SECTION 5

RECOMMENDATIONS
(WITH EXPLANATION/DETAILS)

CARRY-OVER RECOMMENDATIONS FROM 1994 MASTER PLAN, AS AMENDED

The following recommendations appearing in the 1994 *Fire, Rescue, and Emergency Medical Services Master Plan* **remain valid** for the ten-year period of 2005-2015, as they were not fully addressed or are of a continuing nature:

Recommendations from PART B - Service Demand – of the 1994 Plan:

B.2-1: Fire and rescue vehicle accessibility must be given significant consideration in the planning of parks and other low access areas. [Continuous recommendation]

B.2-2: The Fire and Rescue Commission should perform a risk analysis of the fire-rescue planning areas and recommend actions that might be taken to reduce risk or reduce the severity of incidents associated with higher risk areas. [See related recommendation below under "New Recommendations," sub-heading "Risk Reduction."]

Recommendations from PART D - Life Safety Services- of the 1994 Plan:

D.1-1: The fire and rescue service should continue to cooperate with appropriate public agencies and public interest groups in developing and implementing County-wide injury prevention programs. [Continuous recommendation]

Recommendations from PART F - Facilities – of the 1994 Plan:

F.2-1: As new development occurs in the County, the Fire and Rescue Commission should reassess the need for new or expanded stations. The Department [Division] of Fire and Rescue Services and the [Fire and Rescue] Commission should work closely with the Maryland-National Capital Park and Planning Commission as community master plans are prepared. [Continuous recommendation]

F.2-2: When corporation [LFRD]-owned stations are replaced, any agreements for the sale or reuse of the old stations should be decided on a case by case basis. [Continuous recommendation]

Recommendations from PART J Future Planning – of the 1994 Plan:

J.1-1: All fire and rescue service organizations should work from within the service to redefine organizational and leadership roles that promote the continued achievement of high quality public safety services.[Continuous recommendation]

Recommendations from PART K –Fire-Rescue Planning Area Profiles– of the 1994 Plan:

K-7.2: Evaluate the need for an additional fire and rescue station in conjunction with the amount of development. [Continuous recommendation]

DELETION OF OBSOLETE RECOMMENDATIONS FROM 1994 MASTER PLAN, AS AMENDED

The following recommendation from the 1994 *Fire, Rescue, and EMS Master Plan* is obsolete and, therefore, has been deleted:

C.6-2: Future intergovernmental agreements among Montgomery and Prince George's Counties and the City of Takoma Park to provide fire, rescue and emergency medical services to the City of Takoma Park by the Montgomery County Fire and Rescue Service should enable the County to determine which station (s) and apparatus are to serve the city. [Note: The unification of Takoma Park into Montgomery County in 1997 precluded the need for the referenced agreements and voided this recommendation.]

AMENDED RECOMMENDATIONS FROM 1994 MASTER PLAN, AS AMENDED

K-2.1. Further amend this previously amended recommendation [last amended in 2000] by adding the following statement to the end:

"Following the opening of the Clarksburg fire-rescue station, Station 9 will continue to operate. Incident call load in the area, risk analysis, and the ability to meet response time goals will be considered in determining the level of service provided by Station 9.

NEW RECOMMENDATIONS

New recommendations are presented in terms of the following categories for the convenience of Master Plan users:

- Planning Initiatives
- Facilities
- Apparatus and Equipment
- Staffing
- Resource Deployment
- Emergency Medical Services (EMS)
- Fire Suppression and Water Supply
- Specialty Teams, including response to WMD
- Decontamination
- Response Time
- Communications
- Readiness, including readiness for acts of terrorism
- Incident Command
- Risk Reduction
- Fire Code/Legislative Initiatives
- ISO Rating
- Fire and Explosives Investigations
- Fire Code Enforcement
- Training
- Safety and Wellness
- Information Technology
- Program Evaluation
- Accreditation

MCFRS PLANNING INITIATIVES

The Planning Office should take the lead or a primary role in addressing the following planning initiatives between 2005 and 2015: [»Cross-reference: Recommendations 1 and 36, Section 6]

- Conduct additional phases of the Station Location and Resource Allocation Study:

  - Phase 3 - Shady Grove, King Farm, and Derwood areas

  - Phase 4 - Northeast quadrant of County (primarily the first-due areas of Stations 4, 13, 17, and 28), including the Route 27 corridor north of Brink Road, Route

108 corridor between Routes 97 and 650, and Route 124 corridor north of Snouffer School Road

- Phase 5 - Eastern County, with emphasis on the Route 29 corridor north of University Boulevard

- Phase 6 - Western County, west of Stations 9, 22 (Germantown West), 30, 31, 33, and 35 (Clarksburg)

- Phase 7 - Norbeck Road corridor east of Gude Drive

Note: Phases 3, 5, and 7 should include a component examining the Inter-County Connector as it relates to MCFRS service needs and the delivery of fire-rescue services along the highway and adjacent areas.

- Participate in site selection for the following MCFRS facilities:

  - Shady Grove Station (Station 36)
  - Station 18 (relocated)
  - MCFRS apparatus maintenance facilities
  - MCFRS warehouse, if multi-agency facility does not prove feasible
  - Any standalone facilities for housing the "Ready-Reserve Fleet"
  - Any other facilities that require site selection (e.g., Stations 17 and 28, if not renovated on existing sites)

- Develop an implementation plan for this Master Plan and coordinate the implementation of Master Plan recommendations and strategies

- Coordinate and integrate the continued implementation of recommendations of FRC-approved studies (e.g., *2000 Water Supply Study*, *2001 Aerial Unit Study*, 2003 *Rescue Squad Report*)

- Coordinate the development of a MCFRS Business Plan that will set a course for how the MCFRS will be managed and operated to meet its Vision, Mission Statement, and Guiding Principles, and will be integrate with the *Fire, Rescue, EMS, and Community Risk Reduction Master Plan*

- Participate in the process to achieve MCFRS accreditation status, and participate in the re-accreditation process every 5 years [See “Accreditation” heading below]

- Participate in the process to achieve lower ISO ratings in non-hydranted areas of the County and, if cost-effective, within hydranted areas. [See “ISO” heading below]

- Assist in the development of an implementation policy for voluntary compliance with NFPA 1710, and prepare a report to the County Council on voluntary NFPA 1710 compliance

- Expand research and development efforts, with emphasis on new technologies, innovative concepts, policies and procedures

- Assist in the MCFRS' focus on regional approaches to planning, preparedness, training, and response in preparation for acts of terrorism and other mass casualty incidents

- Coordinate comprehensive reviews of this Master Plan at designated intervals, including 18 months from the date (i.e., January 1, 2005) the County Fire Chief took office in accordance with the provisions of Bill 36-03, and 5½ years following the adoption of this Plan by the County Council

- Coordinate the comprehensive replacement of this Master Plan for the next ten-year cycle (2015-2025)

To accomplish this extensive list of planning tasks and initiatives, the MCFRS Planning Office will require additional planning and GIS staff in the immediate and mid-term future.

FACILITIES

New, Relocated, or Renovated Stations and Other Facilities

a. "Germantown West" Fire-Rescue Station: The opening of the new "Germantown West" Fire-Rescue Station should occur in FY07. The station's first-due area will include western and southern Germantown, and Boyds (see map in Figure 5.1). The modified Class II **Germantown West station[1] should house an engine (equipped with a compressed-air foam system), an ambulance, and possibly a second EMS unit upon opening,** and have bay space available for additional units if required in the future. The station's first-due response area will include the south and west portions of Germantown as well as Boyds and nearby unincorporated areas of the County. Units from this station will also assist surrounding stations in protecting other areas throughout the up-County area, primarily Darnestown, western portions of Gaithersburg, Poolesville, Barnesville, Beallsville, and western portions of Clarksburg. [»Cross-reference: Recommendation 2a, Section 6]

[1] Site constraints have lead to a modified apparatus room design, including one full-size bay and five smaller bays, all requiring units to back in. The typical Class II station design includes 3 full-size, drive-through bays.

It is further recommended that **the Germantown West station be designated "Station 22"** within the MCFRS station numbering system (addressed below). Presently, this station number is unused[2] within the system and is, therefore, an appropriate number to assign to the Germantown West station. When this has occurred, the MCFRS will have stations consecutively numbered from 1-31, with other gaps remaining between 31 and 33, and between 33 and 40.

b. "Travilah" Fire-Rescue Station: The opening of the new "Travilah" Fire-Rescue Station should occur in FY08. The station's first-due area will include the Travilah and Traville areas, western portions of Rockville and portions of North Potomac (see map in Figure 5.2). This modified-Class IV, two-bay **station should house an engine and EMS unit upon opening**, but space will be available for additional units if needed in the future. The station's first-due area will include the Travilah and Traville communities, northwestern Rockville including Fallsgrove, and nearby unincorporated areas. Units from this station will also assist surrounding stations in protecting areas throughout the central and up-County regions, primarily Rockville, Shady Grove area, Gaithersburg, Potomac, and North Potomac. [»Cross-reference: Recommendation 2b, Section 6]

It is further recommended that **the Travilah station be designated "Station 32"** within the MCFRS station numbering system (addressed below). Presently, this station number is unused within the system and is, therefore, an appropriate number to assign to the Travilah station. When this has occurred, the MCFRS will have stations consecutively numbered from 1-33, with another gap remaining between 33 and 40.

c. "Germantown East" Fire-Rescue Station: The opening of the new "Germantown East" Fire-Rescue Station should occur in FY08 time frame. The station's first-due area will include eastern portions of Germantown, southeastern portions of Clarksburg and northwestern portions of Montgomery Village (see map in Figure 5.3). Upon opening, **this Class 1, four-bay station should house an engine, aerial unit, EMS unit (type to be determined), and a fourth unit to be determined at a later date** (e.g., a second EMS unit, or possibly the rescue squad now assigned to Germantown Station 29). The station will include a community room and extra parking spaces for those using the community room. The station will also serve as a satellite facility for the MCFRS Collapse Rescue Team (one of 27 national Urban Search & Rescue Teams under the FEMA-sponsored US&R program). The Germantown East station's first-due area will include the eastern and northern portions of Germantown, northern portions of Montgomery Village, and nearby unincorporated areas. Units from this station will also assist surrounding stations in

[2] [Former] Bethesda Station 22 was closed in 1976, and its number has never been reassigned.

protecting areas throughout the up-County region, primarily Montgomery Village, Gaithersburg and Clarksburg. [»Cross-reference: Recommendation 2c, Section 6]

It is further recommended that **the "Germantown East" station be designated "Station 34"** within the MCFRS station numbering system (addressed below). Presently, this station number is unused within the system and is, therefore, an appropriate number to assign to the Germantown East station. When this has occurred, the MCFRS will have stations consecutively numbered from 1-34, with another gap remaining between 34 and 40.

d. Clarksburg Fire-Rescue Station: The **Clarksburg Fire-Rescue Station should** open in FY09 and **should house an engine, tanker, medic unit, and brush unit** and have bay space for additional units if needed in the future. The **Class 1, four-bay** station will include a training room that could also be used by the community for meetings and small events. The station will include limited office space for use by MCP and the Up-county Regional Services Center staff as well. The station's first-due response area will include Clarksburg and nearby unincorporated areas (see map in Figure 5.4). Units from this station will also assist surrounding stations in protecting areas throughout the up-County region, primarily Hyattstown, Damascus, and Germantown. [»Cross-reference: Recommendation 2d, Section 6]

To address the fast pace of development in Clarksburg, corresponding increase in incident call load, and inability of existing stations and units to meet response time goals within Clarksburg, **an interim fire-rescue facility should be established in Clarksburg in FY06.** The interim station would serve Clarksburg until the permanent station is completed in FY09. Apparatus and staffing at the interim station should include a medic unit and engine. The interim facility should be located in the vicinity of Routes 355 and 121.

It is further recommended that **the Clarksburg station be designated "Station 35"** within the MCFRS station numbering system (addressed below). Presently, this station number is unused within the system and is, therefore, an appropriate number to assign to the Clarksburg station. When this has occurred, the MCFRS will have stations consecutively numbered from 1-35, with another gap remaining between 35 and 40.

e. "Shady Grove" Fire-Rescue Station: The opening of the new **Shady Grove Fire-Rescue Station** should occur during the FY10-12 timeframe. This station is the fifth priority in the order of new/additional fire-rescue stations. The station's first-due area will include the Shady Grove area, northern Rockville including the King Farm, southern Gaithersburg, and western portions of Derwood (see map in Figure 5.5). **The station should house an engine and EMS unit (type to be determined) upon opening** and have space available for additional suppression and EMS units if needed in the future. Units from this station will also assist surrounding stations in

protecting areas throughout the central-county and up-county areas, primarily Rockville, Gaithersburg, Traville, and Travilah. [»Cross-reference: Recommendation 3b, Section 6]

Taking full advantage of the central location within the County and extensive highway network, **the 5-6 bay Shady Grove station should be designed to house MCFRS specialty units** such as the Bomb Squad, up-county hazmat unit, Command Post bus, decontamination unit(s), air cascade unit, and proposed EMS bus. The station should also provide office space and dorm space for the Duty Operations Chief, an EMS Supervisor, and Fire & Explosive Investigators. Furthermore, **this facility should house a portion of the recommended MCFRS "Ready-Reserve Fleet," or alternately within an adjacent building,** if an appropriate sized parcel of land is available to house this apparatus in addition to others listed above. The recommended central MCFRS maintenance facility and full-size MCFRS warehouse are other candidate facilities for this site, if the property can accommodate them.

It is further recommended that **the Shady Grove station be designated "Station 36"** within the MCFRS station numbering system (addressed below). Presently, this station number is unused within the system and is, therefore, an appropriate number to assign to the Shady Grove station. When this has occurred, the MCFRS will have stations consecutively numbered from 1-36, with another gap remaining between 36 and 40 (to be addressed in the future if additional stations are recommended).

f. Wheaton Volunteer Rescue Squad: **The Wheaton Volunteer Rescue Squad (WVRS) is to be relocated to the intersection of Georgia and Arcola Avenues in Wheaton**. This site would place the WVRS in an ideal location for providing EMS and rescue services to Wheaton, Glenmont, and northeastern portions of Kensington and to the surrounding areas of Silver Spring, Aspen Hill, Layhill, Four Corners and Hillandale. The WVRS station should be a Class 1, four-bay station, including a community room. The station will be co-owned by the WRS and the County through a cost-sharing partnership. The anticipated completion date is FY07. The complete fleet of EMS apparatus should be moved from the existing station to the new facility. Upon relocation, the WVRS should retain its station designation as "Rescue Company 2." [»Cross-reference: Recommendation 2e, Section 6]

g. Cabin John Park Station 30: In accordance with Recommendation K-7.1 of the 1994 Master Plan, as well as recommendations in Phase 2A of the *Station Location and Resource Allocation Study* dated 2001, Cabin John Park Volunteer Fire Department (CJPVFD) **Station 30 should be renovated or replaced within the vicinity of existing Station 30**. Presently, the station is being renovated on the existing site located at 9404 Falls Road under a joint CJPVFD-County partnership. **The CJPVFD is funding and managing the expansion of the apparatus room**, from

two drive-through bays to four. **The County will fund an extensive renovation to the living quarters** of the smallest, and perhaps most obsolete, fire-rescue station in the County. The third and fourth bays will accommodate the CJPVFD's newly acquired tanker purchased with federal grant monies, as well as other Station 30 units presently housed in a detached storage building. The anticipated completion date for both the expansion and the renovation is FY06, although the expanded apparatus room will be completed in FY05. During renovation, temporary on-site living quarters (e.g., trailers) will be required. The station should retain its designation as "Station 30." [»Cross-reference: Recommendation 2f, Section 6]

h. Burtonsville Station 15: Burtonsville Volunteer Fire Department Station 15, located at 13900 Old Columbia Pike, is to be expanded to better accommodate its volunteer and career staff. **The planned additions include an expanded bunkroom (i.e., ten additional beds) and the addition of a meeting/training room that can also be used by community groups**. The expanded bunkroom is necessary due to the increased number of volunteers who stay overnight, including several who live at the station. The dual purpose meeting/training room is needed because this type of facility does not exist at Station 15. The community needs an all-purpose room of this type, as well. [»Cross-reference: Recommendation 2g, Section 6]

i. Glen Echo Station 11: Glen Echo Volunteer Fire Department (GEVFD) Station 11 located at 5920 Massachusetts Avenue **should be renovated on the station's existing site** in accordance with Phase 2B of the *Station Location and Resource Allocation Study*. The station will require extensive renovation to the entire building due to its age, obsolete layout, and condition. The County will fund the entire renovation project. The anticipated completion date is between FY11 and FY15, as this project was not ready to compete in the FY05-10 CIP Budget Request. During renovation, temporary off-site quarters (site and accommodations to be determined) will likely be required, so that the apparatus remains in service throughout the renovation period. Following renovation, the station should continue to house two primary apparatus (i.e., engine and EMS unit), and it should retain its designation as "Station 11." [»Cross-reference: Recommendation 3c, Section 6]

j. Laytonsville Station 17: Laytonsville District Volunteer Fire Department (LDVFD) Station 17 located at 21400 Olney-Laytonsville Road **should be renovated on the station's existing site or relocated to a nearby site**. The existing station was built around 1950 and is too small to accommodate present day apparatus and the required staff. Site issues include size of property and septic capacity (if sewer lines are not extended into Laytonsville). If renovated on site, the station will require extensive renovation to the entire building due to its size, layout, age and condition. If renovated on site, temporary off-site quarters will likely be required, so that the apparatus remains in service throughout the renovation period.

