

**APPROVED  
FIRE, RESCUE, EMERGENCY MEDICAL SERVICES,  
AND COMMUNITY RISK REDUCTION MASTER PLAN**

**SECTION 1  
INTRODUCTION**

**BACKGROUND**

The Background Section of the Master Plan provides a brief overview of: the statutory requirements for fire-rescue master planning, the original master plan and amendments, rationale for revising the original plan, and laws and standards for service delivery. Section 1 also includes the purpose and scope of the Plan, integration with other plans, and planning assumptions used in developing this Plan.

**STATUTORY REQUIREMENTS FOR MASTER PLANNING**

Chapter 21, Section 12 of the County Code states: “The [Fire and Rescue] Commission must review the master fire, rescue and emergency medical services plan [*Fire, Rescue and Emergency Medical Services Master Plan*] on an ongoing basis, and must propose amendments to the Fire Chief, [County] Executive and [County] Council as appropriate.” The master plan must be developed in coordination with the Maryland-National Capital Park and Planning Commission, “health systems planning agency,” Washington Suburban Sanitary Commission, other County departments, Metropolitan Washington Council of Governments, U.S. Department of Homeland Security, and other interested parties. The Code also states that the County Executive must forward the plan or any amendment(s) proposed by the Fire Chief, along with any comments, to the County Council. The Council then approves the master plan/amendments as proposed, or with further revisions.

Chapter 21, Section 12 also states that the master plan serves as a guideline for the County Executive, County Council and the Fire Chief in making decisions regarding delivery of fire and rescue services. Section 21-12 sets forth the minimum requirements for the master plan, as well.

In addition, Section 21-9 of the County Code addresses a separate document known as the “disaster plan.” It states that the County Executive, after receiving FRC approval, must establish and maintain a fire and rescue disaster plan that provides an integrated chain of command compatible with the Standardized Incident Management System and the Integrated Emergency Command Structure.

**APPROVED**  
**FIRE, RESCUE, EMERGENCY MEDICAL SERVICES,**  
**AND COMMUNITY RISK REDUCTION MASTER PLAN**

## ORIGINAL MASTER PLAN

The original *Fire, Rescue and Emergency Medical Services Master Plan* was adopted by County Council Resolution 12-1835 on October 18, 1994. The stated purpose of the original master plan was to give County residents a comprehensive description of how the Fire and Rescue Service fulfills its responsibilities and how changes in the County are likely to affect service delivery, and to provide direction for the present and future through a set of recommendations that specifically address the steps necessary to provide a desired level and quality of service.

In summary, the original master plan addressed demographic and service demand trends; factors affecting service demand; and an overview of the service delivery system, life safety programs, and fire investigation program. The plan also provided an overview of the organizations comprising the MCFRS, its interrelationships with other agencies and organizations, and the personnel who operate, manage and administer the Fire and Rescue Service. The need for new facilities, apparatus, equipment and communications/data systems was addressed, as well. Considerable attention was given to describing the seven “Fire and Rescue Planning Areas<sup>1</sup>” in terms of demographics, characteristics, service demand and service delivery trends, and resources (existing and future needs). The plan also included a section on funding sources and a brief fiscal impact analysis addressing operating budget impacts, station construction, and water supply enhancements.

In looking back on the ten-year (1994-2004) effort to implement the 39 recommendations appearing in the original master plan, about three quarters of the recommendations have been fully or partially addressed, although certain of the recommendations have required, and will require, continuous action due to the on-going nature of what they are intending to accomplish. Certain of these ongoing/continuous type recommendations, as appropriate, have been addressed in this revised master plan, although some have been re-written or incorporated into new recommendations. Unaddressed recommendations from the 1994 master plan were primarily of a lower priority and were not addressed due to several factors: an insufficient number of staff available to work on them; the ever-changing fire-rescue service environment and related service demands that redirected staff resources to other projects and priorities; and lack of funding to implement some of the recommended capital improvement projects and to effect the purchase of recommended apparatus, equipment and related items.

Of particular note concerning the ability of the MCFRS to keep pace with growth during the ten year period between 1994 and 2004, no additional stations were built. In fact, no additional stations have been built since Germantown Station 29 was completed in 1980.

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<sup>1</sup> The seven Fire and Rescue Planning Areas included: Down County Area, Route 29 Area, Potomac Area, I-270 Corridor, Poolesville Area, Damascus Area, and Georgia Avenue Area.

**APPROVED**  
**FIRE, RESCUE, EMERGENCY MEDICAL SERVICES,**  
**AND COMMUNITY RISK REDUCTION MASTER PLAN**

The original master plan had called for the construction of a new station in Clarksburg and another in the Travilah area. Both of these stations have been included in the CIP as well as two others<sup>2</sup>. In addition, steps were also taken during the ten-year period to enhance service delivery (from an infrastructure standpoint) in that Sandy Spring Station 4 was replaced, Kensington Station 5 underwent a major renovation, and CIP projects have been approved to replace Silver Spring Station 1 (construction in progress) and Takoma Park Station 2. All four of these projects (i.e., Stations 1, 2, 4 and 5) had been recommended in the original master plan, as well as a recommendation to renovate or replace Station 30 (in FY05-10 CIP Budget).

## AMENDMENTS TO ORIGINAL MASTER PLAN

Amendments to the original *Fire, Rescue and Emergency Medical Services Master Plan*, adopted October 1994, were proposed twice during the ten-year life of the plan. The initial amendment occurred in 1996 when Master Plan Recommendation G.2-1, addressing the purchase of fire-rescue support vehicles, was amended to return responsibility for purchasing support vehicles with tax funds to the corporations [Local Fire-Rescue Departments] from the County.

The second attempt to amend the Master Plan occurred during 1999-2000. As a result of recommendations provided in the Phase 1 Report of the “Station Location and Resource Allocation Study,” the FRC, in 1999, proposed a series of amendments to the County Executive and then to the County Council. The amendments were adopted by County Council Resolution 14-442 on February 29, 2000. A public hearing and a worksession of the Council’s Public Safety Committee on the proposed amendments preceded the resolution. The Council-adopted amendments related to this second attempt to amend the Master Plan are summarized below.

