency response activity in Wake County for the period of January 1, 1993 through December 31, 1993. Neither the individual departments nor the Fire Marshal's Office is currently able to provide consistent historical data for prior years. Data collection and reporting methods for each of the departments was inconsistent until 1993 and cannot be utilized to provide valid data relating to past experience. (Sometimes, this has resulted in slightly different numbers between reports).

During 1992, the Fire Marshal's Office and the individual departments initiated the use of a new fire reporting system.¹ Utilization of the new system will improve the quality, uniformity, reliability and usefulness of Wake County fire reporting in the future. The data that follows was provided to the Fire Marshal's Office by individual departments which utilized the new system during 1993.²

Some additional analysis was conducted using limited data that was available from reports and personal interviews by TriData's fire analysis staff. The information that was obtained in this manner appears to be generally consistent with recognized national and regional fire incident reporting information.

- During the period of January 1, 1993 through December 31, 1993, fire departments providing contracted services to Wake County fire districts responded to approximately 6,100 calls, including 483 mutual aid responses (Table 2-6 and Figure 2-5).

¹ The new system was designed and developed by members of the Bayleaf Volunteer Fire Department. Some data may vary slightly between different reports.

² Refer to Appendix A for response data for individual departments. Appendix B contains comparative data from other North Carolina counties.

Table 2-6. Number of Calls by Department, 1993.

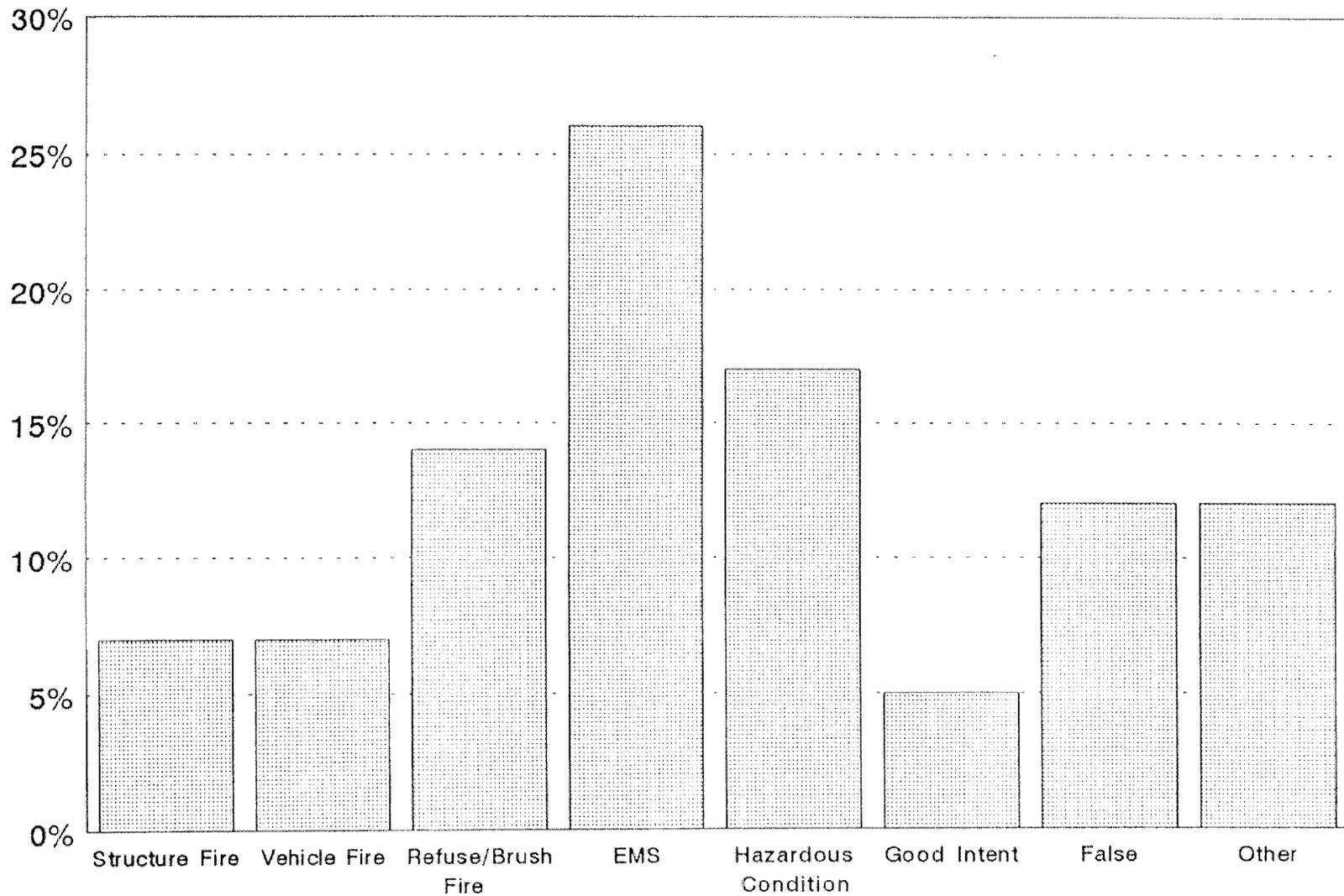
Department	Total Dist. Calls	Structure Fires	EMS	Vehicle	Refuse/Brush Fires	Hazardous Condition	Good Intent	False	Mutual Aid Calls *
Apex	357	44	91	37	40	53	9	32	17
Bayleaf	280	6	110	7	30	27	12	64	11
Durham Highway	362	6	118	9	32	99	19	46	17
Fairgrounds	133	1	52	15	17	9	15	21	130
Fairview Rural	406	15	305	9	37	76	24	19	22
Falls	123	2	71	4	9	4	1	14	5
Fuquay-Varina	275	28	1	29	46	78	9	29	14
Garner	646	76	22	59	118	178	49	75	17
Holly Springs	80	3	2	4	20	3	3	15	12
Hopkins	63	8	0	8	21	6	2	0	16
Knightdale	312	45	8	41	58	97	1	19	6
Morrisville	391	8	131	31	53	64	12	81	37
Rolesville	158	21	1	7	24	49	25	13	17
Six Forks Road	114	3	8	9	44	15	1	17	33
Stoney Hill	139	9	85	6	17	4	0	7	4
Swift Creek	215	5	52	10	38	29	6	26	9
Wake Forest	194	24	3	13	23	51	33	15	16
Wake/New Hope	814	49	338	16	50	41	55	155	57
Wendell	320	34	7	30	46	11	1	20	13
Yrac	87	9	24	11	2	17	8	5	22
Zebulon	120	6	1	15	36	29	15	5	8
TOTALS	5,589	402	1430	370	761	940	300	678	483
Percent		7%	26%	7%	14%	17%	5%	12%	9%