If the station is to be relocated, a site selection process must be undertaken, with input from Laytonsville area residents, LDVFD, and the County. Whether renovated or relocated, the station should be a Class 1, or modified Class 1, facility with four bays to accommodate the large fleet of vehicles[3] housed at Station 17. The LDVFD and Town of Laytonsville may wish to include a community room in the design. The source of funding for this project is yet to be determined, although a LDVFD-County cost-sharing partnership is likely. The anticipated completion date is between FY11 and FY15, as this project was not ready to compete in the FY05-10 CIP Budget Request but is likely to be included in the FY07-12 CIP Budget Request. Whether or not it is relocated, the station should retain its designation as "Station 17." [»Cross-reference: Recommendation 3d, Section 6]

k. Kensington Station 18: The State Highway Administration (SHA) has informed the Kensington Volunteer Fire Department (KVFD) and the County that the intersection of Georgia Avenue and Randolph Road, where Station 18 has been standing since 1954, will be reconfigured when State funding is available. The reconfiguration will reposition Randolph Road under Georgia Avenue. The land upon which Station 18 now stands will have to be condemned by the State to accommodate the widened road network; thus **Station 18 must be relocated**. The timing of the multi-million dollar road project was unknown in FY05 due to State fiscal issues and highway project priorities; therefore the timing of relocating the station is equally unclear. The existing station site is an ideal place from which to serve the community, so **the alternate site will need to be as close as possible**. During FY06, the KVFD, County, and Wheaton-Glenmont area residents must determine where the new station will be sited. **A 4-bay facility will be required** to accommodate the engine, aerial unit, brush unit, and, potentially, a future EMS unit and/or reserve apparatus. Upon relocation, the station should retain its designation as "Station 18." **There will likely be the need to establish temporary quarters** for Station 18's personnel and apparatus, depending upon whether the new station can be completed before SHA needs to demolish the existing fire station. [»Cross-reference: Recommendation 3a, Section 6]

l. Gaithersburg-Washington Grove Station 28: Station 28 was built in 1968 at the corner of Muncaster Mill Road and Shady Grove Road. It is a two-bay station with small living quarters. The station operates an engine and ambulance, but has taken on added importance as the central/up-county satellite station of the Hazardous Incident ("Hazmat") Response Team (HIRT). Due to its age, condition and small size, **Station 28 is a future candidate for either a major renovation or relocation**. It is ideally located to serve the community, so if it must be relocated, **the alternate site must be as close as possible.** [»Cross-reference: Recommendation 3e, Section 6]

[3] E171, EW-17, RE-173, RS-17, W-17, A-179, B-175, and E-172 (reserve)

The GWGFD has suggested that a suitable site might be adjacent to the Montgomery Airpark, where the site might serve a dual function as home for Station 28 and the future MCFRS warehouse, MCFRS maintenance garage, or other MCFRS facility. Should the Airpark's role expand (e.g., serving commuter airlines) and require the presence of an FAA crash-rescue station, then Station 28 might serve as a joint County-Federal fire-rescue station, as suggested by the GWGFD. This and other alternatives would have to be examined. If renovation of existing Station 28 were chosen over relocation, then the size of the existing parcel could be an issue if additional services and/or larger vehicles were to be housed there. This project will likely be ready for competition in the FY09-14 CIP Budget request. Whether or not the station is relocated, it should be a 3- or 4-bay facility to accommodate an engine, EMS unit, specialty unit (i.e., foam unit or hazmat unit), and, potentially, an additional service (e.g., 2nd EMS unit or an aerial unit) or reserve apparatus. The station should retain its designation as "Station 28."

m. Upper Montgomery County Station 14: Upper Montgomery County Volunteer Fire Department (UMCVFD) Station 14, located at 19801 Beallsville Road near the intersection of Routes 28 and 109, has been standing on its current site since the 1940s when the western portion of the County was comprised of farms, parkland, and a few crossroads towns. Beallsville, Poolesville, and Barnesville were all about the same sized crossroads towns, so Beallsville, being in the middle, was chosen as the site for the UMCVFD station. Several decades later, Poolesville had emerged as the largest town in the western County, considerably larger than Beallsville and Barnesville. Today, Poolesville has a population of almost 7000, numerous residential neighborhoods and a business district. It is no coincidence that most of Station 14's call load is in and around Poolesville. Station 14, located about 2.5 miles to the north, must travel about 4.5-5 minutes on Route 109 to reach the main Poolesville intersection of Routes 109 and 107. **During the ten-year life span of this Master Plan, the UMCVFD and the County must consider relocating Station 14 into, or closer to, Poolesville**. When the western County is studied during Phase 7 of the Station Location and Resource Allocation Study, this topic will be one of many examined. The station should retain its designation as "Station 14," whether or not the station is relocated. [»Cross-reference: Recommendation 3f, Section 6]

n. Central Warehouse (Multi-agency or MCFRS-only): MCFRS has established the need for a warehouse that would allow for storage and distribution of clothing, protective gear, SCBA, equipment, and supplies used throughout the MCFRS (see Figure 4.4 in Section 4 for a complete listing of MCFRS items requiring storage at this facility). The warehouse must be configured and operated such that it can support rapid deployment of items during large-scale incidents and/or times of Countywide or region-wide crisis. The facility should also be configured and staffed to provide maintenance and service for SCBA and other equipment, but not for vehicles (maintenance of vehicles is addressed below). The MCFRS has already

stated its interest in becoming one of several County departments to share a multi-agency warehouse; however, if that venture is not feasible, then MCFRS should pursue construction, or lease, of a warehouse of its own. Whether a multi-agency warehouse or MCFRS warehouse, the facility should be as centrally located within the County as possible to conveniently accommodate customers from all fire-rescue stations and other MCFRS work sites. Warehouse space of approximately 50,000-60,000 square feet would be required to store all equipment and supplies listed in Figure 4.4. [»Cross-reference: Recommendation 4, Section 6]

If, due to budget constraints, neither the multi-agency warehouse nor the MCFRS warehouse is feasible over the ten year life cycle of this Master Plan, then **the least costly alternative is to construct or lease a smaller facility to, at a minimum, store uniforms, protective gear, SCBA, and some readiness equipment for large-scale incidents.** As this Plan was being finalized, the County was negotiating a lease for a 33,000 sq. ft. warehouse facility in Rockville to be used by MCFRS.

o. Centralized MCFRS Maintenance Facility: **The desired manner in which to address MCFRS vehicle maintenance is to provide: 1) a large-capacity centrally-located facility to which all MCFRS vehicles would go for major repairs and servicing needs; and 2) two smaller maintenance shops that would handle preventive maintenance and minor/"running" repairs now accomplished by the existing satellite shops**. The smaller shops would be located elsewhere in the County. This proposal would replace the current system using six maintenance shops – one per battalion, plus one serving the B-CC Rescue Squad. The proposed central facility should be centrally located, so that no vehicle would have to travel across the entire County to receive major servicing or repairs. As of 2005, the MCFRS was already searching for a vacant site or existing facility (to be renovated) to serve the purpose of this central facility. [»Cross-reference: Recommendation 5, Section 6]

p. Facilities for Ready-Reserve Fleet: While a portion of the "Ready Reserve Fleet" (RRF) would be housed at existing fire-rescue stations (wherever bay space is available), **the MCFRS should acquire or lease a centralized facility to house a large portion of its RRF. Additional sites for the remainder of the RRF must be identified and appropriate facilities built or modified** (if existing garage-type building(s) are to be used). Under the assumption that all apparatus maintenance and replacement provisions of the Apparatus Management Plan have been implemented, the size of the RRF should be equivalent to 30% of the frontline apparatus with respect to each breed of apparatus (i.e., EMS unit, engine, aerial unit, rescue squad, tanker, brush unit, etc.). [Note: The RRF is examined in greater detail under the "Apparatus and Equipment" heading below.] [»Cross-reference: Recommendation 6, Section 6]

Public Safety Communications Center: While the PSCC is expected to remain at its existing location throughout the 10-year life cycle of this Master Plan, **spatial and functional needs of the multi-functional Center must be re-assessed** during the latter years of this Plan's life cycle. Likewise, there are no plans to expand or relocate the Alternate PSCC during this 10-year period. Considering that the newest PSCC is based upon technology from the 1998-2000 era, existing communications systems will eventually require replacement with newer technologies entering the marketplace. This eventual need for newer systems and equipment, along with the potential need for additional PSCC staff, will be important factors in reassessing future functional and spatial needs of the PSCC. The recommended assessment should be a joint MCFRS, MCP, DHS, and DPWT effort, since all parties share the existing PSCC. [»Cross-reference: Recommendation 7, Section 6]

q. Live-Burn Training Site: The Fire-Rescue Training Academy (FRTA) is limited in its ability to conduct live burn training[4] at the PSTA, due to pressure from the surrounding community as well as environmental regulations (as explained in Section 4). Class-A (i.e., ordinary combustibles such as wood, straw, paper) and Class-B (i.e., flammable liquids such as gasoline, diesel fuel, home heating oil) live-burns at the PSTA are stringently controlled. Appropriate training for firefighters; however, requires that they learn the safest and most effective techniques for suppressing Class-A and Class-B fires. **The only viable solution to this issue is to establish a live-burn training site in a rural portion of the County**, where training fires will have minimal impact on residents, businesses, and the environment. **The MCFRS should begin planning for this type of facility and searching for a suitable site within the 2006-2010 timeframe**. [»Cross-reference: Recommendation 8, Section 6]

Numbering System for New Stations

In 2005, MCFRS had stations numbered as follows: 1-21, 23-31, 33 and 40. **It is recommended that the MCFRS fill gaps in its sequential numbering system for fire-rescue stations.** As recommended in the "New, Relocated or Renovated Stations and Other Facilities" category above, **the numbers would be assigned as follows:**

- **Station 22 - "Germantown West "**
- **Station 32 - "Travilah"**
- **Station 34 - "Germantown East "**
- **Station 35 - Clarksburg**
- **Station 36 - "Shady Grove"**

To address the gap between 36 and 40, any future MCFRS stations should be assigned the following numbers (in order): 37, 38, 39. Any future stations beyond

[4] As explained in Section 4, the FRTA uses various gas-fueled fire simulators, instead of Class A and B materials, to train firefighters in suppression tactics.

these three should be numbered sequentially beginning with #41, since #40 is assigned to an existing station. [»Cross-reference: Recommendation 9, Section 6]

Station Location and Site Suitability Criteria

The following **list of site location criteria,** used in identifying target areas for several new up-county stations, **should be recognized as the standard criteria that will be used for determining target areas[5] for the siting of new stations**: [»Cross-reference: Recommendation 10, Section 6]

- Response time – in relation to County Council-adopted response time goals
- Population – density and total population served
- Special needs populations – e.g., elderly, handicapped, non-English speaking
- Incident call load – all fire, rescue and EMS incident types
- Area of coverage – square mileage within first-due area
- Proximity to surrounding stations
- High hazards – based on a hazards analysis
- Water supply for fire suppression – hydrants, certified drafting points, etc.

The following **list of site suitability criteria,** used in evaluating and selecting sites for several new fire-rescue stations, **should be recognized as the basic criteria[6] that will be used in all future MCFRS site evaluations/selections**:

- Size – 3-5 acres is preferred
- Shape/dimensions – sufficient width and depth
- Topography – preferably level
- Quick access to major roadways – preferably both north-south and east-west
- Egress and ingress of fire-rescue apparatus and citizens' vehicles
- Not located on or at the bottom of a steep grade, or on a sharp curve in the road
- Compatibility with surrounding land-uses
- Soil composition/stability
- Utility hookups – electricity, water/sewer, gas, phone, cable TV, IT systems
- Well and septic suitability, only if municipal water/sewer hookups are not feasible
- Availability and ease of acquisition
- Cost (if other than County-owned)

[5] "Target area" refers to an area within the immediate vicinity of a "bulls eye" point on a map where analysis indicates that a fire-rescue station should be sited to best meet community needs and station location criteria (as contained herein).

[6] These basic criteria are subject to modification by Regional Service Center Directors who have the responsibility and authority (granted by the County Executive) for leading site evaluations for all new fire-rescue stations and making related recommendations to the County Executive.

- Special considerations – environmental issues (e.g., wetland), historic designation
- Pedestrian safety
- Traffic signalization and any roadway access issues

Land Reservation for Future Stations

As land becomes less readily available as the County becomes further developed, the need for advanced land reservation for MCFRS facilities is vitally important. To simplify the site selection process, ensure reservation of land, and decrease, or eliminate, land acquisition costs, the **MCFRS should implement a dual-pronged approach to land reservation.**

One approach is to coordinate the reservation of land for future fire-rescue stations within proposed developments. This would be accomplished via the County's Adequate Public Facilities Ordinance that requires developers to set aside property for future public facilities and through the Growth Policy which attempts to assure that key public infrastructure and facilities keep pace with planned growth. To the greatest extent possible, the MCFRS must follow the lead of MCPS in reserving land for future facilities far in advance. One opportunity to accomplish this action is to work in conjunction with M-NCPPC's Development Review Division to become aware of proposed developments that may be of sufficient size and scope to require a fire station. When a new fire station is indicated, the County could require developers to reserve land for the station, and possibly require them to build the station, as a pre-requisite for obtaining approval for the proposed development. Another opportunity is to work closely with the Directors of the County's Regional Service Centers when negotiations are occurring between the County and developers concerning the establishment of land development districts. The County may be able to require the developer to donate land and/or construction money toward a fire station as part of the deal in obtaining approval for forming the desired land development district.

The second of the dual-pronged approach, which may at times occur in parallel with the first, is for MCFRS to pursue its land needs through the community master planning process. Once a new fire station project is identified by MCFRS and the department has determined a general location for the facility, the MCFRS Planning Office should contact M-NCPPC's Community-Based Planning Division, or the municipality having jurisdiction (if applicable), to ensure that the applicable master plan identifies the need for a new fire station in a particular area. If the community master plan is undergoing revision, that provides an excellent opportunity to address the community's need for the new fire station and the station's land requirements. If the community master plan is not under revision, then an amendment to the plan may be required to accommodate the new station. The MCFRS has had success in recent years having new fire stations identified within community master plans under revision (e.g., Potomac Sub-region Master Plan, draft Shady Grove Sector Plan). Future fire-rescue

resource needs unrelated to new facilities have also been addressed recently in several other revised community master plans (e.g., Olney Master Plan, Upper Rock Creek Master Plan) due to timely coordination between the MCFRS Planning Office and M-NCPPC's Community-Based Planning Division.

Once a new fire station project is identified and a general location for it has been determined by MCFRS, the department should initiate coordination with the Director of the applicable Regional Services Center (RSC) to form a Site Evaluation Work Group[7] to identify and evaluate specific sites. Once the Work Group's site recommendations and those of the RSC Director are forwarded to the County Executive and the County Executive selects a site, the MCFRS and RSC Director should then coordinate land acquisition (unless the site is publicly owned) with the Office of Management and Budget and DPWT's Real Estate Office. OMB will then pursue acquisition of the land through use of the Advance Land Acquisition Revolving Fund (ALARF), or other funding mechanism so that planning and design for the station can begin as soon as CIP funding is secured. [»Cross-reference: Recommendation 11, Section 6]

An important step in the site selection process is Mandatory Referral through the Planning Board. For a site to be considered for Mandatory Referral, the requesting department or agency must submit documentation containing responses to 15 criteria set forth by the M-NCPPC. The criteria examine the appropriateness of the site for the intended facility, focusing on the community need for the facility, conformity with the community master plan and land-use policies, compatibility with the immediate neighborhood, storm water management and other environmental concerns, and several other concerns. **For every new facility, the MCFRS should seek Mandatory Referral from the Planning Board beforehand**. While the Planning Board's decision is only advisory in nature, the County Council (that makes the final decision regarding CIP projects) will consider the Planning Board's recommendation.

Assignment of Stations

In accordance with County Code, Chapter 21, Section 26(g), all new (additional) fire-rescue stations in Montgomery County have always been assigned by the County to one of the LFRDs, including those stations staffed entirely by career personnel. By having a station assigned to it, the LFRD was given responsibility for ensuring that the station could be safely occupied and effectively operated on a continuous basis by a staff of career personnel, volunteers, or a combination of both. The assigned LFRD was given the responsibility for providing utilities, appliances, food preparation and serving equipment, administrative equipment and products, paper products, cleaning equipment and products, and all other items needed to physically operate the station. The LFRD

[7] A Site Evaluation Work Group is led by the Director of the applicable Regional Services Center and comprised of citizens of the affected community and representatives of several County departments (including MCFRS, DPWT, and OMB) and the M-NCPPC.

was also made responsible for overseeing maintenance of the station, grounds, out buildings (if any), and apparatus.

With the trend for more and more stations being staffed predominantly or solely by career personnel, it is no longer appropriate or advantageous to automatically assign new (additional) stations to existing LFRDs. **It is hereby recommended that any new (additional) fire-rescue stations built after 2005 with County funds be operated by the County, unless and until the appropriate LFRD submits an acceptable business plan**[8] addressing volunteer staffing of the station's frontline units and LFRD financial commitment to station operation beyond County funding. [»Cross-reference: Recommendation 13, Section 6]

Station Design

Since 1997, the MCFRS has used a **prototype fire station guide** as the basis for selecting the desired size and major features of future stations and also as a guide for station design. The existing guide, titled "Program of Requirements: Prototype Fire Stations Class I, II, III IV," was adopted by the Fire and Rescue Commission in 1997. **While this guide served a MCFRS need in the late 1990s, its usefulness has decreased over time due largely to its rigidity and obsolescence**. While the guide offers four different classes of stations and each class has a range of square footage, few replacement stations that have been built between 1997 and 2005 have matched the various prototypes described in the guide. The primary reason for this is that each new station must be viewed and designed in terms of the unique needs that it must meet, rather than applying a "cookie-cutter" approach.

Over time, it has become more apparent that new stations must be larger than those serving past needs. Today's fire-rescue stations, and those of the future, must be sufficiently large to accommodate more personnel (including those called back to duty for imminent disasters such as hurricanes or immediately following unexpected emergencies such as terrorist attacks), greater number of vehicles (including bay space for reserve units and possible future frontline units), larger vehicles, new requirements (e.g., decontamination room, gear storage room, IT closet) and more equipment and supplies (including stockpiles for disaster operations). The days of newly built two-bay stations are nearing an end[9], and the same may soon be true for newly built three-bay stations. That would leave only the four-bay, Class 1 prototype station versus the four classes that appear in the existing prototype station guide.

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[8] The CAO will determine the acceptability of the business plan.

[9] The future Travilah station will be limited to a two-bay station due to lack of available space at the Training Academy to add more apparatus bays onto what will become a five-bay garage serving both Academy and fire station needs. A two-bay station is considered minimally acceptable to provide service to the Travilah area, while taking advantage of County-owned property requiring no acquisition costs.

In place of the prototype guide, a design manual is needed. The manual should contain criteria, requirements, checklists, and information that assist the user in designing each station individually, although there will be certain requirements common to every station that will be "boiler plate" items within the design of every new station. The proposed guide must address specific operational and administrative needs, including overall functionality within the station, safety, training, storage, and other needs that will be unique to each station. Unique needs are becoming more prevalent as stations take on specialized functions in addition to their traditional fire, rescue, and EMS functions. For example, certain stations must be designed to support the MCFRS specialty teams including their unique storage, equipment maintenance, and training requirements. In the future, stations will need to be designed to house reserve and ready-reserve apparatus in addition to standard frontline apparatus. Certain stations will need extra office and dormitory space to accommodate command and support personnel at the department and/or battalion levels such as the Duty Operations Chief; Apparatus & Equipment Chief; scheduling staff; and Battalion Chiefs, Training Officers, Safety Officers, EMS supervisors, and code enforcement inspectors. Certain stations will also need to include community rooms of varying sizes[10] to meet individual community needs. In addition, the need could arise for bay space for maintenance purposes at certain of the new stations. **A design manual will allow station designers to address these varied needs without the constraints of the existing prototype station guide** and, therefore will be a more useful tool. [»Cross-reference: Recommendation 12, Section 6]

Early within the ten-year life cycle of this Master Plan, the MCFRS, in conjunction with DPWT, should **develop a fire-rescue station design manual** to replace the existing *Program of Requirements: Prototype Fire Stations Class I, II, III IV* guide. **New station designs must consider changes in operation, technology, and mission.** For example, there is need for **larger storage space** for the stockpiling of rapidly deployable supplies and equipment, so that stations/crews are self-sufficient during times of crisis when normal restocking of supplies cannot be accomplished. There will likely be the need to house larger apparatus, as well, as vehicles increase in size to accommodate larger inventories of specialized equipment. **New station designs should also include station "hardening" components and systems to protect the integrity of the facilities** from natural hazards, civil unrest, terrorism, and environmental threats to ensure that stations remain safe to occupy and functional at all times. Station design must also address emerging needs brought about by future MOSH and/or NFPA requirements.

[10] The existing prototype station guide includes a 2000 square foot community room within the requirements for a Class I station. In the future, community rooms in some stations may need to be larger.

Environmentally-Compatible Facilities and Equipment

In 2002, the MCFRS implemented the County's **System of Environmental Management (SEM)** – the environmental policy and supporting procedures governing the Service's interaction with the environment. Through its SEM/environmental policy, the MCFRS is committed to the following measures:

- Preventing pollution
- Complying with applicable environmental laws, regulations, and other requirements
- Complying with applicable County environmental policies and procedures
- Developing, implementing and improving an environmental management system

Key elements of the MCFRS' SEM include the following:

- Identifying and managing the potentially significant environmental impacts (i.e., impacts to the atmosphere, water, land, natural resources, flora and fauna, human health) of MCFRS activities and services
- Training employees to increase their awareness of environmental responsibilities
- Establishing measurements to document effectiveness of environmental action plans
- Improving the environmental trends identified in the *Environmental Awareness 2000 Report*

There are several measures that the MCFRS should consider implementing with regard to its facilities and everyday operations to become more environmentally compatible and to meet the intent of the SEM. Some are more easily incorporated into new or renovated facilities, while others can be easily incorporated into existing facilities and operations. A detailed list of environmentally-compatible measures can be found in Appendix M. Many of these measures can be implemented at nominal or no cost and can save money on electric and natural gas bills. Some measures will also reduce exposure to chemicals; thus reducing adverse health effects on staff. [»Cross-reference: Recommendation 14, Section 6]

While it is impractical to use alternative fuels for emergency vehicles, the MCFRS should consider pilot testing an alternative fueled vehicle for non-emergency use such as the MCFRS mail delivery vehicle or a MCFRS vehicle used by the civilian staff.

APPARATUS AND EQUIPMENT

1. Apparatus Maintenance, Rehab and Replacement

A. MCFRS Apparatus Management Plan [»Cross-reference: Recommendation 15, Section 6]

The MCFRS should adopt and implement the recommendations presented in the April 2004 "MCFRS Apparatus Management Plan" (AMP), as updated in May 2005. The AMP recommends the following overlying strategies and implementation timeline concerning apparatus purchase, replacement, maintenance, and testing:

1) A system of **centralized accountability** for ensuring that the maintenance organization, business processes and performance standards meet current and projected MCFRS apparatus and service needs.

