



# **Montgomery County Maryland Fire and Rescue Services**

## **Accreditation**

### **Standard of Cover**

# **Montgomery County Fire and Rescue Services**

## **Fire Chief**

**Steve Lohr**

## **Standard of Cover Workgroup**

Battalion Chief John Gallo

Battalion Chief Shane Darwick

Captain Ty Stottlemeyer

Captain Stacey Daniel

Captain Suzanne Mann

Lieutenant Dallas Lipp

Master Firefighter Ashley Robinson

Po Kar Chu, MCFRS IT Section

Lucy Song, MCFRS IT Section

Sarah Ierley, MCFRS GIS Section

Marie LaBaw, MCFRS Code Compliance

Scott Gutschick, MCFRS Planning Section

Kyle Brown, MCFRS Volunteer

Updated by Battalion Chief Derrick Anthony:

May 2013

## TABLE OF CONTENTS

---

Executive Summary .....	1
<b>A. Description of Community Served .....</b>	<b>4</b>
Legal Basis.....	4
History of the Agency .....	7
Financial Basis .....	15
Area Description .....	24
<b>B. Services Provided .....</b>	<b>45</b>
Service Delivery Programs .....	45
<b>C. Community Expectations.....</b>	<b>56</b>
<b>D. Community Risk Assessment and Risk Levels.....</b>	<b>65</b>
Risk Assessment .....	65
Risk Assessment Methodology.....	86
<b>E. Historical Perspective and Summary of System Performance .....</b>	<b>327</b>
Distribution Factors .....	327
Concentration Factors .....	331
Availability/Reliability Factors.....	333
<b>F. Performance Objectives and Measurement .....</b>	<b>341</b>
Performance Objectives – Benchmarks .....	341
<b>G. Compliance Methodology.....</b>	<b>410</b>
Performance Evaluation and Compliance Strategy .....	410
Constant Improvement Strategy .....	415
<b>H. Overall Evaluation and Conclusion Recommendations.....</b>	<b>423</b>
<b>I. Appendices, Exhibits, and Attachments .....</b>	<b>453</b>

# **MCFRS**

## **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

### **Executive Summary**

Montgomery County Fire and Rescue Services (MCFRS) is an “all hazard” department protecting Montgomery County, Maryland. The county is comprised of over 1,000,000 residents distributed over 495 square miles and is located north of Washington, DC.

Residents have come to the county from just about every corner of the globe and live in a mosaic of dense urban areas, suburbs, and farmlands. This diversity of population and density creates a multitude of response challenges for MCFRS. The department has risen to these challenges and readily provides Emergency Medical, fire suppression, heavy rescue, technical rescue, and hazardous materials mitigation services. The department also provides arson and explosive investigation services. MCFRS also seeks to prevent the 911 call with an active code compliance and public education component.

MCFRS is committed to self-review, analysis and improvement in an effort to maintain and improve upon the services its community expects. This process includes Master Plan development and implementation, Headline Performance Measures and receiving accreditation through the Commission of Fire Accreditation International (CFAI). In an effort to maintain the accreditation status earned in 2007, and to improve upon our self-assessment, MCFRS has initiated the full development of a new Standard of Cover document using the latest analytical data, GIS tools, and departmental benchmarks.

MCFRS submits for review its Standard of Cover document which has been developed in house as outlined by the CFAI Standard of Cover manual, 5<sup>th</sup> edition. The first document conceived in 2007 and again in 2012 did not fully meet the expectations of the CFAI where this document fully defines in detail every aspect of this metropolitan fire department including services currently provided, community expectations and how they are being met, performance measurements, strategic goals, and a detailed description of the diverse community served.

Within this document, the many strengths of the department have been outlined as well as areas of improvement. This analysis will be utilized by MCFRS to improve, grow, and



**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

develop this department in an effort to keep the pace of a growing and ever changing community at large.

# **MCFRS**

## **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---



### **VISION STATEMENT**

The Montgomery County Fire and Rescue Service vision is to keep our communities safe and healthy by providing the best fire, rescue, and emergency medical services, utilizing career and volunteer

resources.

### **MISSION**

The Mission of the Montgomery County Fire and Rescue Service is to protect lives, property, and the environment with comprehensive risk reduction programs; and safe, efficient, and effective emergency response provided by skilled, motivated, and compassionate career and volunteer service providers representing Montgomery County's diverse population.

### **GUIDING PRINCIPLES**

"Our Montgomery County Fire and Rescue Service providers will:

- Deliver services to our customers with impartiality and excellence
- Promote the highest standards of safety and welfare
- Serve with integrity and mutual respect
- Recognize the importance of diversity of our workforce and communities
- Promote the efficient and effective utilization of our resources, and ensure that all organizations and personnel comprising the MCFRS share the responsibility for continuously improving their capabilities, effectiveness, and efficiency
- Be responsible for the honor of our profession and public service
- Promote equity and harmony among career and volunteer personnel
- Maintain and promote open honest communication, creativity, and competence
- Be accountable and ethical; continuously improve public confidence and trust

# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

### A. Description of Community Served

#### Legal Basis

Montgomery County Fire & Rescue service over the years has evolved from a loosely knit confederation of locally based volunteer fire departments to become a single county-wide entity that is an integral part of the county government. Over the years, this progression has been marked by strife between the various stakeholders. This strife has been responsible for the generation of much of the present legal framework for the MCFRS.

The Charter of Montgomery County is the “constitution” of Montgomery County and outlines the functions of the Legislative and Executive branches of the County government.

The Montgomery County Code encompasses all of the county regulations and laws. The original code was adopted in 1948. The current code was adopted in November, 1968, with amendments made throughout the succeeding years.

Chapters 21 and 22 are the two chapters, out of 67, that regulate the county fire department and code enforcement as it pertains to fire safety and hazardous materials.

Chapter 21 of the County Code is the legal framework of the fire department. It sets the minimum standards and regulations for the operation of the Fire & Rescue Service.<sup>1</sup>

Chapter 22 defines all of the Montgomery County fire safety code regulations including:<sup>2</sup>

- Hazardous Materials permits
- Fire Protection equipment
- Permitting and licenses
- Building and fire codes
- Fire Department accesses and water supply
- Code enforcement and fire department fees

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

While the County Code, Chapter 21 and Chapter 22 define and regulate the department, there are also numerous legislative bills, laws and referenda that have shaped MCFRS into its present form.

- 1967** Bill 1 – Created by the County Government to have one Fire Chief to over see the 15 independent fire corporations; provided control of county funds
- 1968** Referendum to repeal Bill 1 – the 15 fire corporations banded together to repeal this bill to remain autonomous – passed, Bill 1 repealed
- 1972** Bill 25-72 – Created Department of Fire Rescue Service, Created a Director as the head of Fire Rescue for the first time  
Centralized and coordinated:
- Fire Rescue Operations
  - Communications
  - Training
  - Fire Prevention
- 1979** Bill 16-79 – Created Uniformed Command Structure for all Volunteer and Career Employees in DFRS
- 1986** FLSA Law Suit – Norman Conway, Inc. et al v Takoma Park Volunteer Fire Department. At the time all paid fire fighters were employees of the individual corporations; this lawsuit resulted in the Bill 42-87
- 1987** Bill 42-87 - As a result of the FLSA lawsuit, all paid uniformed employees were transferred from the private corporations to become county merit system employees
- 1994** County Code Section 510A – Allows collective bargaining and binding arbitration for the County Fire Fighters – enacted 11/8/94
- 1996** Question E – An attempt by referendum to get a single County Fire Chief -defeated
- 1997** Bill 37-97 Created a Fire Administrator
- Department of Fire Rescue becomes the Division of Fire Rescue
  - Fire Administrator becomes the primary in control on the Fire Rescue budget passed
- 2003** Bill 36-03 Creates a Uniformed County Fire Chief
- Full operational authority over the fire rescue service, paid and volunteer
  - Full authority over the fire rescue budget
  - Became law 1/1/05
- 2010** Question A – referendum to allow for billing for ambulance transports for all EMS service provided in Montgomery County - defeated

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

#### **NFPA 1710**

NFPA regulations, standards and codes are recommendations distributed to all fire service organizations in an effort to “minimize the possibility and effects of fire and other risks.”<sup>3</sup>

The NFPA standards are adopted as guidelines by the MCFRS in an effort to meet strict standards and goals. While these standards are not law and are not legally binding, MCFRS views them as the model for law, policy and SOP’s in an effort to ensure a safe working environment for the firefighters of the department and provide the best possible service for the citizens.

# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

### History of the Agency



The land that makes up Montgomery County Maryland today was first settled in the early 1600's. Montgomery County was formed into a county in September, 1776, and was named after Richard Montgomery, (although he never set foot in Maryland). Montgomery was a British Officer who became a Brigadier General in the Colonial Army, although he never set foot in Maryland. In December 1791, the Maryland General assembly generously ceded 36 square miles of southern Montgomery County to the Federal Government, which is known today as the District of Columbia.<sup>4</sup>

### **1870-1920**

From the 1770's to the 1870's, fire protection involved neighbor helping neighbor. No formal fire protection was established until the 1870s when the first 5 local fire departments were established. These departments did not officially incorporate until the early 1900's.

- Silver Spring - 1918 (4)
- Rockville - 1921 (4)
- Takoma Park - 1922 (1)
- Kensington - 1925 (4)
- Gaithersburg - 1928 (2)

\*NOTE: Numbers shown in parentheses correspond to open number of stations



### **1920-1930**

Each of these local fire departments was an independent corporation and remains as such today. In 1920 the Fire Board was created to establish cooperation and an open avenue of communication between the companies to deal with the changing needs of the ever-growing suburban community. The Board was created but the companies remained autonomous.

## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

1920 to 1930 brought the addition of six fire stations:

more local

- Sandy Spring - 1924 (2)
- Bethesda - 1926 (3)
- Chevy Chase - 1927 (1)
- Hyattstown - 1929 (1)
- Glen Echo - 1933 (1)
- Cabin John - 1930 (2)



In 1927 the Chevy Chase Fire Department was the first Department to be formed by legislation, which created a defined tax assessment district. This also created the introduction of the first six full time paid fire fighters in the county.

### **1930-1940**

In 1937 the first Montgomery County Fire Training School was built which centralized training for the local departments and expanded their training opportunities. Today the Montgomery County Public Service Training Academy has grown into a world-class training facility that is used by local, national and international students year round.

During the difficult years of the depression, no new fire departments were formed but a new form of service was created. The Chevy Chase First Aid Corp was formed in 1937, providing ambulance and first-aid services. This corporation later reformed in 1945 and is now known as the Bethesda Chevy Chase Rescue Squad, providing ambulance, BLS, ALS and heavy rescue squad service.<sup>5</sup>

### **1940-1990**

Over the next fifty years, as needs and the population grew, so did the need to add local fire departments:

- Hillandale (2)
- Damascus (1)
- Upper Montgomery (1)
- Burtonsville (1)
- Laytonsville (1)
- Wheaton Rescue Squad (1)
- Germantown (1) the last local department to be formed

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

In addition to the MCFRS stations, there are five federal fire stations located in Montgomery County but confined to federal campuses. There is a liberal mutual aid response agreement between these stations and the MCFRS:

- Naval Medical Campus Station 50
- National Institutes of Health Campus Station 51
- David Taylor Research Center Station 52
- National Institutes of Standards and Technology Station 53
- Walter Reed Campus Station 54

The Montgomery County Fire and Rescue Service is a full spectrum life safety agency protecting nearly 1 million people who live and work in Maryland's most populous jurisdiction. MCFRS currently operates 34 fire stations, 2 rescue squads and a 56 acre Public Service training academy. Over 1200 career uniformed personnel work side by side with 800 volunteers and staff 37 engines, 13 aerials, 23 BLS units, 17 ALS units, and 9 rescue squads. A number of specialty units are staffed for response to specific incidents, including 21 boats, 2 Haz Mat units, 2 Medical Ambulance busses and support units, one mass casualty medical supply pod, 3 air supply units and 2 bomb trucks and support units. Daily there are 5 Battalion Chiefs and one Assistant Chief supervising the Division of Operations. The daily operations also include additional work sites including Fire Rescue Occupational Medical Section (FROMS), Fire Investigations and the Bomb Squad, Code Enforcement, a high tech Emergency Operations Center, (ECC), a logistics warehouse, the Central Maintenance Facility for apparatus, a central SCBA maintenance shop and headquarters.<sup>6</sup>

The creation of the MCFRS does not only involve the local fire departments. As the department has grown over the last 140 years it has had to adapt to Montgomery County changing from a farming community to a heavily populated urban/suburban community. With primary transportation routes through its eastern corridor, Montgomery County is challenged with unusual threats due to the proximity of our neighboring communities and eastern corridor transportation routes. MCFRS has developed into a multifaceted department answering the call for the needs of our diverse community.



## MCFRS

### COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

- 1949** Division of Fire Protection was created by the County Council in the first attempt to administer and centralize the laws and enforce fire codes. It also established what is now known as our Fire Investigations and Arson Unit
- 1966** Professional Fire Fighters Union was formed and certified by the International Association of Fire Fighters and recognized as IAFF Local 1664
- 1968** Chapter 21 created - section of the County Code that regulates the Montgomery County Fire Department
- 1972** Department of Fire Rescue Service was established. This created a Director that for the first time oversaw the fire department as a whole, still leaving the local fire stations to operate as independent corporations
- 1970** First Heartmobile was placed in service at station 19. The Heartmobile provided cutting edge advanced life support care, leading the way for our modern ALS medic unit



- 1973** First Fire Rescue recruit graduated from the Fire Rescue Training Academy
- 1974** First Cardiac Rescue Technician Class offered. First County to provide advanced life support in the Washington area
- 1976** Montgomery County is the first county in US to mandate residential smoke detectors by law
- 1981** SETT Team created (high angle rescue team). This team would eventually become part of the technical component of the USAR team
- 1981** Haz-Mat Team created, housed at Fire Station 7 (Chevy Chase).
- 1985** USAAR Team formed; initially called the Collapse Rescue Team then in 1989 became Maryland Task Force One, a FEMA Urban Search and Rescue Team. , The team provides heavy search and rescue, dog searches, medical care, and logistical services. Among notable deployments have been the Pentagon in 2001, the 2002 Salt Lake City Olympics, the 2004 Democratic Convention, and to Alabama and Louisiana during Katrina.
- 1988** Legislation to mandate sprinklers in townhouses
- 1988** All paid fire fighters became county merit system employees and were no longer employed by the individual local fire corporations

## MCFRS

### COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

**1990** Swift water Rescue Team created, formally organized in 1992 to support the need for swift water rescues from the Potomac River and the flash flooding the area experiences on a regular basis. In September 2003 the team responded to Baltimore to serve as a critical part of the rescue efforts during Hurricane Isabel. More recently the team rescued several citizens from a raging river formed by a broken 8' water main on River Road in Potomac, Maryland



**1994** Montgomery County placed the first arson dog in service

**1998** Fire Investigation Bomb Squad was formed

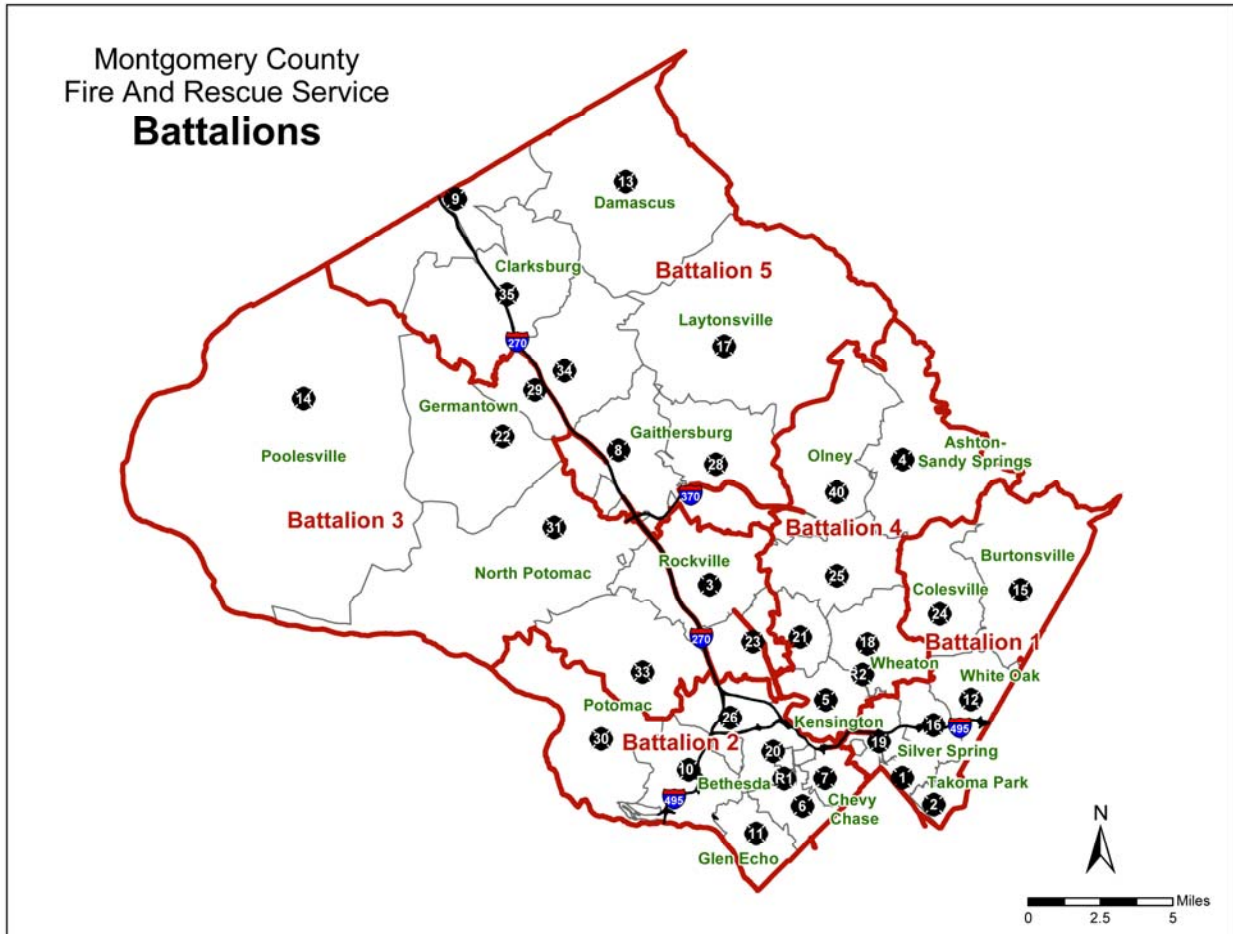
Throughout Montgomery County Fire Rescue history there have been many significant incidents that have formed the landscape that we now know as the modern day MCFRS. While the department runs over 100,000 emergency calls a year, some of the more notable incidents have resulted in the formation of policy and law that affect how MCFRS does business.

- 1935** School bus/train collision in Rockville, 14 children killed, 13 injured
- 1965** Fire Station 17 and apparatus destroyed by fire
- 1966** Travilah Road fatal house fire, 4 person family killed
- 1971** Columbia Union College fire in Takoma Park
- 1975** Washingtonian Country Club fire
- 1981** Arcola Avenue nursing home fatal fire, several injured, 2 died, no sprinklers
- 1982** IBM office building shootings in Bethesda, 9 injured, 3 killed
- 1983** Gasoline spill in Takoma Park sewer caused multiple house fires
- 1986** Fatal farmhouse fire in Boyds, 6 fatalities
- 1992** Tanker explosion from a crash under I-495 overpass, 2 killed, 3 injured
- 1996** MARC & AMTRAK train collision in Silver Spring, 11 killed
- 1998** Pipe bomb explosion in Bethesda garage – 4 teenagers killed
- 1998** Fatal basement fire in Gaithersburg home, 2 children killed
- 2001** Home destroyed by natural gas explosion in White Oak, 2 killed
- 2002** AMTRAK double deck train derailment in Kensington, 101 injured
- 2002** Multi week sniper incident, 6 fatalities
- 2002** Fatal Gaithersburg house fire, 1 adult and 2 children killed
- 2002** Parking garage collapse in Rockville, 3 fatalities
- 2005** Fatal Leisure World fire, 1 killed, MCFRS Mayday policy rewritten and new department policies put in place for fire ground operations
- 2007** Fatal Gaithersburg house fire, 2 adults, 1 child killed
- 2007** Fatal Kensington house fire, 2 elderly killed, genesis of the Senior Citizen Fire Safety Task Force Report
- 2007** Fatal Burtonsville townhouse fire, 1 adult and 3 children killed

# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

- 2008** Fatal Twinbrook apartment fire, one resident killed, 3 fire fighters severely injured, further revision of the Mayday policy
- 2011** 500 acre Darnestown brush fire, largest MCFRS resource deployment to date



# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

### Service Milestones

Throughout the decade MCFRS purchased a total of 110 new pieces of apparatus: 39 CAFS engines, 5 all Steer rear mount aerial trucks, 6 new tractor drawn aerials, 3 midship aerial towers, 45 ambulances, 3 bomb support units, 2 mass casualty busses and 2 support units, 3 heavy rescue squads, 2 Haz-Mat units. This standardized inventories for consistency throughout the county.



**2000** Water Supply Study – identified need for CAFS engines, increased number of tankers, large diameter supply lines, standardization of engines/apparatus, and rural water supply SOPs

**2001** Responded to the Pentagon for the 9/11 attack

**2001** Aerial Unit Study – studied relocation of aerial trucks in the county, benefits of tractor drawn vs. tower ladders, and strategic deployment of aerial units, recommendations made in master plan based on this study

**2002** Fire Rescue Occupation Medical Section opened and MCFRS adopted The IAFF Wellness Fitness Initiative

**2002** Command Development Center established

**2003** Switched radio system to 800 MHz trunked

**2003** MCFRS Command Bus placed in service

**2004** 24-hour safety officer coverage and full time safety office created

**2004** Rescue Squad Study – studied squad locations, tiered response to collisions, integration of rescue trucks, created 9 recommendations

**2004** Residential Sprinkler enacted to mandate sprinklers in single family homes

**2004** Creation of Special Operations Section headed by an Assistant Chief overseeing stations 7, 20, 10, 30, 29, 31, 25, & 28, consolidating operations of USAR, Hazmat, Swift Water Rescue, Investigations, Planning, Emergency Operations and NCIMT (National Capital Incident Management Team)

**2004** Centralized SCBA repair facility opens

**2005** County Fire Chief takes over MCFRS – created a single Chief in charge of MCFRS

**2005** Introduction and adoption of NIMS

**2005** Opened Station 35 – Clarksburg, 1<sup>st</sup> new station in 25 years

**2005** Opened Logistics – uniforms, gear, emergency equipment

**2005** Cooperative DFRS/MCP/Sheriff/public works response to New Orleans to assist the NO FD after Katrina

**2006** 1&1 ALS model – one medic with one EMT expanding ALS first responder units, decreasing response to patient time for critical care patients

**2006** Initiated 4 person staffing implementation adding additional



## MCFRS

### COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

- units every year – up to 11 units per year
- 2006** Opened Station 1 - Silver Spring joint police/fire/public education building
  - 2007** Change to Council of Governments (COG) numbers, consistent with surrounding jurisdictions
  - 2007** Added 2 flex ambulances to accommodate the growing needs of our commuter community operating during peak hours of 0800-2000
  - 2008** Added 2 new EMS duty officers, making a total of 3 to accommodate the need for addressing EMS issues with over 80% of call EMS
  - 2008** Medical Ambulance Bus & Medical Support Unit placed in service as part of the Urban Area Security Initiative federal grant (UASI)
  - 2009** Opened Station 22 – West Germantown
  - 2009** Opened CMF and CMF training facility - consolidating fleet management
  - 2009** Implemented the ePCR, (electronic patient care reporting) program
  - 2009** Driving training facility opens – multi agency training facility high speed track, cone course and lecture rooms, at the Public Service Training Academy
  - 2010** Opened Station 34 – East Germantown
  - 2010** Flex units eliminated due to lack of funding
  - 2010** Eliminated the extra EMS duty officers, now only have one due of lack of funding
  - 2012** The implementation of ambulance billing goes into effect
  - 2013** Aerial Service at FS24 and an additional EMS Duty Officer are re-established in the FY2014 budget





## MCFRS

### COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

#### **Financial Basis**

Funding for the Montgomery County Fire Department has come a long way since the days when the local departments received funds based on the length of hose they housed in their stations. The first tax assessment districts were formed by legislation in 1927 in Chevy Chase and Silver Spring. The other local departments relied on bingo, bake sales, carnivals, and other fund raisers to support their equipment purchases and station management needs. In 1933, the state of Maryland passed legislation authorizing local jurisdictions to assess fire taxes throughout their counties. In 1949, a fire tax district was created for every local fire department in the county. A number of the departments refused the tax money until the 1960's, fearing it would take away their independence. These departments continued to rely on donations and fund raising for operations.

The local departments have always managed their own monies that are obtained through donations. In the past, the Fire Board, the county's previous Fire Department managing entity, had budget and fiscal responsibility over tax distribution. Bill 37-97 enacted in 1997, shifted control of the fire department budget to the Fire Administrator. Bill 30-03, signed into law on January 1, 2005, created a County Fire Chief, giving him full budgetary authority over the fire department. For FY 2013 the operating budget is \$204,946,888, which is an increase of \$25,177,018 from the previous year.<sup>7</sup>

The budget process never really ends. Once one year is submitted for approval, the next year's process begins. Analysis on previous years spending trends is assessed, future needs are created, and baselines are listed. Every year fire rescue is given a mark by the Office of Management and Budget based on expected revenue that includes but is not limited to, property tax, fire tax, and fire code enforcement fees.

Although the fire tax is listed as a line item on county property tax bills; fire tax revenues do not go directly or solely into the fire rescue budget. Instead, the fire tax revenues go into the county general fund. The fire rescue budget is distributed from the general fund and may or may not correlate with the amount collected from the fire tax. In addition to annual

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

operational expenditures, the fire tax also sometimes supports multi-year Capital Improvement Projects.

(CIP). A little known fact is that the fire tax is actually a variable tax from year to year based on the fire rescue annual budget.

Chapter 21 and the County Code also dictate how and when the entire budget is created, submitted and implemented. The law dictates the dates it must be submitted by the Executive, the dates the Council must complete its review and the date it must be finalized. Fire Rescue is just one of many county departments required to work within the fiscal and logistical constraints of the county budget as a whole. Recent years have pitted department against department fighting for fewer and fewer funds.<sup>8</sup>

There are two phases of the Montgomery County budget process. Phase one is submitted as the full expected operating costs. Included in these costs are personnel and benefits (80% of the annual costs) equipment costs, fuel, building, maintenance, and gear. The second phase is the “reduction phase” or the revised slimmed down version that includes the mandated cuts per the Council based on the expected decreased revenue.