Source: Wake County Fire Marshal's Office

*Mutual aid calls are outside of district, and totals in this column are not included in overall district total of 5,589 calls.

Note: This table does not reflect calls for municipal departments. The table reflects 88% of in-district calls; the remainder of in-district calls are classified as "other" types of emergencies. There were approximately 9,700 calls in the entire County in 1993.

Figure 2-5: Percent of Calls by Call Type, 1993



Source: Wake County Fire Marshal's Office

Note: The percentages represent the 5,589 in district calls. They do not include mutual aid calls.

- Emergency medical service is becoming the major activity for the fire departments that provide this service. Although less than two thirds of the 21 departments are actively participating in the First Responder Program, 26% of the total calls were classified as "EMS only" (Figures 2-5 and 2-6).
- Most of the fire departments in Wake County respond to very few structure fires. Approximately 7% of the total calls were for structural fires, while 21% of the total calls were for trash, brush or vehicle fires (Figures 2-5 and 2-6).
- Twelve of the 21 departments responded to 12 or fewer actual structural fire calls during the year. Ten of the departments responded to less than 200 total calls for their districts during 1993 (Table 2-6).
- Alarm system activations, which include malfunctions and unintentional alarm activations, make up more than 10% of the total calls. Departments serving highly rural districts have very few automatic alarm responses. Malicious false alarms represent less than 1% of all calls.
- The distribution of calls by day of the week does not vary significantly from day to day or from department to department (Figure 2-8):

Sunday	14%
Monday	15%
Tuesday	15%
Wednesday	15%
Thursday	14%
Friday	16%
Saturday	13%