- Centralize authority for direction, planning and management of MCFRS under Assistant Chief for Apparatus Management
- Consolidate LFRD apparatus budgets into a single budget managed by the Assistant Chief
- Analyze transition of LFRD-employed mechanics to County employment
- Provide additional training and certifications for apparatus mechanics
- Develop business processes to sustain readiness of frontline, ready reserve and backup reserve units
- Plan and implement the consolidation of apparatus maintenance, tools and equipment into a single organizational code to be managed by the Assistant Chief for Apparatus Maintenance
- Finalize and implement organizational and technical staff requirements to implement a comprehensive MCFRS fleet management program
- Hire and transition personnel as appropriate

2) **Safety and performance standards** for vehicles and equipment.

- Develop and implement daily vehicle condition reports and procedures for declaring vehicles out of service
- Survey and complete an inventory of tools and specialized equipment for apparatus maintenance
- Develop and adopt policy for uniform standards for inspections and testing of fire apparatus
- Develop and adopt policy for hose and ground ladder testing
- Test and inspect vocational equipment, hose, nozzles, appliances, ladders and other portable fire fighting equipment

- Establish uniform standards and specification for inspection, testing, maintenance, and repair of all SCBA

3) **Standards and procedures** for performing daily vehicle inspections, reporting defects, and determining and expeditiously resolving problems for vehicles declared as out of service.

- Develop and implement a policy for regular daily condition reports and procedures for declaring vehicles out of service
- Train drivers and unit officers on maintenance operations and regular and accurate apparatus condition reports

4) Effective **safety and training program**, including driver training and certification.

- Develop and plan driver training program for certification/re-certification
- Provide continued training for mechanic certification and technical competence
- Implement Driver Training Academy for driver certification and re-certification

5) An effective **preventive maintenance program** with ready access to standby frontline and reserve vehicles to ensure that service delivery is not disrupted.

- Develop regularly scheduled levels for apparatus preventive maintenance, including reporting requirements
- Increase budgeted amount for fleet maintenance and repairs to reflect actual business volume, condition and age of the fleet, and increased travel distances incurred
- Evaluate and make continuous improvements to preventive maintenance scheduling and reporting
- Evaluate the consolidation of all MCFRS light duty vehicles into a single preventive maintenance and servicing center

6) On-going and comprehensive **testing and inspection program** for vehicle and equipment compliance with uniform standards to improve reliability and readiness.

- Develop and adopt policies to implement uniform standards for apparatus testing, inspections, and maintenance

7) A **management information system** that provides accurate, timely and uniform reporting of vehicle maintenance and condition to support system-wide fleet management. [This item has appeared in several MCFRS Operating Budgets as a competition item but never funded.]

- Plan and implement apparatus maintenance records management system for apparatus maintenance and reporting protocols
- Evaluate and monitor application of apparatus records management software to analyze maintenance data.
- Analyze data for trends and maintenance issues
- Analyze and evaluate options for fuel monitoring and distribution
- Plan implementation of fuel monitoring system
- Implement uniform fuel monitoring and distribution system

8) Cost-effective **inventory management system** to improve efficiency and reliability and to reduce down time related to parts availability.

- Analyze and establish inventory for certain component parts
- Conduct inventory of parts used and plan for future centralization of apparatus parts
- Analyze integration of inventory management software with apparatus condition and defect reporting in an apparatus records management system
- Analyze and develop plan to meet the need for portable tools management including inventory and maintenance to assure readiness and adequate supply

9) A fleet that provides for **fully-equipped ready-reserve vehicles** to assure continuity of service delivery or to respond to surge requirements in the event of a disaster.

- Adopt policy establishing ratio for ready reserve units
- Based on policy, order equipment for the ready reserve units
- Develop and implement equipment purchases to outfit and equip ready reserve units with the required tools and equipment to be placed into service immediately if needed
- Develop system of inventory and control of equipment on ready reserve units

10) A cost-effective **vehicle replacement/rehabilitation schedule** that reflects the duty cycle of the apparatus.

- Review, update and revise apparatus replacement plan
- Develop and adopt revised policy for replacement schedule
- Place order to lease-purchase backlogged units, including equipment, tools and appliances so units can be placed immediately into service
- Review, update, and revise apparatus replacement plan reflecting prior year purchases. All apparatus purchased or leased should be fully equipped.
- Maintain and update fleet replacement plan reflecting prior year apparatus purchases. All apparatus purchased or leased should be fully equipped.

11) **Cost-efficient facilities with appropriate capacity** to accomplish the fleet management maintenance requirements and functions to operate and sustain fire and rescue service delivery for current and projected needs of the County.

- Analyze need and develop plan for centralized inventory for certain component parts
- Analyze and recommend strategy for parts inventory and management – centralized, distributed, or vendor-controlled
- Develop and complete an inventory of tools and specialized equipment needed to maintain fleet
- Develop scope and start facility planning for maintenance facilities to replace obsolete and aging facilities.
- Amend the CIP to reflect apparatus maintenance facilities for current and projected needs
- Address the need for leased space to transfer RVFD fleet maintenance functions to the County.
- Address warehouse space requirements for storage and distribution of frequently used parts
- Assess, evaluate, and plan the implementation of ISO 14001 - Environmental Management Systems for all fire and rescue facilities
- Achieve compliance and work towards certification.

12) Adopt MCFRS policies addressing the following aspects of apparatus and equipment management:

- Adopt uniform reporting procedures for apparatus maintenance to implement the *Firehouse* apparatus maintenance reporting system, including requirements for reporting of apparatus condition and defects, scheduled preventive maintenance, maintenance history and other maintenance information
- Adopt policy for apparatus replacement schedule (10-12 year replacement cycle consistent with national standards)
- Adopt policy for establishing ratio for ready reserve and backup reserve units
- Adopt policy for vehicle condition and defect reports and procedures for declaring vehicles out of service
- Adopt policies regarding driver certification and re-certification requirements
- Adopt policies to implement standard and regularly scheduled levels of preventive maintenance and reporting requirements for apparatus consistent with national standards
- Adopt policy establishing centralized inventory for certain component parts
- Revise and adopt amended Master Plan that reflects the potential for centralized facility for parts inventory
- Revise and adopt amended Master Plan that includes the need for additional maintenance facilities, and potentially centralized facilities

- Adopt policies to standardize testing and inspection requirements for apparatus consistent with national standards, including standards for pumps, hose, aerial ladders, and ground ladders

B. Aerial Unit Study Recommendations Related to Apparatus

MCFRS should move toward deploying an aerial unit fleet with a composition of 75% tower-ladders and 25% tractor-drawn ladder trucks. This desired mix should be pursued over time as new apparatus is purchased. **In addition, the MCFRS should continue evaluating the "all-steer" technology** that, in theory, allows the rear wheels of rear-mount ladder trucks to maneuver easier than conventional steering systems. [»Cross-reference: Recommendation 27, Section 6]

C. Water Supply Study Recommendations Related to Apparatus

In accordance with recommendations in the *2000 Water Supply Study*, **the MCFRS should purchase suppression units with the following minimum capabilities and features:** [»Cross-reference: Recommendation 25, Section 6]

- **Engines – pumping capability of at least 1500 gpm**
- **Tankers – elliptical-shaped tanks of 3000-3500 gallon capacity**

Note: Since FRC-approval of the *2000 Water Supply Study*, all engines and tankers purchased after 2000 have met these criteria, with the exception of Tanker 30 which is not elliptical-shaped (but does carry the recommended 3500 gallons of water).[11]

D. Pilot Testing of Specialized Units

See "Pilot Tests of Apparatus and Equipment" below

2. Equipment Purchase, Replacement and Maintenance

A. Personal Protective Equipment (PPE) – **The MCFRS should purchase a second set of PPE for all personnel to carry with them in their privately-owned vehicles in case of emergency callback**. This ensures that a backup set is readily available if the primary set becomes unusable due to contamination, torn fabric, water saturation, and/or other problems. Federal Urban Area Security Initiative (UASI) grant funds will be used for the initial purchase; however, County funding must be secured for future replacements of PPE backup sets.
[»Cross-reference: Recommendation 17, Section 6]

[11] Tanker 30 was purchased by the Cabin John Park VFD using a federal Fire Act Grant awarded to the department. CJPVFD wrote the specifications for this tanker.

B. Equipment for Reserve Apparatus – **The MCFRS should place a full complement of equipment on all reserve apparatus, so that these units can be placed into service on short notice**. Units lacking a full complement of equipment cannot be placed in service quickly; in fact, transferring equipment from one unit to another can take several hours. This delay must be avoided to ensure that the minimum complement of County-wide frontline MCFRS units remains available on a 24/7 basis. [»Cross-reference: Recommendation 18, Section 6]

C. Water Supply Study Recommendations Related to Equipment

Standardized Hose Appliances - **Coordination should continue between the County and the LFRDs to standardize hose appliances carried by engines, engine-tankers and quints**. Hose appliances include nozzles of all types, Storz® couplings, coupling adapters, siamese and wye connections, spanner wrenches, hydrant wrenches, hose clamps, hose jackets, and hose ramps.
[»Cross-reference: Recommendation 26, Section 6]

D. Rescue Squad Study Recommendations Related to Equipment
[»Cross-reference: Recommendation 28, Section 6]

(1) Thermal Imager - **All rescue squads should have at least one thermal imager as part of the on-board inventory**. These devices assist firefighters in locating injured or trapped persons in burning structures and in identifying the actual seat of the fire behind walls and above ceilings.

(2) Blast Shields - **Any rescue squad equipped with an on-board air cascade system must have a blast shield containment system around the cascade system** to protect rescuers working near the unit in case of a sudden, violent rupture of the compressed air cylinders.

E. CAFS-equipped Pumpers – Due to the many advantages of compressed-air foam versus water, it is **recommended that MCFRS replace frontline engines with compressed-air foam system (CAFS)-equipped engines.** Replacement priority should go to stations located in rural areas and suburban/rural interface areas. After addressing stations within areas where sustained water supply is an issue, the MCFRS should replace frontline engines at stations within urban areas, as well, because of the superior effectiveness of compressed-air foam (CAF) versus water alone and the reduced water damage. [»Cross-reference: Recommendation 16, Section 6]

CAFS-equipped engines are capable of pumping either CAF[12] or water, depending upon which extinguishing agent is considered most advantageous for a given scenario. In theory, CAF cuts off the oxygen supply to a fire, cools burning materials quicker than water alone, and greatly reduces water damage and runoff. When used on brush/woods fires, CAF has been proven to extinguish fire 5-7 times more effectively and with far less water than conventional water alone -- a considerable advantage if sustained water supply is an issue as it is in areas of Montgomery County lacking hydrants. Due to the overwhelmingly positive results that other fire departments[13] have experienced with CAF throughout the United States as well as the scientific test data proving its effectiveness, it is recommended that MCFRS forgo a pilot test of a CAFS-equipped pumper before purchasing multiple units of this type. A pilot test would only delay the deployment of this much needed technology in Montgomery County at a time when 36 new pumpers have been recommended in the updated *MCFRS Apparatus Management Plan* for purchase during FY06-07.

Additional information on compressed-air foam can be referenced in Appendix I.

F. Class B Foam Equipment - **MCFRS has not addressed the minimum requirement for Class B Foam application recommended in the 2000 Water Supply Study**. Presently, MCFRS lacks dedicated foam units, and the engine fleet has an assortment of mechanical foam proportioning systems ranging from a 95 gpm by-pass foam system to around-the-pump foam proportioning systems made by three different manufacturers. The response of mutual aid foam units is often required for large flammable liquid spills/fires which can easily take 45 minutes or longer to reach the scene. NFPA 11- "Foam Extinguishing Systems" - requires that a minimum Class B foam supply equivalent to 15 minutes of foam application is to be provided for flammable liquid spill fires of one inch depth or less.

The recommended approach to this tactical requirement is to acquire two foam attack units carrying a combined volume of 1000-gallons of Class B foam concentrate. At 3% foam concentration, this amount of foam will sustain foam application operations for about 30 minutes. These foam attack units should be equipped with turrets, foam eductors (of various flows), foam nozzles (of various flows), and foam transfer pumps. The foam attack units should have pump and roll capability enabling foam application through turrets while the unit is moving. A combination foam attack unit and engine-tanker would provide the versatility for this

[12] Compressed-air foam is produced at the pump by mixing Class A foam concentrate, air, and a small percentage (by volume) of water. The foam concentrate is proportioned at a rate of 0.3-0.5%, lower than Class B foam at 3.0-6.0%.

[13] Fire Departments in Phoenix; Los Angeles County; El Paso and Pflugerville, Texas; Emmitsburg, Maryland and other cities have all reported excellent results with CAFS-equipped suppression units.

unit to also function as a pumper and as a small tanker at incidents where foam application is not required.

In addition, **each frontline engine should carry 30 gallons of Class B foam concentrate**. County-wide on-board Class B foam capability would, therefore, be 2080 gallons, plus 500 gallons to be placed in storage for training purposes and for replacement of Class B foam used at incidents.

This recommendation addresses the Class B foam strategy identified in the *2000 Water Supply Study*.

G. Rehab Unit – **The MCFRS should obtain a firefighter-rescuer rehabilitation vehicle and/or shelter that provide greater rehabilitation amenities than those currently provided by Bus-27**. The vehicle/shelter must be configured to allow personnel the space to either lie down or to sit, and space for medical screeners to perform their duties. **A custom-built, climate controlled vehicle or trailer is one alternative** for this purpose. The vehicle or trailer should be fully stocked with all necessary equipment and rehab supplies, and it should include a toilet and sink. **A second alternative is a tent or inflatable structure** that could be erected quickly at the incident scene and set up for rehab use, with equipment and supplies brought in by EMS units, EMS duty officer, or other units(s). Portable air-conditioners (or fans) and heaters would have to be integral components of the tent or inflatable structure. [»Cross-reference: Recommendation 19, Section 6]

H. MCSUs – The MCFRS should **replace its existing Mass Casualty Support Units (MCSUs) with box-style trucks which are better suited to the task than the former Type-I ambulances being used presently.** Larger quantities of EMS equipment/supplies and decontamination equipment/supplies will need to be obtained and placed on board these trucks to allow for treatment and/or decontamination of greater numbers of MCFRS and MCP personnel as well as the general public. [»Cross-reference: Recommendation 20, Section 6]

I. Fuel Supplies - The MCFRS should establish **procedures or obtain assets for obtaining alternate sources of fuel** for vehicles and generators in the interest of readiness for major incidents. Alternatives could include arrangements for first-priority deliveries by DPWT fuel tankers, first-priority deliveries by local fuel vendors, or lease or purchase of a MCFRS fuel tanker. Alternate sources of fuel could be needed following widespread incidents such as winter storms, tropical storms/hurricanes, tornadoes, and terrorist attacks when regular MCFRS fuel supplies are depleted because of constant apparatus deployment and cannot be readily refilled. [»Cross-reference: Recommendation 21, Section 6]

J. Disaster Preparedness and Response Equipment – **The MCFRS must maintain an inventory of specialized equipment, medical supplies, and personal protective gear that keeps pace with the County's hazmat and WMD threat. A system that addresses periodic replacement of items having shelf lives is also needed** to ensure that all items are always ready for use and will function properly. Major categories of equipment are addressed below. [»Cross-reference: Recommendation 22, Section 6]

(1) Specialized Personal Protective Equipment (PPE)

Specialized PPE is required to protect MCFRS personnel from exposure to chemicals, biological agents, and radiation. Standard turnout gear does not, by itself, provide an adequate level of protection for firefighter-rescuers against most hazardous materials and weapons of mass destruction. **Specialized suits, gloves, boots, head protection, and respiratory protection are required to minimize the likelihood of WMD exposure by way of the respiratory system, skin, eyes, and mouth**. The level of required protection is based upon the proximity at which personnel will work in relation to the hazmat or WMD source. While personnel working in the closest proximity to the source (i.e., "Hot Zone") will require the highest level of protection, those working in the area immediately beyond the Hot Zone (i.e., "Warm Zone") must wear a level of protection higher than standard turnout gear. Specialized PPE includes such items as encapsulated suits made of chemical-resistant material, personal air-powered respirators (PAPRs), masks with screw-on style filter canisters, chemical splash suits, flash fire protection garments (i.e., "flash suits"), chemical-resistant gloves, and chemical-resistant boot covers (i.e., "booties").

The MCFRS must expand its inventory of specialized PPE to ensure that all personnel deployed during hazmat or WMD incidents are adequately protected. Furthermore, a system must be established to ensure quick replacement of PPE that has become contaminated, torn, or otherwise compromised. The MCFRS must also ensure periodic replacement of PPE having shelf lives, so that all items are always ready for immediate use.

(2) Medications

WMD exposure may require prompt injection of atropine and 2-pam-chloride. **These medications must be stored in sufficient quantity to serve the needs of MCFRS field personnel and citizen victims of WMD terrorism. Both medications have shelf lives, so a system that addresses periodic replacement must be established to ensure that these medications are always ready for immediate use**. Storage of these medications must also incorporate tight security, as they are highly specialized, controlled substances.

(3) Specialized Equipment

The effective handling of hazmat and WMD incidents requires use of very specialized detection, monitoring, and analysis equipment as well as specialized equipment for containing, neutralizing, and removing the actual hazmat/WMD materials at the incident scene. The detection, monitoring, and analysis equipment is very costly and requires frequent calibration and maintenance. While the MCFRS is fortunate to own equipment that features many cutting edge technologies, **the MCFRS must stay abreast of emerging technologies to keep pace with the latest weapons used by terrorists.**

Some of the more specialized hazmat/WMD equipment owned by the MCFRS HIRT and Bomb Squad includes infrared analysis equipment for unknown solids, a gas chromatography/mass spectrometer for unknown liquids and gases, a vast assortment of detection and monitoring devices, X-ray devices, and robots. All are costly to acquire and maintain, and all demand considerable time and technical knowledge to calibrate, operate, and maintain.

K. Accommodations for Callback of Personnel

All MCFRS stations must be adequately stocked to support callback of personnel in times of crisis. Crises may be imminent events (e.g., hurricanes, winter storms), events in progress (e.g., hazmat incident, flash flood), or the aftermath of unforeseen events (e.g., WMD incident, tornado). When callbacks are ordered, stations must be ready to accommodate crews several times the size of normal day-to-day crews. **To ensure readiness for callback of personnel, stations must stockpile food, beverages, paper goods, potable water, bedding and cots/mats. Fuel must also be stored in sufficient quantities** to serve both apparatus and station generators. Once stockpiles of sufficient quantities are in place, a system must be established to addresses periodic replacement of items having shelf lives to ensure that all items are always ready for immediate use. [»Cross-reference: Recommendation 23, Section 6]

L. EMS Equipment

The MCFRS must acquire and maintain an inventory of medications and other EMS supplies for use during special events involving large gatherings. This action will ensure that sufficient quantities are always available to support these special events, where dozens (or perhaps hundreds) of patients may be encountered if adverse weather conditions or unexpected event (e.g., act of terrorism) were to occur. Preparations for special events are further addressed under the "EMS" heading below. [»Cross-reference: Recommendation 24, Section 6]

3. Pilot Tests of Apparatus and Equipment

The MCFRS should consider conducting pilot tests of the following products, equipment and apparatus that address various operational needs: [»Cross-reference: Recommendation 29, Section 6]

A. GPS Capability in PASS: **Conduct a pilot test of a Personal Alert Safety System (PASS) that incorporates Global Positioning System (GPS) technology**. The GPS component incorporated into the PASS **allows trapped, injured, or disoriented firefighters to be located quickly** within a burning or collapsed structure by means of the GPS pinpointing the wearer's exact location inside the structure.

B. Telesquirt: **A "Telesquirt" device should be pilot tested in an area of high structure fire risk within the County**. A telesquirt is essentially a pipe configured as an articulating boom device with a nozzle on the end. The device is mounted on top of an aerial unit. A telesquirt allows an elevated master stream to be put into operation quickly without the need for firefighters to be positioned on a ladder directing a master stream, as done conventionally. It presents an efficient, effective and safe manner in which to quickly control a well-involved fire on an upper floor of a structure. A telesquirt does not, however, allow firefighters to climb the elevating device to perform rescues or ventilation, as it is not constructed as a ladder. It is only designed as a suppression device, so it is not as versatile as a ladder truck or aerial platform truck. Candidate sites for pilot testing a telesquirt include Station 1, 2, 3, 18, or 23; however, the optimal site should be identified by the Operations Division Chief.