The County is legally obligated to negotiate with the fire fighters representative, IAFF Local 1664, for a collective bargaining agreement. Negotiations occur the year before the CBA expires, be it a one, two or three year contract. The Union negotiates with county and department representatives for wages, conditions of work, benefits, safety issues, gear, and equipment. Once an agreement is reached, either through negotiations, mediation or arbitration, the contract is ratified by the membership and it is then the law that the County Executive include the CBA costs in the budget submittal to council. The County Council then decides whether to fund the agreement as it is submitted. Although the arbitration is binding, the Executive can choose not to include the CBA in his budget, which he did in 2011.<sup>9</sup>

Financing a department with over 1200 career employees, 800 volunteers, county owned buildings and apparatus, and corporation owned buildings and apparatus can be challenging

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

at best. The corporations are funded in part through the county budget with tax dollars. Each corporation submits a budget to operate the stations they own to be included in the overall tax funded Fire Department budget. This could include utilities, station supplies, small tools, and building maintenance. The final approved amount of each of the 33 “mini” budgets is then distributed to each corporation for them to manage for the fiscal year. However, the county has recently moved to centralize all of these station support functions and plans to substantially cut the amount of tax funds given to the corporations. The individual corporations still have the opportunity to earn income through events, fire hall rentals or fundraisers through citizens or business donations. This money is controlled solely by the volunteers to cover items not included (or allowed) in the county budget or items not allowed to be in the budget.<sup>10</sup>

Another avenue of funds for the volunteer corporations is the Senator Amos Fund (so called 508 monies), a Maryland state grant specifically available for volunteer fire companies in Maryland. Annually, an average of \$1.3-1.4 million dollars is given to Montgomery County to distribute to the corporations. This money is to be used strictly for volunteer operations such as recruiting, station operations and equipment.<sup>11</sup>

The County Code, Chapter 21, Section 21-21, mandates a program that rewards long time volunteers with a compensation benefit. The Length of Service Awards Program, LOSAP, is managed by and included in the annual operating budget of the Fire Rescue Service. The LOSAP award is a monthly stipend earned by volunteers based on age and years of service. The monthly benefits paid out based on this criteria range from \$92/mo to a maximum of \$345/mo. Also offered to the volunteers are a \$5000 death benefit, disability benefits, and a survivor’s benefit.<sup>12</sup> The Montgomery County Volunteer Rescue Association is the duly authorized representative bargaining agent for the county volunteers of the Local Fire and Rescue Departments (LFRD) in the direct negotiation process set forth in Chapter 21-6 of the Montgomery County Code. In 2007, the MCVFRA became the first volunteer organization in the country to bargain for volunteer benefits, such as improved death benefits, additional medical expenses associated with annual physicals, apparel, and nominal fee payments. As with the CBA for the uniformed fire fighters, this agreement is mandated by law to be included as part of the fiscal budget submittal to the County Council.<sup>13</sup> Grants have recently



## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

become an important part of funding special events or items not funded by the current budget. Recent grants awarded to Montgomery County include the Federal UASI, NCI, and USAR grants. One of the most recent grants has been the FEMA SAFER grant that funded the hire of new recruits.

The volunteer corporations can apply for and be awarded grants as well. They regularly earn grants to purchase equipment, provide for recruiting, or purchase gear.

There are a number of considerations when applying for and using a grant:

- The time constraints placed on the user
- The strict rules on what the grant can be spent on
- The strict time limit of the grant
- The peripheral costs not included in the grant that will be incurred (e.g. the cost of gear and benefits associated with the hiring of the recruits with the FEMA SAFER grant).

Usually these incidental costs are far outweighed by the grant funding. In the tight economic times we are in today, working around a few challenging obstacles to better serve the public and personnel is worth the grant and its restrictions.

Code enforcement fees are another form of little known revenue for MCFRS. Chapter 22 allows for fees to be set and revised on a yearly basis to cover the cost of the fire code enforcement office and operation. This revenue is included in the projected revenue as the budget is set. The FY '10 fee included in county revenue was \$3.7 million.

Occasionally the need for a supplemental or emergency request arises. A supplemental request would be for an item that was not planned for in a fiscal year, but is considered important enough not to wait for. An emergency item would be an item that was budgeted for but the costs rose and the budget was not able to cover it in the fiscal year. Fuels costs are a good example of emergency requests over the last few years!

With a new decade brings new fiscal belt tightening. Because of the cut backs in the Fire Rescue budget, in 2011 the Fire Chief made some radical changes in the way the department budgeted, procured, and operated in the past. As noted, the volunteer corporations had a lot of authority over station operations, EMS supply inventory and purchasing, station maintenance, supplies, small tools, and apparatus maintenance. This in essence created 33

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

separate purchasing centers. The Chief felt a more centralized approach would better suit our large department, streamline operations, save money and solve a number of logistical problems. With the new plan, the county will be the primary purchaser and MCFRS will have:

- Centralized EMS supply purchasing and repair
- Centralized station supply
- Centralized apparatus maintenance and supply
- Centralized small tools repair
- Centralized fuel purchasing

In the spring of 2012, the Montgomery County Council approved the Emergency medical Services Transport Reimbursement Program (EMST). The intent of the EMS billing program is to generate additional revenue streams by billing insurance companies for services by which Montgomery County residents are currently covered under. The projected revenue anticipated from this program is estimated to generate \$18 million per year with a projected \$8.3 million for FY13. This projected revenue serves to support FY14 budgeted items including:

- Staffing for the new Travilah Station (FS32)
- New EMS Supervisors
- Increased apparatus replacements

#### **Master Plan Report and Studies**

Much of the way Montgomery County Fire Rescue does business has been formed and dictated over the years by Master Plans, and various studies and reports. The first of these was written in 1958. These documents assess service delivery and resource needs in light of current and future trends, so the needs of the community and the department are met. The reports have covered subjects such as equipment, station locations, apparatus relocation, and delivery models in the context of the ever changing population, demographics and hazards of the County and the world today.

The first report drafted in 1958 was a recommendation for stations to be built and future locations. As we look back at this report, the stations that have been built since are very

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

close to these recommendations. In 1973, this report was reviewed and new station locations and future station needs were assessed. Once again, many of the recommendations presented in this report were what created the fire station locations we are working out of today.

In 1980, the Fire Rescue Commission, the governing body of the department at that time, mandated that a Master Plan was needed for the ever growing Fire Rescue and Emergency Medical Services of Montgomery County. Chapter 21 of the Montgomery County Code requires the department to draft a Master Plan, thus making Fire Rescue the only department in the County mandated to develop one. The Master Plan covers a period of 10 years but is reassessed and updated annually. The 10 year plan and subsequent amendments must be approved by the County Council. The first Master Plan was adopted in October 1994. The plan defines its purpose as:

“It gives County residents a comprehensive description of how the fire rescue and emergency medical service fulfills their many public safety functions for which it is responsible and how changes in the County are likely to affect the delivery of service. Second, it provides direction for the present and the future through a set of recommendations that specifically address the steps to provide a desired level and quality of service.”

This Master Plan addressed trends in:

- Service Demands
  - Building fires
  - Types of EMS calls
  - Dispatch times
  - Travel Times
  - Traffic issues
  - County construction trends
- Delivery of Service
  - Life Safety Services
  - Prevention
  - Investigations
  - Code enforcement
- Personnel
  - Staffing
  - Training
- Facilities
  - New
  - Existing
- Vehicles

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

- New
  - Existing
- Communications
  - Network
  - Radio
  - Record Management
- Funding
- Future Planning
- Fire Rescue Planning Area

In 1996, the Fire Rescue Commission initiated a massive multi faceted examination of six issues highlighted in the 1994 Master Plan. In 1998, the first Master Priorities Issues Study was completed. The issues addressed in this study were:

- Technology
- Data Management
- Communications
- Risk Analysis
- Response Times
- Staffing

Six workgroups were created and over the course of two years they produced a very thorough and comprehensive set of conclusions and recommendations to improve upon each of these priority issues. For the first time in the history of Montgomery Fire Rescue, a report was crafted with input from the field personnel through surveys. This allowed the end user in the stations to bring field knowledge to the work group reports. By 2011, 75% of the recommendations from the '98 report had been implemented.

The most recent Master Plan, approved by the County Council in October 2005, is an updated and revised version of the 1994 plan. All of the old trends addressed in the first plan are included in this document as well as new issues and trends that have come about due to the community growth, changes in the world and increasing hazards. This new Master Plan will shape and define the Fire Rescue and EMS service for the next 10 years.<sup>14</sup>

The most recent Amendment in 2009, which required council approval, covered incident response time goals and guides our operations today.

Montgomery County FRS is an all hazards service provider:

- EMS

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

- Fire
- HazMat
- Water Rescue
- Arson Investigations
- Code Enforcement
- Bomb Squad
- Communications
- Public Education
- Mass Casualty
- Special Events
- Disaster Management
- And many non emergency functions

This creates a special challenge to manage and deliver on all levels expected by the citizens. The Master Plan provides goals and expectations from the department, the governing bodies of Montgomery County, and the citizens we serve.

In addition to the Master Plan and Master Plan Issues Study, three major special studies have been completed over the last ten years which have had a substantial impact on current MCFRS operations.

In 2000 a Water Supply Work Group issued a report listing recommendations and an implementation plan based on the work group's review of the county's water supply resources, deficiencies, delivery capabilities, equipment and water supply SOPs. Many of the recommendations have been implemented or are in progress. A few highlights are:

- Legislation mandating residential sprinklers in new construction enacted
- New rural water supply SOP enacted
- 4 additional tankers placed in service – three front line, one reserve
- Tankers added to fire response for all streets in non-hydranted areas
- Development of GIS maps with locations of hydrants, connections and static water supplies
- Replacement of all 3" supply lines with 4"
- Compressed air foam engines to be considered – 36 purchased and placed in service<sup>15</sup>

In 2001, brought the department concluded a year long study of aerial units. This unit study report after a year of analysis of the Montgomery County aerial unit inventory and needs of the county. The study reviewed the long and short term solutions for the strategic deployment of MCFRS aerial units. The criteria for this review included response times, area risk

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

assessment, efficiency, and effectiveness of the deployment of these resources and improvements to public safety. From this work group, recommendations were made to relocate a number of aerial units and place one truck permanently out of service.<sup>16</sup>

In January 2004, ten recommendations were offered from the Rescue Squad Work Group which was formed in 2001 to review past squad reports and assess squad response times, locations, vehicles, tiered response, the mission and utilization of the squad, staffing, inventory, SOP's and training required for squad work. Many of the recommendations made by this group have been implemented, including:

Rescue squad locations – stations 3, 15, 29, R1, R2, 17

- Extrication equipped unit locations
- Dispatch changes to personal injury collisions based on speed limit of road, roll over, level of injury reported, and the number of cars involved
- Change in response time goals
- Training required to be squad qualified
- Equipment recommendations – thermal imagers mandated and blast shields on cascade systems<sup>17</sup>

The Station Location study is an eight phase study reviewing current and future locations of fire stations. This study is a cooperative effort between the county, local incorporated cities and the National Capital Park and Planning Commission. Major transportation plans, future county development and relocation trends are studied to determine the needs for fire and rescue. MCFRS is working in a proactive manner with this study to ensure the departments needs coincide with the needs of county development. For purposes of the study, the county has been divided into eight sections. Each phase studies one of the eight areas in depth and assesses the need for the relocation of existing stations and/or the need for new stations.<sup>18</sup>

# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

### Area Description

#### **Topography**

Montgomery County is the 5th largest county in the State of Maryland and the most populous. The County is positioned in the southern portion of central Maryland and is bordered by the Potomac River to the West, Frederick County to the North, Prince Georges County to the East and Washington DC to the South. The county consists of 495.5 square miles or 324,428 acres. 318,150 acres are land and 6,278 acres are water.<sup>19</sup>

The highest point of elevation in Montgomery County is in the north eastern tip of the county at 880 feet above sea level. The lowest point is 10 feet above sea level at the bank of the



Potomac River at Little Falls. Montgomery County is a relatively flat land mass with no major high points or “mountains.” There are gentle rolling hills in the northern rural portion of the county.

The Potomac River is the western border of the county and draws many hikers, bikers, kayakers and tourists. This is the only official river in the county.

## MCFRS

### COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

Running parallel to the river is the C & O Canal National Park. The canal is 184.5 miles long running from Georgetown to Cumberland, Maryland. The Canal was built in the mid 1800's over the course of 22 years to provide a route free of river rapids for industry, travel and transport of goods. The Canal is now a national park and is popular with hikers and bikers. Approximately 36 miles of the Canal run through Montgomery County.

Great Falls in Potomac, Maryland is a series of cascades and rapids over the course of two thirds of a mile. The river drops 76 feet over this distance with no greater than a 20 foot drop in any one place.

While there are many smaller bodies of water in the county, there are three major reservoirs in Montgomery County: the Tridelfia and Rocky Gorge reservoirs, and Little Seneca Lake. The first two of these reservoirs take up approximately 800 acres each. Both reservoirs span the Montgomery/Howard County line. They are both maintained as a source for drinking water for the metropolitan area by the Washington Suburban Sanitary Commission. As with the Potomac River, these bodies of water attract many outdoor enthusiasts, for paddling, bird watching, hiking and fishing.

#### Climate

Located in the center of the Mid Atlantic region of the United States, Montgomery County enjoys four separate and distinct seasons. Because the county lies in the humid subtropical climate zone, summers tend to be humid and warm to hot. The summer months can bring pleasant days in the 80's as well as runs of days in the mid to high 90's. Winters are generally mild although the thermometer can hit zero during the occasional major winter event. Most snow storms occur during January, February and March.<sup>20</sup>

Average Winter Low	24 degrees
Average Summer High	86 degrees
Average Summer Low	65 degrees
Average Annual Precipitation	43"
Average Annual Snowfall	22"
Average Humidity	70%



## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

The state of Maryland sees an average of 3.2 tornados a year. These tornados are relatively small with minimal damage and rarely occur in Montgomery County. The County has experienced only 18 documented tornadoes between 1879 and 2001. None were greater than a F2/F3 with the majority (fifteen) graded as a F0/F1. The last noted death from a tornado was in 1929.

Wind is the enemy of an aging community that has older above ground power lines and large trees. Montgomery County suffers an increased call load every spring and summer dealing with high wind events that bring down trees and power lines alike. The county is working aggressively with PEPCO, the local power company, to trim many of the large overhanging trees to prevent these annual crisis events.

The State of Maryland has had 64 recorded earthquakes since 1758. None of these quakes was over 3.7. Montgomery County had has never been the epicenter of an earthquake until July 16, 2010. On that date, a 3.6 earthquake, centered in Gaithersburg, rattled the residents out of bed in the early morning hours.

Montgomery County's biggest natural disaster threat comes from hurricanes and tropical storms. While the hit is rarely direct, Montgomery County has often had to deal with residual damages. September is the most dangerous and vulnerable month for hurricane damage.

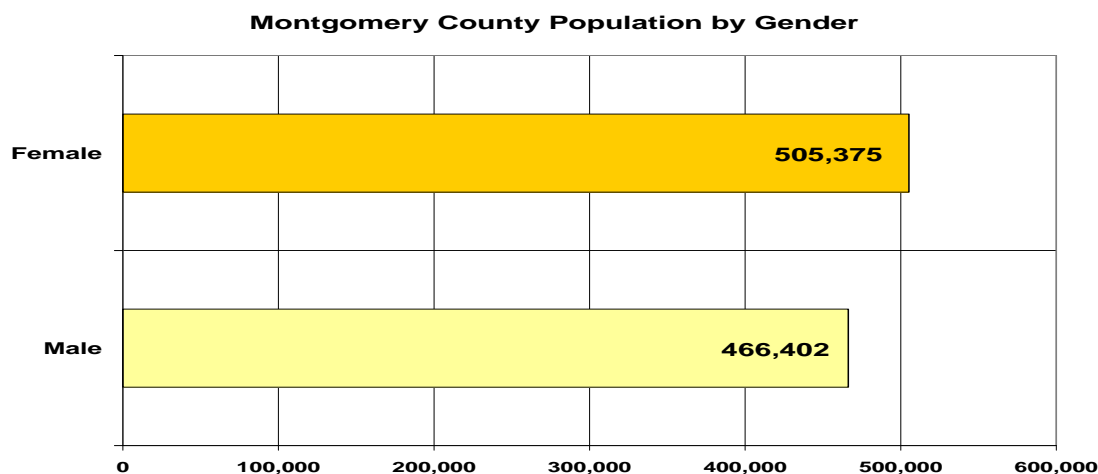
Due to the proximity to the Potomac River, flooding is a common occurrence when a hurricane hits the Mid Atlantic. The storm surge and runoff will cause the river to breach its banks and make a raging river of violent rapids at Great Falls. There are also a number of notorious low areas and small creeks throughout the county that are prone to flash flooding. All Montgomery County fire rescue personnel are trained in the most basic of water rescue techniques. Every county fire unit is equipped with personal floatation devices and throw bags. When the flooding and need exceeds the basic capabilities, the River Rescue team is alerted and dispatched where needed.

## MCFRS

### COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

#### Population

Montgomery County is the 42nd most populous county in the United States. It is the 2nd largest jurisdiction in the Washington DC region. The population grew by 51% between 1980 and 2000. While the growth has slowed in recent years to an average of 1.5% annually, Montgomery County is still expected to reach 1 million residents by 2015. According to the U.S. Census as of July 2012, the new official County population served by the Montgomery County Fire Rescue Service totaled 1,004,709; this is an increase of almost 130,000 residents since 2000. Montgomery County is made up of “in movers” meaning 90% of Montgomery County adult residents were born outside of Maryland.



Census data is showing that the households in Montgomery County are taking on a very different look since 2000. There was nearly a 20% increase in households headed by women. Traditional two parent families have declined by 2%.<sup>21</sup>

#### Population by Age

The median age of Montgomery County is up to 38.5 from 36.8 in 2000. Females outnumber males in the 18 and over age group as well as the 65 and over group.

Under 5	5-14	15-24	25-44	45-59	60-74	75-84	Over 85	Median Age
63,732	128,963	113,893	272,958	219,301	115,695	37,797	19,431	38.5
6.60%	13.3%	11.8%	28.1%	22.6%	11.9%	3.9%	2.0%	

## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

Over the last 10 years the number of households with a person 65 years or older increased by 25%. The aging population in Montgomery County has not only economic and planning implications but is also a new challenge for the Fire Rescue service.

On average, there are 2.7 persons per household in Montgomery County. The breakdown of household types is.

HOUSEHOLD TYPE	2010	2010
<b>Total households</b>	<b>357,086</b>	<b>100.0</b>
Family households <sup>1</sup>	244,898	68.6
With own children under 18 years	118,482	33.2
Husband-wife family	190,571	53.4
With own children under 18 years	91,481	25.6
Female householder, no husband present	40,469	11.3
With own children under 18 years	21,051	5.9
Nonfamily households <sup>1</sup>	112,188	31.4
Householder living alone	89,264	25.0
Householder 65 years and over	30,624	8.6
Households with individuals under 18 years	127,583	35.7
Households with individuals 65 years and over	86,105	24.1

### Education

Montgomery County residents are among the most educated in the nation. Nearly 80% of adults, age 25 and over, have some level of higher education.

The Census Bureau ranks Montgomery County first in the nation for the percentage of adults with advanced degrees and third for the percentage of college graduates.

Level of Education	# of Population	% of Population
Advanced degree	180,000	36%
Bachelors Degree	350,000	56%
Some Post Secondary Education	475,000	78%
Completed High School	-----	91%

# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

### Diversity

The diversity of the Montgomery County population is also shifting. The Latino/Hispanic community grew to outnumber all other ethnicities in the county at 165,398. The white, non Hispanic, population was the only group in Montgomery County to decline over the last 10 years. The majority of Montgomery County's population now consists of minorities.

Population by Race and Hispanic Origin Montgomery County, Maryland (2000 to 2010)						
Race and Hispanic Origin	2000		2010		Change, 2000 to 2010	
	Number	Population Share	Number	Population Share	Number	Percent
<b>White (non-Hispanic)</b>	519,318	59.5%	478,765	49.3%	-40,553	-7.8%
<b>Hispanic or Latino</b>	100,604	11.5%	165,398	17.0%	64,794	64.4%
<b>Black</b>	129,371	14.8%	161,689	16.6%	32,318	25.0%
<b>Asian and Pacific Islander</b>	98,632	11.3%	135,104	13.9%	36,472	37.0%
<b>Other</b>	25,416	2.9%	30,821	3.2%	5,405	21.3%
<b>Total Population</b>	873,341	100%	971,777	100%	98,436	11.3%
<b>Minority Population</b>	354,023	40.5%	493,012	50.7%	138,989	39.3%

The Hispanic population is approximately 26% Salvadorian in origin with the remaining members evenly divided between Mexican, Puerto Rican, Peruvian and Guatemalan origins. There are 140 languages spoken in the Montgomery County school system.<sup>22 23</sup>

# MCFRS

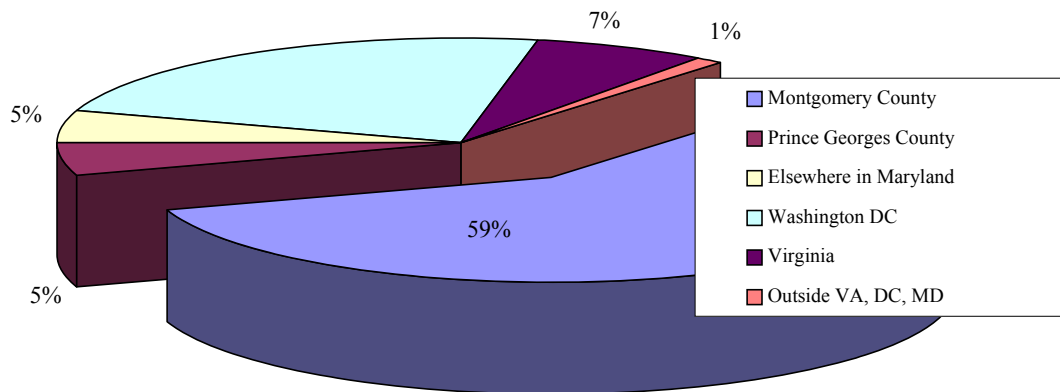
## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

### Employment

There were 510,000 jobs and 33,166 employers in Montgomery County as of January, 2010. Montgomery County has a large cross section of both government and publicly supported organizations as well as many private corporations.

10 Largest Public Sector Employers	10 Largest Private Sector Employers
National Institutes of Health	Adventist Health
Montgomery County Public Schools	Lockheed Martin
National Naval Medical Center	Giant Food
US Food and Drug Administration	Marriot
Nat. Oceanic and Atmospheric Admin.	Holy Cross Health
US Health and Human Services	BAE
Nat. Institute of Standards and	IBM
Nuclear Regulatory Commission	Long and Foster Real Estate
US Department of Energy	Suburban Hospital
Walter Reed Medical Center	Hughes Network Systems

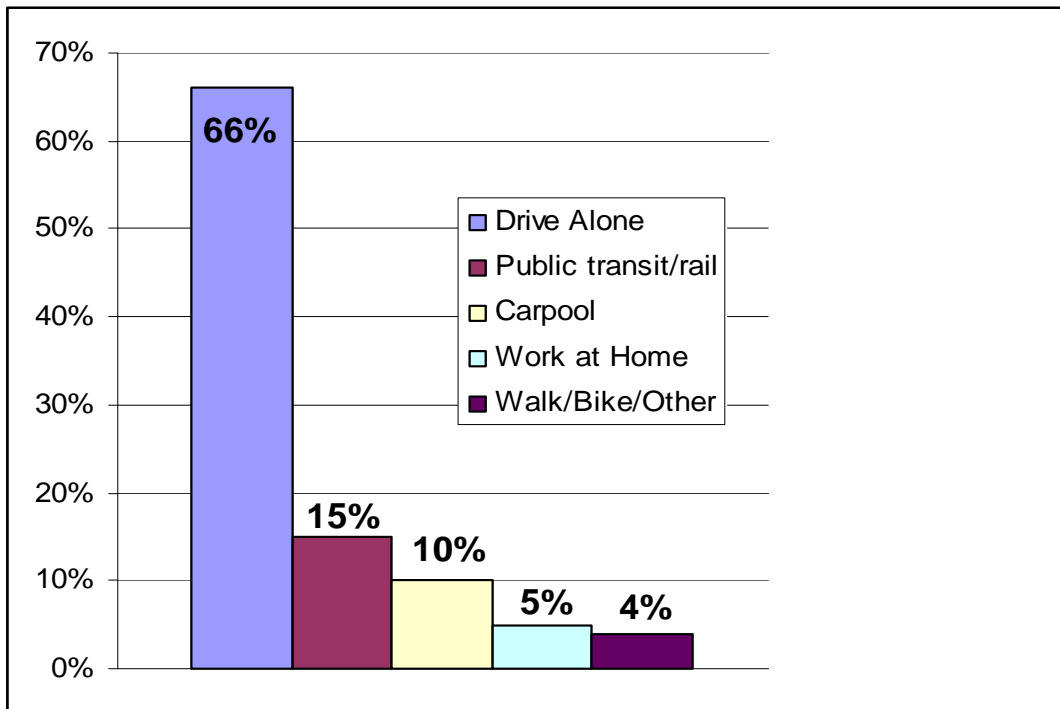
While the jobs in Montgomery County are diverse and varied, approximately 40% of all employed workers that live in Montgomery County travel outside of the County line to go to work.



## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

Traveling to work on the Montgomery County highways and byways is a challenging proposition on any given day. The Washington DC area is ranked as having the fourth worst traffic congestion in the United States. Even though the Washington Metropolitan area provides an extensive public transportation system, the commuters of Montgomery County prefer to drive alone over any other mode of transportation. The average commute time is 33 minutes for workers who live and work in the county. Commute times to surrounding jurisdictions are much greater.<sup>24</sup>



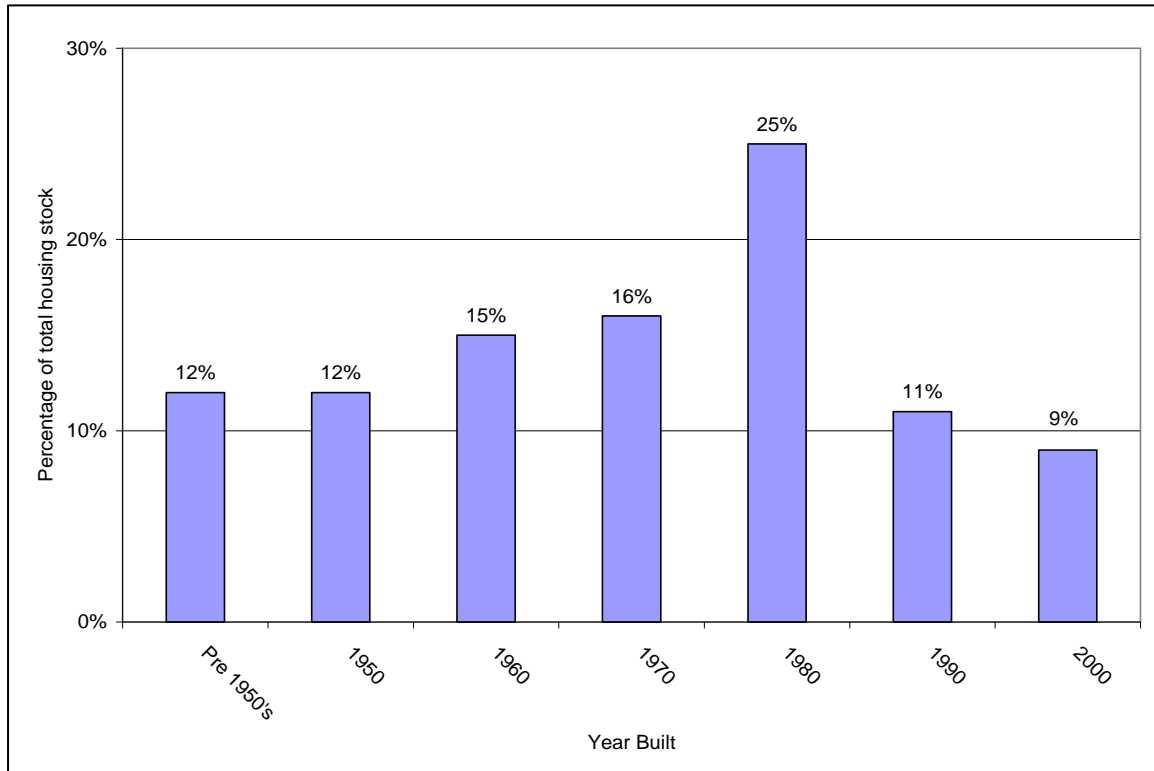
### Housing Stock

55% of Montgomery County housing was built before 1980. The housing boom of the 1980's built 25% of the housing units in the county and introduced light weight construction, the majority of which is in the northern portions of the county. Only about 20% of the housing units have been built since 1990.

## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

Montgomery County was one of the first jurisdictions in the United States to adopt the Moderately Priced Dwelling Unit program. MPDU's are affordable dwelling units integrated in developing neighborhoods.



This program forced socio-economically mixed neighborhoods and schools. They allowed lower income families to purchase new housing at a reduced rate in new developments. Since the 1970's developers have been required to include MPDU's in every development built. There have been 8,210 units built since 1980. The MPDU's are subject to limits on resale, rents and owner occupancy.<sup>25</sup>

## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

Median sales prices of Montgomery County homes are much higher than the national average.

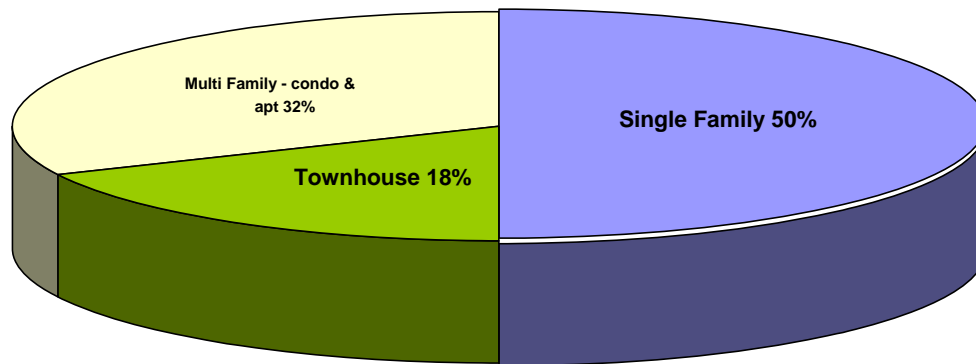
- Single family detached           \$460,000
- Townhouse                         \$280,000
- Condominium                    \$262,575

These prices have dropped, on average, 28% since the housing bubble in 2006.

### Homes Owned vs. Rented



### Housing Stock by Type



## Disaster Potentials

### High Profile Threat

Due to the proximity to Washington DC, Montgomery County has a number of very high profile events. Our Special Ops division is regularly involved in arranging protection for these events, making Montgomery County an approachable, but well protected area.



## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

#### **Area Development**

Montgomery County is a robust commercial/business center. Due to the proximity of Washington DC, there are many US federal government agencies that call the county home. Montgomery County is the epicenter of biotechnology in the mid-Atlantic region with over 200 biotech firms. The convenient location to the nation's capital and easy access to international gateways has lured many international firms to headquarter in Montgomery County. Locating in Montgomery County gives employees access to world class health care, entertainment, shopping and other big city benefits with the option to choose urban, suburban or rural living.<sup>26 27</sup>

With limited commercial space in the District of Columbia, many government agencies are based in Bethesda, Rockville, Gaithersburg and Germantown. Some of the more prominent agencies include:

- Food and Drug Administration – FDA
- National Institutes of Health – NIH
- Walter Reed Army Institute
- Naval Medical Center
- Consumer Product Safety Commission
- Nuclear Regulatory Commission – NRC
- Naval Surface Warfare Center, Carderock Division
- National Institutes of Standards and Technology – NIST
- National Oceanic and Atmospheric Administration – NOAA

Large private corporations have based their operations in Montgomery County due to the location, a quality work force and top notch services and benefits. Some of the more prominent companies include:

- Discovery Communications
- Marriott International
- Ritz Carlton
- Choice Hotels
- Hughes Network Systems
- GEICO Insurance
- Lockheed Martin
- BAE Systems
- Travel Channel
- Coventry Health Care
- Seventh Day Adventist Church

## MCFRS

### COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

Montgomery County is the home of DNA mapping and many of the recent cutting edge biotechnology research studies. The I-270 Biotech Corridor is the 3<sup>rd</sup> largest biotech center in the United States. A few of the well known biotech companies that are based in Rockville, Bethesda and Gaithersburg include:

- Medimmune
- Human Genome Sciences
- Howard Hughes Medical Institute

#### **Demographic Features**

##### **Higher Education**

Montgomery County offers many premier higher education options:

- Montgomery College
- The Universities @ Shady Grove
- Johns Hopkins University

##### **Medical Care**

Montgomery County residents are not wanting for superior health care. There are six hospitals, one of which is a trauma center, and one remote stand alone emergency center.<sup>28</sup>

Facility	Location	# of Beds	Specialty
Suburban Hospital	Bethesda	338	Trauma Center, Cardiac Cath Lab, Stroke Center
Montgomery General	Olney	213	Stroke Center
Holy Cross Hospital	Silver Spring	448	Cardiac Cath Lab, Stroke Center
Washington Adventist Hospital	Takoma Park	281	Cardiac Care
Shady Grove Adventist Hospital	Rockville	336	Cardiac Cath Lab, Stroke Center
Naval Medical Center	Bethesda	205	Military care

## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

Germantown Emergency Center	Germantown	21	stand alone emergency center
-----------------------------	------------	----	------------------------------

### Urban Centers

The primary urban hubs in Montgomery County are Bethesda, Silver Spring and Rockville, which are all currently undergoing redevelopment and re-urbanization. These three high density mixed use areas are pedestrian centers offering shopping, entertainment, residential living options and commercial spaces. The majority of the county's high rise structures are concentrated in these areas, although recent years have also brought a new surge of high rise living in North Bethesda. This area will likely be the next major urbanized area for Montgomery County.

Rockville Town Center is the county seat. The new redevelopment of this area has brought 644 residential units and 175,000 square feet of shops and restaurants.

The Silver Spring Urban District is an older area of the county that has been given new life as an urban center. Over 1 million square feet of commercial, retail and restaurant space and METRO access, makes Silver Spring a desirable area to live, work and play.<sup>29 30 31</sup>

### Shopping

Montgomery County offers world class shopping. There are four major shopping malls and three major mixed used shopping centers and 16 large strip shopping centers and pedestrian shopping areas. High end boutique shopping is centered in Chevy Chase and the four malls cater to the varied demographics of Montgomery County. There are 33 major department stores and 743 specialty stores and boutiques in Montgomery County.<sup>32</sup>

Mall	Location	Square footage	# of stores	Anchors
White Flint Mall	North Bethesda	800,000	125	Bloomingdales, Lord & Taylor
Westfield Montgomery Mall	Bethesda	1,224,195	203	Sears, Nordstrom, Macy's
Westfield Wheaton	Wheaton	1,650,334	195	JC Penny, Macy's, Target

## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

Lakeforest Mall	Gaithersburg	1,046,000	145	Macy's, Lord & Taylor, JC Penny, Sears
Washingtonian Center	Gaithersburg	760, 000	45	Target, Kohls, Barnes & Noble, Dicks Sporting
Collection @ Chevy Chase	Chevy Chase	112,000	9	Tiffany, Jimmy Choo, Ralph Lauren, Cartier
Milestone ShoppingChopping Center	Germantown	868,000	22	Home Depot, Target, Best Buy, Kohls

### The Arts

The governing body of Montgomery County holds the arts in high regard and they are willing to support local arts programs and facilities.

- Strathmore Hall, a 1,976 seat concert hall, opened in 2005. It is home to the Baltimore Symphony Orchestra and the National Philharmonic and hosts a varied offering of musical, theatrical and stage entertainment.
- The Black Rock Arts Center, located in Germantown, opened in 2002. The center offers art and theater classes to the community as well as hosting a variety of live shows.
- The AFI Silver Theater in Silver Spring was redeveloped during the initial re-urbanization of downtown Silver Spring. The American Film Institute calls the Silver Theater home and many events and film festivals are offered throughout the year.
- The Filmore in Silver Spring is the latest arts project headed up by Montgomery County, slated to open September 2011. In this unusual public/private partnership, Montgomery County will own the land and the facility and enter into a lease with Live Nation to manage and operate the 750 seat music venue with a very famous name. This unusual partnership will create a cash windfall for the county with very little involvement with the facility.
- The renovation of the historic JC Penny building is also part of the re-urbanization of Silver Spring and the development of the Silver Spring Arts District.<sup>33</sup>

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

#### **Recreation**

The largest recreational area in Montgomery County is the Discovery Sports Center and Soccerplex. This complex located in Germantown opened in 2000 and was home to the former Washington Freedom Soccer Team. The facility hosts regional and national sporting events year round. The Discovery Sports Center is a 66,000 square foot complex with a 46,000 square foot indoor arena field. The Soccerplex is a premier soccer facility offering 19 full sized soccer fields and a 3,200 seat stadium. Over 60,000 spectators a year gather for a variety of events.<sup>34</sup>

The Montgomery County Fairgrounds in Gaithersburg is the destination for the annual Montgomery County Fair and a number of festivals through out the year.

Potomac has two first rate golf courses. Both of these courses have been used for major international golf events, most recently the Tiger Wood Buick Invitational and the US Open at the Congressional Country Club.

All of these recreation sites bring thousands of spectators and tourists to Montgomery County. Montgomery County Fire Rescue Special Operations works tirelessly to provide fire protection and EMS during these major events.

#### **Residential Communities**

Many developments have been built in Montgomery County to address the living needs of seniors. Independent living, assisted living, and nursing homes, (registered and independent), span every corner of the county. The increase of senior residents poses new challenges to MCFRS and the EMS services. MCFRS is dedicated to providing the best care and education for seniors and has created a Senior Task Force to address the needs of the ever growing elderly population.

5% of the county housing is age restricted, 55 and older. There are six major age restricted communities in Montgomery County. They offer a variety of care from independent living to end of life care.

## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

Facility	Residents	Acres	Living Options
Leisure World	8,500	610	Independent Living
National Lutheran Home	550	30	Independent Living, Alzheimer's Care, Nursing Home
Riderwood	2283 units	120	Independent Living, Assisted living, Nursing Home and end of life care
Charles Smith - Hebrew Home	1,000	6 buildings	Independent Living, Assisted living, Nursing Home and end of life care
Asbury Methodist Village	1194 units	130	Independent Living, Assisted living, Nursing Home and end of life care
Brooke Grove	316 units	220	Independent Living, Assisted living, Nursing Home and end of life care

There are 263 registered and independent Nursing Home facilities in Montgomery County and 117 assisted living facilities. <sup>35 36 37</sup>

### **Planned Communities**

Planned communities are a new development trend that is popping up throughout the county. These communities bring open spaces, community shopping centers, and mixed residential options. This combination of amenities attracts a wide range of residents.

Currently there are 5 planned communities, with more being developed.

Community	# of Homes	Acres
Lakelands	1,410	340
King Farm	3,200	430
Kentlands	1,800	352
Fallsgrove	Approx 1,200	257
Clarksburg Town Center	1,300	268

Kentlands was the first of these communities developed in 1990. These communities are attractive to residents but pose a challenge to the fire rescue service. The homes are all light weight construction on zero lot lines with massive exposure issues. The small roads and alley ways make for charming neighborhoods, but severely limit fire apparatus access.

## MCFRS

### COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

The overall building stock in Montgomery County is relatively new; however, 55% of the residential units were built before 1980. The majority of these are small post World War II era masonry cottages in the down county area.

There are two designated historic districts; Rockville and Kensington. The homes in these areas are late 1800 Victorian balloon frame homes.

As Montgomery County became more suburban, the housing boom peaked in the 1980's in Gaithersburg and Germantown. This growth spurt brought thousands of lightweight construction single family homes and town homes to the area. While the majority single family homes in Montgomery County are averaged sized, 1,000 – 2,000 square feet, there are a number of areas that feature homes in the 3,000 – 4,000 square foot range.

Potomac has the highest area median income along with the highest housing costs. Homes in this area are in the 10,000 or greater square foot range. <sup>38</sup>

Area	Population	Density/Square Mile	# Of Housing Units	Median Household Income
Germantown	86,395	7,999	31,807	\$71,226
Rockville	62,476	4,532	17,786	\$86,085
Bethesda	55,277	4,205	24,368	\$117,723
Silver Spring	71,452	7,584	31,208	\$51,653
Gaithersburg	59,933	5,902	20,674	\$54,883
Potomac	44,822	1,780	15,960	\$154,370
Poolesville	4,883	1,193	1,630	\$85,092

The majority of new high rise residential construction is concentrated in the North Bethesda area with 1,200 units in four new high rises with more in the planning stage. Rockville Town Center is a close second with 644 high rise units.

Montgomery County is at the fore front of fire suppression laws. In 1978, a county law, the first of its kind, mandated smoke detectors in all residences. In January 2004, a law was enacted that requires all new homes to have sprinkler systems.

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

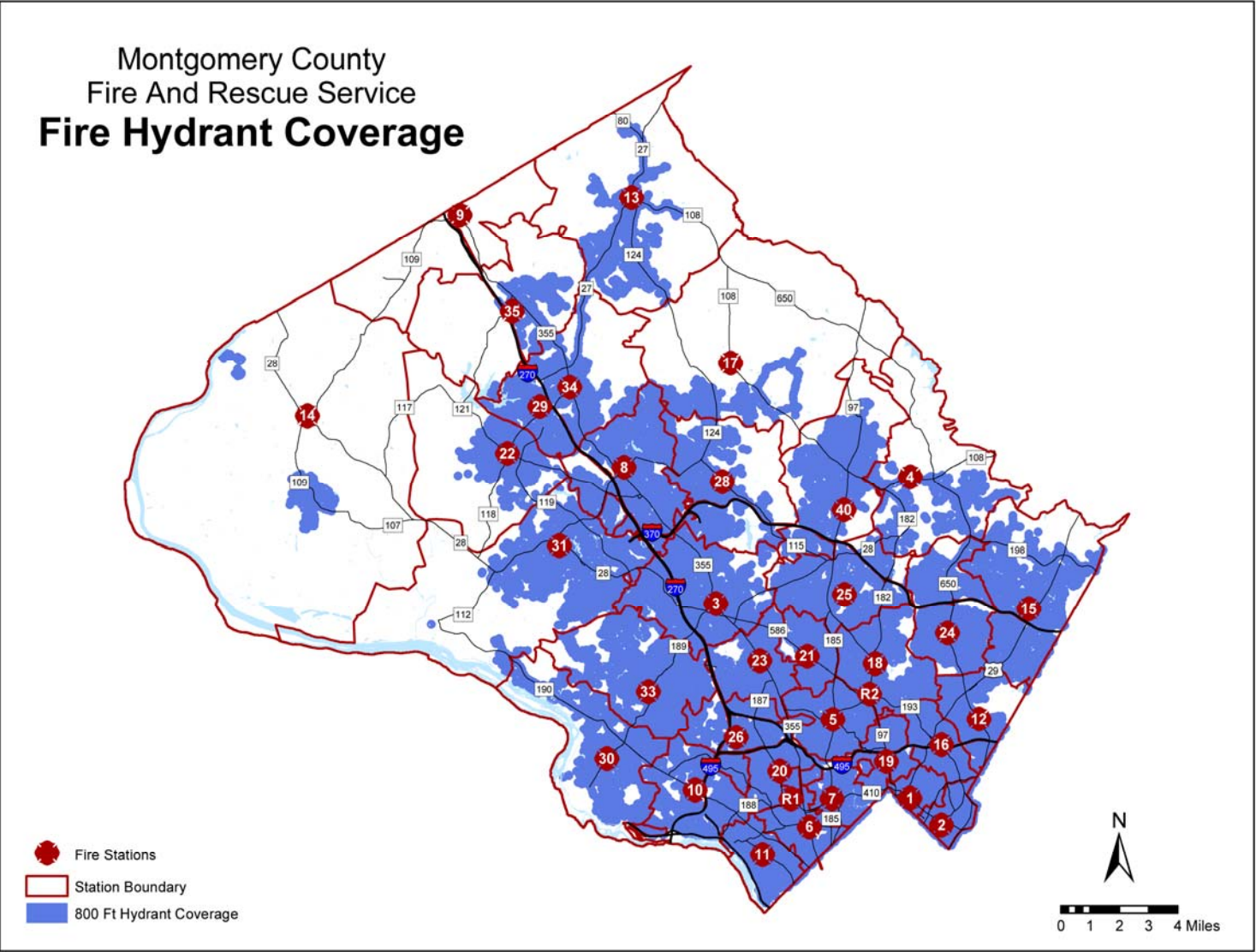
#### **ISO Rating**

The Insurance Services Office, ISO, is an independent organization that rates fire departments. This rating is considered when setting insurance premiums. The major elements of a community's fire suppression ability, including location of stations, water supply access, apparatus and equipment are assessed and given a numerical grade from 1 to 10. Montgomery County has exhibited a split rating; ISO 4/9 for several years. The 4 rating represents urban areas within five miles of a fire station that are served by hydrants. The 9 rating represents the rural areas of the county that are within 5 miles of a fire station but are not served by a hydrant system.

In January of 2013, MCFRS completed a rigorous ISO Fire Suppression Rating Schedule (FSRS) for both hydranted and non-hydranted areas. The evaluation process spanned over several months as the Insurance Services Offices field section evaluated needed fire flow, our receipt and handling of fire alarms, water supply, and various other elements within our Fire Department. The conclusion of the evaluation yielded a successful increase of our Community Classification Rating in non-hydranted areas from a 9/10 to a 6/10 and for hydranted areas from a 4/10 to a 3/10. Montgomery County's split ISO rating is now 3/6; a marketable increase from our previous rating of 4/9.



**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**



## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

#### **Summary**

Montgomery County Maryland has developed from a rural farm community to become a metropolitan center that attracts world-class business headquarters and serves a community of 1,004,709 diverse residents. Montgomery County is the most populated county in the state of Maryland, and is traversed by major highways, rail lines and a river. The challenges of serving this community are exacerbated by the homeland security and high profile threats due to the proximity to Washington DC.

Montgomery County Fire and Rescue Service is a full spectrum life safety agency providing fire, EMS, Haz-Mat, river rescue, Urban Search and Rescue, code enforcement, arson investigation and public education programs. Over the last 140 years MCFRS has undergone many transformations from a 100% volunteer run organization to a government operated career/combination service funded by tax revenue.

The services provided by this department make the MCFRS a world class fire department responding to over 100,000 incidents per year making our 34 fire stations, over 1,200 career employees and 800 volunteers some of the busiest in the nation. In an effort to keep pace with the demands and expectations of the community, MCFRS regularly evaluates its performance, response time goals and actual response times. To maintain these services, MCFRS reviews the location of apparatus throughout the service area, the need for new stations as the population increases and the addition of new services as need dictates. MCFRS regularly reviews its strategies for improving the services through a 10-year master plan.

The expectations of the Montgomery County residents are very high. Montgomery County is one of the highest taxed communities in the mid-Atlantic region allowing the citizens to demand more from their government agencies. MCFRS is expected to “prevent, be prepared, respond to and mitigate fire, hazardous, environmental or medical emergencies to a reasonable sense of normalcy.” MCFRS does this through education, highly trained personnel, incident response and after incident support.

## **MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

The Standard of Cover document will review in detail, the services provided, and the goals and expectations the County Government, the department and the citizens have for their fire department. We will address and follow up on the strategic recommendations developed from our 2007 CFAI accreditation process and review the current response to areas that are in need of improvement.

MCFRS has been an evolving department for 140 years and it continues to evolve, adapt and change to meet the growing needs of the population, the community and the County as a whole.

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

#### **B. Services Provided**

MCFRS maintains a fleet of over 520 vehicles which respond to approximately 100,000 incidents per year. Staffing is provided by over 1,200 career personnel, working about 270 personnel per shift on a 24/48 schedule, and over 800 volunteers.

#### **Service Delivery Programs**

##### **Fire Suppression**

MCFRS responds to approximately 30,000 fire related incidents annually. Of these responses over 700 are classified as structure fires with the remaining being other fires, hazardous conditions, service calls, good intent calls, and false alarms.

##### **Engine Company**

MCFRS fully staffs 32 CAFS equipped engine companies with a minimum of a 750 gallon water tank, a 1500 gpm single stage pump, 25 gallons of Class A foam, and 25 gallons of Class B foam. 23 of these engines are staffed with four personnel with one of the four being an ALS provider; the remaining 9 engines are staffed with three personnel. Engines staffed with ALS providers have a full complement of ALS equipment. All engines are equipped with a pre-connected deck pipe, ground ladders, hard sleeves for drafting, and at least 2000' of 4" supply line. Each CAFS engine has six pre-connected lines ranging from 1.75" to 2.5" with five of the six being CAFS capable and the last line, the Blitz fire line, being foam solution capable.

MCFRS also has seven stations which have more than one Engine Company assigned. The additional engines in these stations are either cross-staffed by career personnel, or staffed by volunteers when available, depending on the availability of personnel and the incident type. Three of these engines are four-wheel drive units equipped with 500 gallon tanks and front mounted pumps. These units are primarily deployed for brush fires and rural water supply responses. Two units are engine tankers equipped with a minimum of a 1500 gallon water tank, one is CAFS equipped; they are used for rural responses. In addition to these

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

specialized units there are eleven stations that have additional engines available to be staffed by available volunteer personnel. MCFRS also maintains a reserve fleet of 19 engines, of which 6 are CAFS equipped.

#### **Truck Company**

MCFRS fully staffs fourteen truck companies that utilize a variety of apparatus types. Five of the trucks are 100' tractor drawn aerials, which are also equipped with vehicle extrication tools. The tractor-drawn units carry hydraulic rescue tools, jacking and lifting equipment, cribbing, chains and other equipment associated with vehicle rescue incidents.

Five of the trucks are 100' rear-mount All Steer towers. Two trucks are 95' mid-ship towers, and the remaining truck is a 100' rear mount aerial. In addition to the staffed truck companies one 100' rear mount aerial is cross-staffed and one 100' mid-ship tower is assigned to a station and staffed by volunteer personnel when available.

The trucks have varying complements of ground ladders up to 45' in length, high angle rescue equipment, forcible entry tools, electric and gasoline powered smoke ejectors, gasoline powered circular and chain saws, generators, lighting, salvage equipment, and a variety of large and small hand tools. MCFRS also maintains a reserve fleet of 8 truck companies: 3 tractor drawn, 4 towers, and 1 rear mount aerial.

In August of 2013, MCFRS will place an additional truck service at Fire Station 24 (AT724) for approximately eighteen (18) months. MCFRS was awarded a subsequent SAFER Grant which will enable the temporary restoration of aerial service in Battalion One. The determination was made after extensive review and analysis identified its need. At the conclusion of the eighteen month term, Montgomery County will actively monitor response data, available staffing, as well as residential and commercial growth to project continued need in funding this critical resource.

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

#### **Brush Trucks**

MCFRS operates fifteen brush trucks. These vehicles are generally full size four wheel drive pickup trucks with skid mounted 200-250 gallon water tanks and pumps. These units are equipped with booster reels, forestry hose, chain saws, and assorted hand tools. These units are cross-staffed with personnel assigned to other units in the stations that they are located in. They are dispatched on brush (wildland) fire assignments and are sometimes used on other responses based on the discretion of the station officer.

#### **Tanker (Water Tender)**

MCFRS operates nine cross-staffed tankers (water tenders). These units are equipped with elliptical tanks in the range of 3000 to 3500 gallons of water, and at least a 1250 gpm pump. All of these units have rear and side dumps that enable the units to quickly discharge the water tanks at dump sites. These units are assigned to stations with non-hydranted boxes in their response areas and are cross-staffed by personnel assigned to other units when needed for a response. Each of these units is also equipped with a minimum of a 4000 gallon folding tank to support water shuttle operations.

#### **Rescue**

MCFRS responds to approximately 800 rescue incidents a year. More than 350 of these incidents are vehicle collisions with people trapped. Additionally, there are responses for machinery entrapment, building and trench collapses, and other rescue related incidents. Rescue Squads MCFRS operates 6 heavy rescue squads. Two are fully staffed, one is cross-staffed, three of these units are staffed by career personnel during the day with volunteer personnel staffing them at night, one unit is fully staffed by volunteer personnel, and two units are co-located with other rescue squads and staffed by volunteer personnel as available. These vehicles are equipped with a wide spectrum of heavy rescue equipment including hydraulic rescue tools, lifting and jacking equipment, cribbing, winches, chains, high angle rescue equipment, generators, compressors, cascade systems, lighting, power saws, large and small hand tools, and salvage equipment.

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

MCFRS has one reserve rescue squad in addition to the two sets of co-located rescue squads of which one unit in each set can be used as a reserve when needed.

#### **Rescue Engines**

MCFRS has one rescue engine and one engine tanker equipped as a rescue engine. Both of these units are in rural areas of the county and provide auto extrication capability in their response areas. In addition to carrying a normal inventory of engine equipment these units also carry hydraulic rescue tools, jacking and lifting equipment, cribbing, chains and other equipment associated with vehicle rescue incidents.

#### **Medical**

MCFRS responds to approximately 80,000 EMS incidents per year. Approximately 45,000 of these incidents are classified as BLS responses with the remainder being ALS responses. All MCFRS personnel are trained to the EMT-B provider level as a minimum. All MCFRS apparatus are equipped to act as a BLS first responder and respond as such when BLS transport unit response times are extended. Additionally, 23 engines and 1 truck are staffed with at least one ALS provider and equipped with ALS equipment. These units, in combination with the ALS transport units, provide ALS delivery capability.

#### **Basic Life Support**

MCFRS staffs 21 BLS transport units with two BLS providers. The ambulances are the primary BLS response units. When response times are extended fire apparatus is assigned to act as a first responder. These ambulances also act as first responders on ALS incidents when they are either the closest available unit or the closest available transport unit. They respond to these incidents in combination with ALS equipped fire apparatus and/or ALS transport units.