- Amendment 1: Established County-wide response time goals for fire and rescue incidents, including density-related goals for urban, suburban, and rural areas.
- Amendment 2: Revised Fire and Rescue Service priorities for the Capital Improvements Program for existing station replacement/renovation and new station construction.
- Amendment 3: Revised Recommendation K-2.1 concerning the disposition of Hyattstown Station 9. The amendment proposes the continued operation of Hyattstown Station 9, assignment of the new Clarksburg station to the Hyattstown

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<sup>2</sup> The West Germantown, East Germantown, Travilah, and Clarksburg stations are approved projects in the FY05-10 CIP.

**APPROVED**  
**FIRE, RESCUE, EMERGENCY MEDICAL SERVICES,**  
**AND COMMUNITY RISK REDUCTION MASTER PLAN**

Volunteer Fire Department, and redeployment of [certain] equipment from Station 9 to the Clarksburg station.

- Amendment 4: Updated the Interstate 270 Corridor Fire-Rescue Planning Area section, including recommendations to build new (additional) stations in west Germantown, east Germantown, and Clarksburg.
- Amendment 5: Updated the Potomac Fire-Rescue Planning Area section, including a recommendation to build a new (additional) station in the Travilah-Shady Grove vicinity.
- Amendment 6: Revised Appendix A, which lists all Master Plan recommendations, to reflect changes brought about by Amendments 3, 4, and 5 above.

## RATIONALE FOR MASTER PLAN REVISION

The existing *Fire, Rescue and Emergency Medical Services Master Plan* (adopted October 18, 1994) was intended to have a ten-year life span, sunsetting in December 2004. Page 86 of that Plan states: “Before this plan sunsets, a new plan for 2005-2015 should be adopted by the process that is currently in the law” [County Code, Chapter 21, Section 4I]. A new Master Plan, therefore, is mandated by the previous Master Plan. Aside from the mandate, a ten-year life span for a master plan of this type and scope is an appropriate time span. Comprehensive reviews at appropriate intervals are also needed to determine whether circumstances at those times warrant major revisions or amendments to the existing Plan. In addition, annual review of the master plan is in order to identify recommendations and actions that should be addressed in the annual work plan and to determine whether any amendments might be needed to modify or add to existing strategies in response to a major change to the risk environment and/or current events.

In addition to this mandate for a new master plan, there are other rationales for establishing a new plan. Both the MCFRS and the County itself have seen considerable change over the ten-year period from 1994-2004. The County’s population has not only grown by nearly 135,000 residents (about 17%) since 1994, the demographic composition of the population has become much more diverse, with considerable increases in the numbers and percentages of minorities, particularly Hispanics, Asians/Pacific Islanders, and African Americans. The population is also aging, despite the influx of young families and young singles in the northern portions of the County and elsewhere. The geographic center of the County’s population has also shifted northward as communities such as Germantown, Gaithersburg, Rockville, North Potomac and Clarksburg have grown substantially and will continue to do so. Other communities throughout the County have seen considerable growth and development, as well, particularly Burtonsville, White Oak, Silver Spring, Bethesda, Aspen Hill, and the

**APPROVED**  
**FIRE, RESCUE, EMERGENCY MEDICAL SERVICES,**  
**AND COMMUNITY RISK REDUCTION MASTER PLAN**

Layhill area. With these changes in growth and demographics, the incident call load has increased at a much higher rate than ever before, and the rate of certain call types, mainly of an EMS nature, has risen sharply as well. This new master plan will better address these demographic and growth-related trends.

The Montgomery County Fire and Rescue Service (MCFRS) experienced significant change between 1994 and 2004, as well. From an organizational standpoint, a major change occurred in 1998 as a result of legislation (i.e., **Bill 37-97**) passed by the County Council, which amended Chapters 2 and 21 of the County Code. Based on this legislation, a major reorganization took effect in July, 1998 (see details below) creating the Office of the Fire Administrator and the Divisions of Fire and Rescue Services (DFRS) --comprised of career employees -- and Volunteer Fire and Rescue Services (DVFRS) – comprised of volunteer members of the County’s 19 independent local fire and rescue departments. The legislation also changed the composition of the Fire and Rescue Commission (FRC) membership, resulting in the seven-member body being composed of three County citizens with no MCFRS affiliation, two DVFRS representatives, and two DFRS representatives, with the Fire Administrator serving as the non-voting Chair.

In 2003, the DFRS was reorganized. The Bureaus of Life Safety, Operations and Program Support were replaced by the Bureaus of “Operations,” “Special Operations” and “Wellness, Safety & Training.” Other less-sweeping organizational changes occurred in 2003, as well, impacting the Office of the Fire Administrator. The reorganizations in 1998 and 2003 were predominantly brought about by political pressures, changes and new priorities in the service needs of our customers, and the need for greater organizational efficiency and effectiveness.

In May 2004, the County Council enacted **Bill 36-03** amending Chapter 21 of the County Code. **The primary purpose of the bill was to “clarify and increase the integration of the public and private components of the Montgomery County Fire and Rescue Service to enhance accountability and improve emergency preparedness and services.”** The bill became effective on January 1, 2005. The most significant elements of the bill and the subsequent amendments to Chapter 21 are summarized below.

- Replace the Fire Administrator with a uniformed Fire Chief to serve as the director of the MCFRS (career and volunteer components combined), and modify the qualifications and duties of, and the process to appoint, the Division Chiefs
- Modify the structure, duties, and authority of the Fire and Rescue Commission
- Replace the existing MCFRS Divisions with the “Division of Fire and Rescue Operations” and the “Division of Volunteer Services,” each having a Division Chief reporting directly to the Fire Chief. The Fire Chief may also establish additional divisions as he/she deems appropriate to meet the MCFRS mission.