C. Mobile Traffic Signal Control System: **A mobile traffic signal control system should be pilot tested in the most congested areas of the County** (e.g., within the Urban Zone). The technology allows a system-equipped, responding emergency vehicle to signal system-equipped traffic signals to turn or remain green in their favor, so that the unit may pass safely and quickly through the intersection. In theory, this system should reduce response times and increase the level of safety for personnel staffing the system-equipped apparatus as well as the safety of motorists on cross streets at intersections controlled by system-equipped traffic signals. While there are many areas of the County that would be appropriate for the pilot test, the optimal areas to conduct the pilot test should be determined by Operations Division managers from MCFRS, DPWT, and MCP (assuming that MCP participates in the pilot test). Any traffic signal control system should be tied to an AVL system, so that after a responding emergency vehicle passes through a signal-controlled intersection, the signal can be returned to its normal cycle. Absent this mechanism, traffic stoppage on cross streets may delay other responding units approaching from other directions toward the same intersection, not to mention the negative impact on traffic flow concerning all motorists.

D. Fire Hydrant Marking System: **A pilot test should be conducted to assess fire hydrant marking systems**, as recommended in the *2000 Water Supply Study,* which allow for easy sighting of hydrants by firefighters. The pilot tested marking systems should incorporate the practices recommended in NFPA Standard 291-Recommended Practice for Fire Flow Testing and Marking of Hydrants, 2002 Edition. One marking system that could be tested is a reflective blue lens embedded in the pavement opposite each hydrant. Another marking system that could be examined is a distinctive, reflective fiberglass pole attached to the hydrant which can be seen even above snow drifts. A third system that could be tested is a reflective piece of Scotch-Lite® material adhered around a hydrant's bonnet. Other marking systems may be available to test, as well. The optimal area(s) to conduct the pilot test should be identified by the Operations Division Chief and Community Risk Reduction Services Division Chief.

E. Fire Hydrant Design: MCFRS should work with the local water utilities to design a new style of hydrant that employs one or more large-diameter outlets in place of 2½-inch outlets that have become obsolete. This design would go hand-in-hand with the use of large-diameter supply lines.

F. "ManSAC": **One, or several (e.g., one per battalion), ManSAC® patient carrier system(s), or a similar product, should be pilot tested**. A ManSAC[14] is a strong, lightweight, durable polyvinyl chloride plastic device designed for carrying obese patients through tight spaces and around tight corners where conventional stretchers and rigid backboards cannot be used because they do not bend. The device wraps around an obese patient and distributes their weight across the entire device, making the task of moving the patient much easier and safer. There are ten handles built into the device, so that up to ten rescuers can participate in moving a patient, when necessary. The ManSAC can hold up to 1600 pounds and, under most scenarios, can be cleaned and decontaminated for repeated use. The optimal area(s) to conduct the pilot test should be identified by the Operations Division Chief and EMS Section Chief.

G. Other Pilot Tests: The MCFRS must continuously stay abreast of the newest/latest technologies and innovations and pilot test those that appear to best meet MCFRS present and future needs, as funding allows. [»Cross-reference: Recommendation 30, Section 6]

[14] " SAC" stands for "Single Axis Carrier."

STAFFING

1. Staffing of Engines, Aerial Units, Rescue Squads and Tankers

The County must increase mandatory minimum staffing to <u>four</u> personnel for engines, aerial units, and rescue squads. Concurrently, the MCFRS must do everything within its capability to staff all engines, aerial units, and rescue squads with at least four personnel per unit. This can be accomplished through continuous efforts to recruit and retain volunteers, ensuring volunteer standbys during evenings and weekends, and influencing elected officials to fund increased career staffing levels in accordance with staffing levels determined by the Fire Chief and provisions set forth in NFPA Standard 1710. **<u>Without 4-person staffing on engines, aerial units, and rescue squads, the safety of firefighter-rescuers is compromised and their effectiveness in suppressing fires and rescuing trapped or injured persons is also compromised</u>**.

[Justification for this recommendation appears in Section 4 of this Plan under "Staffing Issues Impacting Fire Suppression," under the sub-heading "Future Suppression Issues, Needs and Strategies".]

The MCFRS must also provide staffing to ensure immediate response of tankers on a 24/7 basis. Presently, tankers are frequently staffed by removing a firefighter-rescuer from another primary unit (e.g., typically an EMS unit), thus placing that other unit temporarily out of service. This individual drives the tanker to the fire, operates it during the incident, and drives it back to the station -- a deployment of several hours if the incident involved an actual structure fire or large brush fire. Unless one or more volunteer member(s) arrived at the station (while the tanker was out) to staff the understaffed primary unit left behind, that other unit remained out of service until the tanker driver returned. Placing a primary unit out of service to deploy a tanker is an undesirable, but often times necessary, alternative to having the tanker fail to respond. In circumstances where no one is readily available to drive the tanker, the tanker does fail to respond -- a serious issue when structure fires occur in areas not served by hydrants and an uninterrupted water supply of 500 gpm cannot otherwise be established. **The only solution to both of these undesirable scenarios is to provide guaranteed 24/7 staffing of one qualified person to deploy each frontline tanker in the MCFRS fleet**.

The MCFRS should also provide Battalion Chief Aides to assist career Fire-Rescue Battalion Chiefs in the field. The B/C Aides would drive the Battalion Chiefs' vehicles and assist the Battalion Chiefs with operational tasks, which would lessen the burden on Fire-Rescue Battalion Chiefs to concentrate entirely on incident command and other duties demanding their complete attention. A Fire-Rescue Battalion Chief's Aide would be required on a 24/7 basis for each battalion, including the proposed 6th Battalion. The addition of these positions would meet one of the staffing provisions set forth in NFPA Standard 1710.

A 7-phase, 7-year staffing plan is recommended to achieve 4-person staffing on frontline engines, aerial units, and rescue squads; ensure staffing of tankers; and staff the recommended position of Battalion Chief Aide. A 7-phase, 7-year staffing plan is recommended to achieve these vital staffing needs as follows: [»Cross-reference: Recommendation 32, Section 6]

- Phase 1, 1st Year - **Increase career staffing to 4 personnel on 8 engines at predominantly rural stations** located on the periphery of the County by adding one firefighter-paramedic per engine on a 24/7 basis, thus establishing paramedic engines at these 8 stations.

- Phase 2, 2nd Year - **Increase career staffing to 4 personnel on 8 aerial units at stations located in high-density areas** of the County by adding one firefighter per aerial unit on a 24/7 basis.

- Phase 3, 3rd Year - **Increase career staffing to 4 personnel on 8 engines at stations located in high-density areas** of the County by adding one firefighter-paramedic per engine on a 24/7 basis, thus establishing paramedic engines at these 8 stations.

- Phase 4, 4th Year - **Increase career staffing to 4 personnel on 6 aerial units and 3 rescue squads at stations located in suburban areas** of the County by adding one firefighter per unit on a 24/7 basis for most of these units and a daytime only basis for the remainder (plan assumes volunteers will provide the remainder of the fourth person staffing).

- Phase 5, 5th Year - **Increase career staffing to 4 personnel on 9 engines at stations located in suburban areas** of the County by adding one firefighter-paramedic per engine on a 24/7 basis for all but one engine and a daytime only basis for the ninth engine, thus establishing paramedic engines at these 9 stations.

- Phase 6, 6th Year - **Increase career staffing to 4 personnel on 6 engines and one rescue squad at stations located in suburban areas** of the County by adding one firefighter per unit on a 24/7 basis. In addition, the MCFRS should provide **dedicated staffing of one person to ensure immediate response of each of 8 tankers** on a 24/7 basis

- Phase 7, 7th Year - The **MCFRS should provide Aides to assist career Fire-Rescue Battalion Chiefs in the field.** A Battalion Chief's Aide would be required on a 24/7 basis for each battalion, including the proposed 6th Battalion.

  Note: **As new stations open, 4-person staffing should be provided for the frontline engines, aerial units, and rescue squads housed therein.**

2. Additional Battalion and Battalion Chief Position

Coinciding with the opening of the Germantown West fire-rescue station (anticipated in FY07), a sixth MCFRS battalion should be established. The sixth battalion will be needed to effectively manage the addition of five new up-county stations (i.e., Clarksburg, Germantown West, Germantown East, Travilah, and Shady Grove), which will better serve both the department and its customers. Existing Battalion 3 (covering Rockville, N. Potomac, Germantown and the western County) and Battalion 5 (covering Gaithersburg, Damascus, Hyattstown and Laytonsville) will not be able to accommodate the new stations, as Battalions 3 and 5 would become unmanageably large. Concurrent with the creation of Battalion 6, the **MCFRS must create and staff a career Fire-Rescue Battalion Chief position for that battalion on a 24/7 basis**. [»Cross-reference: Recommendation 33, Section 6]

3. Battalion-Based Resources

The MCFRS should establish battalion-based resources to improve effectiveness and efficiency of its operations/services through improved supervision, increased quality assurance, and strategic deployment of specialized staff and apparatus. Battalion-based resources would work under the supervision of the six on-duty Fire-Rescue Battalion Chiefs, working together as a team to implement the Fire Chief's vision and policies. By deploying these resources at the battalion level, they can provide community-based services more effectively and serve internal and external customers quicker than from centralized locations. Battalion-based resources could include, but not be limited to, the following:

- EMS Supervisor (i.e., EMS Captain) on a 24/7 basis**.** The EMS Supervisor would respond to major EMS incidents, and any other EMS incidents at their discretion, to provide incident command and/or quality assurance oversight. The EMS Supervisor could also assist the Battalion Chief with incident command at major fire-rescue incidents. [»Cross-reference: Recommendations 34 and 47, Section 6]

- Fire Code Enforcement inspectors: Assigned inspectors would concentrate on occupancies located within that specific battalion, rather than traveling to inspections countywide. The battalion-based inspectors would also have an office in a MCFRS work site within the battalion.

- Community Resource Units on a 24/7 basis. Firefighter-rescuers and paramedics assigned to these units would be specially trained and proficient in providing fire safety and risk reduction education to the public. [»Cross-reference: Recommendation 37i, Section 6]

- Battalion Chief Aides on a 24/7 basis. The aides would serve as drivers for the Battalion Chiefs (thus allowing Battalion Chiefs to focus on incident command

tasks and other business) and assist the Battalion Chiefs at incidents and with routine administrative tasks. [»Cross-reference: Recommendation 32g, Section 6]

- Battalion Training Officers: The BTOs would identify specific training needs and coordinate training for all career and volunteer personnel within each battalion. The BTO is envisioned to be a MICRB-certified Lieutenant in the field, with battalion training responsibilities as a collateral duty.

4. Career Staffing Level Adjustments

The Fire Chief must continuously assess the staffing needs at each station and must initiate steps to adjust the level of career staffing on an as-needed basis. Staffing levels should be consistent with that recommended in NFPA Standard 1710 (see above). [»Cross-reference: Recommendation 31, Section 6]

5. Recruitment and Retention of Firefighter-Rescuers

The MCFRS must continuously recruit a sufficient number of diverse, qualified career and volunteer applicants to meet the department's staffing needs and retain these personnel for long-term service. **To this end, the MCFRS must continue supporting the fulltime Recruiter position established in FY05, as well as an annual budget for recruitment and retention activities, materials, advertising, and vehicle. To assist the Recruiter, additional fulltime and/or part time staff must be hired, as needed. The Recruiter must devise a comprehensive volunteer/career recruitment and retention plan and implement the plan** as quickly as possible**.** [»Cross-reference: Recommendation 35, Section 6]

RESOURCE DEPLOYMENT

1. The MCFRS should **identify resource needs (i.e., facilities, apparatus, staffing) in the following areas** not yet studied under the ongoing Station Location and Resource Allocation Study: [»Cross-reference: Recommendation 36, Section 6]

- Shady Grove, Derwood, King Farm areas
- Northeast quadrant of County (Station 13's, 17's, 4's and 28's first-due areas), with special emphasis on Route 27, 108, and 124 corridors
- Eastern County, with special focus on the Route 29 corridor
- Western County, west of Stations 9, "22"-Germantown West, 30, 31, "32"-Travilah, "34"-Germantown East and "35"-Clarksburg
- Norbeck Road corridor east of Gude Drive

Note: Determination of resource needs is further addressed under the heading "MCFRS Planning Initiatives" in this section.

2. **Recommended apparatus and personnel deployment enhancements** are presented below. [»Cross-reference: Recommendation 37, Section 6] [Note: Justification of EMS enhancements appears in Section 4 of this Plan, under the "EMS Deployment" subheading under the "EMS" heading.]

a. Add a second medic unit to Gaithersburg-Washington Grove Station 8 to serve as a "flex" unit, **having guaranteed 12-hour staffing** (e.g., 9 a.m. - 9 p.m.) **to handle peak call volume** within the Gaithersburg area

b. Add a second medic unit (Medic-257) to Kensington Station 25 to serve as a "flex" unit, **having guaranteed 12-hour staffing** (e.g., 9 a.m. - 9 p.m.) **to handle peak call volume** within the Aspen Hill area

c. Add a second ambulance to Rockville Station 3 to serve as a "flex" unit, **having guaranteed 12-hour staffing** (e.g., 9 a.m. - 9 p.m.) **to handle peak call volume** within the Rockville area

d. Place Ambulance-199 in service at Silver Spring Station 19, **staffed 24/7**

e. Staff Ambulance-158 (purchase new unit, as needed) at Burtonsville Station 15 **on a 24/7 basis.**

f. Upgrade Ambulance 219 to a medic unit (Medic-219) at Kensington Station 21**, and provide guaranteed 24/7 staffing**

g. In accordance with recommendations appearing in the *2001 Aerial Unit Study*, **deploy aerial units (one each) at Damascus Station 13 and Sandy Spring Station 40**. [The rationale for these new deployments can be found within that study.]

h. Establish a new rescue squad/rescue unit deployment strategy (in accordance with the *2004 Rescue Squad Report*) featuring six "core" rescue squads, each with guaranteed staffing, and strategically deployed extrication-capable units (i.e., extrication-equipped engines and ladder trucks). The six designated core rescue squads will include those housed at Stations 3 (RS-3), 15 (RS-15), 17 (RS-17)[15], 29 (RS291), Rescue Company 1 (RS-18 or RS-19) and Rescue Company 2

[15] The Sandy Spring VFD Board of Directors chose not to move RS-4 from Station 4 to Station 40 to become a core squad as recommended in the Report; therefore, RS-17 will be designated as a core rescue squad instead of RS-4 ("40").

(RS-28 or RS-29). Extrication-capable units will be housed at Stations 2, 4, 9, 12, 13, 14, 30 and 31. Together, the core rescue squads and extrication-capable engines and ladder trucks will provide an appropriate level of rescue service throughout the County. Existing rescue squads that have not been designated as core rescue squads (i.e., RS-4, RS-9, RS-21 and RS-30) will not have guaranteed staffing and will only be eligible for dispatch under conditions[16] defined in the *2004 Rescue Squad Report*.

i. Establish a "community resource engine" and "community resource medic unit" (eventually one CR engine and CR medic unit per battalion), each with guaranteed staffing, whose primary purpose is to temporarily fill in at stations where similar units are committed on long duration incidents or long duration details outside their first-due area. These units would provide coverage to an area that would otherwise be covered by second-due units for several hours (a frequent scenario when units are detailed to the Training Academy). **The community resource engine would provide suppression, basic rescue, and BLS first responder service in the first-due area it is temporarily covering**. It could also serve as an AFRA when a firefighter-paramedic and ALS Kit were on board and/or as an extrication-capable engine if appropriate extrication equipment were on board. **The community resource medic unit would provide ALS and BLS service in the first-due area it is serving**.

Secondary purposes of these community resource units would include:

- Assisting with **community outreach/public education events**
- Filling in at one of the **specialty team stations** when engines and EMS units from those stations are committed on long-duration incidents where specialty teams are deployed
- Temporarily assisting in **areas with heavy call loads** when units in those areas are committed on incidents
- Providing a **reflex capability** when additional units are required on major incidents (e.g., structure fire requiring alternate sources of water)
- Serving any other temporary assignment that may arise

[16] Only when all primary units in the station are minimum staffed (by any combination of career and/or volunteer personnel qualified to staff the units) can a non-core rescue squad be eligible for dispatch (i.e., held in a "controlled" status in the Computer-Aided Dispatch System).

3. **The MCFRS should establish a policy whereby additional EMS, suppression, and rescue squad units are placed in service prior to existing units exceeding 2500 calls per year per unit**. As part of this policy, the MCFRS should develop and initiate a review process to assess a specific unit's future call volume when the unit reaches the 2000-call level. This process will be designed to prevent units from greatly exceeding the 2500-call level before additional units are placed in service. **The threshold level should be re-evaluated on a continuous basis** to ensure its appropriateness considering the changing risk environment, number and type of departmental resources, overall workload of staff, and other related factors. [»Cross-reference: Recommendation 38, Section 6]

4. **Upon both Germantown West and Germantown East fire-rescue stations becoming operational, it is recommended that existing Germantown Station 29 remain open, housing an appropriate complement (to be determined) of fire-rescue apparatus**. It is important to maintain a fire-rescue presence in the Town Center and directly adjacent to the residential community immediately north of the Town Center, which are, together, expected to continue having the highest call load in Germantown. The Station 29 units will also provide backup service to the east and west portions of Germantown as well as to Gaithersburg, Clarksburg, Boyds, Darnestown, and elsewhere in the up-County area. [»Cross-reference: Recommendation 39, Section 6]

5. **Consideration should be given to splitting the Fire and Explosive Investigations (F&EI) and Bomb Squad functions** to provide a dedicated service in each discipline. This will allow F&EI personnel to focus solely on their heavy investigation workload, instead of frequent interruption for Bomb Squad responses. As incidents requiring response of the Bomb Squad increase, the need for this change will become increasingly apparent. [»Cross-reference: Recommendation 40, Section 6]

The time and complexity of both of these areas continues to increase every year. To operate the program more effectively and safely, additional trained personnel and equipment will be needed to perform each function. If the functions were to be split in the future, **the F&EI Section should have a complement of about 15 personnel** that would allow for the shift investigators and auxiliary investigators to conduct follow-up investigations. **The independent Bomb Squad (as proposed) should have a complement of about 10 dedicated, centrally located personnel, with auxiliary personnel having primary duties within other sections of the MCFRS**. [This deployment strategy is also addressed under the "Specialty Teams" heading below.]

6. **The HIRT/hazmat function should be a dedicated service** versus the existing arrangement where the crew of an engine company (e.g., Engine 71's crew) has dual functions as both an engine company and HIRT Team. **Establishing a dedicated HIRT of 4-5 personnel would ensure that the team is readily available for hazmat calls** and would allow HIRT personnel greater time for training, calibrating and testing of specialized equipment, performing equipment maintenance, and preparing incident

reports and performing other administrative duties. [See "Specialty Teams" heading below for details] [»Cross-reference: Recommendation 40, Section 6]

EMERGENCY MEDICAL SERVICES

EMS Models for Future Consideration

The MCFRS should evaluate the current EMS model/system to determine how it can be improved. [»Cross-reference: Recommendation 41, Section 6] Areas on which to focus could include:

- Use of the "1 and 1" ALS deployment model where staffing on each medic unit would be changed from two paramedics to one paramedic and one firefighter-rescuer. The 2nd firefighter-paramedic would then be assigned as the third position on an engine, aerial unit, or rescue squad at the same station as the medic unit, thus creating an ALS first responder unit in addition to the medic unit.
- Authorization to transport patients to the most appropriate patient care facility (e.g., crisis center, public health facility, hospital, etc.), not always to a hospital.
- Increased efficiency, effectiveness and distribution of the EMS command structure throughout the County.
- Use of BLS transport units and ALS chase cars (with and without AFRA) versus using ALS transport units exclusively (with and without AFRA)
- Part-time BLS and ALS units - additional units used during peak periods only
- EMS-only career positions versus all career positions having both fire suppression and EMS responsibilities

Additional EMS Units

See "Resource Deployment" heading above

Response Threshold

See "Resource Deployment" heading above

EMS Expansion

1. **The MCFRS should provide dedicated ALS support for all specialty teams** by: [»Cross-reference: Recommendation 42, Section 6]

    - Dedicating at least one ALS unit to each specialty team to offer specialized ALS care to members of that team (e.g., M-319 dedicated to the CRT, M-309 to the RRATS Team, "M-289" [A-289 upgraded to a Medic Unit] and possibly a second

Medic Unit for the HIRT, a Station 8 Medic Unit, M-39 or a Medic Unit assigned to the future Shady Grove Station dedicated to the Bomb Squad).