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

#### **Advanced Life Support**

MCFRS staffs 18 ALS transport units with one ALS provider and one BLS provider. The medic units are the primary ALS response units and respond to incidents coded as ALS-1 responses (requiring only one ALS provider) by themselves if they are the closest unit. For ALS-2 responses (where two ALS providers are required) an ALS staffed fire unit responds to provide the second ALS provider. Additionally, depending on incident proximity, a BLS first responder unit and/or an ambulance may also be dispatched on ALS incidents.

#### **Hazardous Materials**

Hazmat units are housed at stations 7 and 28. These vehicles are equipped with monitoring, testing, containment, and collection equipment along with an extensive inventory of personal protective equipment and decontamination equipment for entry and decontamination teams.

#### **Specialized Services**

##### **Urban Search and Rescue**

Station 31 is the primary US&R station. A dedicated US&R warehouse houses the equipment cache for the US&R team and the team's vehicle fleet is stored at the station. The US&R team provides a wide variety of technical rescue capabilities that are utilized in the county, regionally, and nationally. The team is trained to respond to trench and confined space incidents, structural collapses, man-made and natural disasters. For local and regional responses US&R personnel are consolidated into several stations providing an immediate response capability.

For national responses the team is capable of operating continuously on deployments up to two weeks long and deploying within 6 hours of notification for national responses. Depending on the type national response the team deploys with between 30 and 80 personnel.



## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

#### **Water Rescue**

MCFRS has swift water and flat water response capabilities. Boats are housed in stations throughout the county with the boats being concentrated along the eastern and western edges of the county where the Potomac and Patuxent rivers border the county. For swift water rescues boats respond in teams with helicopter support provided either by the United States Park Police or the Maryland State Police.

#### **Mass Casualty**

MCFRS is equipped with two 20 patient ambulance buses located at stations in the north and south central areas of the county. Each bus is paired with a mass care support unit stocked with EMS supplies for treating up to 100 patients.

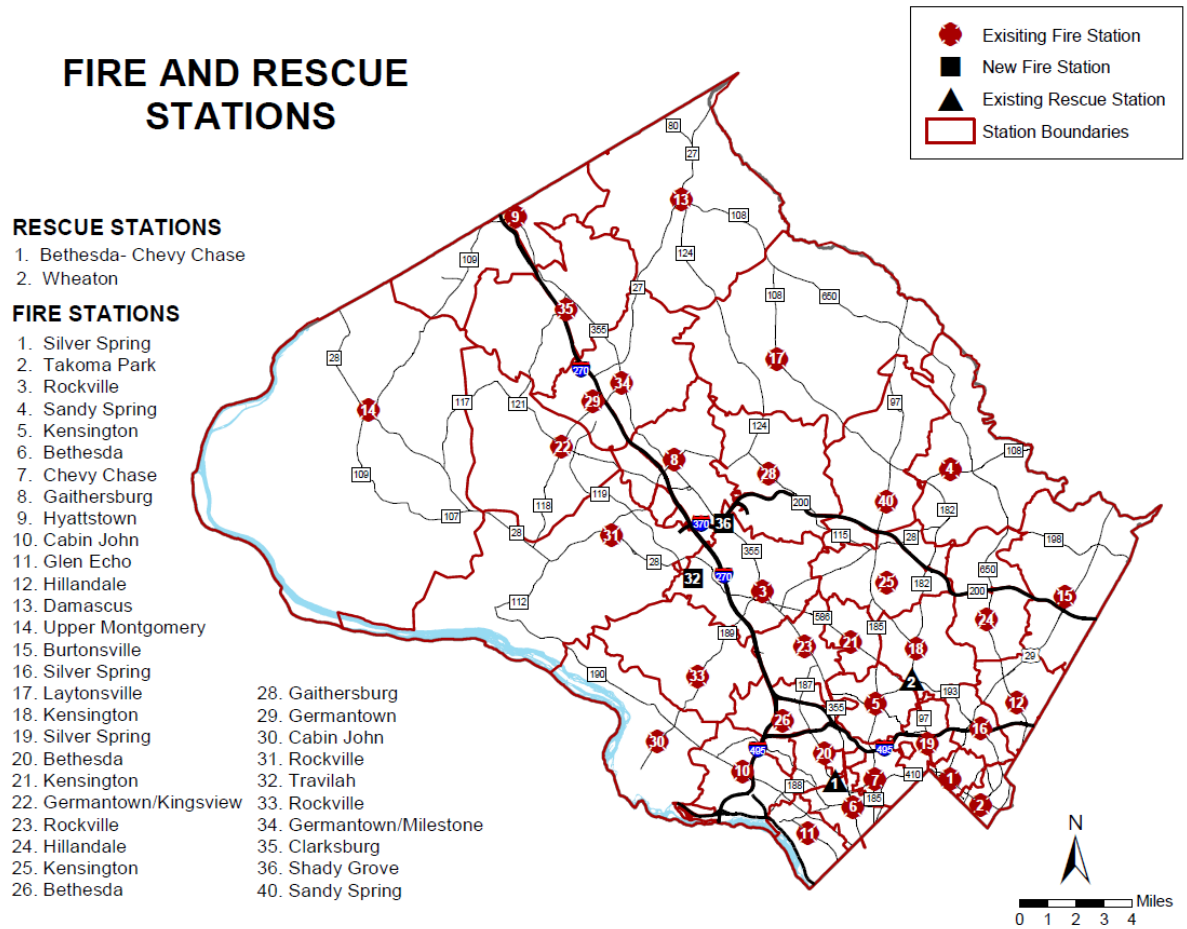
#### **Bomb Disposal**

The Fire and Explosives Investigation section provides bomb disposal capabilities. The section has investigators who are certified bomb disposal technicians. They utilize two bomb disposal vehicles that are equipped with a robot, a containment vessel, an x-ray machine and many other technical capabilities.

# MCFRS

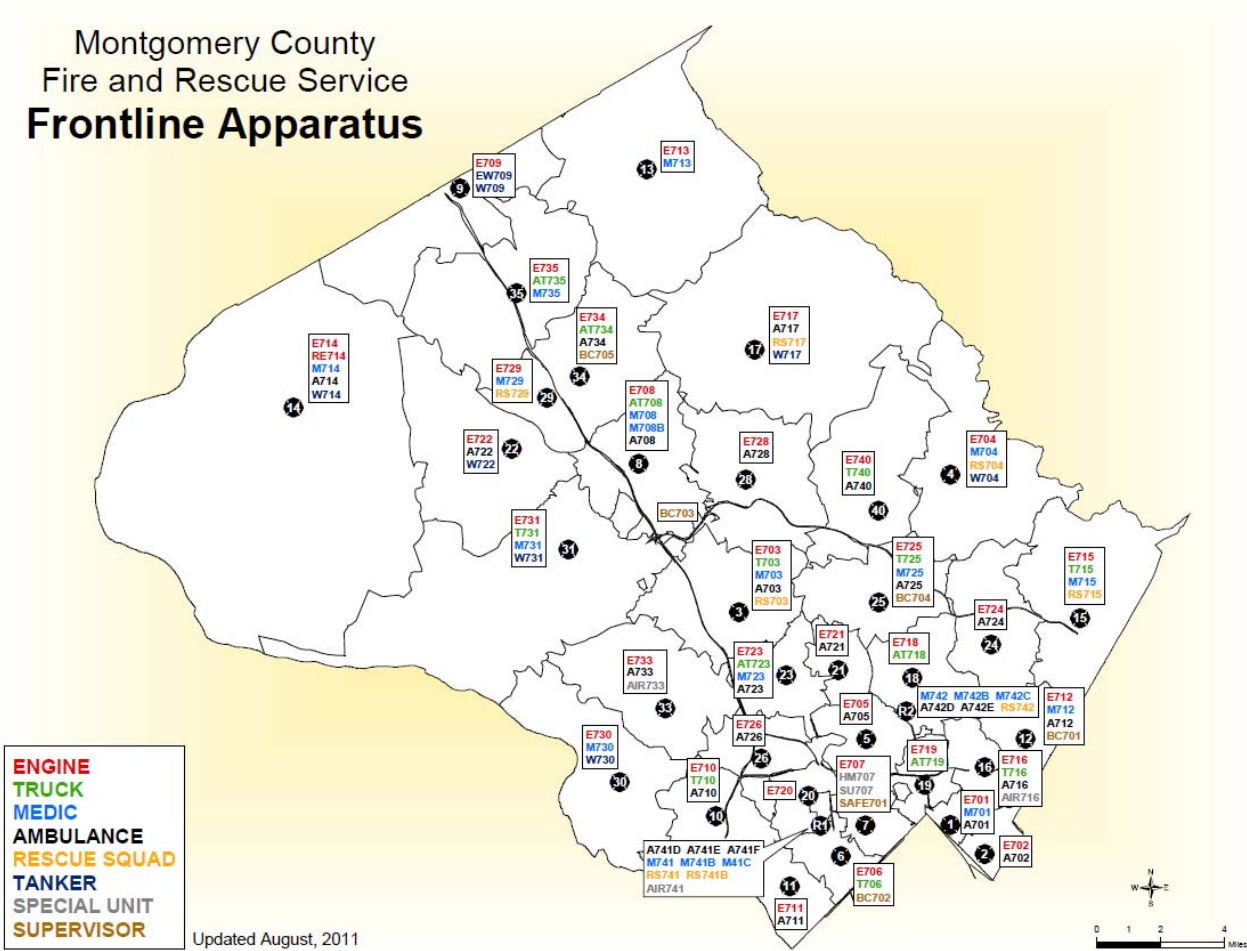
## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

### Current Deployment



MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

Resources



# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

### Resource Staffing

Operations Division Weekday Field Staffing Matrix								
Worksite	A/C	B/C	Capt	Lt	MF/F	MF/P	F/F	F/P
ECC			1	1	1		4	
DOC Office	1		2		1			
BC701		1						
FS01			1		1	1	4	1
FS02			1		1		3	
FS12			1		1	1	4	1
FS15			1		3	1	2	1
FS16			1	1	2		4	1
FS19			1	1	2		2	1
FS24			1		1		3	1
BC702		1						
R1						1	1	
FS06			1	1	2		2	1
FS07			1		1		1	1
FS10			1	1	2		4	
FS11			1		1		3	
FS20			1		1		1	
FS26			1		1		1	
FS30			1		1	1	2	1
BC703		1						
FS03			1	2	3	1	6	1
FS08			1	1	2	2	6	2
FS23			1	1	2	1	5	1
FS28			1		1		3	1
FS31			1	1	2	1	3	1
FS33			1		1		3	1
BC704		1						
FS04			1		1	1	1	1
FS05			1		1		3	
FS18			1	1	2		2	1
FS21			1		1		3	1
FS25			1	1	2	1	5	1
FS40			1		1		3	
R2			1		1	2	5	
BC705		1						
FS09			1		1		1	
FS13			1		1	1	1	1
FS14			1		1	1	2	1
FS17			1	1	2		4	1
FS22			1		1		3	1
FS29			1	1	2	1	3	1
FR34			1	1	2		4	1
FS35			1	1	2	1	3	1
Totals	1	5	38	16	54	18	110	27

269

# MCFRS

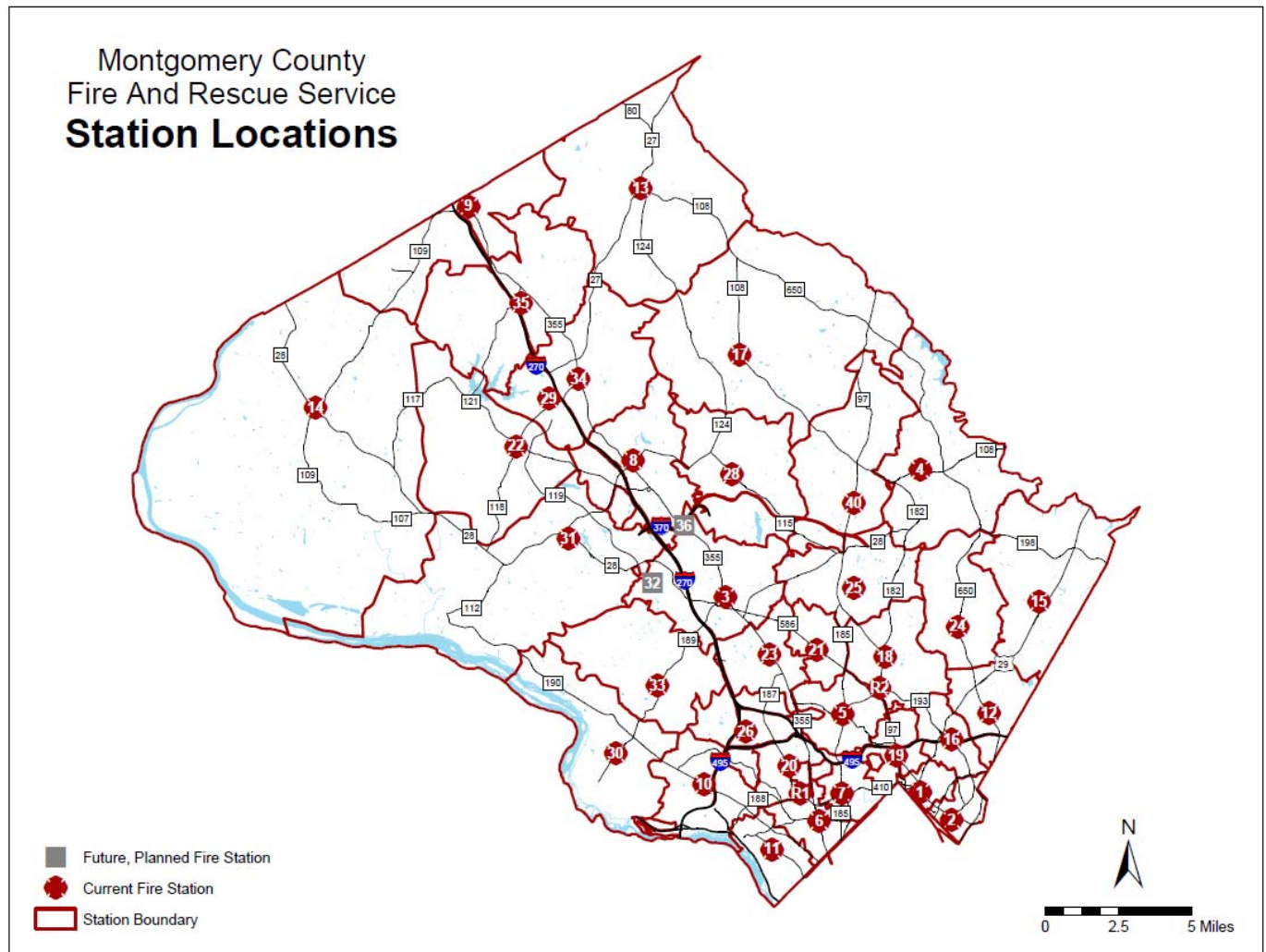
## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

Operations Division Night and Weekend Field Staffing Matrix								
Worksite	A/C	B/C	Capt	Lt	MF/F	MF/P	F/F	F/P
ECC			1	1	1		4	
DOC Office	1		2		1			
BC701		1						
FS01			1		1	1	4	1
FS02			1		1		3	
FS12			1		1	1	4	1
FS15			1		2	1	2	1
FS16			1	1	2		4	1
FS19			1	1	2		2	1
FS24			1		1		3	1
BC702		1						
R1							1	
FS06			1	1	2		2	1
FS07			1		1		1	1
FS10			1	1	2		2	
FS11			1		1		3	
FS20			1		1		1	
FS26			1		1		1	
FS30			1		1	1	2	1
BC703		1						
FS03			1		1	1	2	1
FS08			1	1	2	2	6	2
FS23			1	1	2	1	5	1
FS28			1		1		3	1
FS31			1	1	2	1	3	1
FS33			1		1		3	1
BC704		1						
FS04			1		1	1	1	1
FS05								
FS18			1	1	2		2	1
FS21			1		1		3	1
FS25			1	1	2	1	5	1
FS40			1		1		3	
R2								
BC705		1						
FS09			1		1		1	
FS13			1		1	1	1	1
FS14			1		1	1	2	1
FS17			1		2		3	1
FS22			1		1		3	1
FS29			1	1	2	1	3	1
FR34			1	1	2		4	1
FS35			1	1	2	1	3	1
Totals	1	5	36	13	48	15	92	27

237

# MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

## Resource First Due Response Areas



## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

#### **C. Community Expectations and Performance Goals**

The citizens and elected officials of Montgomery County, Maryland have the expectation that Montgomery County Fire Rescue Service (MCFRS) will take actions to prevent, be prepared, respond to and mitigate fire, hazardous, environmental or medical emergencies to a reasonable sense of normalcy. It is also expected that measurable standards and expectations be adopted and assessed to evaluate the effectiveness of MCFRS's efforts and to identify areas in need of improvement. MCFRS then should take action in response to the identified deficiencies to improve the delivery of emergency services.

#### **Community Expectations:**

##### **Prevent the Emergency**

##### **Expectation:**

Develop and implement comprehensive emergency medical, fire and disaster prevention/education programs.

##### **Response:**

The Division of Community Risk Reduction Services which includes a variety of public education and outreach programs, as well as the offices of the Fire Marshal.<sup>xxxix</sup>

##### **Public Education**

The "Safety in Our Neighborhood Program" keeps our communities safe and healthy by providing comprehensive and effective fire and injury and disaster prevention/educational outreach programs through diverse partnerships and utilizing a variety of outreach tools and mediums.

##### **Code Enforcement**

The Fire Code Compliance section provides inspections of commercial, industrial and residential structures for compliance with applicable County and State fire and life safety codes. Engineering staff provide technical evaluation of complex fire protection needs and recommend systems or processes for appropriate fire protection in all occupancy types within the County. Yearly

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

inspections are conducted at health care, day care and educational facilities, as well as residential boarding and home-based health care facilities.<sup>xi</sup>

#### **Car Seat Program**

The Montgomery County Car Seat Program started over 11 years ago. Our mission is to ensure that children ride properly restrained in car seats and seat belts while traveling. Motor vehicle crashes are a leading killer of children under 15 and we want to prevent the 911 call. We also emphasize safety in and around cars with the caregivers (trunk entrapment, never leaving children alone in vehicles, rollover prevention, etc.) The program inspects around 8,000 car seats each year at seat checks, and attends numerous community outreach events each year to educate the public. We distribute over 500 reduced priced car seats annually to families in need and conduct multiple trainings each year to nationally certify and update our technicians. The program also provides loaner car seats for children with special healthcare needs. All participants at seat checks are also given fire safety information. Approximately 11,000 calls are taken each year to answer questions caregivers have, and a website is kept up to date with current resources for parents.

#### **CERT**

The Community Emergency Response Team (CERT) Program educates residents in disaster preparedness for hazards that may impact their communities and trains them in basic disaster response skills, such as fire safety, light search and rescue, team organization and disaster medical operations. Using training learned in the classroom and during hands-on exercises, CERT members can give critical assistance to others in their neighborhoods or workplace following an event when professional responders are not immediately available to help. CERT members also are encouraged to support emergency response agencies by taking a more active role in safety education and emergency preparedness projects in the community.<sup>xli</sup>

#### **Prepare for the Emergency**

##### **Expectation:**

MCFRS is to be prepared to respond to all types of emergencies with well trained, able-bodied personnel who are properly equipped with the tools, apparatus and technology necessary to perform their duties in a safe, timely and efficient manner.



## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

#### **Response:**

The Division of Wellness, Safety and Training which oversees the Safety Section, Training Section and Occupational Medical Section and the Division of Administrative Services Department which oversees Logistics, Information Technology, Procurement, Human Resources, Capital Improvement and Facilities and Budget and Grant Administration.<sup>xlii</sup>

#### **Technology**

The Information Technology section is responsible for development, implementation and ongoing support of all IT needs for the department. This section ensures compliance with all Department of Technology Services requirements, assists with Computer Aided Dispatch, directs the Data Warehouse and maintains desktops, and Firehouse reporting and inventory control software.<sup>xliii</sup>

#### **Training**

Training courses are provided in six areas; volunteer orientation classes, entry level firefighting, emergency medical technician training, paramedic training, career development courses that train personnel to operate at increasing levels of responsibility, command officer professional development and improvement (COPDI). Additionally, regular in-service training is conducted for field personnel to evaluate company readiness as well as in-station, field and on-line drills and training. The high school fire science program, offered in conjunction with the Montgomery County Public Schools, is an alternative educational opportunity that allows high school students the opportunity to explore the fire and rescue service<sup>xliv</sup>. (Note – this program was suspended in FY 11 due to budget issues.)

#### **Fire Rescue Occupational Medical Section (FROMS)**

Provide fire-specific focus on MCFRS health needs. Services provided by FROMS include entry level physicals, annual physicals, injury care, return to work exams, fitness for duty exams, vaccinations, and follow up evaluations as necessary. FROMS also monitors employees injured on the job to ensure appropriate care and timely return to work.<sup>xlv</sup>

#### **Logistics**

The Logistics section handles the uniform and protective clothing requirements for career personnel in the fire/rescue occupational series. This includes the procurement, order placement, receipt, storage, inventory and distribution of a wide array of items as well as related contract and budget

## MCFRS

### COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

administration and invoice processing. The Logistics section coordinates special services such as uniform tailoring and alterations, shoe repair and protective clothing inspection, cleaning and repair<sup>xlvi</sup>.

#### **Respond and Mitigate**

##### **Expectation:**

When the need for emergency services arises, the citizens of Montgomery County expect to have easy access to the fire and rescue services: that the service will respond safely and in a timely manner with adequate personnel and resources to protect lives, property, and the environment with effective emergency management and mitigation provided by skilled, motivated, and compassionate career and volunteer service providers representing Montgomery County's diverse population.

##### **Response:**

The Division of Operations is the organizational component of the MCFRS that is responsible for the day-to-day delivery of critical EMS, Fire Suppression, and Technical Rescue mitigation to the citizens and visitors of Montgomery County. The career and volunteer components of the combined service work in an "Integrated Emergency Command Structure" that defines the authority and responsibility for all members of the service. The Operations Division is organized into five major sections, including Field Operations, Emergency Communications Center, Special Operations, Emergency Medical Services and Fleet Management<sup>xlvi</sup>.

#### **Alarm Receipt and Dispatch**

The Emergency Communications Center is responsible for the effective performance of all emergency communications relating to a fire, rescue, or emergency medical incidents. From its Communications Center work site, the Communications Section is the primary link between a citizen, who reports an emergency, and the fire and rescue personnel and equipment, who respond to an incident scene. The Communications Section dispatches all emergency fire and rescue resources in Montgomery County. It also participates in data processing activities for the fire and rescue services and serves as the focal point for other regional governments during mutual emergency operations<sup>xlvi</sup>.

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

#### **Apparatus**

MCFRS personnel operate thirty-four engines, fourteen aerial units, six heavy rescue squads, nine tankers, eighteen ALS transport units during the day with seventeen staffed at night and twenty-two BLS transport units during the day with seventeen staffed at night (based upon available volunteer staffing) to make up the primary fleet of first response apparatus. There are additional units that can be placed in service with available volunteer or recalled career personnel to increase the MCFRS capability. All apparatus is procured and maintained by either the MCFRS Apparatus Section or by the individual local LFRDs<sup>xlix</sup>.

#### **Stations**

Thirty-two fire/rescue stations and two rescue squads, most of which are strategically located throughout the county base on population density and specific hazard location.

Thirty-one of the stations associated with local volunteer fire/rescue corporations. The other three are entirely owned, operated and staffed by Montgomery County Government.

#### **Personnel**

Over 1200 career firefighters and approximately 1100 volunteers provide emergency fire/rescue services to the citizens of Montgomery County. All Active firefighter/rescuers and emergency medical personnel must meet applicable standards of training and experience to serve in the Montgomery County Fire and Rescue Services, and to participate in the Integrated Emergency Command System<sup>l</sup>.

#### **EMS**

The MCFRS EMS function provides BLS and ALS services to the residents, businesses, and visitors of Montgomery County. While any MCFRS primary unit can provide first responder-level service, a higher level of care and transport service is provided by a fleet of ambulances providing BLS care and medic units providing ALS/paramedic care. ALS First Responder Apparatus - "AFRA" (i.e., engine, aerial unit or rescue squad with a firefighter-paramedic on-board), if available, is dispatched on ALS incidents if closer than a medic unit, along with the closest ambulance and/or closest medic unit. One or more ambulances are present in all but five of the MCFRS stations, and medic units are present in 14 stations. Rescue Station 1(BCCRS) and Rescue Station 2 (WVRS) each has a fleet of EMS and rescue units consisting of medic units, ambulances that can be upgraded to medic units

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

when the proper equipment and personnel (at least one paramedic) are aboard, and heavy rescue squads.<sup>li</sup>

#### **Fire Suppression**

The MCFRS fire suppression function provides fire protection services to the property owners in Montgomery County and to the operators and passengers of vehicles, trains, and aircraft using the County's transportation networks and airspace. Fire suppression units respond to structure fires, vehicle fires, rubbish fires, utility pole fires, and fires involving natural resources such as brush, grasslands, croplands, and forests. Thirty-two of thirty-four existing MCFRS stations operate water-equipped fire suppression units. Only the two existing rescue stations (BCCRS and WRS) lack water-equipped suppression units, although both have heavy rescue squads considered to be both suppression and rescue units.<sup>lii</sup>

#### **Special Operations**

Montgomery County Fire and Rescue staffs two fully equipped hazmat units in two separate strategic locations for effective hazardous materials response throughout our county. Our hazmat team is capable of responding to any incident where there is the potential release of a hazardous material both natural and manmade. The minimum staffing requirement is thirteen members in consolidated stations with other certified technicians located at stations throughout the county. Our capabilities include command, analysis, identification, mitigation, decontamination of a release of hazardous materials and coordination with other agencies such as DEP, MDE and other state and federal entities for a safe and effective resolution.

The Montgomery County River Rescue and Tactical Services team, provides swift water rescue and technical rope rescue with the primary focus to the Potomac river. The team also serves the entire county during flooding events. This is accomplished with personnel from Fire Station 10 and 30. Personnel are trained to water rescue specialist and swift water boat operator status. Staffing is provided for 2 boats with crews at both stations on a 24/7 basis. Each station is equipped with a support vehicle with rope and water rescue equipment, 2 inflatable boats on trailers, a utility pickup truck and one air boat. Training days are scheduled on each shift once a month and yearly skills recertification for team members is required.

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

Montgomery County MDTF-1 is a team of individuals specializing in [urban search and rescue](#), disaster recovery, and emergency [triage](#) and medicine. The teams are deployed to emergency and disaster sites within six hours of notification. The [Federal Emergency Management Agency](#) (FEMA) created the Task Force concept to provide support for large scale [disasters](#) in the United States. FEMA provides financial, technical and training support for the Task Forces as well as creating and verifying the standards of Task Force personnel and equipment.