**APPROVED**  
**FIRE, RESCUE, EMERGENCY MEDICAL SERVICES,**  
**AND COMMUNITY RISK REDUCTION MASTER PLAN**

- Create the position of “authorized LFRD representative,” serving largely as a collective bargaining unit for the volunteers, with whom the Fire Chief must consult and negotiate concerning all major policy changes
- Promote consistency and coordination between emergency planning, incident management, command, and emergency services in the County and other local, regional and national emergency management plans
- Require that MCFRS policies, procedures, and command structure address new or elevated threats to public safety
- Encourage citizens to volunteer within the MCFRS, recognize the contributions of volunteers to the community, and improve benefits awarded to volunteers

From a service demand and delivery standpoint, between 1994 and 2004, the MCFRS has had to broaden the delivery of its services in response to a changing population and a changing world – one that must now contend with acts of domestic and international terrorism and violent/deadly acts by troubled youths and adults in schools and in workplaces. Regional and national incidents such as the September 11, 2001 terrorist attacks on the Pentagon and World Trade Center; anthrax incidents during October-November, 2001; April 19, 1995 bombing of the Murrah Building in Oklahoma City; the sniper incidents in the Montgomery County/Washington Metropolitan Area in 2002; and the shootings at Columbine High School in Colorado in 1999 have had a major impact on the MCFRS in terms of preparedness, training, and response. The three-month series of anthrax, bomb and suspicious package incidents in the County following the September 11, 2001 terrorist attacks presented a significant challenge for the entire MCFRS, and the County Government as a whole, as the bomb squad, hazmat team, and other fire-rescue units responded to an unprecedented number of incidents, and a special hotline had to be created and staffed to handle citizens’ fears, questions, and need for information. A major organizational change to address the need for specialized preparedness, training, and response to acts of terrorism, hazmat, collapse rescue, and water rescue incidents was to create a special operations function within the department.

Concerning the County’s changing population and its associated impact on fire-rescue incidents, the MCFRS has, and must continue, to monitor incident trends in terms of volume and type of incidents, and ensure that resources are allocated efficiently to meet these needs. Most notably, the aging population has led to increased call loads for both advanced life support (ALS) and basic life support (BLS) services, which place considerable demand on MCFRS resources. In addition, non-English speaking minority populations requiring EMS services disproportionately to that of the majority population present a challenge for MCFRS personnel who often have difficulty communicating with them. A new master plan is needed to help address the fire-rescue service demands of a

**APPROVED**  
**FIRE, RESCUE, EMERGENCY MEDICAL SERVICES,**  
**AND COMMUNITY RISK REDUCTION MASTER PLAN**

growing population, the ever-changing composition of that population, and the increasingly urbanized nature of the County's communities.

## LAWS AND STANDARDS FOR SERVICE DELIVERY

Several laws and standards impact the MCFRS and FRC in terms of organizational structure, administration, authorities and responsibilities, legal matters, and service delivery. **Laws that govern the MCFRS and FRC include Chapters 2, 21, and 22 of the County Code. Standards<sup>3</sup> that impact the MCFRS include response time goals and deployment criteria.** NFPA Standard 1710<sup>4</sup>, while not legally binding because it has not been adopted into law by the County Council, is a voluntary national standard to which the MCFRS should plan to comply because of the likelihood that it will eventually be adopted, in whole or in part, by the County Council as more jurisdictions across the State and nation adopt its provisions. Each of these laws and "standards" is addressed below.

In addition to the broad laws and standards that impact MCFRS in a general manner, there are other laws and codes that pertain to specific MCFRS functional areas such as Fire Code Enforcement (e.g., Montgomery County Fire Safety Code, Code of Maryland Regulations, Annotated Code of Maryland, NFPA codes that have been adopted by the County, etc.). Laws and codes that pertain to specific MCFRS functional areas are addressed in Section 4 of this plan.

### COUNTY CODE, CHAPTERS 2, 21 AND 22

Chapters 2, 21, and 22 of the Montgomery County Code address fire and rescue services, with Chapters 21 and 22 providing the majority of the legislative language. Both Chapters 2 and 21 have been amended through the County Council's enactment of Bill 36-03 in May 2004. Chapter 22 is the County's Fire Safety Code. Only Chapter 21 addresses strategic planning. **Chapter 21, as amended in May 2004, consists of six Articles. Portions pertaining directly or indirectly to planning appear below.**

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<sup>3</sup> The County and FRC have not adopted any of the service delivery goals and criteria addressed in this plan as actual "standards" per se, but have adopted these goals and criteria for the purpose of planning the deployment of resources and siting of fire-rescue stations.

<sup>4</sup> NFPA Standard 1710 – "Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments"

**APPROVED**  
**FIRE, RESCUE, EMERGENCY MEDICAL SERVICES,**  
**AND COMMUNITY RISK REDUCTION MASTER PLAN**

ARTICLE I – COMPREHENSIVE FIRE AND RESCUE SERVICES

- [One of six goals of Chapter 21, Section 1] “**Plan and coordinate** County fire, rescue, and emergency medical services with services provided by other government and private organizations to provide all needed services while minimizing duplication and conflict.”

ARTICLE II - ORGANIZATION

- [Section 21-2(d)(3)(C)] **The FRC “may review and make recommendations regarding the master plan for fire, rescue and emergency medical services** as provided in Section 21-12.”
- [Section 21-2(d)(3)(B)] The FRC “may advise the [Fire] Chief, [County] Executive, and [County] Council on County-wide policies, standards, procedures, **plans**, and programs that should apply to all fire, rescue and emergency medical service operations.”

ARTICLE III - OPERATIONS

- [Section 21-9] “The County Executive, by regulation issued after receiving [Fire and Rescue] Commission approval under Section 21-2(d)(4), **must establish and maintain a fire and rescue disaster plan that provides an integrated chain of command compatible with the Standardized Incident Management System and Integrated Emergency Command Structure.**”
- [Section 21-12] See discussion under the “Statutory Requirements for Master Planning” heading above regarding **master planning**.