- Identifying specific EMS needs of specialty teams and supporting those needs
- Creating a liaison between the individual specialty teams and the EMS Section
- Coordinating specialized EMS needs for special operations through the Special Operations Division
- Specifically for the Hazardous Incident Response Team (HIRT), train HIRT technicians, who are also MCFRS paramedics, in toxicology so that they may more effectively treat HIRT members or other firefighter-rescuers exposed to toxic substances. To this end, it is further recommended that the MCFRS dedicate a minimum of four paramedics[17] per shift, trained in toxicology and use of related medications, to respond to all incidents where MCFRS personnel will don entry suits and enter potentially toxic environments. These paramedics will perform pre-entry and post-entry examinations of personnel donning hazmat entry suits and treat exposed MCFRS personnel per NFPA Standards 471 and 473 and OSHA/MOSH regulations. They must be intimately familiar with HIRT operations and equipment and with the health effects of hazardous materials.

2. **The MCFRS should develop comprehensive plans for special events involving large gatherings** that address the following: [»Cross-reference: Recommendation 43, Section 6]

- Establishing a single point-of-contact within MCFRS for special events
- Creating partnerships with local hospitals for providing medical care for special events
- Coordinating County services and staging departments' resources in relation to special events.
- Determining “triggers” (i.e., number of event participants, age group of event participants, anticipated weather conditions -- temperature, humidity, precipitation -- impacting the event) that would signal the need for certain levels and types of support.
- Establish a requirement for a permit for any event that is expected to draw over 500 participants, including spectators. This requirement of event organizers /sponsors will assist MCFRS and other County agencies in resource planning for

[17] Other fire departments (e.g., Phoenix FD) that already have paramedics trained in toxicology have found that two toxicology-trained paramedics are required to treat each hazmat technician or other firefighter exposed to toxic substances. Typically, a two-person crew is sent into the "Hot Zone," therefore four paramedics are required to treat these two personnel.

the event and could require the organizer/sponsor to provide certain of the needed resources themselves.

EMS Service Quality Improvements

1. The MCFRS should **maximize the effectiveness of certain skilled services** provided to patients (e.g., increase the percentage of successful IV starts on the first attempt):

- Improve training involving ALS skills
- Require regular in-field evaluation/assessment/testing of paramedic skills

[»Cross-reference: Recommendation 44, Section 6]

2. The MCFRS should **minimize on-scene contact/treatment time** between EMS providers and patients experiencing high-priority medical problems (e.g., trauma, MI,), so that patient is transported more quickly to an appropriate medical facility:

- Improve training involving ALS skills
- Evaluate and revise on-scene patient care procedures, as needed
- Ensure rapid, complete, and concise communications with the appropriate medical facility

[»Cross-reference: Recommendation 45, Section 6]

3. The MCFRS should **minimize EMS unit cycle time** at receiving facility, therefore increasing the time that each unit is available for calls:

- Work with hospitals to provide actual bed and staff availability upon notification that a patient is en route via EMS unit
- Work with hospitals to improve restocking procedures
- Ensure coordination between MCFRS and Hospital IT experts to allow for rapid downloading and printing of patient care records
- Reducing the incidence of diversions from the intended destination hospital to an alternate hospital (usually further away)

[»Cross-reference: Recommendation 46, Section 6]

EMS Quality Assurance

1. **The MCFRS should continue the program addressing ALS and BLS quality assurance** in accordance with Maryland Title 30 and should improve documentation guidelines for ALS and BLS incidents. [»Cross-reference: Recommendation 47, Section 6] Together, the program and guidelines should:

- Employ a **full-time Medical Director and an appropriate staff** to support the roles and responsibilities of the Office of Medical Oversight
- Create a standardized process of **quality review/assurance** for all career and volunteer EMS providers, including the addition of an EMS supervisor at the battalion level to ensure adequate quality control. Until battalion EMS supervisors have been established, an interim program should be established to provide field

evaluations for ALS personnel, wherein they would be detailed to medic units at select stations throughout the county for a 10-hour shift annually. An ALS Field Training Officer would be on-board each of these units to perform evaluations. A similar interim program should be established for evaluations of BLS personnel.
- Provide a mechanism for patient follow up and case review
- Establish a mechanism for collecting and analyzing data to indicate areas of weakness, and work in conjunction with the FRTA and the Office of Medical Oversight to develop a curriculum to address areas of weakness.

2. **The MCFRS should establish documentation guidelines for BLS and ALS incidents** to ensure consistency of reporting:
- Collect data to indicate areas needing improvement.
- Work in conjunction with the FRTA and the Office of Medical Oversight to develop curricula to address those areas of weakness.

EMS Human Resources

1. **The MCFRS should take steps to increase the number of EMS providers** by:
- Working with the LFRDs to improve volunteer retention, so that more EMTs & paramedics are available to staff units
- Striving to prevent burnout of EMS providers through increased utilization of CISM, FROMS, EAP and other County programs to sustain their health

[»Cross-reference: Recommendation 48, Section 6]

2. **The MCFRS should strive to provide a safe as possible work environment** in an inherently dangerous profession by:
- Charging the MCFRS Safety Office and FROMS to take an active role in reducing the number and severity of injuries to EMS providers
- Providing the best possible safety equipment and apparel to personnel for use at EMS incidents

[»Cross-reference: Recommendation 49, Section 6]

EMS Training

Addressed below under the "Training" heading.

Community Outreach/Injury Prevention

1. **The MCFRS should interact with the community on a non-emergency basis** to allow for greater understanding, trust and reasonable expectations during emergencies.

[»Cross-reference: Recommendation 50, Section 6]

2. **The MCFRS should strive to reduce EMS call volume**.
[»Cross-reference: Recommendation 51, Section 6]

Both #1 and #2 can be addressed together by accomplishing the following:

- Providing community CPR, AED and First Aid training through the FRTA on an ongoing basis
- Expanding the public access defibrillator program
- Continuing and expanding the Risk Watch curriculum on home safety and injury prevention for elementary, middle, and high school children in both public and private schools
- Educating the public on what EMS provides to the citizen
- Educating primary care physicians (PCPs) on appropriate use of 911 as well as what EMS provides to them and their patients
- Creating a partnership with hospice to develop do-not-resuscitate (DNR) education for nursing facilities and families of patients who are DNR patients
- Promoting community services (e.g., car safety seat and home safety inspections)

3. **The MCFRS should continue to maintain effective working relationships with all hospital emergency departments, nursing homes and assisted living facilities** in Montgomery County and with MIEMMS by:

- Establishing effective working relationships with hospital administrators, emergency room physicians and charge nurses
- Encouraging joint-training and continuing education involving local hospitals and MCFRS personnel
- Educating nursing, assisted living and rehabilitation facilities on the appropriate circumstances to call 911 to assist their residents
- **Maintaining an excellent working relationship with MIEMSS, and working with MIEMSS to expand the scope of Montgomery County's EMS providers** (e.g., participating in pilot programs developed by MIEMSS)

[»Cross-reference: Recommendation 52, Section 6]

<u>EMS Information Technology</u>

The MCFRS should establish and maintain a state-of-the-art record management system that will: [»Cross-reference: Recommendation 53, Section 6]

- Track patients who enter system multiple times to determine whether follow up is needed by other County agencies
- Utilize patient care data and the GIS to predict future service needs
- Obtain patient outcome data
- Collect data that will satisfy MIEMSS, NFIRS and any other organization that is entitled to this info in the future
- Use appropriate IT hardware and software applications to collect and report data

EMS Standardization

The MCFRS should standardize EMS response across career and volunteer components to better serve the citizens. This can be accomplished by:

- Standardizing crew configuration and structure
- Standardizing EMS inventories as much as possible
- Accountability through quality assurance

[»Cross-reference: Recommendation 54, Section 6]

FIRE SUPPRESSION AND WATER SUPPLY

1. Many recommendations from the 2000 *Water Supply Report* have been implemented; however, others have not been fully addressed and are presented below, except for those included under other headings in this Plan (e.g., "Apparatus and Equipment"). [»Cross-reference: Recommendation 55, Section 6]

a. Develop **legislation requiring retrofitting of existing high-rise apartment buildings and garden apartments lacking sprinkler systems** with automated sprinkler protection.

b. Establish the capability to provide a **fire flow of at least 500 gpm for the initial 30 minutes** of a structure fire anywhere in the County. [Note: As of 2005, this capability existed in about 80% of the County.

c. Establish **ISO-certified drafting points** throughout non-hydranted areas

d. Develop a County-wide **Class-B foam strategy.** [Addressed under "Equipment Purchase, Replacement, and Maintenance" heading]

e. Continue to encourage the **expansion and looping of water mains** (by WSSC) in the Clarksburg and Damascus areas.

f. Coordinate with the State Highway Administration **required maintenance for standpipe connections through sound barriers** along interstate highways.

g. **Identify alternate water supply sources by means of reflective signs** along roadways in the vicinity of the water sources.

h. Develop **procedures for the tactical use of dry vertical standpipes** to establish expanded water supply relays on limited-access highways because these systems.

[At such time when dry vertical standpipes are in place at new interchanges along Route 29 and other future locations, the MCFRS will adopt an SOP for their use.]

i. Place **GIS hydrant maps** onto the mobile data computer system in MCFRS apparatus [Expected to occur between 2005 and 2006]

j. Establish a **program to expand the use of dry hydrants**, incorporating guidelines set forth in NFPA Standard 1142, (formerly NFPA 1231 as referenced in the *2000 Water Supply Report)*

k. Develop **water supply strategies for fighting fires on the American Legion Bridge**. [The problems associated with the use of the existing horizontal dry standpipe running the length of the bridge had been determined to be too great to attempt to address them in a cost effective and tactically feasible manner.]

2. **The MCFRS should ensure that Operations personnel are well versed on the "Safe Structural Fire Fighting SOP" and continue to conduct drills regularly to ensure proficiency. Special attention must be given to proficiency in water supply operations for areas lacking fire hydrants.** Training and drills should ensure that all command staff are capable of filling the role of Water Supply Officer, in both urban (hydranted) and rural (non-hydranted) environments, with a high degree of effectiveness and proficiency. [»Cross-reference: Recommendation 56, Section 6]

3. The MCFRS should **continue conducting panel reviews of large-scale fire incidents to identify operational improvements** that should be implemented to improve fire suppression and water supply proficiency, safety and the overall level of service to the public. [»Cross-reference: Recommendation 57, Section 6]

SPECIALTY TEAMS

HIRT – Hazmat and WMD

The HIRT has many ongoing and unmet needs in terms of training, equipment, and apparatus. Most notably, the existing primary hazmat response vehicle has been in need of replacement since 2003 and, due to County fiscal issues, funds have not been allocated for this purpose. **The HIRT's primary unit must be replaced in the immediate future to support the team's expanded role in hazmat, destructive device and WMD incidents**. [»Cross-reference: Recommendation 58, Section 6]

It is imperative that the HIRT research and seek funding for the latest hazmat and counter-WMD technology and training to ensure its readiness for future incidents. Federal terrorism and homeland security preparedness grants to be awarded in the future to the MCFRS should provide the HIRT with opportunities to participate in specialized

training and to purchase needed protective gear; detection, monitoring and analysis instruments; and other equipment that will allow the team to stay prepared for the latest WMD and tactics used by terrorists. [»Cross-reference: Recommendation 59, Section 6]

The HIRT/hazmat function should be a dedicated additional service versus the existing arrangement where the crew assigned to an engine company (i.e., Engine 71) has dual functions of both an engine company and HIRT Team. Hazardous materials response is a highly specialized field requiring the fulltime attention of a dedicated team. Furthermore, the number of incidents to which the HIRT responds has been increasing. As the three hazmat engines (i.e., E71, E201, E281) and Tower-20 run an increasing number of suppression, rescue and EMS incidents, they will be increasingly unavailable to run hazmat calls, thus increasing the need for mutual aid hazmat resources responding into the County from distant locations. **Establishing a dedicated HIRT of 4-5 personnel would ensure that the team is readily available for hazmat calls** and would allow HIRT personnel greater time for training, calibrating and testing of specialized equipment, performing equipment maintenance, and preparing incident reports and performing other administrative duties. [»Cross-reference: Recommendation 40, Section 6]

Bomb Squad – Destructive Devices and WMD

Consideration should be given to splitting the Fire and Explosive Investigations (F&EI) and Bomb Squad functions to provide a dedicated service in each discipline. If split, the F&EI Section should have a complement of about 15 personnel that would allow for the shift investigators and auxiliary investigators to conduct follow-up investigations. The independent Bomb Squad (as proposed) should have a complement of about 10 dedicated and centrally located personnel. [Further justification for this recommendation is presented in Section 4.] [»Cross-reference: Recommendation 40, Section 6]

Another recommendation for the upcoming ten-year period is to increase the depth of certified bomb technicians in the Bomb Squad, so that all members are certified. This increased depth will allow the Bomb Squad to operate with greater effectiveness, efficiency and safety. For this recommendation to be implemented, new Bomb Squad personnel will have to attend destructive devices schools offered at out-of-state federal training facilities such as the FBI's Hazardous Devices School at the Redstone Arsenal in Huntsville, Alabama. [»Cross-reference: Recommendation 61, Section 6]

The MCFRS should also purchase state-of-the-art equipment to effectively and safely respond to incidents involving destructive devices and WMD (as stated above under the "HIRT" heading). Counter-WMD equipment that will be purchased in the future by the MCFRS using federal grants will be divided between the Bomb Squad and HIRT, as appropriate, to ensure that each team has the proper equipment to perform their assigned functions and duties. [»Cross-reference: Recommendation 62, Section 6]

To increase the Bomb Squad's explosive detection capabilities and to improve incident scene safety of all MCFRS and emergency personnel, the acquisition of an explosive detection canine should be evaluated. Presently, the Bomb Squad must rely on other local or regional agencies (e.g., MCP, METRO Police) to provide this capability. Having its own explosive detection canine would enable the MCFRS Bomb Squad to be self-sufficient in this regard and quickly clear the incident scene of personnel should an explosive device be found. [»Cross-reference: Recommendation 60, Section 6]

RRATS - Water Rescue

The following RRATS Team goals should be pursued between 2005 and 2015:

- All RRATS personnel certified as NFPA-1006 Swiftwater and Rope Rescue Technicians[18]
- All dive personnel certified as Public Safety Divers, Ice Divers, and Evidence Recovery Divers
- Development of experienced senior command personnel
- Development of more extensive training for RRATS members
- Obtain proper flood and year-round PPE for all team personnel
- Upgrading of dive equipment to fully encapsulate team divers
- Availability of a team-issued, nationally-recognized training certification0

[»Cross-reference: Recommendation 64, Section 6]

Collapse Rescue Team - Collapse, Confined Space, Trench and High-Angle Rescue

To improve its effectiveness, **the CRT (a.k.a. Maryland Task Force 1, National Urban Search & Rescue Response System) should pursue the following goals during the ten-year master plan cycle of 2005-2015**, although many of these goals have near-term timelines as established by the team:

- Increase staffing to the full **FEMA-desired level of 210 members** (3-deep at each of 70 positions)
- **Train 100%** of team personnel for their **primary discipline**
- **Train 80%** of team personnel for their **secondary discipline**
- **Equip 100%** of team members with **required personal gear**
- Obtain an **additional US&R host fire station** to improve both local and national response capabilities
- **Develop and maintain a CRT/US&R fleet** (including two yet to be purchased box-style trucks) capable of deploying all team assets

[18] NFPA Standard 1006 – "Standard for Rescue Technician Professional Qualifications"

- **Obtain a storage area** of sufficient space to inventory and maintain all equipment at Station 31, and an **additional 6000 sq. ft.** (approximation) at another US&R support station (e.g., Germantown East station)

[»Cross-reference: Recommendation 63, Section 6]

Special Operations Technical First Responders

Establish "Special Operations Technical First Responder" capability at Station 25 and at other strategic locations (to be determined) to place hazmat, water rescue, and collapse rescue first responders in areas of the County that cannot be reached quickly by MCFRS specialty teams. All career personnel assigned to these stations should be trained and certified at the Special Operations Technical First Responder level. Each station having Special Operations Technical First Responder capability should also have at least one HIRT member, one RRATS member, and one CRT member assigned to the station, per shift. The role of the Special Operations Technical First Responders is to assess the nature and scope of incidents involving hazmats, water-related rescue, or collapse/trench/confined space/high-angle rescue and to develop an initial action plan, including resource needs, which can be relayed to command personnel and the ECC. [»Cross-reference: Recommendation 65, Section 6]

Station 25 in Aspen Hill has been selected to have Technical First Responder capability due to its strategic location in the eastern portion of the County. MCFRS should determine another strategic site for establishing Technical First Responder capability within the northern portion of the County, as well. One possibility is the future Germantown East station, due to its strategic location along Route 355 between Germantown and Gaithersburg and proximity to Interstate 270 and Routes 118 and 27.

DECONTAMINATION

Over the 10-year period of this Plan, the MCFRS needs to improve its capabilities to decontaminate MCFRS personnel as well as the public. The MCFRS' two existing decontamination units will need to be replaced (see "Apparatus and Equipment" heading above). In terms of equipment and supplies, larger quantities of decon equipment and supplies will need to be obtained and placed on board the decon units to allow for the decontamination of greater numbers of MCFRS and MCP personnel as well as the general public. A rotation and replacement process will also have to be developed and funded. In addition, decon training for Operations personnel will need to be offered on a continuous basis to keep all personnel prepared for this important task. The MCFRS should also coordinate and participate in decon training for local hospital staffs to ensure that hospital emergency department staff are capable of providing effective decon of contaminated patients arriving at hospitals. [»Cross-reference: Recommendation 66, Section 6]

COMMUNICATIONS

During the life cycle of this Master Plan, MCFRS staff at the PSCC will:
[»Cross-reference: Recommendation 67, Section 6]

- Strive to **answer 911 calls within the State standard** of 10 seconds or two rings
- Strive to **process all requests for emergency service within one minute**
- Develop and implement measures that will **speed the processing of 911 callers' requests for service and the dispatch of MCFRS apparatus**
- **Evaluate on an ongoing basis the effect of EMD on MCFRS-wide resource deployment and availability**, and provide this information to the Operations Division Chief for decisions concerning short- and long-term resource deployment
- **Evaluate on an ongoing basis the time required of Emergency Medical Dispatchers to execute EMD protocols, and determine its impact on PSCC staffing needs**
- **Identify and implement actions necessary to receive requests for fire-rescue services from customers using Voice Over IP**
- **Evaluate on an ongoing basis the effectiveness of existing communications systems at the PSCC (e.g., CAD) and emerging communication technologies**
- Continually **evaluate the scope of its services** to identify the need for any new services as well as needed enhancements in the areas of new technology and new procedures
- Continually **evaluate its business processes and implement necessary changes** to better serve its customers

To address the on-going need to attract Operations Division personnel to serve as Emergency Communicators at the Fire-Rescue ECC and to retain their services at the Fire-Rescue ECC for the long-term, **the MCFRS should establish a deployment strategy by which MCFRS Emergency Communicators are given the opportunity to split their time between the PSCC and a designated fire-rescue station**. This strategy would allow personnel to serve regularly in the field while spending the majority of their shift work at the PSCC. The rotation between the PSCC and the field would allow personnel to retain their practical fire-rescue skills through regular drills and continued response to incidents, while (presumably) serving long-term assignments at the PSCC. **It**

is further recommended that the Germantown West station, or other suitable fire-rescue station, be designated to participate in this deployment strategy.

To address the eventual 800 MHz band migration or "**re-banding" of public safety frequencies** under the plan devised by Nextel[19] and approved by the FCC, the **MCFRS must work closely with the County's Department of Technology Services[20] (DTS), MCP, Sheriff's Office, and DC&R to develop a plan to implement the re-banding process** in Montgomery County. The County's plan must address several issues:

- Methodology to Achieve the Desired Result: All existing base stations, portable radios and bi-directional amplifiers must be reprogrammed to the new re-banded frequencies. This effort will be coordinated both operationally and technically between DTS and the County's public safety departments and will be a very complex activity to ensure that some level of interoperability is maintained between our neighboring jurisdictions.