#### **Restore Normalcy**

##### **Expectation:**

After an emergency incident, the community expects that MCFRS will take action to eliminate the potential for spread of the hazard to person, property or the environment. The community desires to feel secure and confident that their most basic physical, psychological and emotional needs are met and their lives can be restored to state similar to that of the pre-emergency.

##### **Response:**

MCFRS provides investigative, security and support services to meet the needs of the community post-mitigation of an emergency incident.

#### **Secure Situation**

On fire events, necessary and appropriate salvage and overhaul operations are performed to prevent further loss of property. The scene is secured of any hazards to the general public and turned over to the property owner or appropriate authorities. For EMS incidents, after the patient(s) have been removed from the scene, all medical waste and potential biohazards are removed and secured in appropriate containers for proper disposal.

#### **Provide Assistance**

Regardless of the type of incident, often the need for physical, mental and emotion assistance is required by the occupant, patient and/or family of those involved. MCFRS provides support and assistance in conjunction with agencies such as the Red Cross, MCFRS Critical Incident Stress Management Team, Montgomery County Crisis Center and local clergy.

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

#### **Investigate**

The Fire and Explosives Investigation section investigates all fires involving loss of life, serious injury, substantial property damage and all suspicious fire, to determine the cause, origin and circumstances. The Section is responsible for the enforcement of all State and County laws concerning fire, arson and explosives. This program involves four major elements: (1) fire and explosive origin and cause investigation; (2) investigation of incendiary or explosive devices or materials; (3) hazardous device mitigation (bomb squad); and (4) training and education to business, law enforcement agencies and the general public regarding fire and explosive materials.<sup>liii</sup>

#### **After the Fire**

After every significant fire event, MCFRS field operations section performs an “After the Fire” activity. In service fire/rescue units canvass the neighborhood/area of the event and pass out general information about the event and fire safety, as well as answering any questions the public may have regarding the event.

# **MCFRS**

## **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

### **Vision and Mission Statements**

#### **Vision Statement**

The Montgomery County Fire and Rescue Service vision is to keep our communities safe and healthy by providing the best fire, rescue, and emergency medical services, utilizing career and volunteer resources.

#### **Mission Statement**

The Mission of the Montgomery County Fire and Rescue Service is to protect lives, property, and the environment with comprehensive risk reduction programs; and safe, efficient, and effective emergency response provided by skilled, motivated, and compassionate career and volunteer service providers representing Montgomery County's diverse population.

#### **Guiding Principals**

"Our Montgomery County Fire and Rescue Service providers will:

- Deliver services to our customers with impartiality and excellence
- Promote the highest standards of safety and welfare
- Serve with integrity and mutual respect
- Recognize the importance of diversity of our workforce and communities
- Promote the efficient and effective utilization of our resources, and ensure that all organizations and personnel comprising the MCFRS share the responsibility for continuously improving their capabilities, effectiveness, and efficiency
- Be responsible for the honor of our profession and public service
- Promote equity and harmony among career and volunteer personnel
- Maintain and promote open honest communication, creativity, and competence
- Be accountable and ethical
- Continuously improve public confidence and trust

## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

### **D. Community Risk Assessment and Risk Levels**

#### **Risk Assessment**

Risk is defined as the likelihood (i.e., probability) of a damaging or injury-inflicting event in combination with the consequences of that event. Risk can also be examined and compared subjectively in terms of categories such as low, moderate, and high, or variations of these qualitative measures. In general, as incident mitigation increases in complexity the risk moves from low to special. Low risk level incidents can be managed through sequential tasking by one or two responding units. As risk increase and additional resources are required to mitigate the incident, tasking becomes concurrent and collaborative, and may ultimately involve multiple agencies.

Montgomery County Fire and Rescue Service (MCFRS) provides fire, rescue and emergency medical service to a population of 1,004,709 citizens. The geographical service area is approximately 495 square miles (507 sq mi including bodies of water) and covers metropolitan, urban, suburban and rural areas. Montgomery County also provides mutual aid services to bordering jurisdictions including Washington, D.C., Fairfax County, Virginia and Prince George's, Fredrick, Howard, and Carroll Counties in Maryland.

Within proximity of the Nation's Capital, Montgomery County is at risk of potential terrorist attacks in terms of buildings and transportation networks. Local airports in surrounding jurisdictions include Washington DC Reagan National, Dulles International and Baltimore Washington International Airports. Many commercial and private aircraft travel over the County to approach and depart from the region's three major and two minor airports. In addition, a high volume of railway routes travel through Montgomery County carrying both commuter passengers and hazardous materials. The Potomac River and Chesapeake and Ohio Canal border the southwest side of the County and are highly occupied recreational waterways during the spring, summer and fall.

The fire, rescue and emergency medical services in Montgomery County are provided by a combination of career and volunteer personnel from 36 fire and rescue stations. There are more



## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

than 1200 career personnel and 800 active volunteers who provide service. The MCFRS responds to almost 110,000 incidents annually, including mutual aid assistance each year. MCFRS is responsible for providing staff to the following units on a 24 hour/7 day a week basis: 34 Engines, 14 Trucks/Aerials, 6 Rescue Squads, 25 BLS Units, 17 ALS units, 9 Tankers, 10 Brush trucks, and various specialty units. MCFRS maintains the following specialty teams: Hazardous Materials Team, Urban Search and Rescue Team, Technical Rescue Team, Swift Water Rescue Team, and Bomb Squad. The special operations teams are staffed to an operational level on a daily basis by personnel having specialty team duties as collateral duties. They are supplemented by additional personnel for long term incidents through a callback system consisting of both career and volunteer members.

#### **Community Risk Input factors**

According to CFAI the factors used as inputs in the risk assessment process are both physical and theoretical.

#### **Physical Risk Factors**

According to CFAI, The review of physical risk factors requires an understanding of those features which may increase demand, adversely affect the capability of the agency to respond, increase the probability of an emergency, or increase the consequences of life safety and economic impact upon the community served.

#### **Geospatial Characteristics of the Service Area**

- **Political Boundaries** – Areas served or underserved due to different level of government or laws
- **Growth Boundaries** – Areas where new services will be required due to rapid growth
- **Construction Limitations** – Limitations or lack there of, due to the height, size, or complexity of the new development
- **Infrastructure Limitations** – The ability of water, power, sewer, streets, and other infrastructure to support the service area currently and with new development. Of particular note are areas where development will over take the infrastructure either temporarily or permanently

## MCFRS

### COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

#### Topography

- **Response Barriers** – Areas not easily accessed due to level of connectivity.
- **Elevation Changes** – Areas where grade differential requires steep roads, multi-tired structures, extreme changes in water pressure, or narrow/windy roadways.
- **Open/Surface Interface** – Undeveloped areas without circulation or infrastructure that produce large open space areas which act as impediments to response or inhibit access.

#### Transportation Networks

- **Roads** – roads and vehicles are sources of incidents within the service area. These service demands come in the form of accidents, medical calls and fires. As a general rule, the more traffic in the area, the larger the number of incidents generated
- **Rail Lines** - Virtually every commodity used in life today is carried on rail lines. The locations, usage, and nature of the rail lines will dictate the level of risk. Side spurs into industrial areas will generally have loading and unloading issues but lower volumes. Main lines and passenger routes will have higher frequencies of usage and higher speeds, which can generate major incidents.
- **Airports** – Most aircraft accidents occur during the take off and landing phase of air travel. Thus, the areas surrounding airports will have increased risk of hazard. As with rail lines, the activity levels at airports will have a significant impact on the level of risk. Airports of significant operation levels can create the need for specialized response resources.
- **Waterways** – Like other transportation features, waterways will increase exposure to incidents. Like rail lines, water ways can also have access issues and may require specialized equipment.

#### Climactic Impact

Montgomery County is classified by the National Weather Service as part of the Baltimore/Washington region which has experienced several significant snow, wind, and rain events between 2008 and 2010<sup>1</sup>. Montgomery County defines weather events in accordance with the National Weather Service<sup>2</sup> guidelines. The Baltimore/Washington Region is not prone to severe droughts, earthquakes, hurricanes, or incidents with heavy wildland interface.

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

In 2008, Montgomery County experienced 3 snow and ice events that produced school closures and response delays in January and February. There were also 5 heavy rainfall events between March and June with accompanying wind gusts up to 70 mph and short-duration tornados in the region. In 2009, there was a significant snow event in March and another in December that each produced over 7 inches. In 2010, there was snow event in January that produced over 7 inches and a blizzard in February that produced up to 50 inches of snow in Montgomery County.

There were also 4 heavy rainfall events between July and November with accompanying wind gusts up to 90 mph and short-duration tornados in the region. Each heavy rain event produces some level of flooding in Montgomery County and snow events are consistently accompanied by school closures. Heavy winds and tornados that often accompany rain events increase calls for wires and trees down and place significant demands on emergency response.

#### **Disaster Exposure**

##### **Potential Risks:**

- Earthquakes
- Floods
- Wildland Interface
- Wind Events (tornado, hurricane, and high wind events)
- Key Assets

##### **History of Major Events:**

- Jan 08 snowfall up to 6 inches
- Feb 08 ice up to 0.3 in
- Feb 08 snowfall up to 1.5 in
- March 08 rain up to 2 in
- March 08 wind up to 66 mph
- April 08 tornados local/rainfall
- May 08 rainfall up to 3.4 in/local tornados
- June 08 local tornados/winds up to 59 mph
- March 09 snow up to 7.7 in
- Dec 09 snow up to 7.3 in/rain up to 1.6 in, ice up to 0.1 in
- Jan 10 2.4 in and 7.2 in snow events
- Feb 10 blizzard July 10 rain/wind gusts up to 70 mph
- Aug 10 80-90 mph wind gusts thunderstorms
- Sept 10 rainfall up to 5.4 in/local tornados
- Nov 10 local tornados/thunderstorms.

## MCFRS

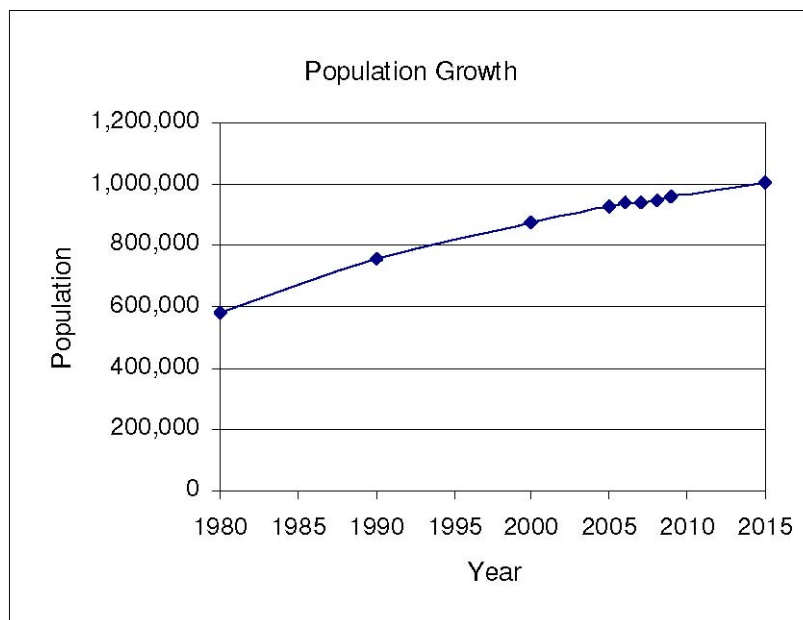
### COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

#### Development and Population Growth

According to CFAI, the current population levels and locations should be detailed to include: density of development areas and average age of concentrations at risk. Also, the impact of transient populations on service demands should be noted.

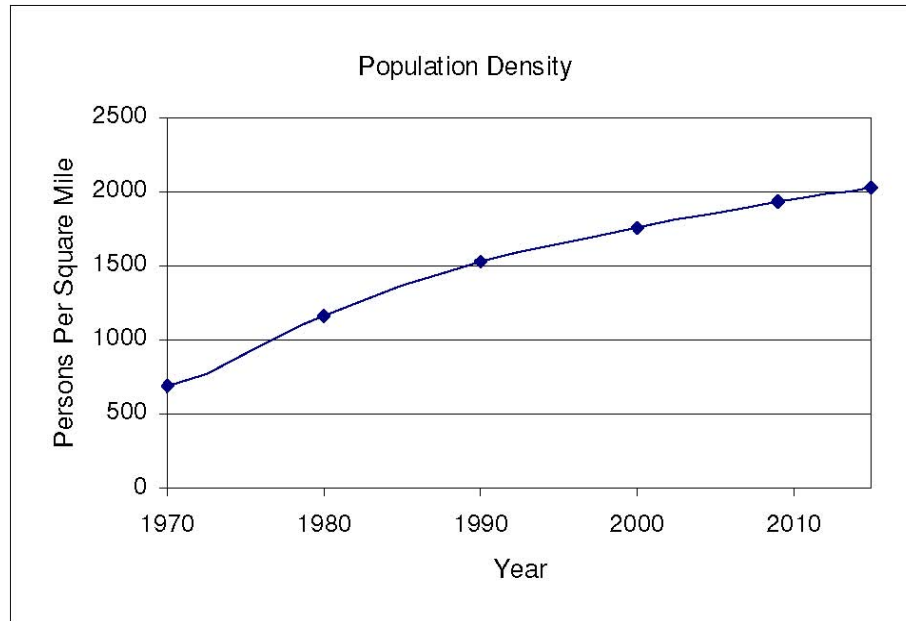
- **Population:** Montgomery County's population grew 51% between 1980 and 2000, a 2.5% average yearly growth rate. The population grew at the rate of 1% or less from 2005 through 2009. It can be expected that the county population will continue to grow at a 1% or less annual rate. Population projections by the Maryland National Capital Park and Planning Commission (MNCPPC) indicate that the total population in Montgomery County should reach 1,002,800 by 2015.



- **Population Density:** Population density is measured in persons per square mile. There are 495 square miles of land in Montgomery County, and population has increased steadily since 1970. Between 1970 and 2000, overall population density increased from 688 to 1755 persons per square mile, indicating a 5.2% average annual rate of increase. It is projected that population density will reach 2024 persons per square mile by 2015, an expected annual increase of approximately 1%.

## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---



- **Age Groups:** According to a 2005 Census Update Survey by MNCPPC, 62.9% of Montgomery County's population is between the ages of 18 and 64, 25.9% are under the age of 18, and 11.2% are 65 years of age or older. The median age is 36.9 years. In the year 1987, 25.9% of the population were less than 18 years of age, 63.7% were between the ages of 18 and 64, and 10.5% were 65 or older. While the percentage of 65+ persons in the County has not increased dramatically, the percentage of 45-64 year old residents has increased from 21.4% in 1987 to 27.5% in 2005. This is significant given the 36.6% overall population increase (all ages combined) during that time.
- **Households:** There were 350,000 estimated households in Montgomery County in 2005, up 35.9 % from 257,558 in 1987. The number of family households went from 166,876 in 1987 to 259,609 in 2005, a 34.6% increase. In 2005, family households made up 74.2% of all households, compared to 74.9% in 1987. Married couples occupied the majority (80.1%) of single-family detached households in 1987 as well as in 2005 (78.8%). Single parent households made up 10.2% of family households in 2005, compared to 7.9% in 1987. Single persons made up 21.0% of the total households in 1987 and occupied 58.9% of the high-rise households. In 2005, 23.5% of all the county households were single persons who occupied 60.0% of the high-rise households. In 1987, 70.1% of households owned their home while 29.9% rented. In 2005, 74.3% of households owned and 25.7% rented. The median age of heads of household were 44 in 1987 and were 51 in 2005.

## MCFRS

### COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

- **Employment:** There were approximately 518,000 jobs in Montgomery County as of January, 2007. Unemployment averaged 2.9% in 2007 (through July). The largest employment sector is professional and business services. Many of these jobs are concentrated in high-paying scientific, technical, legal and other advanced service fields. Technology jobs account for 23% of the professional and business services employment sector. Technology industry employers include Biotech, Information Technology, Communications and Aerospace companies. Lockheed Martin is the largest technology Company in the County, employing nearly 3,700 people.

Montgomery County's job base increased by 50,000 between 2000 and 2006. Job growth in 2006 was approximately 1.4%. The County is projected to add nearly 100,000 new jobs by 2020 and more than 150,000 new jobs by 2030. Professional and business services were also the fastest growing employment sector, with a 5.4 percent job growth rate in 2006. Tech sector job growth was 3.4 percent and biotech employment increased 3.8 percent. The construction industry, which employs approximately 30,000 people, expanded 4.3 percent in 2006.

In 2006, jobs in Montgomery County paid an average annual salary of approximately \$54,000. Professional & technical services paid an average annual salary of approximately \$75,000. In 2005, 526,830 Montgomery County residents over age 16 were employed. Approximately 60% work in the County.

Approximately 68% of working-age women are employed. Sixty percent of Montgomery County's resident labor workforce was in private industry, 22% worked for federal, state, or local governments, 11% worked for non-profits, and 7% were self-employed or worked as unpaid family workers.

Approximately 260,000 Montgomery County residents (54%) are employed in business and professional occupations, primarily in information technology, life sciences, education, finance, medicine, law, business management, the arts, law and architecture. Twenty two percent of employed residents, 107,000 people, work in sales jobs (including retail). Thirteen percent, 60,000 employed residents, work in service occupations such as healthcare support, public protection services, food preparation and landscaping. Six percent, 30,000 people, work in construction. Four percent, 20,000 people, work in production and transportation occupations.

## MCFRS

### COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

- **Education:** Nearly 80% of Montgomery County adult residents age 25 and older have some level of higher education. Thirty percent of adults (180,000 residents) have earned a masters, professional, or doctorate degree. Nearly 56% of adults (350,000 residents) have earned a bachelor's degree or higher. Approximately 78% of the County's adult population (475,000 residents) has at least some post-secondary education and 91% of adults in Montgomery County have completed high school.
- **Language:** Thirty six percent of adult residents in Montgomery County are foreign-born. English is the primary language of 65% of Montgomery County adults in the workforce, followed by Spanish (13%), other Indo-European (10%), Asian (9%) and other languages (4%). More than two-thirds of English speakers have a bachelor's degree or higher (67 percent), and an additional 20 percent have an associate's degree or some other college education. Only 2 percent of English-speakers have less than a high school education. Among Spanish-speakers, 22% have a bachelor's degree or higher, and 23% have an associate's degree or some other college education. Thirty three percent have not completed high school.

#### Service Demand/Work Load

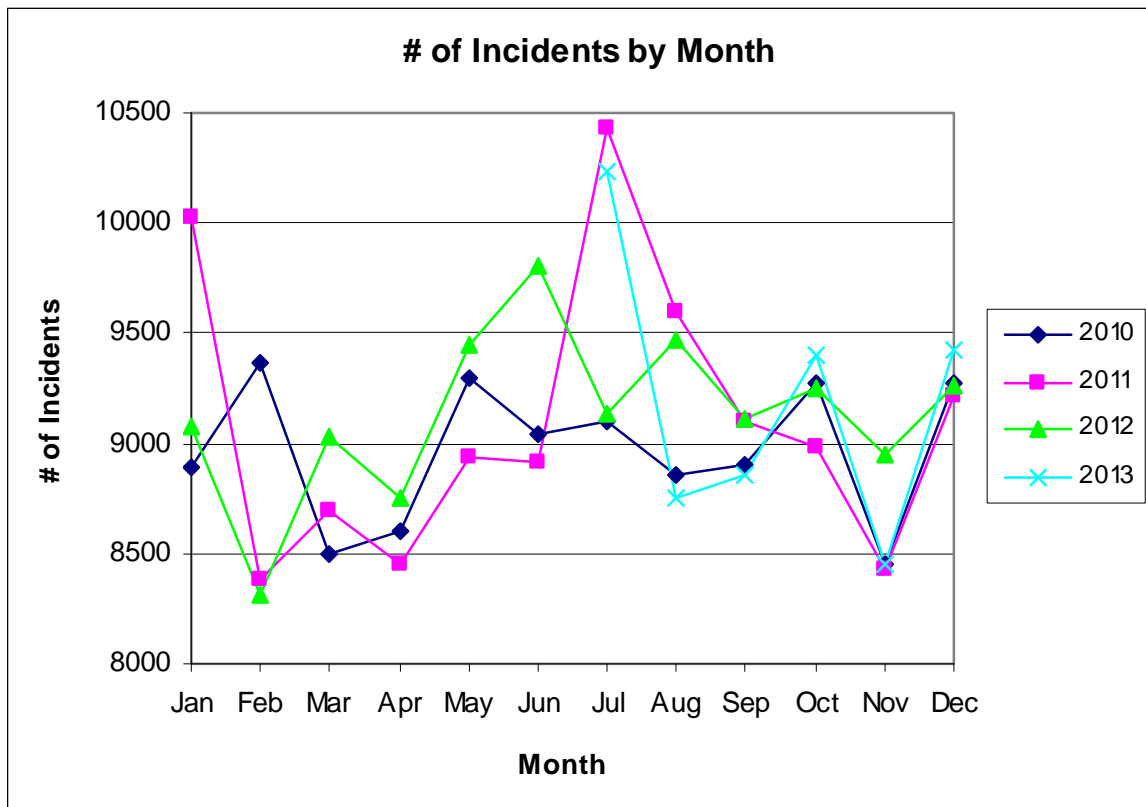
A work load study can be defined as historical data driven analysis which includes: call types, location of calls, and frequency of calls.

County-Wide Total Emergency Workload By Fiscal Year	
FY	Total # of Incidents
2010	107525
2011	109153
2012	109597
2013	55111 <small>*2013 only reports the first two quarters of the fiscal year</small>

**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

<b>County-Wide Emergency Workload Separated by Program and by Fiscal Year</b>										
<b>FY</b>	<b>Adaptive</b>	<b>ALS1</b>	<b>ALS2</b>	<b>Aviation</b>	<b>BLS</b>	<b>Explosive</b>	<b>Firefull</b>	<b>Hazmat</b>	<b>Technical</b>	<b>Water</b>
2010	14916	27181	3681	1	45764	240	958	672	795	29
2011	15850	27344	3509	2	46364	340	963	1272	1009	10
2012	14535	27933	3523	1	46833	328	1008	1356	992	26
2013	7851	14739	1865	1	23301	156	528	646	525	11

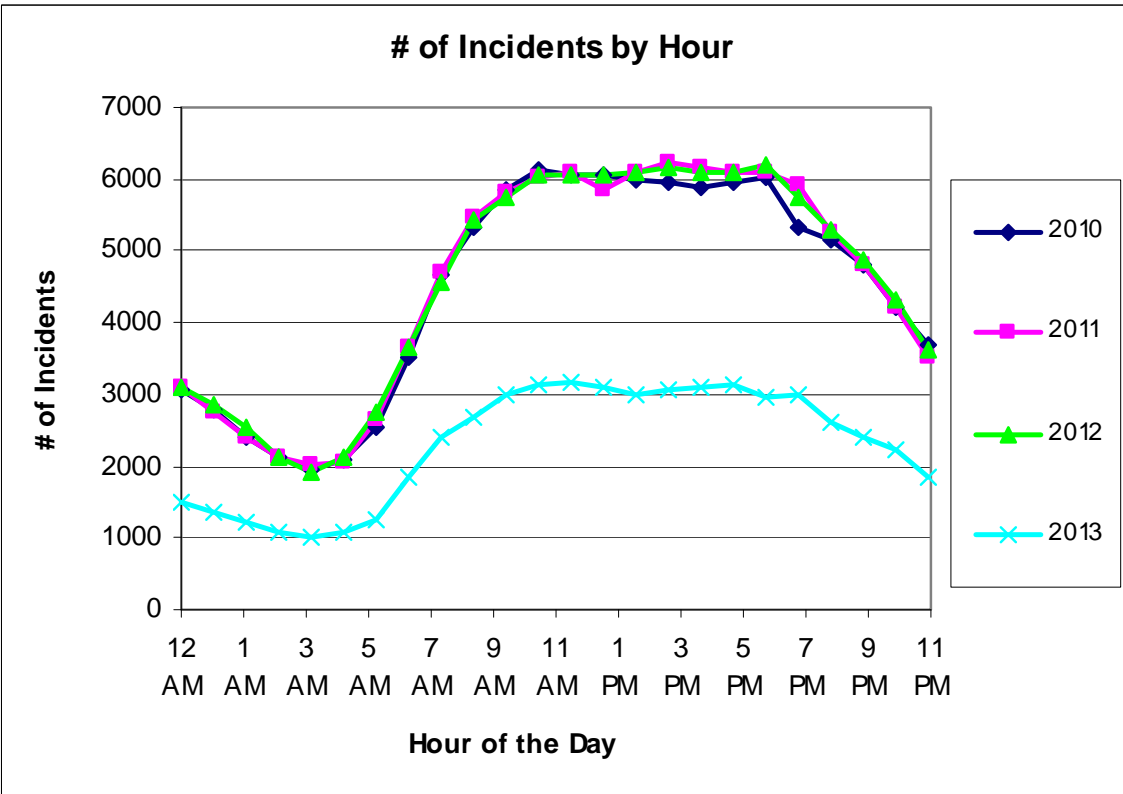
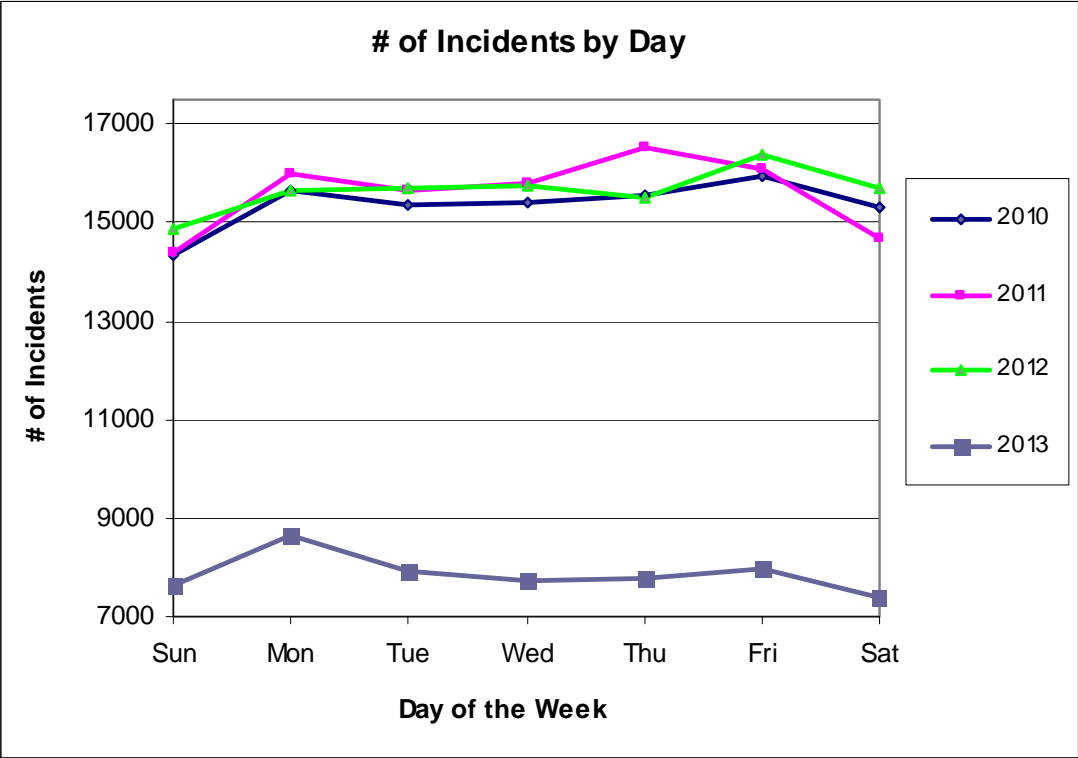
**\* 2013 only reports the first two quarters of the fiscal year**





**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---



## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

#### **Personnel Resources**

According to CFAI, as input to the risk assessment process, the level of staffing and capabilities of this staffing is essential to the assessment. Therefore, the availability of human resources will be examined.