ARTICLE V – FISCAL MATTERS

- [Section 21-22] The [Fire and Rescue] Commission must forward the Commission’s comments on the Fire Chief’s proposed budget, together with a summary, an analysis of County-wide implications and relationships to applicable provisions of the fire service **master plan**, and the Commission’s recommendations on the proposed budget, to the County Executive for review and submission to the County Council as required by the County Charter.”
- [Section 21-26] “A newly constructed fire-rescue station, purchased with tax funds after July 1, 1999, may be held under a title reflecting concurrent ownership by the County and local fire and rescue department if: (1) **the station complies with the adopted master fire, rescue and emergency medical services plan.**” Two other conditions apply, as well, unrelated to planning.



**APPROVED  
FIRE, RESCUE, EMERGENCY MEDICAL SERVICES,  
AND COMMUNITY RISK REDUCTION MASTER PLAN**

**RESPONSE TIME GOALS**

Response time goals adopted by the FRC in 1998 are not mandatory standards or required by law, but are, nonetheless, goals that the MCFRS strives to meet. The goals (see [Figure 1.1](#)) are comparable to those used by similar-sized jurisdictions across the nation and similar to, but not equivalent to, response time guidelines published by the National Fire Protection Association (addressed later in this plan). Up until 1998, the County’s fire and rescue service had no adopted response time goals or standards, although CPR initiation guidelines published by the American Heart Association were unofficially used as criteria on which to base response time for incidents involving patients experiencing cardiac problems.

**Figure 1.1 - Fire and Rescue Response Time Goals in Effect 1998-2000**

Incident Type	Goal for Appropriate Unit	Percent of Time	Special Service (Truck or Squad)	Percent of Time	Entire Dispatch Assignment	Percent of Time
ALS	6 min.	50	9 min.	80	10 min.	90
	8 min.	90	--	--	--	--
BLS	5 min.	50	9 min.	80	10 min.	90
	6 min.	90	--	--	--	--
Fire	5 min.	50	9 min.	80	10 min.	90
	6 min.	90	--	--	--	--

Source: *Master Plan Priority Issues Study Final Report*, July, 1998

In response to Recommendation B.2-3 of the 1994 master plan<sup>5</sup>, the ensuing “Master Plan Priority Issues Study<sup>6</sup>” proposed response time goals that were subsequently adopted by the Fire and Rescue Commission in July 1998 and approved by the County Council in February 2000. These goals were intended to be used, not as standards, but as

<sup>5</sup> Recommendation B.2-3: “The Fire and Rescue Commission should evaluate the current emergency incident response times and develop a recommendation for maximum acceptable response times for the different areas of the County, taking into consideration the findings of the risk analysis.”

<sup>6</sup> FRC study published in February 1998 addressing priority recommendations in the 1994 Master Plan

**APPROVED**  
**FIRE, RESCUE, EMERGENCY MEDICAL SERVICES,**  
**AND COMMUNITY RISK REDUCTION MASTER PLAN**

planning goals for use in decisions concerning apparatus and personnel allocation and to site fire-rescue stations.

These response time goals were based on the following assumptions:

**Assumption #1: Response time is defined as the elapsed time from the initiation of a call to 911, to the arrival of appropriate unit(s).** The appropriate unit was defined as the first-due fire, rescue or EMS unit that has primary responsibility for a particular type of incident as follows:

- Advanced Life Support (ALS) incident - ALS Unit (Medic Unit)
- Basic Life Support (BLS) incident - BLS Unit (Ambulance)
- Fire incident - Engine

For a fire-related incident, the appropriate special service unit is an aerial unit<sup>7</sup> and for a rescue incident, the appropriate special service unit is generally a rescue squad (but can be an engine or aerial unit under certain situations if extrication-equipped). For any type of incident requiring the response of multiple units, the entire assignment refers to all units responding on the initial alarm (e.g., standard structure fire assignment: 4 engines, 2 aerial units, 1 rescue squad, 1 EMS unit, and one or more command units; standard assignment for a traffic collision: 1 EMS unit, 1 rescue squad, 1 engine).

**Assumption #2:** Implementation of technologies and/or procedures will be pursued to expedite the processing of 911 calls, the dispatch of fire and rescue units, and the response of fire and rescue units.

**Assumption #3:** Fire and rescue units should reach cardiac arrest patients within 4-6 minutes to initiate CPR or defibrillation and within 8 minutes to provide advanced life support to offer the patient the best chance of recovery.

**Assumption #4:** Firefighters should apply water to a growing fire inside a room, generally, within 5 to 9 minutes of ignition to prevent flashover. If water can be applied before a room flashes over, the fire suppression goal is to confine the fire to the room of origin, which is a MCFRS performance indicator. Once flashover occurs, however, the fire suppression goal becomes one of confining the fire either to the floor of origin, or the building of origin, depending upon the stage of fire growth when water is first applied.

**Assumption #5:** In the 1970s, the Rand Institute conducted a response time study involving New York City Fire Department (FDNY) apparatus. The study's findings showed that the FDNY apparatus traveled at an average "cruising speed" of 39.2 mph, following the initial 0.5 mile of the response route when the units were accelerating to

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<sup>7</sup> A rescue squad can fulfill the requirement under certain situations such as for automatic home fire alarms, alarm bells, activated smoke detectors, electrical shorts, etc.

**APPROVED**  
**FIRE, RESCUE, EMERGENCY MEDICAL SERVICES,**  
**AND COMMUNITY RISK REDUCTION MASTER PLAN**

that cruising speed (see [Appendix A](#)). The study is widely accepted throughout the nation, and similar results have been replicated in municipalities of varying sizes elsewhere in the United States.