- Coordination, Timing, and Logistics: From a National Capital Regional perspective, the band migration process will be very challenging in terms of coordination, timing, and logistics concerning the many jurisdictions involved.

- Cost: Nextel's reimbursement to the County may be of a lesser amount than the actual cost to implement the County's re-banding plan.

- Availability of Expertise: If the County's band migration plan calls for reprogramming the existing 800 MHz Radio System, the availability of qualified technical resources from the private sector could become an issue. Montgomery County would be competing with hundreds of other Wave-1 jurisdictions[21] for a limited number of contractors having the required technical expertise.

The FCC Transition Administrator's timeline for implementing the nationwide re-banding plan, published in January 2005, calls for Wave-1 jurisdictions to have completed their band migration by the 4th quarter of CY2007. While it is the responsibility of DTS to manage the County's re-banding process, MCFRS believes that

[19] The plan was devised by Nextel to address interference that has occurred nationwide between their frequencies and public safety frequencies that are close together within the 800 MHz spectrum. The plan calls for public safety frequencies to move to a lower portion of the 800 MHz band (i.e., 851-860 MHz) while commercial users like Nextel would move to a higher portion of the band (e.g., 869 MHz and higher).

[20] DTS will have responsibility for developing the County's 800 MHz band migration plan, with all public safety departments providing input, and for managing the plan's implementation.

[21] The FCC has divided the United States into four "waves," or areas, for implementing the FCC's band migration plan. Maryland, Virginia, and the District of Columbia are included in Wave-1 as highest priority for completion.

the FCC Transition Administrator's timeline for completion is ambitious in view of the known issues described above as well as other issues that may arise. **It is recommended by this Master Plan that MCFRS be an active participant in providing input to DTS for the County's 800 MHz re-banding plan and in implementing the plan itself.**

The long-term program to improve interoperability between public safety agencies will include a Statewide 700 MHz voice and data network anticipated during the 2010-2020 time frame (see page 4-89 for details). **It is recommended that MCFRS be an active participant in providing input, through DTS, to the State's Interoperability Project Team.**

RESPONSE TIME

1. New Goals: **The MCFRS should adopt the revised and expanded response time goals presented in Figure 5.6 below** (page 5-54). The goals are based upon **modified density zones** as seen in the map in Figure 5.7. [»Cross-reference: Recommendation 68, Section 6] The density zones originally adopted by the County Council as part of the February 2000 amendments to the *Fire, Rescue and Emergency Medical Services Master Plan* have been modified to reflect a broader definition of "density." Previously, "density" was considered synonymous with population density. **The new MCFRS density zones are based upon seven elements of density** that can be shown geographically by means of the Geographic Information System: **population density, building density, future population projections, zoning, fire hydrant coverage, distance to the urban core, and distance to interstate highways.**

Using this broader definition of density, the new MCFRS density zones are considerably different than their predecessors. The **Urban Density Zone has expanded to the north along the Interstate 270 corridor to Germantown** – formerly an area included in the Suburban Zone. Much of Olney now falls within the Urban Density Zone, as well. **The Suburban Density Zone has also expanded into areas originally considered rural, while a portion of the former Suburban Zone has been shifted to the new Urban Zone**. Damascus, Poolesville, the Route 27 corridor and the Route 355 corridor between Clarksburg and Hyattstown are now included within the Suburban Density Zone. **The Rural Density Zone is significantly smaller than before** and includes farmland, open space, and low density housing. In terms of land area, the Urban Density Zone has increased from 18.6% to 28.4% of the total County land area, the Suburban Density Zone has increased from 23.8% to 33.6%, and the Rural Density Zone has decreased from 57.6% to about 38%. In terms of population, 74.9% (formerly 51%) of the total County-wide population now falls within the Urban Density Zone, 22.5% (formerly 39%) lies within the Suburban Density Zone, and only 2.6% (formerly close to 10%) falls within the Rural Zone.

Similar to the original goals, the new response time goals are based on the following assumptions:

Assumption #1: Response time is defined as the elapsed time from the initiation of a call to the Public Safety Answering Point (PSAP or "911 Center"), to the arrival of appropriate unit(s).

Assumption #2: Implementation of technologies and/or procedures will be pursued to speed up 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 6 minutes to initiate CPR or defibrillation and within 8 minutes to provide advanced life support to provide the patient the best chance of recovery.

Assumption #4: Firefighters must apply water to a growing fire inside a room within 5 to 9 minutes of ignition to prevent flashover. If water can be applied prior to flashover, the fire suppression goal is to confine the fire to the room of origin, which is a MCFRS performance indicator. When flashover has occurred upon arrival of firefighters, the fire suppression goal becomes one of confining the fire to either 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 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.

The new set of MCFRS response time goals is also based upon the following philosophies and concepts:

- The first arriving unit having ALS capability (minimum requirements: paramedic and an ALS kit on board), whether a medic unit or another ALS first-responder apparatus ("AFRA"), meets the criteria for there being an ALS provider on the scene. Formerly, this unit had to be a medic unit to meet the criteria of the first arriving ALS unit.

- The first arriving unit having BLS capability (minimum requirements: EMT and BLS kit on board), whether an ambulance or first responder unit (e.g., engine, aerial unit, rescue squad), meets the criteria for there being a BLS provider on the scene. Formerly, this unit had to be an ambulance to meet the criteria of the first arriving BLS unit.

- The arrival of a transport unit, whether a medic unit or an ambulance that can be upgraded to a medic unit by a paramedic from an AFRA, meets the criteria for there being an ALS transport unit on the scene.

- The arrival of a transport unit, whether an ambulance or medic unit (when an ambulance is unavailable), meets the criteria for there being a BLS transport unit on the scene.

- The new response time chart includes the arrival times of the 2nd, 3rd and 4th due engines, not the 1st due engine alone as in the past.

- Three 3000-3500 gallon tankers are included on the initial assignment for a structure fire in areas lacking fire hydrants to assist in achieving a minimum water flow of 500 gpm for the initial 30 minutes of fire suppression operations.

- There is no longer a goal for a "special service" unit, formerly defined as an aerial unit or rescue squad. In the new response time chart, an aerial unit and a rescue squad each has its own set of response time goals.

- The arrival of an extrication-capable unit, whether an extrication-equipped engine or aerial unit, or heavy rescue squad, meets the criteria for there being an extrication-capable unit on the scene.

- Only the arrival of a heavy rescue squad meets the criteria for there being a heavy rescue squad on the scene. An extrication-capable unit does not meet the criteria.

- The new response time chart includes the arrival times of the 2nd due aerial units, not the 1st due aerial unit alone as in the past.

- Arrival time of the 1st due aerial unit is in relation to arrival of the 1st and 2nd due engines on box alarms or adaptive responses, because, tactically, the 1st due aerial unit must support and work in conjunction with the 1st and 2nd due engines.

- Arrival time of the 2nd due aerial unit is in relation to arrival of the 3rd and 4th due engines on box alarms, because, tactically, the 2nd due aerial unit must support and work in conjunction with the 3rd and 4th due engines.

- The full assignment on a structure fire refers to all initial alarm units due on a standard box alarm, high-rise box alarm, or non-hydranted area box alarm.

FIGURE 5.6 - EXPANDED RESPONSE TIME GOALS

Service	Response Time Goal	Travel Time	Urban Area Goal -%	Suburban Area Goal -%	Rural Area Goal -%
ALS -1st Due[22]	8 min	6 min	90%	80%	45%
BLS -1st Due[23]	6 min	4 min	90%	75%	50%
Transport Unit for ALS Patient[24]	10 min	8 min	95%	80%	50%
Transport Unit for BLS Patient[25]	12 min	10 min	95%	80%	50%
Fire -1st Due Engine	6 min	4 min	90%	75%	50%
Fire -2nd Due Engine	8 min	6 min	90%	75%	40%
Fire -3rd Due Engine	10 min	8 min	90%	75%	40%
Fire -4th Due Engine	12 min	10 min	90%	75%	40%
Tanker - 1st Due[26]	8 min	6 min	NA	NA	45%
Tanker - 2nd Due[27]	12 min	10 min	NA	NA	35%
Tanker – 3rd Due[28]	18 min	16 min	NA	NA	25%
Extrication[29]	9 min	7 min	90%	75%	50%
Heavy Rescue[30]	12 min	10 min	95%	80%	25%
1st Due Aerial Unit[31] on Any Fire Incident When Due to Respond	8 min	6 min	85%	75%	40%
2nd Due Aerial Unit[32] **on Structure Fire**	12 min	10 min	80%	65%	25%
Full Assignment on Structure Fire[33]	12 min	10 min	95%	70%	25%

NOTE: New or modified goals appearing under the "Service" heading are shown in boldface type.

[22] First arriving unit having ALS capability (minimum: paramedic & ALS kit) – medic unit or AFRA
[23] First arriving unit having BLS capability (minimum:EMT & BLS kit)– ambulance or first responder unit
[24] Arrival of transport unit, whether a medic unit or an ambulance that can be upgraded to a medic unit with a paramedic from the AFRA
[25] Arrival of transport unit, whether an ambulance, or medic unit when an ambulance is unavailable
[26] 1st due tanker on fires in areas lacking hydrants arrives within 2 minutes of 1st due engine
[27] 2nd due tanker's arrival coincides with arrival of 4th due engine
[28] 3rd due tanker arrives approximately 2-3 minutes before 2nd tanker's water is expended
[29] Extrication capable unit – extrication-equipped engine or aerial unit, or heavy rescue squad
[30] Rescue Squad response required
[31] Arrival time of 1st due aerial unit is in relation to arrival of 1st and 2nd due engines on box alarms or adaptive responses
[32] Arrival time of 2nd due aerial unit is in relation to arrival of 3rd and 4th due engines on box alarms
[33] All initial alarm units due on a standard box alarm, high-rise box alarm or non-hydranted area box alarm

As with the original response time goals adopted in 2000, **the time component of the new response time goals is the same for all three density zones**. The times (e.g., 6-minutes, 8-minutes, etc.) selected for the various types of fire and rescue services relate to critical time milestones for influencing successful outcomes concerning patient care and property loss. These time frames have, for the most part, been retained in the updated response time goals, although a 12-minute time frame has been introduced for certain services (e.g., heavy rescue squad, 2nd due aerial unit, 2nd due tanker, etc.).

The designation of **urban, suburban, and rural areas** in the 2000 amendments to the previous *Fire, Rescue Emergency Medical Services Master Plan* were based upon the County's comprehensive general plan reflecting projected population density. Similarly, this Master Plan utilized GIS technology to further define the character of **urban, suburban, and rural density zones** by utilizing factors – population density, building density, population projections, zoning, fire hydrant coverage, distance to urban amenities, and distance to interstate freeways – that relate more appropriately to the delivery of fire and rescue services. As was the case in the 2000 amendments, the purpose of recommending response time goals in the context of the character of the area – urban, suburban and rural density zones - is to convey the policy statement that the ability to meet response time goals for the range of fire and rescue services uniformly throughout the County, without regard to population density or density zones, would not be cost effective, efficient or a prudent use of resources. That is to say, in many of the rural and suburban density zones, response times will be longer than the response times in the urban density zone. Applying response time goals on the basis of the three different density zones is grounded in risk management principals and best efforts to deploy fire and rescue resources strategically to meet the projected needs of the County's communities and to match the pattern and pace of development.

This Master Plan presents response time goals for various fire and rescue services on the basis of percent of population covered within the designated density zone. The percent of population covered within a given response time goal is higher in the urban density zone than for suburban and rural zones.

Existing response time goals (adopted by the County Council in 2000) for first-due ALS unit, BLS unit, and engine have been retained within the new set of goals appearing in Figure 5.6, however, the percentages of population that can be reached within specified times has been modified. The response time goal for arrival of all units due initially on a box alarm has also been retained but the time component has been increased to 12 minutes (formerly 10 minutes) and percentages have been added for the three density zones in place of the former across-the-board percentage of 90%. Goals that have been modified to be more stringent (i.e., first-due BLS unit and first-due engine) reflect provisions in NFPA Standard 1710, as well as future stations and resources that are expected to result in improved response times. Existing goals that have been modified to be less stringent (i.e., 1st due ALS and full assignment on a structure

fire) also reflect NFPA 1710, as well as an increasing demand for ALS services throughout the county.

MCFRS' ability to meet all of the new response time goals countywide will be largely dependent upon the deployment of additional resources, mostly within the newly-defined suburban and rural density zones. Strategically deployed resources will reduce travel distances to some areas, resulting in quicker responses to some incidents. Resources that will be needed for MCFRS to meet the new response time goals include fire stations, apparatus, and career staffing. Some of these needed resources have been programmed in the FY05-10 CIP, including the four new up-county stations in Germantown (two stations), Clarksburg (one station), and the Travilah-Traville area (one station) and associated fire, rescue, and EMS apparatus. At the time this Plan was written, a fifth station, that would serve the Shady Grove-King Farm area, was included in the MCFRS FY07-12 CIP Budget request. Other resources that, if funded in future operating budgets, will contribute to MCFRS' ability to meet new response time goals include:

- Personnel, apparatus, and equipment to be deployed at new stations (those stations programmed in the CIP as well as others that may result from recommendations derived from Phases 3-7 of the Station Location and Resource Allocation Study)

- Additional career personnel to be assigned to existing stations

- Increasing minimum staffing on engines, aerial units, and rescue squads from three to four personnel (which will reduce the number of units required on certain incidents, resulting in greater availability of remaining units for other incidents and associated reductions in response time)

In addition to these resources, implementation of technologies and/or procedures should be pursued to expedite the processing of 911 calls, the dispatch of fire and rescue units, and the response of fire and rescue units. For example, a traffic signal control system (see Assumption #2 above and item 2 below) should facilitate quicker response of apparatus through congested intersections.

Measuring how well the MCFRS is meeting response time goals is an important on-going management practice. As additional resources are deployed, response times should improve in many areas of the county. The degree to which improvements are realized will be captured in periodic response time analyses, and the results will be shown in **MCFRS program measures**.

At the time this Plan was written, existing response time goals (see Figures 1.1 and 1.2) were, for the most part, not being met. The two primary reasons were: 1) lack of resources to keep pace with countywide service demand, particularly in suburban areas

but also in urban and rural areas; and 2) long distances between fire-rescue stations, thus creating large first-due areas within rural and suburban zones, outlying areas of which cannot be reached within existing response time goals. Gradual improvements are anticipated as new stations come on line and as additional apparatus and career personnel are deployed. Injury and fire prevention programs should also result in fewer incidents per capita, resulting in greater unit availability for incidents, thus improving response times to those incidents.

2. Traffic Signal Control System: **The County should acquire a mobile traffic signal control system for use in the most congested areas of County**. This should be coordinated with MCFRS, MCP, and DPWT as a multi-agency project. [See "Pilot Tests" heading above for further discussion.]
[»Cross-reference: Recommendation 69, Section 6]

3. Response Time Goals for MCFRS Specialty Teams: **The MCFRS should develop response time goals for its specialty teams** (i.e., HIRT, RRATS, CRT, Bomb Squad) to reach the scene of any incident to which they are dispatched. **An alternative would be to establish varied response time goals for special operations apparatus** based upon the type of special hazard involved in a given incident.
[»Cross-reference: Recommendation 70, Section 6]

4. Response Time Goals for MCFRS Command Units: **The MCFRS should consider developing response time goals for command staff** to arrive on the scene of incidents to which they are dispatched. These goals would not likely apply to discretionary responses by command staff where they were not dispatched.
[»Cross-reference: Recommendation 71, Section 6]

5. Maximum Response Time Goals: **The MCFRS should consider developing a set of maximum response time goals that should not be exceeded except in rare cases**. Maximum response time goals would address situations when an incident occurs within an area where units that are normally first-due (or second-due or third-due in some cases) are committed on other incidents and distant unit(s) must be dispatched that cannot meet the lower response times appearing in Figure 5.6. Maximum response time goals would likely be developed in relation to the MCFRS-developed density zones recommended in this Plan. For example, the maximum goals would likely be highest in the rural density zone where fire-rescue stations and apparatus are further apart than in the suburban and urban density zones where stations/apparatus are more concentrated. Maximum response time goals, along with the shorter goals in Figure 5.6, would be major factors in the siting of future fire-rescue stations as well as future apparatus deployments.

MCFRS RESPONSE READINESS

It is vitally important that the MCFRS continuously take steps to ensure response readiness for large-scale incidents such as terrorist attacks, natural disasters, transportation incidents, and other incidents involving mass casualties. The MCFRS must first define the level of response readiness that it will strive to attain. Once that level of readiness has been determined, that level can be achieved by accomplishing the following actions and measures:

- Establishing specific goals and objectives to achieve an environment of readiness
- Building upon areas where acute readiness exists and providing appropriate organizational development techniques to help this behavior spread throughout the organization and become institutionalized
- Exercising operational functions and integrating tasks into large-scale exercises to identify areas where the MCFRS has not achieved the desired level of readiness
- Continually seeking opportunities to obtain funding for needed resources
- Continually evaluating current supplies and equipment to identify what is needed to reach the desired level of operational readiness, and then initiating processes to obtain these supplies and equipment
- Establishing of an organizational functionality toward central asset management and maintenance
- Specific training and continuous learning focused on readiness, incident management and response to terrorism
- Developing of a deep understanding of the adverse effects associated with WMD and other terrorist weapons of choice and the needed procedures to safely and effectively handle the effects of these weapons. The key elements of this strategy are recognition, detection and protection.

[»Cross-reference: Recommendation 72, Section 6]

The level of response readiness will require periodic re-definition to adjust to the ever changing threat and level of risk posed by terrorism, natural disasters, technological hazards, societal hazards, transportation hazards, and any other hazards of the future.

INCIDENT COMMAND

Applied Technology: **The MCFRS should continuously explore ways in which new technology, best practices and innovations can be applied to incident command.** Related technology include communications, automated and non-automated incident command tools/systems, personnel accountability systems, and any other new technologies, best practices and innovations that emerge. This continuous effort will involve research; contact with manufacturers and other fire-rescue departments; evaluation of new products, best practices and innovations; pilot testing; purchase of products (if applicable); implementation of new products and strategies including development of SOPs and training of personnel in using/applying the new technologies and ideas. Periodic evaluation of the effectiveness of the new technologies and SOPs must also be performed to determine whether the products and/or SOPs are worth continuing. [»Cross-reference: Recommendation 73, Section 6]

Incident Management Team: **The MCFRS should continue to develop and enhance the IMT concept for both in-County and regional large-scale incidents.** IMT training for all Battalion Chief-level personnel (see below) should be encouraged or mandated by the Fire Chief. [»Cross-reference: Recommendation 75, Section 6]

Regional Incident Command: **The MCFRS should continue participating in COG-sponsored planning and training for incident command of regional incidents**. For regional incident command to function successfully, mutual aid agreements must be maintained and updated (as needed). **The MCFRS should become involved from the earliest stages of development in the federal initiative to create a "Metropolitan Incident Management System" in the Washington, D.C. Metropolitan Area** (as well as other large metropolitan areas) **for use during regional incidents**. The MCFRS should, likewise, participate in all COG-sponsored coordination and training efforts concerning the "Regional Information, Communication and Coordination System" (RICCS). [»Cross-reference: Recommendations 74 and 76, Section 6]

A desirable outcome of the MIMS initiative would be the creation of Type-3 Incident Management Teams (IMTs), ideally several per COG jurisdiction. The intention would be for Type-3 IMTs to be deployed across jurisdictional boundaries to assist with major incidents occurring in a particular County or city. A key step in creating these IMTs is training. Battalion Chiefs and those Captains on the promotional list should be trained to serve on a Type-3 IMT. A training program should include the NFA's Command and General Staff Course followed by IMS/ICS training. The MCFRS IMT(s) could be activated for incidents within Montgomery County, any of the COG or NCR jurisdictions, or elsewhere within the region.