#### **Fire Suppression Services**

Fire is a risk that residents and other property owners face on a daily basis throughout Montgomery County. Fires can be categorized as structure fires, vehicle fires, rubbish fires, utility pole fires, and fires involving natural resources such as brush, grasslands, croplands, and forests. All fires present some degree of risk to people and/or wildlife, sometimes resulting in injuries and deaths. With the exception of rubbish fires, all fires cause property damage ranging from minor to catastrophic. While automatic suppression systems are present in some buildings to control or extinguish fires while they are in their early stages of development, the fire department is expected to suppress all fires that have not been controlled or extinguished by suppression systems.

#### **Residential Fire Risk**

A rapidly growing fire that seriously threatens the structure and its occupants occurs frequently in Montgomery County. Nationally, the ratio of residential structure fires to all structure fires is approximately 3 to 1. . More importantly, approximately 85% of all civilian fire deaths and 75% of all civilian fire injuries occur in residential occupancies. The vast majority, about two-thirds of all fire deaths and about 50% of all fire injuries occur in one-and two-family dwellings. These ratios have held nearly constant in spite of increased use of smoke detectors, and advances in public education programs. Montgomery County has many large single-family homes (in excess of 4,000 square feet) found in all areas of the County and presents challenges not normally encountered by large municipal fire departments in other areas of the country. The threats posed to the occupants of

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

these homes, and the opportunity for a rapidly spreading fire to consume the structure before suppression resources can assemble for large fire flows, are great. Many times, first arriving units are faced with rapidly advancing, post-flashover fires that must be aggressively attacked to prevent the fire from totally destroying a given structure. Newer construction that takes advantage of lightweight trussed construction epitomizes this problem.

#### **Commercial and Industrial Fire Risk**

With a few exceptions, Montgomery County is not an area where large industrial parks or other highly protected risks exist to the extent that fire service capabilities are unusually challenged. By and large, the commercial and industrial occupancies are arranged and organized such that existing response guidelines are adequate to protect these structures.

Strip shopping centers and several regional shopping malls provide challenges, particularly in established areas of the County. Many of these occupancies were built before sprinkler protection and other code-mandated safeguards were enacted. The potential for a large dollar loss fire is significant in these structures. In nearly all cases, adequate fire fighting water is available to extinguish a large fire and protect adjacent exposures.

#### **Montgomery County Fire Flow Requirements**

The amount of water in gallons per minute (GPM) required to suppress a fire in a given structure is most often referred to as needed fire flow, or required fire flow. Water requirements for fire fighting include the rate of flow, the residual pressure required at that flow rate and the total quantity required.

Several different methods may be used to calculate needed fire flow for non-sprinklered structures. The Iowa State University Method is the easiest to apply and is most frequently used by Command Officers for a convenient method to estimate fire flow needs. This simple formula is:  $\text{GPM Required} = \text{Length} \times \text{Width} \times \text{Height of Structure} / 100$ . The most widely recognized and utilized formula is contained in the Insurance Services Office Fire Suppression Rating Schedule. The fire flow calculated using this method is considered a good estimate. The ISO Method considers building construction, occupancy, adjacent exposed buildings and communication paths for fire spread

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

between buildings. Calculations are typically rounded to the nearest 250 GPM for flows under 2500 GPM and the nearest 500 GPM for larger flows. Additional adjustments are made for buildings with wood shingle roofs. As a general rule both the American Water Works Association (AWWA) and the ISO recommend 3500 GPM as the upper limit for needed fire flow for normal public protection. These organizations have further established 500 GPM as the minimum needed fire flow. Calculated fire flows up to 12,000 GPM are not unusual for many buildings in older cities. Data provided to the MCFRS by the ISO, however, shows that most non-sprinklered residential high-rise buildings within Montgomery County have a calculated required fire flow of between 5,000 and 8,000 GPM. The needed fire flow should be available simultaneously with domestic consumption at the maximum daily rate. Needed fire flow should be available for up to 10 hours. Many municipal water authorities place an upper limit of 2 to 4 hours on fire fighting water supply duration due to the economics of pumping and storing large quantities of water. Due to the large number of garden apartments, townhouses, and clusters of homes, the MCFRS provides a minimum quantity of fire fighting water in the 3000-3500 GPM range for townhouses, garden apartments, and other groups of dwellings. This is routinely accomplished in areas with municipal fire hydrants utilizing the resources currently deployed on a structure fire response, provided that sufficient supply lines are deployed above ground. Water supply requirements for structures equipped with automatic sprinklers are required by code to meet the anticipated flow (design flow) of the sprinklers, plus an allowance for hose streams for manual fire fighting. Structures protected by automatic sprinklers, therefore, are excluded from needed fire flow calculations. The long-standing success of automatic sprinklers is well documented in the fire protection community. Montgomery County passed various legislation over the past 24 years requiring automatic sprinklers in new residential construction including: both single and multi-family homes, apartments and town homes.

NFPA 1142 -Standard for Water Supplies for Suburban and Rural Fire Fighting identifies minimum requirements for fire fighting water supplies in rural and suburban areas where reliable water supply systems do not exist. NFPA guidelines are used to calculate a minimum water supply in gallons. The basic formula for minimum water supply is:

$$\begin{aligned} &\text{Total Volume of Structure} \\ &\text{Minimum Water Supply} = \\ &\text{Occupancy Class Number} \\ &(\text{Construction Classification \#}) \end{aligned}$$

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

Where:

Occupancy Classification Number =

3 for Severe Hazard Occupancies

4 for High Hazard Occupancies

5 for Moderate Hazard Occupancies

6 for Low Hazard Occupancies

7 for Low Hazard Occupancies

and:

Construction Classification Number =

0.5 for Type I Fire Resistive Construction

0.8 for Type II and IV Noncombustible and Heavy Timber Construction

1.0 for Type III Ordinary Construction

1.5 for Type V Wood Frame Construction

Assignment of the various occupancies is pre-determined in NFPA 1142, although the Authority Having Jurisdiction (AHJ) can exercise professional judgment when applying the requirements of the standard based on other factors.

Calculation of the total water supply required in gallons is then used in the following table to determine the minimum rate of delivery by the fire department:

Total Water Supply Required

(GALS)

Rate of Delivery

(GPM)

Up to 2499 250 gpm

2500 – 9999 500 gpm

10,000 – 19,999 750gpm

20,000 or more 1000 gpm

Source: Table 5-9(b), NFPA 1142

The NFPA standard referenced here focuses on rural and suburban areas where water may not be as

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

readily available. In either case, the standard operating procedures adopted by the MCFRS for structural fire fighting and needed fire flow are supported by either of these methods.

Montgomery County is served by three independent municipal water systems: the Washington Suburban Sanitary Commission (WSSC), the City of Rockville, and the Town of Poolesville. Of the three, WSSC has the largest network and serves the largest number of County customers. All three public systems serve a dual purpose: (1) to supply water for normal domestic demand and (2) to provide water to fire hydrants for fire fighting use and or to supply fixed fire protection systems such as automatic sprinklers, standpipe and other fire suppression systems. The various components of these systems determine the quantity and quality of fire fighting water available to units suppressing fires in Montgomery County. Other in-place procedures, or lack of procedures, determine the reliability of this available water. The WSSC water distribution system is adequate for supplying both domestic and fire suppression needs under normal conditions. Much of the system is looped; ensuring that water supply is not cut off to a large area should a main break or otherwise need to be shut down for a short period. About 20,000 fire hydrants are located throughout the WSSC water supply system and are owned and maintained by WSSC. In residential areas containing single family homes, hydrants are spaced not more than 600-800 feet apart, as measured along an improved roadway. In addition, hydrants must be within 600 feet of the most distant corner of any single family dwelling, as measured along an improved roadway. For areas containing townhouses and garden apartments, hydrants are spaced not more than 300 feet apart, and hydrants must be within 300 feet of the most distant corner of any townhouse or garden apartment, as measured along an improved roadway. In areas containing high-rises, commercial, and/or industrial occupancies, hydrants are spaced not more than 300 feet apart, and specific flow rates are determined per occupancy. The minimum flow rate for hydrants in single family dwelling neighborhoods is 1000 gallons per minute (GPM) at 20 PSI, and 1500 GPM at 20 PSI for multi-family dwellings.

The City of Rockville water system, operated by the City's Public Works Department, serves properties within the city limits with the exception of a few areas which are served by WSSC. The Rockville system serves about 11,650 residential, business and institutional customers. Fire hydrants are located throughout the City of Rockville water supply system and are owned and maintained by the city. In residential areas containing single family homes and/or townhouses, hydrants are spaced not more than 500 feet apart. In areas containing commercial and/or industrial occupancies, hydrants are spaced not more than 300 feet apart.

## MCFRS

### COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

The Town of Poolesville water system, operated by the Town's Public Works Department, serves properties within the town limits. About 300 fire hydrants are located throughout the Town of Poolesville and are owned and maintained by the town. The system-wide minimum flow rate for hydrants is 1200 GPM at a residual pressure of 20 PSI; normal static pressure is 60 PSI. In residential areas containing single family homes, hydrants are spaced not more than 600-800 feet apart. In areas containing townhouses or commercial occupancies, hydrants are spaced not more than 300 feet apart. For areas containing townhouses and garden apartments, hydrants are spaced not more than 300 feet apart.

A significant portion of Montgomery County is not served by municipal water service and therefore considered rural in nature for fire fighting purposes. There are two major reasons why rural areas do not have municipal water service – cost of laying water mains to distant, sparsely populated areas; and land-use, zoning, and growth policies that restrict development and extension of water and sewer lines. The latter issue is heavily impacted by the County's desire to maintain agricultural and rural open space in an effort to preserve the County's agricultural heritage and to maintain undeveloped areas that contribute to the overall quality of life for all County residents. The legal mechanism for preserving agricultural and open spaces is based in the document titled "*Functional Master Plan for the Preservation of Agriculture and Rural Open Space in Montgomery County*," adopted in 1980. The plan created an Agricultural Reserve of approximately 91,000 acres. Through the application of preservation techniques (e.g., Rural Density Transfer Zone, Transfer Development Rights, etc.), this land has remained largely undeveloped, although limited types of low-density residential development is allowed in specific areas. Most dwellings and businesses within the "Reserve" are served by wells and septic fields; thus fire hydrants are non-existent throughout the vast majority of the Reserve. Because of this preservation policy, high-density development in Montgomery County is taking place only in areas where water and sewer lines have been approved. Non-hydranted areas must be served by some combination of fire department tankers, underground storage tanks, dry hydrants, cisterns, etc.

The MCFRS has identified small pockets of non-hydrated areas throughout much of the hydranted portion of the County. Station areas 10, 30, 33 and 40 are primary examples of areas having pockets

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

of non-hydranted streets adjacent to larger areas that are fully served by hydrants. Some of these areas are part of designated park and recreation lands that will not be developed in the future. Other areas are a result of inadequate planning as water and sewer was extended into expanding areas of the County over the years. A smaller number of areas exists where groups of homeowners have chosen not to connect to public utilities for a variety of reasons. As growth and development expands further into the rural areas of the County, the MCFRS has taken positive actions to assure that a well-planned water delivery system is in place throughout the County to efficiently provide fire fighting water to our suppression forces in rural, suburban and urban areas. The Standard Operating Procedure for “Safe Structural Fire-Fighting” provides for efficient water delivery in all areas of the County. These procedures have been tested and continue to be practiced to guarantee minimum required fire flows using municipal fire hydrants, tanker shuttle, or engine relays. The MCFRS has deployed tanker resources in the County to ensure first arriving suppression units can initiate an attack with 5,000 gallons of water for ten minutes. The MCFRS sees a number of important advantages to this concept. Delivering a minimum of 5,000 gallons of water to the fire ground will guarantee that units will be able to utilize effective streams and sustained fire flows for a short duration of time, well beyond the reach of fire hydrants and other water supplies. In all cases, the MCFRS has adopted a strategy that strives to provide a fire fighting water supply that is rapid, efficient, expandable and uninterrupted.

#### **Limited-Access Highways**

In addition to large structure fires, the MCFRS has considered the threats posed by limited-access highways and the net affects of fires similar to those that have occurred either in Montgomery County or in other nearby jurisdictions. Serious incidents involving a large volume of fire are always challenging since water is not directly available on most limited-access highways<sup>1</sup>. The MCFRS includes other major commuter routes in our consideration of limited-access highways that may or may not have available fire fighting water. Route 29, River Road, Clara Barton Parkway, Mid-County Highway, Great Seneca Highway and Route 27 serve as prime examples. Nonetheless, the MCFRS believes the County’s greatest water supply risk to be on the interstate highways. Fires that occur on limited-access highways are usually of little threat to our citizens, other than those directly involved in the incident. For example, a serious fire that threatens the bridges at the points where I-495, Rt-355, and the Metro Rail overpass meet would disrupt the transportation network in the metro



## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

area. Clearly, the most efficient and cost-effective method for water delivery on the various highways is to bring it on-board initial arriving units. Most often, this is accomplished using the booster tanks on fire department engines, and, in many instances, tankers. The MCFRS does not believe that an adequate, uninterrupted water supply can be provided in the event of a hazardous materials transportation emergency using hauled water alone. The new Inter-County Connector (MD200) is the first and only limited-access highway in Montgomery County equipped with fire hydrants.

#### **Target Hazards**

Fire department target hazards and their subsequent risks are selected based upon known history and the threat to human life rather than the potential to tax a fire department's water supply delivery system. These risks are well known and are considered the basis for the fundamental and occupancy chapters of NFPA-101, The Life Safety Code. The MCFRS provides aggressive Life Safety and Structures programs focused on preventing incidents based upon pre-defined laws, codes and recommended best practices. In the final analysis, the MCFRS was able to confirm that their strategy regarding needed fire flow as related to occupancy risk was adequate and prudent with few exceptions. Those exceptions were primarily limited to occupancies without adequate fire department access, unregulated Federal installations, and unique target hazards like the Mirant Power Plant in Dickerson.

## MCFRS

### COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

#### **Evaluation of Probability**

Risk is defined as the probability (i.e., likelihood) of a damaging or injury-inflicting event in combination with the consequences (i.e., severity) of that event. Stated mathematically: Risk = Probability of Occurrence X Consequences where probability and consequences can be stated numerically to derive a numerical level of risk that can be compared with other types of risks in order to rank them. Risk can also be examined and compared subjectively in terms of categories such as low, moderate, and high, or variations of these qualitative measures. The highest risk posed to the citizens of Montgomery County on any given day, week, month, or year is the result of a hazard posing both a high probability of occurrence and severe consequences. The lowest risk is one having a low probability of occurrence and minor consequences. A moderate level of risk might be the result of a hazard posing a high probability of occurrence but with minor consequences, or a hazard posing a low probability of occurrence but having severe consequences. Probability is defined as the likelihood that a particular event will occur within a given period of time. In the context of describing risk, probability is the likelihood that a damaging or injury-inflicting event will occur, without regard to who or what may be harmed. The probability of a given event occurring within a given time frame may range from very low to very high depending upon the presence of a number of casual factors including, but not limited to, hazards present, condition of people who are present, actions/activities/processes underway, environmental factors, weather conditions, season of the year, day of week, time of day, or some combination of these or other factors. A table showing the probability of occurrence of several types of fire-rescue incidents on a daily basis can be found in Appendix 1. Probabilities are based upon past frequency of incidents within Montgomery County over the past ten years. The most probable incident to occur on a daily basis is a BLS incident involving one patient (e.g., “sick person”). A hazmat incident at a fixed facility is an example of an incident having a medium probability of occurrence on any given day. The least probable incident (of those shown in the table) on a daily basis is a terrorism incident.

**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

**INCIDENT PROBABILITIES AND FREQUENCY OF OCCURANCE**

<b>Incident Type</b>	<b>Very High</b>	<b>High</b>	<b>Medium</b>	<b>Low</b>	<b>Very Low</b>	<b>Impact Area</b>
BLS, one patient, non-PIC	X					L
ALS, one patient, non-PIC	X					L
PIC, one patient	X					L
PIC, multiple patients	X					L
Structure fire		X				L
Vehicle fire		X				L
Brush/woods/mulch fire		X	X			L
		Summer	Winter			
Rubbish/debris fire		X				L
Hazardous condition <sup>3</sup>		X				L
Destructive device			X			L
Suspicious package			X			L
HazMat, fixed facility			X			L
HazMat, in transport			X			L
Water rescue			X		X	L
			Summer		Winter	
PIC, bus, w/ mass casualties			X			L
Thunderstorm, w/o tornado			X		X	L-C
			Summer		Winter	
Snow/ice storm, w/o blizzard			X			C
Extended temperature extreme			X			C
Extended drought			X			C
Pipeline leak/fire				X		L
<b>Incident Type</b>	<b>Very High</b>	<b>High</b>	<b>Medium</b>	<b>Low</b>	<b>Very Low</b>	<b>Impact Area</b>
Hurricane				X		C
Tornado				X		L
Blizzard				X		C
Flooding				X		L-C
Rescue, structural collapse				X		L
Rescue, confined space				X		L

## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

Rescue, high angle		X		L
Metro Rail incident		X		L
Passenger train incident		X		L
Passenger airline incident		X		L
Terrorism, WMD		X		L-C
Terrorism, other (i.e., non-WMD such as shootings)		X		L-C
Utility disruption, water		X		L
Utility disruption, power		X		L
Utility disruption, gas		X		L
Utility disruption, phone		X		L-C
Pollution emergency	X Summer	X Winter		C
Disease/health epidemic		X		L-C
Civil disturbance		X		L-C
Commodity shortage		X		C
Dam failure			X	L
Earthquake			X	C
Sinkhole			X	L
Mudslide			X	L
Conflagration			X	L
Act of war			X	C

\*\*\*\* **Note:** All incident types are non-terrorism related unless stated specifically as **terrorism**

Incidents include downed/arcing wires, downed trees, natural gas leaks, electrical shorts, odor of smoke, unknown odor, lockout with food on stove, etc.

L-Locally C-County-wide

# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

### **Risk Assessment Methodology**

The risk assessment contains the quantitative outputs pertaining to the determined risk input factors. Each item contains a probability/consequences matrix which represents the considerations of risk assessment in each community.

### **Fire Risk Assessment**

#### **Primary Fire Risks Categories**

MCFRS concluded that our primary occupancy risks were based in the following broad categories listed below:

#### **Low Fire Risk:**

These incidents include those requiring a single engine response. This type of incident is minor in nature having relatively low personal safety risk and low property loss rate of less than \$40,000 are:

- Passenger style vehicle fires
- Dumpster fires detached from buildings
- Grass or woodland fires less than one acre in area

#### **Moderate Fire Risk**

These incidents are those requiring a one or two Engine Company and special service unit (Truck, Tower or Rescue Squad) adaptive response. This type of incident is moderate in nature an increased potential for civilian or fire service injuries and/or an increase in direct property loss rate of \$40,000 to \$ 100,000 are:

- Truck or bus fire
- Dumpster fires attached to buildings
- Grass or woodland fires greater than one acre in area without the potential for structural involvement

## MCFRS

### COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

- Contained fires within a dwelling i.e. oven fires

#### **High Fire Risk**

This includes incidents requiring a Fire-Full Assignment dispatch of five Engines, two Trucks or Towers, a Rescue Squad and two command officers. This type of incident has a high potential for civilian and fire service injuries and an increase in direct property loss rate greater than \$100,000 but less than \$ 1,000,000 are:

- Single-family dwelling fires
- Commercial building fires on one floor only and involving less than 52,000 square feet.
- Transportation related fires and/or explosions i.e. Metro, rail

#### **Special Fire Risk**

These incidents require greater than five Engines, greater than two Trucks or Towers, greater than one Rescue Squad, and multiple command officers as in a box alarm with greater alarm response, a high-rise fire, or a fire in a non-hydranted area. This type of incident has a high potential for civilian and fire service injuries and an increase in direct property loss rate greater than \$1,000,000 are:

- Multi-family dwelling fires
- Commercial building fires on multiple floors or involving more than 52,000 square feet
- Fires involving CBRNE materials
- Fires interrupting critical infrastructure, commercial or governmental
- Incidents involving high-rise structures
- Fire incidents requiring rural water supply

#### **Fire Risk Assessment Methodology**

Fire Risk was determined by combining incident data history with zoning data.

#### **Incident Data**

Incident data is from fiscal years 2010, 2011, 2012, and the 1<sup>st</sup> and 2<sup>nd</sup> quarters of 2013. The data is categorized into two groups: Fire Full Assignment and Fire Non Full Assignment. Fire Full Assignment call types include:

Call_Type_Description	
Call Type	

## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

FIR/HOUS	HOUSE FIRE
BOX	BOX ALARM
BARN	BARN FIRE
GARAGE	GARAGE FIRE
TRN/FIRE	TRAIN FIRE
FIR/BLDG	BUILDING FIRE
FIR/GARG	GARAGE FIRE DET
METRO-BX	METRO BOX ALARM
TRAN/PAS	PASS TRAIN DERAIL OR FIRE
BOX/HM	BLDG FIRE W/HAZMAT
HOUSE	HOUSE FIRE
FIR/APT	APT FIRE
MET/CRSH	METRO CRASH
FR/GARG	GARAGE FIRE DET

Fire Non Full Assignment call types include:

Call_Type	Call_Type_Description
ACT/CO	ACTIVATED CARBON DIOXIDE DETECTOR
ACT/SD	ACTIVATED SMOKE DET
ADAPTIVE	ADAPTIVE RESPONSE
AFA	AUTOMATIC FIRE ALARM
AHFA	AUTO HOME FIRE ALARM
ALA/AFA	ALARM FROM ALARM CO
ALA/AHFA	HOME ALARM FROM ALARM CO
ALA/BELS	LOCAL ALARM - NO SMK/FIRE
ALA/CO	ALA/CO
AUTO	AUTOMOBILE(CAR) FIRE
BBQ	ILLEGAL BBQ
BELLS	AUDIBLE ALARM BELLS
BOGS	BROKEN OUTSIDE SERV
BRUSH	BRUSH, GRASS, WOODS
BUS	BUS FIRE
DUMPSTER	DUMPSTER FIRE
ELEC/SHT	ELECTRICAL SHORT
EQUIP	CONSTRUCTION EQUIP
FIR/APPL	CONF APPLIANCE FIRE
FIR/BRSH	VEGETATION FIRE
FIR/DUMP	DUMPSTER FIRE
FIR/LGVH	FIRE - LARGE VEH, BX TRK, RV, BUS
FIR/OUT	FO IN STRUCT, NO SMK/FIRE
FIR/SEWR	FIRE IN SEWER
FIR/SHED	SHED FIRE
FIR/TRSH	TRASH FIRE
FIR/TXFM	TRANSFORMER FIRE
FIR/UNK	FIRE UNKNOWN
FIR/VEH	AUTO FIRE
FIRE/OTH	FIRE OTHER
FIREOUT	FIRE REPORTED OUT
FO/SMOKE	FIREOUT W/SMOKE COND
FOOD	FOOD ON THE STOVE

## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

FRWATCH	FIREWATCH
FURNACE	CONFINED HVAC FIRE
GAS/LEAK	INSIDE ODOR OF GAS
ILLEGAL	ILLEGAL FIRE
INVEST	INVESTIGATION
LO/FOOD	LOCKOUT/FOOD ON STOVE
MET/OTH	METRO OTHER EVENT
ODOR	ODOR OF SMOKE
OVEN	CONFINED OVEN FIRE
PEPCO	NON-DISPATCH WIRES
PICK-UP	SMALL TRUCK FIRE
POLE	POLE FIRE
SEWER	FIRE IN SEWER
SHED	SHED FIRE
SHORT	ELECTRICAL SHORT
SMOKE	SMOKE IN THE AREA
TRASH	TRASH FIRE OUTSIDE
TRUCK	TRUCK FIRE
TXFORMER	TRANSFORMER FIRE
UN/EMER	UNKNOWN EMERGENCY
UN/FIRE	UNDETERMINED FIRE
VEH/OTH	OTHER VEHICLE
W/F	WATERFLOW ALARM
WIRES	WIRES DOWN

The numbers of incidents in each Risk Management Zone were counted. The Fire Full assignment incidents were assigned 2 points per incident and the Fire Non Full Assignment were assigned 1 point per incident.

For example – Risk Management Zone 0203:

20 Full Assignment Incidents: 20 x 2 points = 40 points

160 Non Full Assignment Incidents: 160 x 1 point = 160 point

---

200 total incident points

The incident point scores were then grouped into 5 separate categories:

Scores assigned:

- 0 Incident points = 0 points
- 1-50 Incidents = 1 point
- 51-200 Incidents = 2.5 points
- 201-400 = 5 points
- 401 – 800 = 7.5 points



## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

- $801 - 1257 = 10$  points

Therefore, Risk Management Zone 0203 with 200 total incident points receives a score of 2.5.

### **Zoning Data**

The zoning data for the county is the best method we have to capture general building characteristics on a County-wide level. The zoning data gives a general overview of each risk management zone and is a good indicator of whether an area is primarily residential, commercial, industrial or agricultural. Each zoning category carries inherent risk based on building type. Each zoning category was examined individually and predominate building size, height, and use was determined to give the zoning category a level of risk.

Building size

Small = 1 point

Medium= 2 points

Large= 3 points

Very large= 4 points

Building height

Access with Ground Ladder = 1 point

Access with Aerial Ladder = 2 points

Areas with no ladder access = 3 points

The use of structure (occupancy type)

Low hazard occupancy = 1 point

Moderate hazard occupancy = 2 points

High hazard occupancy = 3 points

The 3 largest zoning categories were used in the risk analysis since there can be over 20 categories per risk management zone. This gives us the predominant building characteristics. An average score of the three largest zoning categories was used as the final score for zoning.

For example – Risk Management Zone 0203 has the following zoning categories:

<b>ZONE</b>	<b>Sq Footage</b>
R-60	4859429.16270246
R-10	464336.618971379
R-40	427612.52844544
R-30	330667.216770291
RT-8	171770.474176
C-1	113369.06861541
C-O	68551.5756323
O-M	38396.4778358

## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

R-60, R-10 and R-40 are used in this risk analysis since they are the largest in square footage.