Supplemental to the County-wide response time goals adopted by the Fire and Rescue Commission in July, 1998 were a set of goals that matched response times to population density. When analyzing projected population density throughout the County for 2015, it is readily apparent that density varies considerably when moving from Silver Spring, Takoma Park, and Bethesda; through Kensington, Wheaton, Aspen Hill, Rockville, Gaithersburg, Germantown and Clarksburg, to rural areas in the western, northern and northeastern areas of the County. Upon analysis of all areas of the County and associated population densities, three distinct density zones emerged -- Urban, Suburban, and Rural.

The original Urban Zone covered about 19% of the land area in the County and approximately 51% of the County's population. It included most of the down-County, including Silver Spring, Takoma Park, Hillandale, Wheaton, Kensington, Bethesda, North Bethesda, and portions of Burtonsville, Rockville, Glen Echo, and Cabin John. The average density within this zone was slightly above 6700 persons per square mile. Given the fact that this area has the highest projected density for 2015 in the County and about half the County's 2015 population, an appropriate set of response time goals for this area was determined to be:

- Provision of 6-minute ambulance or engine response to **85%** of the population, and
- Provision of 8-minute medic unit response to **95%** of the population

The original Suburban Zone covered close to 24% of the land area in the County and about 39% of the County's population. It included most of the central portion of the County, including Gaithersburg, Montgomery Village, Germantown, Derwood, and most of Rockville and Olney. Also included were Clarksburg, Poolesville, and portions of Cabin John, Potomac, North Potomac, Damascus, Burtonsville, Layhill, and Colesville. The average density within this zone was about 3500 persons per square mile. Given the fact that this area has the second highest projected density for 2015 in the County and about 40% of the County's 2015 population, an appropriate set of response time goals for this area was determined to be as follows:

- Provision of 6-minute ambulance or engine response to **65%** of the population, and
- Provision of 8-minute medic unit response to **90%** of the population

The original Rural Zone covered about 57% of the land area in the County but less than 10% of the County's population. It essentially included the area within the Agricultural Reserve as well as a few fringe areas approaching suburban areas. The average density within this zone was slightly less than 500 persons per square mile. Given the fact that this area has the lowest projected density for 2015 in the County and less than 10% of the

**APPROVED**  
**FIRE, RESCUE, EMERGENCY MEDICAL SERVICES,**  
**AND COMMUNITY RISK REDUCTION MASTER PLAN**

County’s 2015 population, an appropriate set of response time goals for this area was determined to be:

- Provision of 6-minute ambulance or engine response to **25%** of the population, and
- Provision of 8-minute medic unit response to **50%** of the population

The FRC response time goals for special service units and full box alarm assignments remained unchanged in terms of time, percentage and County-wide application (not broken down into specific density zones).

**Figure 1.2 - Urban, Suburban and Rural Response Time Goals**

Response Goal	Percent of Urban Population	Percent of Suburban Pop.	Percent of Rural Pop.
6-min. Ambulance	85%	65%	25%
6-min. Engine	85%	65%	25%
8-min. Medic Unit	95%	90%	50%

Source: *2000 Amendments to the Fire, Rescue, and Emergency Medical Services Master Plan*, adopted by the Fire and Rescue Commission, October 14, 1999.

The original urban, suburban and rural response time goals (summarized in [Figure 1.2](#)) further refine the County-wide goals adopted by the FRC pertaining to response time of first-due ambulances, medic units and engines. In conjunction with the County-wide goals, the urban, suburban, and rural goals allow the Fire and Rescue Service to better allocate its resources to meet the needs of the public throughout areas of varying density in the County. The creation of urban, suburban, and rural response time goals also brought MCFRS in compliance with Recommendation B.2-3 of the 1994 Master Plan, which called for the development of “maximum acceptable response times for different areas of the County.”

Recommended changes to the MCFRS response time goals are discussed in Sections 5 and 6 (Recommendations sections) of this Master Plan.

**DEPLOYMENT CRITERIA**

The MCFRS uses several deployment-related criteria to assist in the decision-making process concerning resource allocation. These criteria include 2500 incident responses per unit per year, and failures to respond (FTRs). Each is described below. Another recently published deployment criteria (i.e., NFPA Standard 1710) that could be used by the MCFRS in the future, depending upon whether it is adopted into law by the County Council, is also described below, following the FTR description.

**APPROVED**  
**FIRE, RESCUE, EMERGENCY MEDICAL SERVICES,**  
**AND COMMUNITY RISK REDUCTION MASTER PLAN**

**2500 Unit Responses per Year**

Although not appearing in the previous *Fire, Rescue and Emergency Medical Services Master Plan* (adopted October 1994), nor in the 2000 amendments to the previous Master Plan, the MCFRS and FRC have been using the criterion **2500 unit responses per year** as the threshold for identifying a unit that has become overextended and that may require the addition of another unit in the same station, or a nearby station providing the same type of service to the community. This threshold, or trigger level, was found to be used by other fire-rescue departments in the United States of a similar size and characteristics as MCFRS, although most departments do not have an established/adopted threshold figure to which they adhere.

The 2500 threshold was derived by the Station Location and Resource Allocation Work Group in 1998 and first placed in print by the MCFRS in the *Phase I Report of the Station Location and Resource Allocation Work Group* in 1999. The report states on page 18: “The Work Group has determined that the maximum threshold level for unit responses should be 2500 per year (equivalent to about 7 calls daily) for any unit. This maximum threshold level takes into consideration: the time spent on each incident (including trips to/from hospitals for EMS units and time spent [by personnel assigned to the unit] preparing units for service following an incident), time for training, and time for performing routine activities such as incident reporting, station/equipment maintenance, public relations, physical fitness, etc.” In 1999, the FRC adopted this criterion for the MCFRS. This criterion was a major factor in the decision to place additional EMS units in service at Stations 8, 12, 23, and 25 between 1998 and 2001.