RISK REDUCTION

EMS Risk Reduction and Injury Prevention

1. EMS Response Resources: **The addition of new stations, apparatus and personnel will help in reducing the overall EMS risk in the County through the reduction of civilian injuries and deaths**. Recommendations under the "Facilities," "Apparatus and Equipment," "EMS," "Staffing" and "Resource Deployment" headings above fully address new fire-rescue and rescue-only stations, EMS apparatus and equipment, and EMS resource deployment. [»Cross-reference: Recommendation 77, Section 6]

2. Community Interaction: **MCFRS personnel should interact with the public on a non-emergency basis to educate the public on injury prevention and risk reduction**. **Interaction will also lead to greater understanding and trust during emergencies**. MCFRS personnel should participate in the following efforts:

- Educate the public on EMS and what it provides to the citizen
- Provide community CPR, AED and first aid training through the FRTA on an ongoing schedule
- Expand the public access defibrillator program by placing AEDs in public places and teaching staffs of shopping malls, restaurants, theaters, public pools, etc. to use them effectively
- Promote community services such as car safety seat inspection and home safety inspections (see below)

3. Risk Reduction and Injury Prevention: **Led by the Public Information & Community Outreach (PI&CO) Section, the MCFRS should continue, or initiate (where applicable), the following programs and efforts to reduce risk and prevent injuries over the ten-year period of this Master Plan**. [Explanation of each program can be found in Section 4 of this Plan under the "Public Information & Community Outreach" heading.] [»Cross-reference: Recommendation 78, Section 6]

- "Safety in Our Neighborhood" (SION) Program aimed at all County residents
- "Risk Watch" aimed at children in elementary and middle schools
- Other programs for school-age children
- Smoke alarm program
- "Operation Extinguish" aimed at juvenile fire setters
- Senior citizen programs
- "CERT/CHAMP" training program for adults at or above 18 years of age
- Special events -County Fair, Kids Festival, File of Life, Fire Prevention Week, etc
- "Safe Kids" Program - focusing on safety seats and home and recreational safety
- "Federal Fire Partnership" Program [NEW]
- Program to Prevent Fire- and Fall-Related Deaths Among Older Adults [NEW]

- "Fire & Rescue Safety Zone" programs at new Station 1 [NEW]

In addition, **the PI&CO Section should pursue the following upgrades between 2005 and 2015 that relate directly or indirectly to risk reduction**: [»Cross-reference: Recommendation 79, Section 6]

- Add a Public Education Specialist position for each MCFRS Battalion. In addition to general safety knowledge and skills, each should have an area of particular expertise such as seniors, children, CERT/CHAMP, corporate training, training of MCFRS personnel in risk reduction, etc.
- Establish an up-county "Fire & Rescue Safety Zone"
- Establish dedicated funding for the CERT/CHAMP Program
- Standardized educational videos, brochures, CD-ROMS, equipment, etc. for distribution at each fire-rescue and EMS station
- Purchase/lease vehicle(s) for use by the PI&CO staff

Other recommended initiatives and enhancements relating to risk reduction over the upcoming ten-year period include the following: [»Cross-reference: Recommendation 80, Section 6]

- Conduct a study/survey on age and operability of smoke alarms, focusing on target areas of the County
- Establish a targeted program of door-to-door smoke alarm checks, with handout of free 10-year smoke alarms to low income residents
- Pilot test a Cable TV fire and injury prevention show, and continue the effort if feedback is positive
- Staff and pilot test a customer service unit for conducting home inspections, public education, etc., and make it permanent if it proves successful
- Pilot test a mobile fire/injury prevention "lab" similar to that operated by the Home Safety Council, and then operate it permanently if it proves successful
- Pilot test on-line fire/injury prevention classes for the public developed jointly with Montgomery College and MCPS, including the earning of credits. Continue the initiative if it is successful
- Create on-line video communication/training classes for MCFRS personnel concerning community risk reduction and injury prevention
- Establish mandatory community safety classes for Operations staff as part of promotional requirements
- Establish discretionary funding for each station to purchase materials/items for public educational events
- Establish "Public Education" stations at strategic locations for in-depth community outreach
- Include within the design of each new station, or station that will undergo a major renovation, a "Fire Safety Education and Fire Escape Simulator." This would be

a separate small building designed to resemble a house, where children can learn about household hazards and escaping from a smoke-filled house (using a non-toxic, simulated smoke generator).

- Establish formal fire/injury prevention awards for citizens and MCFRS staff and initiate an annual ceremony honoring award recipients
- Conduct risk reduction/safety seminars for residents, business owners, and MCFRS personnel
- Expand outreach efforts to the County's fast growing Hispanic population, including the publication of risk reduction, injury prevention and fire prevention literature in Spanish

Fire Risk Reduction

1. Fire Suppression Response Resources: **The addition of new stations, apparatus and personnel will help in reducing the overall fire risk in the County through the reduction of civilian casualties and actual fire loss**. Recommendations under the "Facilities," "Apparatus and Equipment," and "Staffing" headings above fully address new fire-rescue stations, fire suppression apparatus and equipment, and fire suppression resource deployment.

2. Water Supply: While the 2000 *Water Supply Study* has already led to many rural water supply improvements that should help to reduce fire-related risk, much remains to be done. **The following list summarizes the *Water Supply Report* recommendations related directly or indirectly to risk reduction**. [Other recommendations from that report have been cited elsewhere in this Section under the headings of "Fire Suppression and Water Supply" and "Apparatus and Equipment."]
[»Cross-reference: Recommendation 81, Section 6]

   a. Although a **comprehensive MCFRS-wide risk analysis** of station first due response areas, or fire box areas, has not been conducted as of 2005, a firefighter assigned to the Code Enforcement Office was in the process of completing a **database of target hazards** throughout the County. When completed, the database will assist in planning efforts as well as operational strategy in response to incidents involving these fire and EMS target hazards. **The database will also be used for homeland security purposes**. This database, based upon research by this lone individual, will contain much of the **risk assessment information** that would have otherwise been obtained had a large number of MCFRS personnel participated. **In the future, all MCFRS personnel should contribute to this effort so that all risks and target hazards throughout the County are completely identified and assessed**.

   b. By 2005, the MCFRS had not yet developed an inspection procedure for use by in-service fire-rescue units based upon NFPA Standard 25-"Standard for the Inspection, Testing and Maintenance of Water Based Fire Protection Systems."

Presently, in-service units simply check (during inspections) the maintenance and testing records of sprinkler systems and fire pumps kept by building managers. **In the near future, the MCFRS should develop an inspection procedure for use by in-service fire-rescue units based upon NFPA Standard 25**.

c. Little progress had been made, as of 2005, in coordinating the review of hydrant flow records with the three municipal water authorities operating in Montgomery County – WSSC, City of Rockville and Town of Poolesville. **In the near future and annually thereafter, the MCFRS should coordinate the review of hydrant flow records with the three municipal water authorities.**

d. By 2005, little progress had been made in encouraging WSSC to improve maintenance of hydrants and in improving the process whereby WSSC notifies the MCFRS when WSSC hydrants are out of service. **In the near future and on a continuous basis thereafter, the MCFRS should encourage WSSC to improve maintenance of hydrants and improve the process whereby WSSC notifies the MCFRS when WSSC hydrants are out of service.**

3. Property in Areas Lacking Hydrants: **The MCFRS should encourage property owners in areas lacking fire hydrants to implement measures to minimize the likelihood and consequences of fires**. Several measures are presented below. [»Cross-reference: Recommendation 82, Section 6]

- Installing an automated fire sprinkler system in their home
- Ensuring functional smoke detectors, preferably monitored by a security/monitoring company
- Practicing fire safety in their homes and outbuildings on a daily basis
- Having an evacuation plan, practiced by all occupants, including a designated assembling point
- Quick reporting[34] of actual fires, odors of smoke and malfunctioning systems/appliances to 911
- Installing a pond (preferably with a dry hydrant), cistern or underground water tank on the property for use by firefighters and ensuring adequate access to the cistern or pond by large, heavy fire-rescue apparatus
- Ensuring that driveways allow ready access to homes and outbuildings by large, heavy fire apparatus
- Clearing trees/brush away from structures to minimize the chance of a brush fire spreading to structures
- Avoiding the use of wood shingles on homes and outbuildings

[34] A delayed report of fire can result in an advanced stage fire by the time MCFRS units arrive, thus destroying much of the home

- Installing lightning protection systems if the home or outbuildings are sited in high and/or open areas

Note: Property owners residing in areas served by fire hydrants can implement many of these measures, as well.

4. Unsprinklered Residential Dwellings: **The best manner in which to minimize the risk presented by unsprinklered townhouses, garden apartments, and residential high-rises is to enact laws requiring that such structures be retrofitted with sprinkler systems**. The MCFRS should continue its efforts to draft and encourage the enactment of laws requiring these retrofits. The first priority should be retrofitting residential high-rises, followed by garden apartments and then townhouses. [»Cross-reference: Recommendation 83, Section 6]

5. Exterior Fire Spread: To minimize the risk of fires spreading from mulch to the outside walls of dwellings or to wooden decks, **the County should increase fire safety educational efforts to encourage smokers to dispose of smoking materials properly and enact an ordinance making it illegal to place wood mulch within "x" feet[35] of multiple-family dwellings**. Use of non-combustible material such as landscaping stones could be offered as an acceptable alternative within immediate vicinity of structures. Owners of single-family homes should be encouraged, but not mandated, to use non-combustible materials in flower beds that come in contact with outside walls, porches and under wooden decks. [»Cross-reference: Recommendation 84, Section 6]

6. Abandoned Buildings: **The County should address the issue of fire risk associated with abandoned buildings through a task force approach**, including personnel from the MCFRS, County Housing Commission, County Building Department, and County Attorney's Office. The task force should be charged with identifying abandoned structures and working with property owners to secure and renovate the buildings, or tear them down. The issue of abandoned buildings in Montgomery County, while a low fire risk, is nonetheless an issue that requires on-going attention. [»Cross-reference: Recommendation 85, Section 6]

Hazmat, Destructive Devices and WMD Risk Reduction

MCFRS risk reduction efforts concerning hazardous materials, destructive devices and weapons of mass destruction (WMD) are largely preparedness and response related. The only exception is the Office of Emergency Management's Hazmat Permitting Program that involves inspection of "SARA facilities," which can lead to the identification of

[35] Number of feet to be determined by Fire Code Enforcement Office

unsafe storage and usage procedures that owners must correct before permits are issued. Efforts to prevent incidents involving WMD and destructive devices fall under the responsibility of law enforcement agencies having jurisdiction in Montgomery County such as MCP, municipal police departments, Park Police, State Police, Metro Transit Police, FBI, and various federal law enforcement agencies that protect federal facilities in the County.

The MCFRS should focus on the following efforts concerning preparedness and response related risk reduction measures: [»Cross-reference: Recommendation 86, Section 6]

- Continuing the enhancement of HIRT, Bomb Squad, and CRT response capabilities
- Continuing to stockpile specialized protective clothing and respiratory protection
- Acquiring, storing and re-supplying key equipment and supplies listed in Annex O of the *Emergency Operations Plan*
- Expanding the inventory within the EMS Mass Casualty PODS
- Expanding the WMD medications inventory and regularly replacing items with short shelf lives
- Expanding decontamination capabilities for MCFRS personnel and the general public
- Providing WMD and mass casualty training to all MCFRS personnel
- Conducting training exercises involving MCFRS and other County and municipal departments
- Acquiring needed equipment with funds awarded through federal and State grants
- Conducting local and regional planning, preparedness and training
- Continuing participation in the Washington Metropolitan Area "Metro Medical Response System" and associated "Metro Medical Response Team."
- Establishing a "ready reserve fleet" to supplement regular MCFRS apparatus
- Expanding logistical capabilities (i.e., food, beverages, cots/mats, water, etc.) to support the callback of career personnel and large numbers of volunteers on-duty at stations, and to ensure at least 72-hour self-sufficiency of all on-duty personnel and MCFRS assets
- Continuing to seek other opportunities to become better prepared and to improve readiness

Through better preparedness for responding to incidents involving WMD, destructive devices and hazmats, the consequences of incidents involving these materials/devices can be lessened, thus reducing, but not entirely eliminating, associated risk.

Water Hazards Risk Reduction

As explained in Section 3, water-related risk is associated with recreational use of the County's water resources and flash flooding occurrences impacting property, roadways and people who get caught in rising water. **Efforts to reduce the risk associated with static or flowing water (i.e., rivers, streams, canals, lakes, pools, etc.) will primarily involve the RRATS Team, Public Information & Community Outreach Section, and Office of Emergency Management**. It should also involve all Operations personnel to some extent, particularly personnel serving at stations located near the Potomac River or large lakes/reservoirs, or in areas having a high concentration of public and private pools (e.g., Potomac, Cabin John, Bethesda, Chevy Chase). Public education is the main strategy in reducing this type of risk, although established laws (e.g., laws prohibiting swimming in all natural bodies of water) and codes (e.g., code requirement for ≥5 ft high fences with self-closing gates surrounding swimming pools) play important roles, as well.

The MCFRS should focus on the following water-related risk reduction efforts:
[»Cross-reference: Recommendation 87, Section 6]

- **Water safety presentations and demonstrations** for boaters and the general public by the RRATS Team, PI&CO Section and other Operations personnel
- **Pool safety presentations and demonstrations** for the general public by Operations personnel in all MCFRS battalions
- General **water safety measures** provided by the PI&CO Section through risk reduction programs such as Risk Watch, Safety in Our Neighborhood, Safe Kids, CERT/CHAMP and other programs
- **Flash flood mitigation and safety precautions** provided to the public by the OEM
- Seasonal **public safety announcements and TV/radio coverage** concerning pool safety and the dangers associated with venturing onto thin ice
- Information posted on the **MCFRS web site, including the "Safety e-Newsletter**"

Natural Hazards Risk Reduction

As explained in Section 3, natural hazards pose varying degrees of risk in Montgomery County. **Efforts to reduce the risk associated with natural hazards during the ten-year period of this Master Plan will primarily involve the Homeland Security Department, Office of Emergency Management (OEM), however, the Public Information & Community Outreach Section of MCFRS will assist OEM**. Natural hazards (e.g., severe thunderstorms, tornadoes, winter storms, flash floods, tropical storms/hurricanes) cannot be prevented, but mitigation measures can be implemented to minimize their impact on people, property and the environment. The OEM has a hazard mitigation plan and obtains hazard mitigation grants from FEMA and the State to fund

programs and projects that address natural hazards that regularly impact Montgomery County, such as flash flooding of roadways.

Over the next 10 years, OEM will continue its hazard mitigation program and applications to the Federal Government and State Government for hazard mitigation grants. **One mitigation project that needs considerable attention over the next ten years is the hardening of public safety facilities such as the PSCC and fire-rescue stations.** Facility hardening involves steps to make key buildings and building systems stand up more effectively to various hazards and events that could otherwise cause damage and possibly shut down vital public safety operations occurring inside these facilities. Hardening also involves adding redundant systems, so that reliable backup systems are available in case primary systems go down. Redundancy is particularly important for communications, electrical power, water and IT systems.

[»Cross-references: Recommendation 72 and 77-80, Section 6]

FIRE CODE/LEGISLATIVE INITIATIVES

Between 2005 and 2015, **MCFRS should lead the effort to promote risk reduction legislative initiatives aimed at saving lives, reducing the number and severity of injuries at home and elsewhere, and lowering property damage caused by fire**. This should be a joint effort between the Fire Code Enforcement Section and the Public Information & Community Outreach Section. **The following initiatives should be considered:**

- **Retrofitting <u>all</u> non-sprinklered nursing homes and assisted living facilities** with automated sprinkler systems, within a 10-year period.
- **Retrofitting <u>all</u> non-sprinklered high-rise residential buildings** with automated sprinkler systems, within a 10-year period.
- Requiring **sprinkler protection for the attic areas of new buildings** of all types
- **Retrofitting non-sprinklered single-family homes** with automated sprinkler systems **when these homes undergo major/extensive renovation**.
- Requiring **hard wired (w/battery back up) smoke alarms within each sleeping area and on all levels** of all types of residential occupancies.
- **Prohibiting the use of fuel-fired space heaters** in single-family homes. [Note: Law already exists for all other types of occupancies]
- Requiring that a **safe usage sheet accompany all candles** sold in Montgomery County.
- Requiring that **risk reduction classes (e.g., Risk Watch) be taught in Montgomery County schools**.

[»Cross-references: Recommendation 82 and 83, Section 6]

FIRE & EXPLOSIVES INVESTIGATIONS

Over the ten-year period of this Plan, the F&EI Section should strive to meet its goals, as follows: [»Cross-reference: Recommendation 89, Section 6]

- Close 50% of all criminal cases
- Increase the depth of certified personnel for the Bomb Squad
- Increase the number of personnel within the Section to keep pace with workload
- Continue efforts to increase incident scene safety for investigators

Between 2005 and 2015, **consideration should be given to splitting the Fire and Explosive Investigations (F&EI) and Bomb Squad functions** to provide a dedicated service in each discipline. If split, the F&EI Section should have a complement of about 15 personnel, and the independent Bomb Squad should have a complement of about 10 personnel. To operate the two programs more effectively and safely, additional trained personnel and equipment will be needed to perform each function. [The recommendation to separate the Bomb Squad from the F&EI Section is addressed in greater detail under the "Resource Deployment" heading above.]

FIRE CODE ENFORCEMENT

Future enhancements to the Fire Code Enforcement program are needed, so that residents and business owners may be better served. **Enhancements should include the following**: [»Cross-reference: Recommendation 90, Section 6]

- Complete automation of the inspection process enabling faster record management for quicker inspection turn-around time and statistical data management and retrieval.

- Reliable state-of-the-art computer hardware and software applications, including those that would allow for statistical computations to reduce time required in computing statistics manually.

- Electronic access to building and fire protection permit records (including hazmat permits) by Fire Code Enforcement staff and Operations Division personnel.

- Re-introduce the practice of inspections by operational firefighter-rescuers to enhance occupant and responder fire safety and building facility familiarization. Provide a code enforcement resource (e.g., "Battalion Coordinator"), at the Master Firefighter or Officer level, per MCFRS Battalion to reduce the number of referrals from Operations Division personnel to Fire Code Enforcement inspectors for non-technical /non-complex fire code issues.

- Equip all Fire Code Enforcement vehicles with mobile data computers and records management access for automation purposes.

- Provide continuous opportunity for fire inspectors to learn about the latest technology (i.e., products, applications, processes) applicable to the functions and duties for which they are responsible.

- Seek opportunities for Fire Code Enforcement personnel to actively participate in working groups and technical committees at the County, State and federal levels addressing issues such as fire code development and enforcement, fire protection, hazardous materials regulations and homeland security.

- Seek active participation on technical committees for model codes (e.g., NFPA codes) to facilitate specific local applications.

- Implement training at the FRTA for new firefighter-rescuer recruits that will enhance their understanding of the direct relationship between the building inspection process and responder's safety. Specifically, a one-day class is recommended that would provide recruits knowledge of the ESCAPE (Exits, Storage, Capacity, Access/Aisles, Protection, Emergency Lighting) Program.

- Provide continuing educational opportunities to Operations personnel on technological improvements to sprinkler systems, fire pumps, fire alarm systems and clean-agent extinguishment systems.

- Active participation in life safety enhancements for occupants and responders in pre-existing non-conforming buildings and facilities.

- Inclusion of Fire Code Enforcement personnel in Operations Division preparedness activities such as regular skills review, SOP changes/updates, and training opportunities.

- Implement fire modeling of actual incidents to assess fire protection systems' effectiveness and to provide data in support of code modifications

- Develop revenue streams that shift program costs to system users and provide funding for Fire Code Enforcement enhancements

TRAINING

1. Training Academy Enhancements: The MCFRS **should pursue the recommended enhancements to the FRTA described in extensive detail in Section 4 of this Plan** (see "Non-Emergency Functions" and then "Training") and seek funding as appropriate. Enhancements were derived by the experienced staff of the FRTA. A considerable portion of the recommended enhancements pertains to facility improvements, while the remainder of the recommendations addresses needs in the following areas: curriculum, administrative, technology, apparatus and equipment, and EMS training. [»Cross-reference: Recommendation 91, Section 6]

2. EMS Training: **The MCFRS should maintain EMT-P, EMT-I(CRT) and EMT-B curricula at the current national-level standard** through the following actions: [»Cross-reference: Recommendation 92, Section 6]

   - The EMS Section and FRTA should identify areas where improvement is needed in EMS training.
   - Beginning in FY05, train prospective paramedics at the EMT-I(CRT) level, allow students to obtain field experience at that level for a 9-month period, then provide these personnel a "bridge" course to the EMT-P level. The "bridge" will also be offered to those MCFRS personnel who were certified under the 1999 EMT-I(CRTs) standard to bring them up to the 1999 EMT-P standard.
   - Combine continuing education for EMT-B, EMT-I(CRT) and EMT-P providers, as it would allow for a greater understanding of the capabilities of each level among all levels.
   - Offer "blended learning" opportunities for EMS, including classroom training at the FRTA and distance learning opportunities at stations (if allowed by the State) through web-based, video-based, and Cable TV-based training programs.