R-60, Residential One-Family, Minimum lot area of 6,000 square feet for each dwelling.

R-10, Multiple-Family High Density Residential, Minimum net lot area of 1,000 square feet for each dwelling.

R-40, Residential One-Family, Minimum lot area of 4,000 square feet for each dwelling.

FireZoning							
Zone	Size	Size_score	Height	Height_nu	Use	Use_nu	Zone_TotalPoints
R60	Medium	2	Low	1	Low	1	4
R10	Medium	2	Medium	2	Low	1	5
R40	Medium	2	Low	1	Low	1	4

Zoning Score Assigned for each Risk Management Zone. Range is 3.3 -9.

For example – Risk Management Zone 0203's Average Zoning Score is 4.3

### **Totals**

All of the points were added together to create the total Fire Risk.

Total point score grouped for each Risk Management Zone:

Fire Risk	Total Points
Low	0-6
Moderate	6-8
High	8-10
Special	10-15.3

For example – Risk Management Zone 0203:

Incident Data – 2.5

Population Density - 4.3 points

---

6.8 points = Moderate Risk

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

#### **Emergency Medical Services**

Emergency medical services (EMS)-related risk is one of the most significant risks facing Montgomery County's residents, business owners, and visitors on a daily basis. The consequences of EMS incidents can impact one individual (e.g., person suffering a heart attack) up to potentially hundreds or even thousands of people depending upon the scope of the incident (e.g., mass casualty incident).

The MCFRS categorizes EMS incidents into advanced life support (ALS) and basic life support (BLS) incidents. ALS incidents include life-threatening incident types such as cardiac arrest, chest pains, heart attack, unconscious person, asthma, choking, diabetic, shooting, stabbing, electrocution, pedestrian struck, allergic reactions, severe bleeding, poisoning, and anaphylactic shock. BLS incidents include non-life threatening incident types such as injured persons, sick persons, hemorrhages, patients with mental disorders, child deliveries, and similar incidents of a basic life support nature. While EMS incidents are distributed throughout Montgomery County, these incidents are heavily concentrated in certain areas within the south and central portions of the County. EMS incident density is highest in areas having the following characteristics:

- High population density Nursing homes, assisted living facilities, and group homes
- Residential communities or individual mid-rise/high-rise residences for seniors
- Large concentrations of mid-and high-rise occupancies, particularly residential
- Major highways Shopping malls or other large concentrations of commercial/retail occupancies

For the most part, larger nursing homes average about one to two ALS incidents per day. The large "Leisure World" community for seniors, located north of Station 25 in the Aspen Hill area, experiences a very high volume of ALS incidents. Another heavy user of ALS (and BLS) services is the large Asbury Methodist complex located south of Station 8 in Gaithersburg. A third complex consisting of a large residential occupancy for seniors (Revitz House), two nursing homes (Smith-Kogod and Wasserman Buildings), and a community center, located on Montrose Road near East Jefferson Street in Rockville, also experiences an especially high volume of ALS (and BLS)

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

incidents annually. The heaviest concentrations of ALS incidents are located in Rockville, Aspen Hill, Gaithersburg, Germantown, Silver Spring, Four Corners, Burtonsville, Wheaton, Chevy Chase, Bethesda, and Friendship Heights. This density of ALS incidents is expected to continue, and the volume of ALS incidents is expected to increase as the County's senior population and overall population increases in Silver Spring, Wheaton, Chevy Chase, Bethesda, and Friendship Heights.

Areas of moderate density of BLS incidents include Hillandale, Burtonsville, Kensington, and Germantown. Much like ALS incidents, a high volume of BLS incidents occurs at nursing homes, assisted living facilities, group homes and senior communities/complexes. Roadways, shopping malls, schools, and recreational facilities also generate a large volume of BLS incidents. This density of BLS incidents is expected to continue for at least the next ten years, and the volume of BLS incidents is expected to increase as the senior population and overall population increases.

#### **EMS Risk Assessment Methodology**

EMS Risk was determined by combining incident data history with population density.

#### **Incident Data**

Incident data is from fiscal years 2010, 2011, 2012, and the 1<sup>st</sup> and 2<sup>nd</sup> quarters of 2013. The data is categorized into four groups. The number of incidents in each Risk Management Zone were counted and assigned a point based on severity of incident type.

BLS Incidents = 1 points  
ALS1 Incidents = 3 points  
ALS2 Incidents = 5 points

For example – Risk Management Zone 0203:

BLS Incidents: 548 x 1 points = 548 points  
ALS1 Incidents: 314 x 3 points = 942 points  
ALS2 Incidents: 48 x 5 points = 240 points

---

1730 total incident points

The incident point scores were then grouped into 5 separate categories with the following scores assigned:

- 0 Incidents = 0 points
- 1-250 Incidents = 1 point
- 251-500 Incidents = 2.5 points
- 501-1000 = 5 points

## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

- 1001 – 5000 = 7.5 points
- 5001 – 12436 = 10 points

Therefore, Risk Management Zone 0203 with 1730 total incident points receives a score of 7.5.

### **Population Density**

Census 2010 block data was partitioned to create box area population density. The ranges that were used are from the CFAI definitions.

Population Density (people/Sq Mi)	Points
Rural - less than 1,000 people/sq mi	0
Suburban - 1,000 - 2,000 people/sq mi	1
Urban - 2,000 + people/sq mi	2
Metropolitan - 3,000 + people/sq mi	3

For example – Risk Management Zone 0203 is Metropolitan population density, and thus receives 3 Population Density points.

### **Totals**

All of the points were added together to create the total EMS Risk.

Total point score grouped for each Risk Management Zone:

EMS Risk	Total Points
Low	0-3.25
Moderate	3.25-6.5
High	6.5-9.75
Special	9.75-13

For example – Risk Management Zone 0203:

Incident Data – 7.5

Population Density - 3 points

---

10.5 points

# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

### **Primary Medical Risks Categories**

MCFRS concluded that our primary medical risks were based in the following broad categories listed below:

#### **Low Medical Risk**

Incidents requiring a single ambulance response staffed with two EMTs able to provide basic life support. This type of incident is minor in nature, presenting a relatively low personal safety risk for the EMTs, and the response provides basic first aid and transportation for those suffering from non-life threatening injuries or illnesses. Examples include:

- Injured person from a fall without a loss of conscious
- Automotive collisions on roads with speeds less than 40 MPH
- Sick person complaining of flu like symptoms
- EMS support at fire scenes or at special events

#### **Moderate Medical Risk**

These are incidents requiring a single medic unit response staffed by one EMT and one Paramedic capable of providing advanced life support. This type of incident presents a relatively low personal safety risk for the responders, and it provides basic to advanced life support and transportation for a stable patient who is suffering from life threatening or life altering injuries or illnesses. Examples include:

- Injured person from a fall with a loss of conscious
- Automotive collisions on roads with speeds greater than 40 MPH
- Hypertensive patient complaining of chest pain
- Asthma or patient complaining of trouble breathing

#### **High Medical Risk**

Incidents requiring a single medic unit response staffed by one EMT and one Paramedic plus a second Paramedic responding on the nearest available Fire-Rescue unit capable of providing advanced life support (e.g., ALS engine). This type of incident presents a moderate personal safety risk for responders, and it provides advanced life support and transportation for an unstable patient suffering from life threatening or life altering injuries or illnesses. Examples include:

## MCFRS

### COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

- Patients with traumatic injuries
- Patients in respiratory or cardiac arrest
- Incidents having more than one Priority-2 patient
- Patients suffering from infectious disease

#### **Hazardous Materials Services**

Hazardous materials generally present a moderate risk within Montgomery County on a daily basis. Hazardous materials are classified as flammable/combustible liquids, compressed gases, corrosives, poisons/toxic materials, oxidizers, flammable solids, etiologic agents, cryogenics and radioactive materials. Many hazardous materials pose multiple hazards such as flammable gases (e.g. acetylene) and poisonous corrosives (e.g., drain cleaner). Substantial quantities of hazardous materials are present in Montgomery County every day, whether in storage, in use, or transported within or through the County. Hazardous materials are stored and used in numerous businesses, offices, research centers, laboratories, and other facilities throughout the County.

Hazardous materials are transported through the County by means of vehicles, trains, and underground pipelines, and over the County by aircraft. No portion of the County is risk free from hazardous materials, although the urbanized areas are considerably more at risk than suburban and rural areas. Hazardous materials can be released from their containers into the surrounding environment in the form of leaks, spills, explosions, and/or fires. The release may occur all at once in a catastrophic container failure, or gradually through small breaches in containers. Upon entry to the environment, released hazardous materials can cause immediate harm to nearby people, wildlife, property, and the natural environment. Spills will flow downhill and can harm anyone or anything in their path. Leaks produce vapors, sometimes large vapor clouds, which will be carried downwind to impact anything in its path.

Hazardous materials are constantly on the move across, beneath and above Montgomery County. Hazardous materials are transported across the County by a variety of highway vehicles and train cars on a daily basis. At the same time, aircraft are transporting hazardous materials above the County around the clock. Aside from any hazardous cargo, commercial aircraft carry thousands of gallons of fuel which presents a life safety and environmental risk in and of itself should the aircraft crash. Some hazardous materials are being delivered within the County for sale or for use while

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

others are simply passing through en route to other destinations.

Primary roadways used by vehicles transporting Hazardous materials include Interstates 495, 270 and 370; U.S. Route 29, and Maryland Routes 200-Intercounty Connector, 355-Rockville Pike, 97-Georgia Avenue, 650-New Hampshire Avenue, 193-University Boulevard, 185-Connecticut Avenue, 108-Olney-Sandy Spring Road, 28-Darnestown Road, 190-River Road, 410-East West Highway, 124-Woodfield Road, 27-Ridge Road, 119-Great Seneca Highway, 109-Beallsville Road, and 586-Veirs Mill Road. I-495 carries the highest number of hazmat vehicles in the County on a daily basis. County-owned and -maintained roadways with heavy hazmat traffic include Shady Grove Road, Montrose Road, Randolph Road, Montrose Parkway, and Bel Pre Road.

Commonly transported hazardous materials in Montgomery County include gasoline, diesel fuel, heating oil, propane, hot tar, muriatic acid, pesticides, compressed gases (e.g., oxygen, acetylene), sodium hydroxide, potassium hydroxide, chlorosulphonic acid, and hydrogen peroxide. A wide variety of flammable, combustible, corrosive, and compressed gas products are also transported in tractor-trailers and smaller delivery trucks/vans. Large quantities of hazardous materials are also transported by rail along the CSX Railroad tracks running between Silver Spring (to the south) and Dickerson (to the northwest) and through Kensington, Rockville, Gaithersburg, Germantown, Boyds and Barnesville along the way.

Commonly transported hazardous materials by rail include: propane, liquid petroleum gas, chlorine, anhydrous ammonia, hydrochloric acid, sulfuric acid, caustic soda, nitric acid, phosphoric acid, acetic acid, acetone, alcohols, molten sulfur, acrylonitrile, ethylene oxide, and methyl mercaptan. Passenger train locomotives carry about 3,000 gallons of diesel fuel in each fuel tank that can spill and catch fire during derailments, endangering passengers, crew, and emergency responders, and damaging the environment. High pressure petroleum product pipelines that traverse the County are considered Montgomery County's top conventional hazmat risk. The Colonial Pipeline transports gasoline and diesel fuel, and the Columbia, Williams (Transcontinental), and Dominion pipelines transport natural gas. All four pipelines transport products at extremely high pressure, adding to the risk of the flammable fuels being transported.

There are over 2500 businesses, facilities, and occupancies that store, use, or process hazardous materials in Montgomery County. Types and quantities of hazardous materials vary considerably



## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

from location to location, posing varying degrees of risk. Types of occupancies that store, use, and/or process hazardous materials on the premises include the following:

- Laboratories Multiple/all categories of Hazardous materials
- Research & development firms Multiple/all categories of Hazardous materials Bio-technology firms Multiple/all categories of Hazardous materials
- Manufacturers Multiple categories of Hazardous materials
- Hospitals Comp. gases, cryogenics, etiologic agents
- Garden centers Pesticides, fertilizers
- Nurseries Pesticides, fertilizers, flammable fuels
- Lawn care storage/filling facilities Pesticides, fertilizers
- Farms Pesticides, fertilizers, flammable fuels
- Golf courses Pesticides, fertilizers, flammable fuels
- Pest control storage facilities Poisons
- Chemical suppliers Multiple categories of Hazardous materials
- Vehicle repair and painting shops Flammables, corrosives, compressed gases
- Automobile dealerships Flammables, corrosives, compressed gases
- Auto parts stores Flammables, corrosives, compressed gases
- Gasoline/service stations Flammables, corrosives, compressed gases
- Propane storage/filling facilities Flammable liquids, compressed gases
- Compressed gas storage/filling facilities Compressed gases—flammable and non-flam.
- Refinishing shops Flammables, corrosives, compressed gases
- Home improvement centers Multiple categories of Hazardous materials
- Hardware stores Multiple categories of Hazardous materials
- Grocery stores Multiple categories of Hazardous materials
- Pharmacies Multiple categories of Hazardous materials
- Sporting goods stores Flammables, compressed gases
- Camping goods stores Flammables, compressed gases
- Paint stores Flammables, comp gases, poisons, corrosive
- Department stores Multiple categories of Hazardous materials
- Warehouses Multiple categories of Hazardous materials
- Quarries and construction sites Explosives, flammable fuels Water filtration plants

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

- Chlorine, other Hazardous materials for water treatment
- Power plant Flammables, compressed gases Natural gas
- Pressure reduction facilities Flammable compressed gas Cell/microwave towers  
Corrosives (batteries)
- Schools/colleges (chemistry labs) Multiple categories of Hazardous materials
- Pools Chlorine, corrosive acids.

# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

### **Hazmat Risk Assessment Methodology**

Hazmat Risk was determined by combining incident data history with hazmat risk facility locations.

#### **Incident Data**

Incident data is from fiscal years 2010, 2011, 2012, and the 1<sup>st</sup> and 2<sup>nd</sup> quarters of 2013. Call Type Group 3 = Hazmat and HM/Full call type. Excludes BOMBP and BOMBT call types.

The number of Hazmat incidents in each Risk Management Zone were counted and assigned a point based on the total number of incidents.

Total point score grouped for each Risk Management Zone:

Number of Incidents	Points
0	0
1-10	1
11-20	2
21-104	3

#### **Hazmat Risk Facilities**

The number of SARA Title III Sites in each Risk Management Zone were counted and assigned a point based on the total number of facilities.

Total point score grouped for each Risk Management Zone:

# Sara Title III Facilities	Points
0	0
1-3	1
4-8	3

## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

**Incident Data and Hazmat Risk Facilities were added together to calculate total Hazmat Risk for each Risk Management Zone**

Hazmat Risk	Total Points
Low	0-1
Moderate	2
High	3-4
Special	5-6

### **Primary Hazardous Materials Risk Categories**

#### **Levels of Risk**

##### **Low Risk:**

This category, Hazmat Investigation, is used for small scale spills and incidents where a unit on-scene requests the hazardous material officer consultation. The minimum response force for these events is four (4) personnel.

This category is dispatched to the following call types:

Call Type	Definition
HM/WATER	A spill into or reported substance in a creek or other body of water with no vapor, fumes, flames or injured people
SC/FIRE	An event to assist a unit already on-scene

##### **Moderate Risk:**

This category, Hazmat Local Alarm, is for responses to hazardous material incident that do not involve fire, five or more sick people, a transportation of dangerous goods vehicle or a natural gas or propane leak. The minimum response force for these events is 19 personnel.

This category is dispatched to the following call types:

Call Type	Definition
HM/SPILL	An emergency involving the spilling or leaking of a hydrocarbon or other fuel product when there are no vapor, fumes, or flames visible and four or less sick persons involved

## MCFRS

### COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

HM/PWDR	An emergency involving an powder spill or leak when there are no vapor, fumes, or flames visible and four or less sick persons involved regardless of the container the package is or is not in
HM/MERC	An emergency involving a spill of mercury with no active fire conditions.

#### **High Risk:**

The category, Hazmat Street Alarm, is for responses to hazardous material incidents that do not involve fire, a natural gas or propane leak but do involve five or more sick people. The minimum response force for these events is 28 personnel.

This category is dispatched to the following call types:

Call Type	Definition
HM/CHEM	An emergency involving an chemical spill or leak when there are no vapor, fumes, or flames visible and four or less sick persons involved
HM/UNK	An emergency involving the spill, leak or escape of a suspected hazardous material when there are no vapor, fumes, or flames visible and four or less sick persons involved and the caller cannot provide more detailed information
EMD CO Call Types	An emergency involving signs and symptoms of multiple sick people with possible indications of carbon monoxide exposure.

#### **Special Risk:**

The category, Gas Box Alarm, is for responses to hazardous material incidents that involve fire. The minimum response force for these events is 48 personnel.

## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

This category is dispatched to the following call types:

Call Type	Definition
Gas/BOX	An emergency that is primarily a hazardous materials incident but involves fire or smoke inside a structure.

### **Water/Ice Risk Assessment Methodology**

Water/Ice Risk was determined by incident data history.

#### **Incident Data**

Incident data is from fiscal years 2010, 2011, 2012, and the 1<sup>st</sup> and 2<sup>nd</sup> quarters of 2013. Call types are: FERRY, ICE, LAKERIV/STIL, RIV/SWFT, RIVER, SWIFT2, SWIFT3 and WATER.

The number of Water/Ice incidents in each Risk Management Zone were counted and assigned a point based on the total number of incidents.

Total point score grouped for each Risk Management Zone:

0-2 incidents = Low

3-4 incidents = Moderate

5-9 incidents = High

10+ incidents and Potomac River RMZs = Special

\*Potomac River RMZs received an automatic score of Special.

## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

### **Aviation Risk Assessment Methodology**

Aviation Risk is based on facilities in the County. Risk Management Zones with Airports are Special Risk and RMZs with helipads are moderate risk.

Risk Management Zone	Risk	Facility
0201	Moderate	Helipad
0321	Moderate	Helipad
0419	Moderate	Helipad
2008	Moderate	Helipad
2901	Moderate	Helipad
5001	Moderate	Helipad
5401	Moderate	Helipad
1718	Special	Airport
2801	Special	Airport

\* There were only five aviation incidents in fiscal years 2010, 2011, 2012, and the 1<sup>st</sup> and 2<sup>nd</sup> quarters of 2013. All incidents were located at the airports.

### **Technical Rescue Risk Assessment Methodology**

Technical Rescue Risk was determined by incident data history.

#### **Incident Data**

Incident data is from fiscal years 2010, 2011, 2012, and the 1<sup>st</sup> and 2<sup>nd</sup> quarters of 2013. Data includes the following call types: 22-D-1, 22-D-1A, COLLAPS2, CONFINE2, ELEVATOR, FCRASH, RES/CLPS, RES/CONF, RES/HIGH, RES/LOW, RES/OTH RES/TRNC, ROCK/WAT, and TRAN/OTH.

The number of Technical Rescue incidents in each Risk Management Zone were counted and assigned a point based on the total number of incidents.

Total point score grouped for each Risk Management Zone:

0-9 incidents = Low

10-48 incidents = Moderate

49-99 incidents = High

100-327 incidents = Special

**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

**Bomb/Explosive Risk Assessment Methodology**

Bomb/Explosive Risk was determined by incident data history.

**Incident Data**

Incident data is from fiscal years 2010, 2011, 2012, and the 1<sup>st</sup> and 2<sup>nd</sup> quarters of 2013. Data includes the following call types: BOMBP and BOMBT

The number of Bomb/Explosive incidents in each Risk Management Zone were counted and assigned a point based on the total number of incidents.

Total point score grouped for each Risk Management Zone:

0-9 incidents = Low

10-49 incidents = Moderate

50-98 incidents = High

99 incidents = Special



# MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

## Fire Station 1

Battalion 1

Silver Spring Station

8110 Georgia Avenue, Silver Spring



### Description

- Ownership: County
- Employees: 10 Shift Work
- Apparatus Housed: Engine, Truck, Ambulance, Medic
- First Due Area: 2.08 mi<sup>2</sup>
- Active LOSAP Volunteers: 36
- IECS Volunteers: 22

### Overview

Silver Spring Station 1 is located between Georgia Avenue (MD97) and the METRO/CSX train tracks in their back yard. Georgia Avenue itself is a major six lane highway that runs from Washington D.C. to Howard County, a county bordering Montgomery County to the northeast. Silver Spring itself “serves as the primary urban area in Montgomery County”<sup>4</sup> and has been revitalized in recent years with new national retail chains, theaters, and restaurants as well as many family-owned restaurants with their own ethnic diversity. In 2003, Discovery Communications (Discover Channel) built their new headquarters on the corner of Georgia Avenue and Colesville Road. It is a huge, state-of-the-art facility that employs over 1,000 people.

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

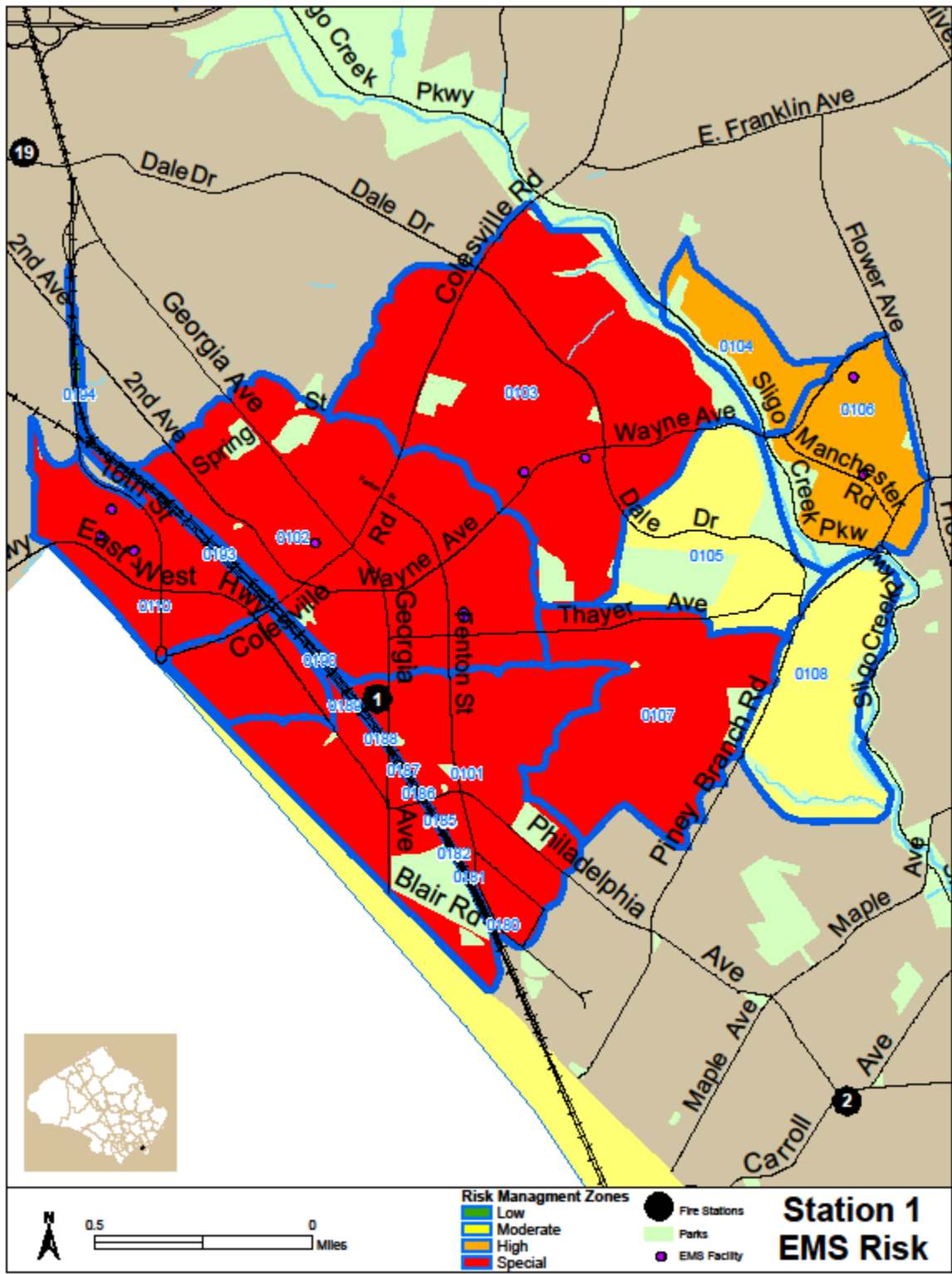
#### **High Risk Areas – Including Hazards**

Silver Spring has both the METRO and CSX railroad running through the downtown area which is served by Fire Station 1. The railroad right-of-way is used by CSX, Amtrak, and MARC trains. The Silver Spring METRO station is an above ground station. METRO services many professionals, visitors and students. In November 2010, the Silver Spring METRO Station had 12,602 pedestrians entering the METRO and 12,185 pedestrians exiting the METRO during the weekdays alone. For weekends during November 2010, 10,775 pedestrians entered the METRO at the Silver Spring Station and 10,620 exited. Fire Station 1 generally runs calls to the METRO or its vicinity frequently every shift. Particularly noteworthy, CSX Railroad transports an enormous amount and variety of chemicals and other hazardous materials through the downtown Silver Spring area every day presenting a huge hazard for the employees in Silver Spring as well as its residents. Another known hazard in Station 1's area is the known research labs and college science labs. Furthermore, there is a Verizon Switching Facility in the area.