During calendar year (CY) 2004, twenty eight fire-rescue units exceeded the 2500 response threshold, including 10 ambulances, 10 medic units, 6 engines, and one rescue squad. Furthermore, 16 of these units, mostly EMS units, each surpassed 3,000 responses during 2004. The 2004 incident data also revealed that two other units were nearing the 2500 responses per year level. The data indicates that additional units are needed to decrease the demand for these overextended units, or that the MCFRS may want to re-evaluate the 2500 threshold and possibly raise it, or that both actions are necessary in tandem.

**Failures to Respond**

The failure-to-respond (FTR) rate is another criterion used by the FRC and MCFRS to evaluate the need for additional personnel in the County’s fire-rescue stations. An FTR is the failure of a MCFRS unit to respond within 5 minutes of being dispatched, per FRC policy. If, after 3 minutes of having been dispatched, the unit has not indicated that it is responding, or personnel from that station indicate that the unit will not be able to respond, the ECC, per FRC policy, dispatches the next due unit of that type as well as a first responder unit for certain types of EMS incidents. After 5 minutes without

**APPROVED**  
**FIRE, RESCUE, EMERGENCY MEDICAL SERVICES,**  
**AND COMMUNITY RISK REDUCTION MASTER PLAN**

indication of response from the originally dispatched unit, the ECC records a FTR. While a small percentage of FTRs is caused by mechanical breakdowns of apparatus, the overwhelming majority of FTRs is due to lack of adequate staffing.

A station or individual unit having a high percentage of FTRs (e.g., at or above 2% of the total annual call load) is an indication that steps must be taken to ensure guaranteed staffing, such as adding career position(s), increasing volunteer coverage at the station, or a combination of these staffing enhancements to decrease the number of FTRs. Stations having even a low rate of FTRs are a serious concern, as MCFRS strives to achieve an FTR rate of zero in its efforts to better serve the public. It is important to note that stations having guaranteed staffing (i.e., Stations 6, 7, 20 and 26 that have been 100% career staffed since their opening) historically had a FTR rate at or very near zero. Any FTRs that did occur were due to mechanical problems with the apparatus or station alerting system.

### NFPA STANDARDS 1710 AND 1720

In July 2001, the National Fire Protection Association issued **NFPA Standard 1710 – “Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments.”** The purpose of this standard is to specify the minimum criteria addressing the effectiveness and efficiency of the career public fire suppression operations, emergency medical services, and special operations in protecting the public and the occupational safety and health of fire-rescue service employees. **NFPA 1710 is widely considered the benchmark for service delivery for urban fire-rescue departments in the United States.**

In 2001, the NFPA also issued **Standard 1720 – “Standard for Volunteer Fire Service Deployment”** applicable to those fire departments whose emergency response deployment is predominantly volunteer. The purpose of this standard is to specify the minimum requirements addressing the effectiveness and efficiency of volunteer public fire suppression operations, emergency medical services, and special operations in protecting the public and the safety and health of the volunteer members.

**Like all NFPA standards, both 1710 and 1720 are model standards that carry no mandate unless they are adopted by the “authority having jurisdiction,” such as a state, County or municipality.** When a department is comprised of a combination of both career and volunteer employees, “the authority having jurisdiction shall determine if the standard [1720] is applicable to their fire department,” per NFPA 1720. While the Montgomery County Council has not adopted into law either of these two NFPA standards, many fire-rescue departments throughout the United States have committed

**APPROVED**  
**FIRE, RESCUE, EMERGENCY MEDICAL SERVICES,**  
**AND COMMUNITY RISK REDUCTION MASTER PLAN**

themselves to meeting these standards whether by mandate of local law and/or by their desire to improve their operations to better serve their customers.

NFPA 1710 is the more stringent of the two standards (see discussion below); therefore it is considerably more challenging to meet. Standard 1710 establishes specific deployment and response criteria whereas Standard 1720 is non-specific in nature and therefore more subjective in terms of determining compliance. NFPA 1720 criteria are largely being met within rural areas of Montgomery County, so future emphasis should be placed on meeting NFPA 1710 requirements in urban and suburban areas.

NFPA 1710's deployment criteria address minimum staffing on units, minimum staffing levels for structure fire operations, minimum uninterrupted water supply and application rates for structure and wildland fires, and maximum response times for units to fire and EMS incidents. The exact criteria are presented in a chart in Appendix L. The chart compares NFPA 1710 deployment criteria to those used in Montgomery County in accordance with FRC policy and response time goals per *Fire, Rescue and Emergency Medical Services Master Plan*, as amended (i.e., 2000 amendments).

2002 data indicate that **NFPA 1710 response time requirements are largely being met within the urban areas of Montgomery County**. Water supply and application rates specified in Standard 1710 are also being met throughout areas of the County having fire hydrants and increasingly being met within areas lacking hydrants due to recent water supply improvements (e.g., additional water tankers, new rural water supply SOP) resulting from the implementation of recommendations appearing in the MCFRS *Water Supply Study* of 2000. The one NFPA 1710 requirement with which MCFRS is clearly not in compliance is unit staffing of individual engines, aerial units, and ALS ("medic") units. MCFRS exceeds the NFPA 1710 criteria for minimum staffing for structure fire operations, however, due to the number of suppression and rescue units due on first alarm and subsequent alarms, despite the lower number of personnel on board each individual unit.

NFPA 1710 also establishes service delivery criteria for special operations performed by fire-rescue departments, including confined space rescue, hazardous materials response, wildland fire suppression, airport fire suppression/rescue, and marine-based rescue and fire suppression services. Each of these special operations is individually addressed by a separate NFPA standard<sup>8</sup> (except marine-based rescue/fire fighting) and is only addressed in a general manner by NFPA 1710. Requirements for wildland fire suppression, however, are covered in NFPA 1710 in terms of water flow application rate, number and size of hose lines, and number of suppression and supervisory-level personnel.