3. Training Requirements for Personnel Staffing Heavy Rescue Squads: **Require all MCFRS personnel making up minimum staffing on heavy rescue squads to have completed the FRTA's "Site Operations and Vehicle & Machinery Rescue Course" (formerly "Practical Rescue Course"), or an equivalent course** taken elsewhere (e.g., through MFRI). LFRDs offering comprehensive practical rescue training programs for their personnel (e.g., BCCRS' "check off procedure" concerning rescue squad equipment) is an acceptable alternative. [»Cross-reference: Recommendation 71, Section 6]

4. MCFRS Mobile Command Post Training: **The MCFRS should provide training for MCFRS command-level officers that will enable them to effectively use the MCFRS Mobile Command Post, and training for Mobile Command Post drivers to operate the unit safely and effectively**. [»Cross-reference: Recommendation 94, Section 6]

5. **Recommendation: The Fire-Rescue Training Academy (FRTA) should maximize training opportunities for volunteer personnel to ensure they are given ample opportunity to complete both mandatory and optional training courses and programs.** The FRTA should make every effort to maximize training opportunities for volunteer personnel to accommodate the fact that they are not readily available to attend training classes during daytime hours, Monday-Friday. This can be accomplished through a combined approach offering "blended learning" opportunities and by scheduling as many courses as possible during nights and weekends when volunteers have greater availability to attend. Blended learning opportunities are training courses offered at the FRTA combined with distance learning opportunities at MCFRS work sites, including web-based, video-based, and Cable TV-based training programs. Web-based and video-based programs allow fire-rescue personnel to receive training at any time and to proceed at their own pace. Both volunteer and career personnel can benefit from this blended learning approach. [»Cross-reference: Recommendation 95, Section 6]

6. Fire Code Enforcement Training: **Include basic fire code inspection training in Recruit School or as a requirement for promotion to the rank of Master Firefighter** to ensure that personnel understand the importance of, and are capable of effectively conducting, fire safety inspections. This approach would also build a cadre of firefighters with a desire to transfer into the Office of Fire Code Enforcement sometime during their MCFRS career. [»Cross-reference: Recommendation 96, Section 6]

7. Foreign Language Training for MCFRS Personnel: Considering the County's highly diverse population, **the County should continue providing optional foreign language courses, or tuition reimbursement for college-offered foreign language courses, for MCFRS personnel** interested in conversing effectively with non-English speaking customers. Courses should reflect the foreign languages most commonly spoken by County residents, including Spanish, Chinese, Vietnamese, Korean, Russian, and Farsi. To encourage participation, the County should continue offering a pay differential to those career MCFRS employees who become proficient at one or more foreign languages and an appropriate incentive for volunteer personnel who become proficient in a foreign language. Career personnel who have completed foreign language courses should be assigned to stations serving large populations of foreign immigrants (for example, placing personnel who speak Spanish at Stations 2 and 18 whose first-due areas contain many South and Central American immigrants). [»Cross-reference: Recommendation 97, Section 6]

WELLNESS AND SAFETY

Wellness

Over the 10-year period of 2005-2015, the **MCFRS Wellness Program should focus on the following enhancements and goals**: [»Cross-reference: Recommendation 98, Section 6]

- Continue **monitoring the health of all uniformed MCFRS personnel**, including fitness, medical (e.g., colon-rectal cancer screening), and behavioral health monitoring

- Monitor MCFRS staff to **identify trends in injuries and occupational disease**, and targeting programs for the prevention of these health problems

- Ensure that the **wellness program is available to all uniformed MCFRS personnel,** including annual physicals for career personnel and IECS-certified volunteers

- **Provide greater access to all health and wellness programs** (e.g., PHLAME - Promoting Healthy Lifestyles; Assessing More Effects) for uniformed MCFRS personnel through outreach

- Establish a **behavioral health center,** including an appropriate staff (e.g., psychologist and two licensed social workers)

- **Expand injury care** at FROMS

- Establish a **base level of exercise equipment** for all work sites [$80,000 had been appropriated in FY06 as matching funds to a federal grant, and matching funds in that amount will be required in future MCFRS operating budgets.]

- **Provide training** for at least 100 peer fitness trainers and 60 peer behavioral health counselors

- **Improve records/data management** and tracking capabilities

Additional wellness enhancements for consideration could include the facilities and programs listed below. An evaluation is needed of the most appropriate and cost-efficient approach to implementing these enhancements to the wellness program. Regarding the medical and fitness facilities, consideration should be given to creating **joint public safety facilities** for use by MCFRS, MCP, Sheriff's Office, and Department of Corrections & Rehabilitation. Joint-use facilities would improve cost-efficiency, and a

joint-use fitness center would provide the opportunity for informal interaction between personnel of the various public safety departments.

- **Fully staffed medical facility** capable of supporting: annual exams, return-to-work evaluations, expanded diagnostic capability to support ultrasound, computer tomography (i.e., CT or "cat" scan), mammography, colonoscopy; physical therapy and work hardening provided in-house

- **Full fitness facility** capable of supporting up to 40 people, with classroom capability and behavioral health lab

- **Peer fitness trainers in each work site** for each shift and peer counselors in each battalion for each shift

- **Expanded family support network**

- **Expanded injury prevention programs**

- **In-house nutritionist** [possibly a joint-public safety initiative]

Rehabilitation

The firefighter-rescuer rehabilitation ("rehab") function must be improved and expanded to fully meet the needs of MCFRS personnel. Most importantly, **the rehab function must incorporate a formal medical screening component,** including the taking of vital signs, and monitoring body temperature, blood enzymes, and body hydration levels. To offer expanded medical screening to all firefighter-rescuers who are sent to the rehab area, a larger/wider shelter is required than that currently provided by Bus-27. [This enhancement is addressed under the "Apparatus and Equipment" heading above.]

[»Cross-reference: Recommendation 99, Section 6]

A second required improvement to the rehab function is to improve the overall nutritional value of the food and beverages served. The Wellness, Safety and Training Division should identify foods and beverages that offer firefighters the appropriate level of nutrition and hydration. These foods and beverages should then be acquired and stockpiled for transport to incidents by canteen units. A small quantity of non-perishable, nutritious foods and beverages should also be stored on each primary MCFRS unit to supply that unit's crew during incidents when a canteen unit cannot respond. During hot weather, all units should carry at least a large container of ice water.

Safety

Immediate needs of the MCFRS Safety Program include **funding of the three original Safety Captain positions (reclassified to the Battalion Chief level)** to better cover the County and the safety needs of all fire-rescue employees. **Reclassifying the Safety Captain positions to the Battalion Chief level will allow them to be integrated into the command structure; thus** placing a command level officer in charge of one of the most critical functions at major incidents. [»Cross-reference: Recommendation 100, Section 6]

Between 2005 and 2015, the MCFRS Safety Office must pursue the following enhancements and goals:

- Implement the "**Safety Management Plan**"

- Continued implementation of and adherence to the MCFRS "Safe Driving Action Plan" [see "Safety" heading in Section 4 for details]

- **Establish focus teams (one per Battalion) to assist the MCFRS Safety Office in addressing firefighter-rescuer safety.** These focus teams would be comprised of career and volunteer personnel across all ranks, and participation would be voluntary. The use of focus teams has proven successful in many industries. MCFRS focus teams would concentrate on injury prevention and reduction in the number of worker's compensation claims.

  Goals of the Safety Program that must be addressed on an <u>ongoing</u> basis include the following:

  - **Reduce** the number of preventable **injuries to service providers**
  - **Reduce** the number of preventable **vehicle collisions**
  - Realize a **reduction in worker's compensation pay outs**
  - Realize a **reduction in vehicle insurance premiums**
  - Deliver **behavioral-based safety training and education** to MCFRS personnel
  - **Review and revise**, as needed, **safety policies** relating to injury and collision investigation and Significant Injury Team activation

INFORMATION TECHNOLOGY

The strategic plan for MCFRS information technology (IT) has to account for the dynamics of today's first responders' environment where imminent severe threats exist beyond traditional fire-rescue threats. **The IT plan must consist of three critical components: key data, technology, and interoperability.**

Key Data: Key data is derived from several sources, including:

- Computer-aided dispatch (CAD) information
- Record management system (RMS) data records created after EMS and fire incident reports are created utilizing the new "Firehouse" software system
- GIS mapping data that contribute to the accuracy and timeliness of operational and planning decisions concerning resource allocation and station location
- Financial and budget data
- Personnel data

The collection and consolidation of this data into a data warehouse is one of the strategic goals for MCFRS during the 10-year life cycle of this Master Plan. The formulating of business rules that will allow the data to be normalized into a set of data relationships is an important element in this strategy. Data can be queried and reports created for many purposes, such as analyzing growth in the county and population concentrations to identify the public's fire-rescue needs. The collection of this data also supports MCFRS performance measures.

Technology: The leveraging of technology is critical to providing premier fire-rescue services. **The growing need to move to mobile portability with as much data as possible continues to be a challenge**. The utilization of **Voice over Internet Protocol (VoIP) and encrypted video** are key components that are being implemented, as well. Furthermore, **the need to extend incident management into the field from the EOC, via laptops and communications systems installed in the mobile command post, is critical to the outcome of major incidents**.

Interoperability: Interoperability is likely the biggest IT challenge facing MCFRS during the 2005-2015 timeframe. **The sharing of information is imperative for MCFRS** from several viewpoints. The first viewpoint is the ability to share operational and planning information between all MCFRS components. The second is the ability to extend this interoperability into all other Montgomery County departments and agencies. The third viewpoint is the effective sharing of information between MCFRS and COG and NCR jurisdictions, other Maryland counties, State agencies, and federal agencies (see Appendix J) because of the County's proximity to the nation's capital and the ongoing terror threat. Critical information that should be shared includes emergency management information and operational data as it is being collected or created within the county's EOC software "RAMSAFE." MCFRS should also continue its evaluation of CapWIN[36] and other interoperable networks to determine their usefulness to the department.

[36] The Capital Wireless Integrated Network (CapWIN) is a partnership between Maryland, Virginia, and the District of Columbia to develop an interoperable first-responder data/information sharing network. The CapWIN network is an interoperable data/information-sharing network under development by local, State, and federal agencies.

Implementation of recommendations found in the report[37] titled "Public Safety Communications Interoperability in Maryland" should also improve interoperability between counties in Maryland.

[»Cross-reference: Recommendation 101, Section 6]

PROGRAM EVALUATION

In keeping with MCFRS Goal #9 – to establish an organization-wide program of evaluation – **the MCFRS should expand the scope of its performance measures program to include measures that will address all programs and elements of the MCFRS and to make performance measures a regularly-used management tool by all MCFRS program managers**. Program areas whose performance was not being measured in 2004-05 (when this Plan was in development) included all elements of the Division of Volunteer Services, as well as asset management (e.g., apparatus/equipment maintenance, apparatus/equipment replacement, facility maintenance), IT services, firefighter-rescuer wellness, and recruitment and retention. Performance measures must be developed for all of these programs/elements and any others created by the Fire Chief as a result of Bill 36-03 and Chapter 21 (as amended in May 2004). In addition to using performance measures for its own benefit, MCFRS, as well as all County departments /agencies, is required to submit performance measures annually to OMB as part of the annual budget process. While the requirement to submit measures to OMB was the impetus for MCFRS to first develop performance measures, **MCFRS program managers must establish an ongoing business practice of updating and utilizing these measures regularly (e.g., monthly or quarterly) to measure the performance of their programs.**

In addition, **existing performance measures must be continuously assessed for needed improvements** that will better measure performance, and **standardized data gathering methods must be established** to collect and compile the comprehensive data on which performance measures are based.

MCFRS might find it beneficial to perform benchmarking with other fire-rescue departments, as long as departments and jurisdictions comparable to MCFRS and Montgomery County can be included. Benchmarking, if attempted, should be done in addition to developing and updating performance measures.

Another method of evaluation is the self-assessment process that an applicant fire department must conduct when seeking accreditation from the Commission on Fire

[37] Report of the Interoperability Project Team to the Public Safety Communications Interoperability Governance Work Group, dated February 28, 2005, developed through the Maryland Association of Counties and Governor's Office of Homeland Security

Accreditation International, Inc. (CFAI). It is recommended (below) that MCFRS seek accreditation through the CFAI.

[»Cross-reference: Recommendation 102, Section 6]

ISO RATING IMPROVEMENT

As reported in the *2000 Water Supply Study*, Montgomery County has a split Public Protection Classification-PPC (a.k.a. Insurance Services Office-ISO Rating) of 4/9--Class 4 for the area defined by ISO as "urban" and Class 9 for most of the area defined as "rural" by ISO.[38] The non-hydranted, far western portion of the County adjacent to the Potomac River, which is greater than five miles[39] from a fire station, has a rating of Class 10 – the highest risk classification. The Class 10 rating is limited to the most sparsely populated portion of the County with the least number of structures.

Montgomery County's rating is calculated using two components–fire loss history and ISO's "Fire Suppression Rating Schedule (FSRS)." While advantageous in other ways,[40] lowering an ISO rating of 4 to 3, 2 or even 1 may not result in lower insurance premiums for many policy holders. This is because PPCs are often times banded together (e.g., Classes 1-4) by insurance companies, meaning that premiums could be the same whether individual properties fall within a Class 1, 2, 3 or 4. Improving from Class 9 (i.e., non-hydranted area, less than 5 miles from a fire station, with few readily accessible and reliable alternate sources of water) to Class 8 (having more reliable alternate water sources than an area rated Class 9), or from Class 10 (i.e., area greater than 5 miles from a fire station) to Class 9, however, can make a huge difference in premiums, depending upon the insurance company or underwriter.

Based on this information, **Montgomery County's best course of action, from a cost-benefit viewpoint, is to implement water supply/delivery and other operational improvements in the portion of the County having the ISO Class 9 rating in hopes of ISO lowering that rating to a Class 8 or lower**. Subsequent efforts should focus on improving the ISO Class 4 rating within the urban portion of the County, which may

[38] For comparison, Prince Georges County has a Class 3 rating, Baltimore City's rating is Class 2, and the average ISO rating in Maryland is Class 5. There is less than 50 municipalities nationwide having the coveted ISO rating of Class 1.

[39] ISO rates any area or property greater than 5 miles from a fire station as Class 10, whether or not hydrants are present.

[40] Other benefits are of a non-monetary nature such as the fire department's and municipality's pride in having a lower rating, which indicates that citizens are well protected from fire and being served effectively by their fire department.

prove less beneficial to insured property owners than would the Class 9 to Class 8 reduction in rural portions of the County.

While improving the County's FSRS score (e.g., by improving the County's water supply/delivery capabilities) may help to lower the County's ISO rating, the other factor impacting the rating is the actual fire loss history over a period of several years. Unfortunately, MCFRS can only favorably impact fire loss to a limited degree due to factors beyond its control (e.g., time between ignition and reporting of a fire to the PSCC, building occupants attempting to fight a fire before reporting it to the PSCC, inclement weather prolonging response time, etc.). Nonetheless, fire loss history is a key factor in ISO's determination of the County's ISO rating. Several consecutive years of above average or below average fire loss can impact the County's ISO classification, upward or downward. [»Cross-reference: Recommendation 103, Section 6]

Implementation of these improvements will assist the MCFRS in attaining accreditation (see separate heading below), as several of the criteria for accreditation pertain to operational capabilities to suppress fires quickly and effectively.

ACCREDITATION

During the 10-year period of 2005-2015, **the MCFRS should seek accreditation status through the Commission on Fire Accreditation International, Inc. (CFAI).** Accreditation is a voluntary process that evaluates and recognizes fire service agencies worldwide as meeting certain predetermined evaluation criteria. CFAI's premise in creating the accreditation process is that "any fire service agency that is currently using contemporary management techniques and conforming to nationally and locally recognized standards should be capable of achieving accreditation."

The **benefits of accreditation**, as stated by CFAI, include the following:

- Promotes excellence within the department
- Encourages quality improvement through a continuous self-assessment process
- Assures the public and peers that the department has defined missions and objectives that are appropriate for the jurisdiction
- Provides a detailed evaluation of the department and its services to the community
- Identifies areas of strength and weakness within the department
- Establishes a system for addressing deficiencies and building upon success
- Promotes professional growth for the department and its personnel
- Provides a forum for the communication of organizational priorities
- Provides a mechanism for developing strategic and programmatic plans
- Fosters pride in the department
- Promotes local, national, and international recognition of departmental capabilities

Initial accreditation is a multi-step process (see Appendix K) during which the applicant first becomes a "registered agency," then an "applicant agency," then moves on to become an "accreditation candidate," and finally, if successful, is awarded "accreditation agency" status. Upon receiving initial accreditation status, the department must then undergo an annual renewal process, which is considerably easier and less time consuming than the initial process, to maintain their accreditation status.

The criteria for accreditation through CFAI are published in a CFAI document titled "Fire and Emergency Services Self-Assessment Manual" (FESSAM). The FESSAM contains 47 criteria presented in 10 categories. Each criterion is comprised of several performance indicators, including a number of "core competencies" that must be met. There are a total of 255 performance indicators in the FESSAM to which the applicant's self-assessment document must favorably respond.

The accreditation evaluation process starts with the applicant department developing self-assessment documentation addressing the 47 criteria. When completed, a CFAI Peer Assessment Team visits the applicant department and evaluates the documentation to determine if sufficient evidence is presented that satisfies the FESSAM criteria. Upon completion of the Peer Assessment Team's visit, the Peer Assessment Team Leader submits a report to the applicant and to CFAI regarding the Team's recommendation for accreditation status. The CFAI then hears the report from the Team Leader with representatives from the applicant department present. Based on this hearing, the CFAI grants accreditation status, denies the status, or defers a decision until certain conditions are met.

Once accreditation status has been granted, the department must submit an annual compliance report to the CFAI to maintain its status. On the fifth anniversary of the award of accreditation, the department must submit an application for re-accreditation, along with a revised copy of the department's self-assessment documentation. Then an on-site assessment is conducted once again by a CFAI Peer Assessment Team, followed by another CFAI hearing where reaffirmation of accreditation is decided.

The accreditation process is a major undertaking that must have the full commitment of the entire department, from the Fire Chief on down. The process will take several years and involve thousands of hours of preparation. In addition to the huge time commitment, **the process involves the following costs**:

- $250 non-refundable fee (except when the department pays the applicant agency fee) for becoming a "registered agency"

- $6,000 non-refundable "applicant agency fee" (for departments serving populations over 200,000) minus the $250 initial fee (credited to the applicant department for not withdrawing from the process)

- All travel expenses for the CFAI Peer Assessment Team to conduct their visit

- All travel expenses for the CFAI Peer Assessment Team Leader to attend the CFAI Accreditation Hearing

- Annual fee (upon accreditation) equal to one-fifth of the applicant fee (i.e., 1/5 of $6,000) for maintenance of accreditation status and re-accreditation.

If the accredited department chooses not to pay the annual fee and/or not to submit the annual compliance report to the CFAI, the award of accreditation is good for only a two-year period. After two years, the department may begin the entire process again, or allow the accreditation to lapse.

Every plan, strategy, policy, executive regulation, SOP, study, program, and any other statement of policy or intent to establish a new/different program or direction must be pursued with the CFAI accreditation criteria and self-assessment in mind. This course of action will increase the chances of success in the accreditation process and make the process simpler and faster to complete.

As of 2005, ninety fire-rescue departments around the world (mostly in the U.S.) have been awarded accreditation status, including two nearby jurisdictions in Maryland -- Howard County and Annapolis. As of 2005, the fire-rescue departments in several nearby jurisdictions were pursuing accreditation status.

[»Cross-reference: Recommendation 104, Section 6]