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<sup>8</sup> NFPA 1670 – Standard on Operations and Training for Technical Rescue Incidents; NFPA 472 – Standard for Professional Competence of Responders to Hazardous Materials Incidents; NFPA 295 – Standard for Wildfire Control; NFPA 403 – Standard for Aircraft Rescue and Fire-Fighting Services at Airports

**APPROVED**  
**FIRE, RESCUE, EMERGENCY MEDICAL SERVICES,**  
**AND COMMUNITY RISK REDUCTION MASTER PLAN**

MCFRS' desire and future capabilities to meet the criteria set forth in NFPA Standard 1710 are discussed in Sections 4-6 of this Master Plan.

## PURPOSE AND SCOPE OF MASTER PLAN

The purpose of this *Fire, Rescue, Emergency Medical Services, and Community Risk Reduction Master Plan* is to set a forward-thinking, rational and attainable course for the continued delivery of effective and efficient fire, rescue and EMS services to the residents, business owners and visitors of Montgomery County during the ten-year life span of the Plan. This Master Plan is not meant to be a business plan for administering and managing the MCFRS, although a business plan is related to this Master Plan, and its content should be consistent with the principles, policies, recommendations, and overall intent of the Master Plan.

The **primary focus** of the *Fire, Rescue, Emergency Medical Services, and Community Risk Reduction Master Plan* is on the **external customer -- the citizens of Montgomery County**. The Plan must guide the MCFRS in how best the Service can meet the needs and expectations of the customer. The Plan can accomplish this task by addressing what emergency and non-emergency programs are needed, what apparatus and equipment are needed and where, what facilities are needed and where, and how best to train and deploy MCFRS personnel.

The *Fire, Rescue, Emergency Medical Services, and Community Risk Reduction Master Plan* is based upon the MCFRS vision, mission and guiding principles (see Section 2); MCFRS goals (see Section 2); and Chapters 2, 21, and 22 of the County Code. Conclusions, upon which Plan recommendations are made, are fact-driven, derived from incident data; GIS-based maps, analyses and data; U.S. Census data and statistics; community master plans; and demographic and incident-related trends.

## INTEGRATION OF FIRE-RESCUE AND COMMUNITY /MUNICIPAL MASTER PLANS

**It is important to ensure the integration of this *Fire, Rescue, Emergency Medical Services, and Community Risk Reduction Master Plan* with community and municipal master plans and sector plans** prepared by the Maryland-National Capital Park and Planning Commission (M-NCPPC) and several of the municipalities within Montgomery County (e.g., Rockville, Gaithersburg). Community/municipal master plans and sector plans address public services and facilities such as education/schools, transportation/transportation networks, libraries, pools, recreation/community centers,



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**FIRE, RESCUE, EMERGENCY MEDICAL SERVICES,**  
**AND COMMUNITY RISK REDUCTION MASTER PLAN**

law enforcement/police stations, and fire-rescue services/fire-rescue stations. **The fire-rescue master plan must be consistent with community/municipal master plans, and vice-versa, in terms of description of needs and recommendations to address those needs.** Facts, figures, and other information regarding fire-rescue services and facilities should also be consistent between these plans. This consistency ensures that citizens and elected officials are presented with the same message concerning fire-rescue service issues, needs and recommendations, so that they can identify and understand what issues and needs must be addressed and how best to respond to those issues and needs. This common understanding of issues and needs garners support for funding the services, initiatives, programs, resources and facilities called for in the master plans' recommendations.

Historically, this partnership between the MCFRS and municipal planning agencies and the integration of planning documents has not occurred to any meaningful degree. This lack of communication and integrated planning has, for the most part, resulted in community/municipal master plans not addressing the need and potential locations for new fire-rescue stations and related services in major growth areas of the County. Historically, the MCFRS did not participate in the process of revising community/municipal master plans, and the various planning agencies assumed, since MCFRS was not raising the need for new facilities and services, that nothing new was needed in terms of fire-rescue stations and expanded services and programs. The result is that the last new (additional) fire-rescue station in Montgomery County was opened in 1980 in Germantown. Since that time, the County's population has increased by over 300,000 (about 55%) and once rural or undeveloped land has now been converted into residences, businesses, schools and other structures – all contributing to large increases in the fire-rescue incident call load.

Starting with the previous *Fire, Rescue and Emergency Medical Services Master Plan* adopted in 1994, this issue is gradually being resolved. Planning agencies participated in the development of the 1994 Master Plan which included a recommendation calling for MCFRS and M-NCPPC to strengthen their relationship and coordinate planning efforts. In 1997, the MCFRS invited M-NCPPC to assist with a major planning initiative to assess fire-rescue station and resource needs within the up-County area. From that point forward, a strong partnership has evolved due to the commitment of both organizations. For the first time in decades, perhaps ever, a community master plan<sup>9</sup> was adopted in 2001 that called for a new fire-rescue station to be built in a specific area to serve a fast-growing area of the County. In addition, community master plans and sector plans under revision in 2002-2003 contain language regarding the siting of new fire-rescue stations in northern Rockville and Germantown.

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<sup>9</sup> *Potomac Subregion Master Plan* adopted in 2001, which recommended the construction of a fire-rescue station in the vicinity of Shady Grove Road and Piney Meeting House Road.

**APPROVED**  
**FIRE, RESCUE, EMERGENCY MEDICAL SERVICES,**  
**AND COMMUNITY RISK REDUCTION MASTER PLAN**

The effort to forge lasting partnerships with the planning departments of the cities of Rockville and Gaithersburg was, for the most part, initiated in 2000. It is important that this and future versions of the *Fire, Rescue, Emergency Medical Services, and Community Risk Reduction Master Plan* are integrated with the master plans of these two municipalities and others within the County. Efforts to initiate and then maintain long-term planning relationships with the Maryland State Highway Administration and with nearby jurisdictions (for regional plans) will also be needed.

## PLANNING ASSUMPTIONS

Planning assumptions on which this master plan is based are presented below.

1. The revised *Fire, Rescue, Emergency Medical Services, and Community Risk Reduction Master Plan* (hereafter referred to as the “Master Plan”) will be the single plan on which all fire, rescue and emergency medical services (EMS) resource allocation, station location, and service delivery will be based.
2. This Master Plan, or amendments thereof, will not be superseded by any other plan developed by the Montgomery County Fire and Rescue Service (MCFRS). Only amendments approved by the County Council may modify this plan. Other MCFRS plans addressing specific topics will be consistent with broader language contained in the Master Plan and will include no content contrary to that appearing in the Master Plan. MCFRS implementation and deployment plans, for example, may contain greater detail and minor deviations from this Master Plan as long as they meet the basic intent of the Master Plan.
3. The MCFRS will continue to be the County’s provider of fire, rescue and EMS services to the public during the ten-year lifespan of this Master Plan.
4. The Fire Chief will be the individual responsible for managing, administering and leading the MCFRS, and formulating and enforcing policies and procedures applying to all MCFRS operations and personnel.
5. The MCFRS will remain a combination system of career and volunteer personnel, and sufficient efforts will be undertaken to ensure the continuation of this long-standing partnership.
6. The MCFRS will receive adequate appropriations and support from the County Council that will allow for continued operation of existing programs/services, initiation of new programs/services as deemed necessary by the Fire Chief, and continued delivery of quality service to the public.

**APPROVED**  
**FIRE, RESCUE, EMERGENCY MEDICAL SERVICES,**  
**AND COMMUNITY RISK REDUCTION MASTER PLAN**

7. The fire, rescue and EMS incident call load in the County will continue increasing in relation to population growth, pace of development and other socio-economic factors.
8. The ongoing trend of EMS incidents comprising the vast majority of incident responses by the MCFRS will continue over the lifespan of this Master Plan.
9. County-wide risk related to terrorism will remain throughout the 2005-2015 period and may increase or decrease as the level of risk becomes better defined. The MCFRS will take an active role in the County's homeland security efforts to plan for, prepare for, respond to, and - to the greatest extent possible - mitigate acts of terrorism. The MCFRS will continuously increase its level of preparedness to a level commensurate with the perceived threat and risk.
10. Planning and preparedness for, and response to, large-scale emergencies (e.g., natural disasters, major transportation incidents, acts of terrorism, etc.) occurring in Montgomery County or within the Washington D.C. Metropolitan Area will be addressed from a more regional approach than in the past to ensure the most effective and efficient means of protecting the public.
11. While all age groups in the County will continue to increase in number, the largest percentage increase will occur in the 65 and over group. This growth will outpace all other age groups by a sizable margin. Due to this increase in elderly population, the EMS call load will rise sharply, particularly the ALS call load.
12. The trend of increasingly higher numbers of ethnically diverse populations residing in the County will continue. Likewise, the percentage of these diverse populations residing in the County in relation to all populations will continue to grow.
13. Residential and business development throughout the County will continue to grow at a steady rate between 2005 and 2015, particularly along the I-270 corridor, primarily in the up-County communities of Germantown and Clarksburg. Transportation infrastructure (highway and rail) will continue to expand within the County, as well.

## AMENDMENTS AND REVISIONS TO THIS PLAN

**In accordance with Montgomery County Code, Chapter 21 (as amended May 4, 2004), the Fire Chief must draft the Master Plan and any amendments.** These amendments and revisions must be developed in coordination with the Maryland-National Capital Park and Planning Commission, "health systems planning agency," Washington Suburban Sanitary Commission, other County departments, Metropolitan Washington Council of Governments, U.S. Department of Homeland Security, and other interested parties. The Fire Chief must conduct at least one public hearing before

**APPROVED**  
**FIRE, RESCUE, EMERGENCY MEDICAL SERVICES,**  
**AND COMMUNITY RISK REDUCTION MASTER PLAN**

proposing any significant amendment(s) to the County Executive. The Code also states that the County Executive must forward the Plan, or any amendment(s) proposed by the Fire Chief, along with any comments, to the County Council. The Council then approves the Master Plan, or amendments, as proposed, or with Council-directed revisions.

**An annual review of the Master Plan is in order to identify recommendations and actions that should be addressed in the annual work plan and to determine whether any amendments might be needed** to modify or add to existing strategies in response to a major change to the risk environment and/or current events. In addition, a review and updating of the Strategic Plan for Implementation of Master Plan Priorities (Section 7) is needed annually to coincide with upcoming fiscal year operating budget requests.

In addition to annual reviews, **the Plan will undergo comprehensive reviews at the 18-month mark, and again at the 5½-year mark, following its initial adoption by the County Council.** Revisions, possibly extensive in scope, will follow each comprehensive review, as needed. The Fire Chief, County Executive, or County Council may direct additional comprehensive reviews at any interval. Amendments to the Master Plan may be introduced at any time by the Fire Chief, as stated above.

The comprehensive review would begin in July 2006; eighteen months after Fire Chief Thomas Carr, Jr. took office. This approach is predicated on the new Fire Chief requiring 18 months into his tenure to review the Plan and determine whether its content reflects his vision and priorities for the MCFRS. It is envisioned that any necessary revisions /amendments would take approximately 6-12 months to complete, followed by a 6-12 month period of review by all stakeholders, and the required public hearing, prior to adoption by the County Council; therefore the entire process could take up to two years to complete.

**The next comprehensive review would occur 4 years after the first review was initiated,** which could be as little as 2 years since the revisions associated with the first review were adopted by the County Council. The revision/adoption process associated with the second comprehensive review may take up to two years to complete, as with the first review. By 4½ years following this second comprehensive review, the Master Plan will have sunset and been replaced by an entirely new Master Plan for 2015-2025. **It is envisioned that development of the 2015-2025 Master Plan will begin around the 8-year mark of the 2005-2015 Plan to ensure its adoption by the previous Master Plan's sunset date (i.e., December 31, 2015).** On or before January 1, 2016, a new Master Plan will likely be adopted by the County Council, following reviews by the Fire Chief, Fire and Rescue Commission, and County Executive as well as a public hearing.