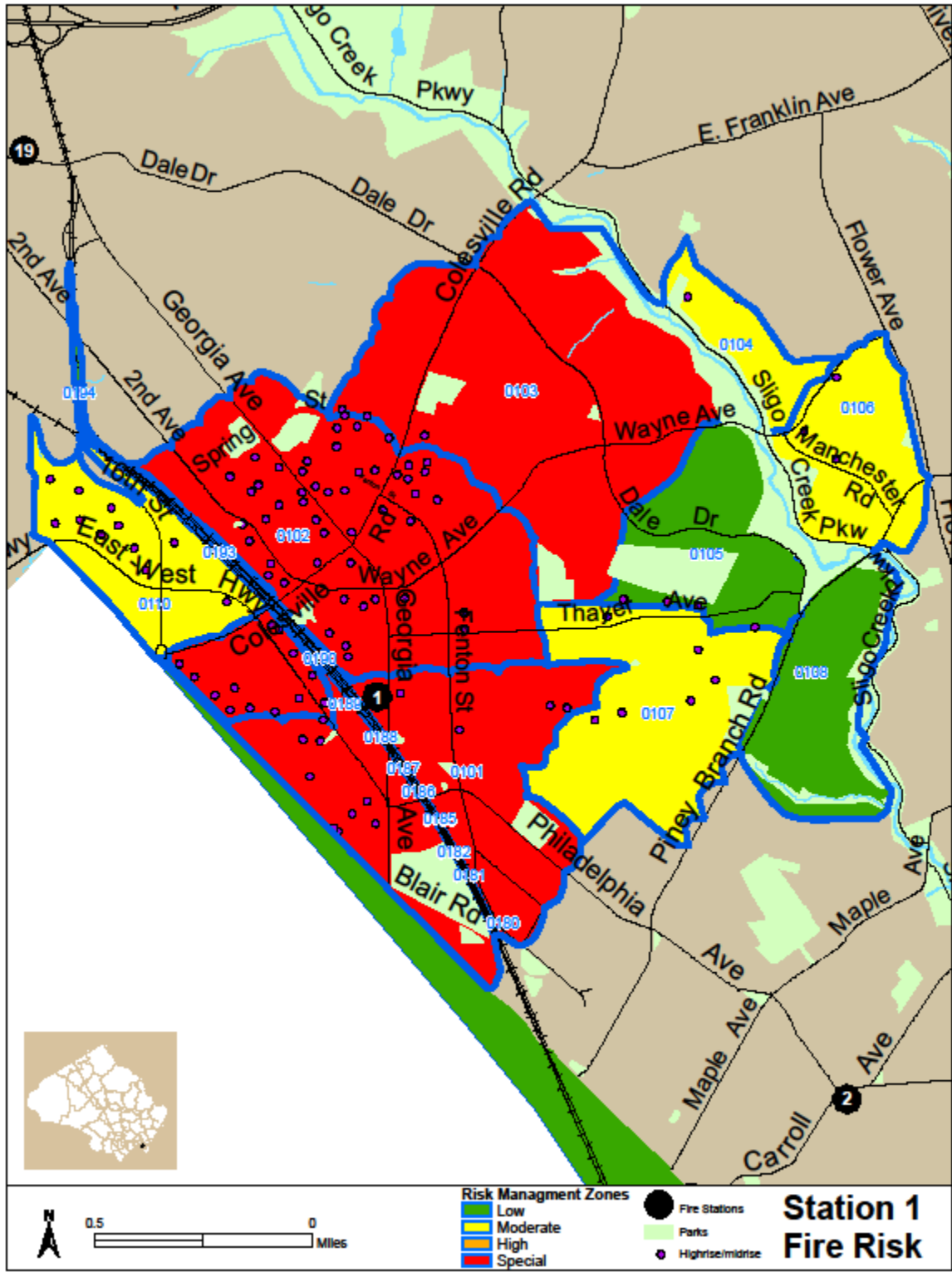
**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

<b>Station 1 - # of Incidents by Call Type</b>				
<b>Fiscal Year</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013 (1st and 2nd Quarter Only)</b>
<b>Adaptive</b>	<b>621</b>	<b>658</b>	<b>634</b>	<b>351</b>
<b>ALS1</b>	<b>1098</b>	<b>1170</b>	<b>1165</b>	<b>572</b>
<b>ALS2</b>	<b>149</b>	<b>122</b>	<b>163</b>	<b>67</b>
<b>BLS</b>	<b>2035</b>	<b>2168</b>	<b>1975</b>	<b>930</b>
<b>Explosive</b>	<b>34</b>	<b>34</b>	<b>30</b>	<b>11</b>
<b>Firefull</b>	<b>50</b>	<b>52</b>	<b>50</b>	<b>19</b>
<b>Hazmat</b>	<b>40</b>	<b>75</b>	<b>70</b>	<b>27</b>
<b>Tech Rescue</b>	<b>122</b>	<b>174</b>	<b>153</b>	<b>71</b>
<b>Total Calls</b>	<b>4376</b>	<b>4623</b>	<b>4429</b>	<b>2145</b>

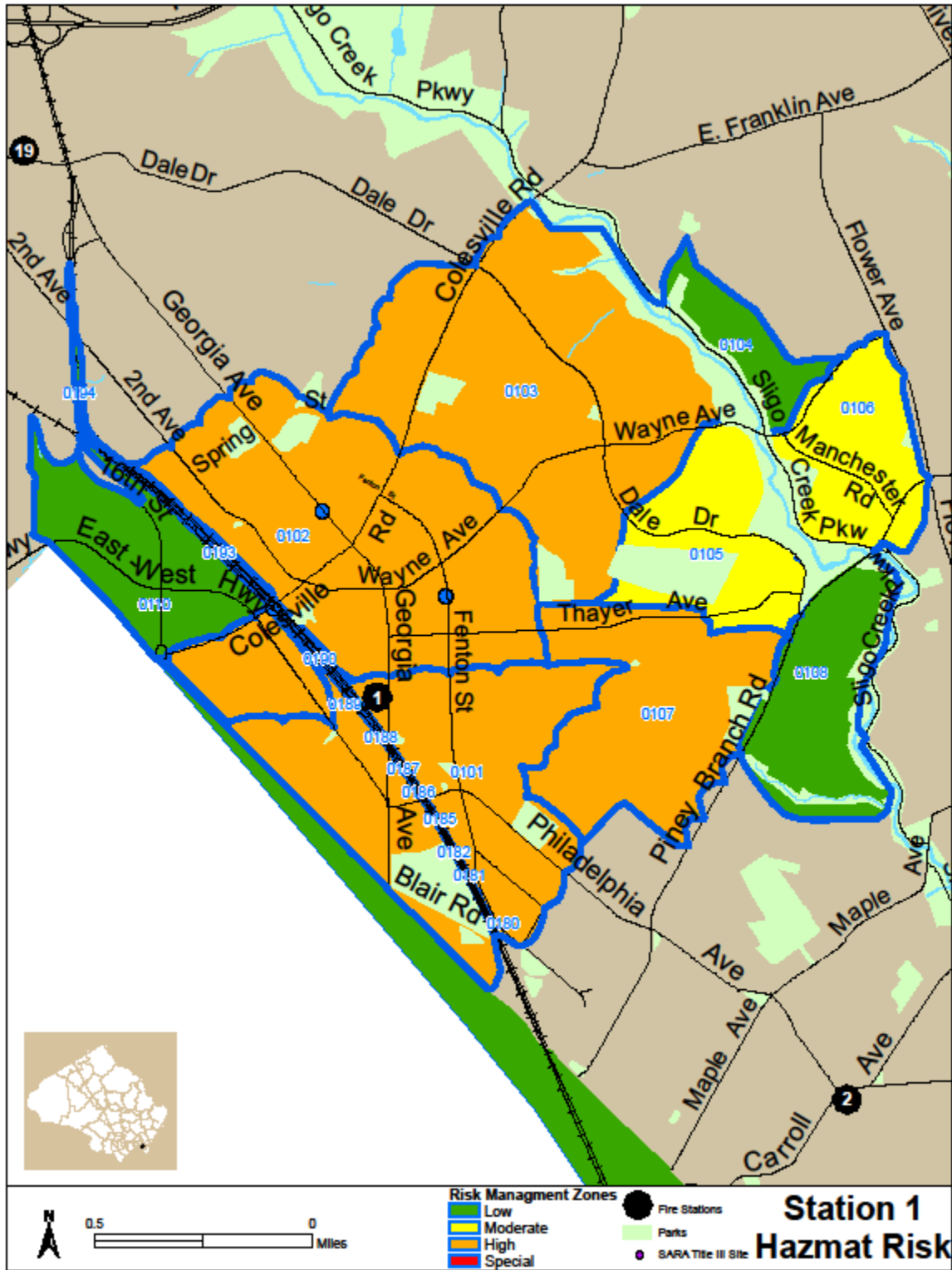
MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

### Fire Station 2

Battalion 1

Takoma Park Station

7201 Carroll Avenue, Takoma Park



#### Description

- Ownership: County
- Employees: 5 Shift Work
- Apparatus Housed: Engine, Ambulance
- First Due Area: 2.54 mi<sup>2</sup>
- Active LOSAP Volunteers: 24
- IECS Volunteers: 11

#### Overview

Takoma Park Station 2 is a prominent committee landmark at the intersection of Carroll Avenue and Philadelphia Avenue – two of the few main roads in Takoma Park. Takoma Park was incorporated in 1890; it was a planned commuter suburb and is situated along the Metropolitan Branch of the Baltimore and Ohio Railroad, just northeast of Washington, D.C. The city is governed by a mayor, council members and an appointed city manager. The top employers in the city (2009) are Washington Adventist Hospital (1,660 employees), Montgomery College (300 employees) and Montgomery County Public Schools (235 employees). In the late 1960s and 1970s, Takoma Park was becoming noted regionally and nationally for political activism outside the Nation's capital.<sup>18</sup> A huge dispute that went on for years and ending in 1995 were the boundaries of Takoma Park. Prior to 1995, the boundaries of Takoma Park went into the District of Columbia and Prince George's County. The "old town" of Takoma Park was always in Maryland; however, the citizens of Takoma Park lobbied for the county boundaries to be adjusted and they won – "following subsequent

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

approval by both counties' councils and the Maryland General Assembly, the county line was moved to include the entire city into Montgomery County.”

#### **High Risk Areas – Including Hazards**

The METRO's Red-Line and CSX railroad tracks run through Station 2's area approximately 1/8 – 1/4 mile. There is no actual station however. There is no high interstate traffic or industrial/chemical/biological hazards. Station 2 does service one hospital (Washington Adventist Hospital); one nursing home; four to five known group/boarder homes and two senior living high-rise apartment buildings.

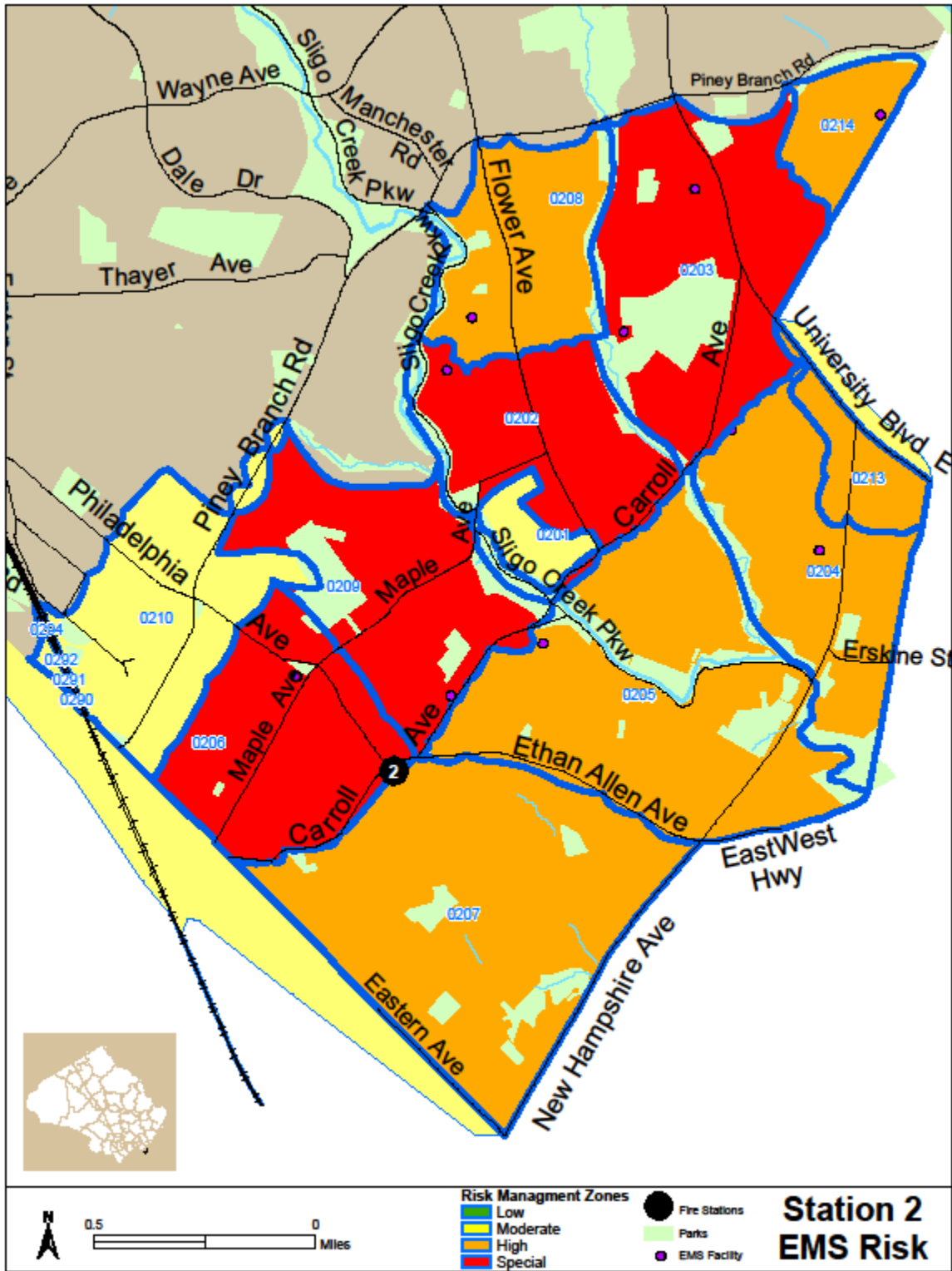
Washington Adventist Hospital is a 281-licensed bed acute care facility located in downtown Takoma Park. The hospital provides a range of health services to the community such as cardiac and vascular care, maternity services, cancer care, surgical services, and orthopedics and emergency services. When the hospital first opened in 1907, it was Montgomery County's first cardiac center. Today, more than 500 open-heart surgeries and 6,000 interventional cardiology procedures are performed annually.



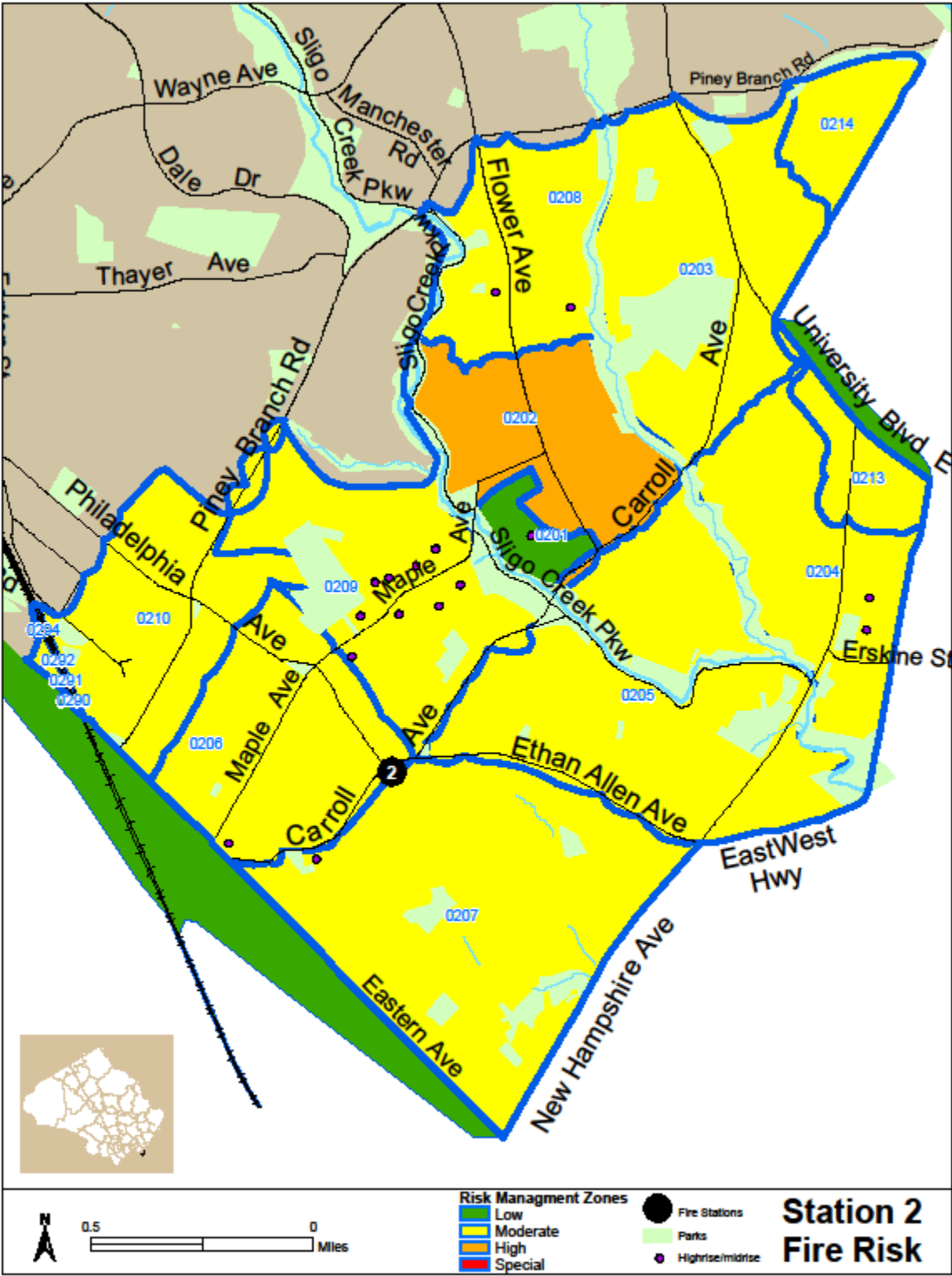
**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

<b>Station 2 - # of Incidents by Call Type</b>				
<b>Fiscal Year</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013 (1st and 2nd Quarter Only)</b>
<b>Adaptive</b>	<b>371</b>	<b>387</b>	<b>357</b>	<b>181</b>
<b>ALS1</b>	<b>586</b>	<b>590</b>	<b>606</b>	<b>284</b>
<b>ALS2</b>	<b>88</b>	<b>80</b>	<b>94</b>	<b>29</b>
<b>BLS</b>	<b>997</b>	<b>975</b>	<b>1031</b>	<b>431</b>
<b>Explosive</b>	<b>3</b>	<b>N/A</b>	<b>1</b>	<b>1</b>
<b>Firefull</b>	<b>43</b>	<b>34</b>	<b>37</b>	<b>22</b>
<b>Hazmat</b>	<b>17</b>	<b>42</b>	<b>49</b>	<b>17</b>
<b>Tech Rescue</b>	<b>56</b>	<b>36</b>	<b>40</b>	<b>33</b>
<b>Water/Ice</b>	<b>N/A</b>	<b>N/A</b>	<b>1</b>	<b>N/A</b>
<b>Total Calls</b>	<b>2316</b>	<b>2312</b>	<b>2413</b>	<b>1086</b>
<b>*Note: Total category includes unfiltered calls - # may exceed sum of call types</b>				

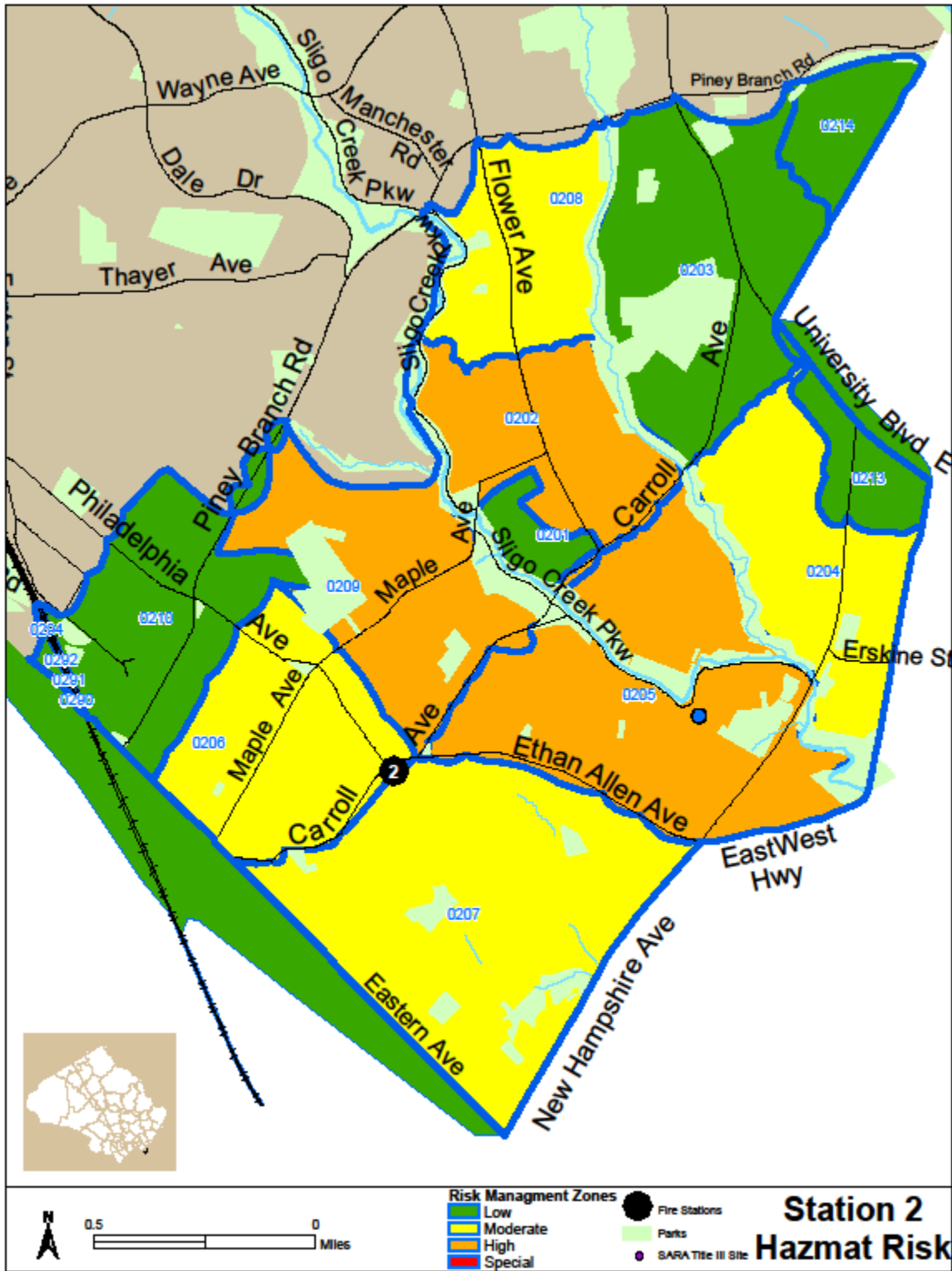
MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

### Fire Station 3

Battalion 3

Rockville Station

380 Hungerford Drive, Rockville



#### Description

- Ownership: Volunteer
- Employees: Each shift has 9 assigned members (A, B, C, D); On nights and weekends there are 6 shift workers; On weekdays there are 8 day workers (10 hours) for a total of 14
- Apparatus Housed: Engine (AFRA), Truck, Squad Ambulance, Medic Unit
- First Due Area: 14.32 mi<sup>2</sup>
- Active LOSAP Volunteers: 169
- IECS Volunteers: 125

#### Overview

Rockville is home to many people as well as the heart of business for the Federal, County and Local governments, research offices and headquarters for national corporations. West Montgomery Avenue is the main street in historic Rockville, still only two lanes, which showcases mature trees, brick sidewalks, balloon-frame homes as well as new-lightweight construction homes. A wide variety of buildings, hazardous materials and people keep the fire stations of Rockville busy.

A meeting on March 9, 1921, started the process for forming the Rockville Volunteer Fire Department. For the first few years of its existence, the fire apparatus was stored in the basement of the County courthouse that was built in the late 1800's. The siren was in the tower of the same courthouse until 1966. The original fire station was built on Perry Street in 1926 and was replaced with Station 3 in 1966 as it currently stands. Station 3 is the home of the volunteer administrative activities of the corporation and it sits curbside to Hungerford Drive (RT 355) – a six-lane highway that runs from Washington D.C. to Pennsylvania and is one of the most traveled highways in Montgomery County. On the other side of Hungerford Drive are the METRO and CSX Railroad

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

tracks bringing many people to and from work in Rockville. Approximately five miles in the opposite direction is Interstate 270 which Station 3 protects from Shady Grove Road to Wooten Parkway. Rockville is diverse in the many forms of businesses that have become a permanent fixture: Montgomery College (built in 1946 with more than 15,000 full/part-time students<sup>41</sup>); PEPCO; Shady Grove Transfer Station for refuse and recycling; METRO; Shady Grove Adventist Hospital; judicial and government buildings; home to the administrative aspect of Montgomery County Fire/Rescue and a plethora of research laboratories that have biological hazards.

#### **High Risk Areas – Including Hazards**

Rockville has both the METRO and CSX railroad running through their first due area which is served by Station 3. There are two METRO stations: Rockville and Shady Grove. The railroad right-of-way is used by CSX, Amtrak, and MARC trains. Both stations are “at-grade” stations. Rockville Metro Station is at Route 355 and Park Road. Shady Grove METRO Station is at Somerville Drive. Part of the Shady Grove station is in Station 28’s area; however, Station 3 handles all the calls. METRO services many professionals, visitors and students. In November 2010, the Rockville METRO Station had 4,699 pedestrians entering the METRO and 4,647 exiting the METRO during the weekdays alone. For weekends during November 2010, 3,254 pedestrians entered the METRO at Rockville and 3,207 exited. In November 2010, the Shady Grove METRO Station had 13,323 pedestrians entering the METRO and 13,001 exiting the METRO during the weekdays. For weekends during November 2010, 8,575 pedestrians entered the Shady Grove METRO Station and 8,500 exited<sup>56</sup>.

Shady Grove Adventist Hospital, an acute-care facility and located in Station 3’s first due area, opened in 1979 and has recently had many renovations to be able to house 336 beds and expand its neonatal intensive care unit and pediatrics department. Shady Grove Hospital is located within a 600-acre Life Sciences Center which has Montgomery County’s largest concentration of advanced technology companies including the hospital, Johns Hopkins University – Montgomery County Campus, the Universities at Shady Grove, Potomac Ridge Behavioral Health and many biotechnology companies. Shady Grove Hospital currently has approximately 2,000 employees, 1,200 medical staff and health professionals, and 800

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

volunteers. Shady Grove delivers approximately 5,000 babies per year and treats over 100,000 emergency patients and operates the first Pediatric Emergency Department in Montgomery County. Shady Grove is also a Stroke and STEMI designated hospital for local medical transports. Potomac Ridge is an 87-bed acute psychiatric and substance abuse treatment facility less than one mile from Shady Grove Hospital. The facility is coupled with an additional 83-bed residential treatment center for adolescents and various outpatient services. The Ridge School of Montgomery County is also housed within the perimeters of the Adventist Behavioral Health campus. The school is run by the Board of Education and serves adolescents across the State of Maryland that have experienced a failure with truancy, loss of self-esteem, academic progress and negative attitudes. The school works with children grades six through twelve.

The biotechnology corridor surrounds Rockville: Research Boulevard, Taft Court, and Medical Center Drive. Many of the facilities focus on infectious disease, cancer, endocrinology, animal models, and genomic medicine. Also located in the vicinity of the biotechnological area is Washington Gas which has a small office with eighteen employees and is considered a Peak Shaving Plant. The plant maintains twelve employees on the premises and has been in existence for close to sixty years. This particular plant sits on 120 acres of land next to the METRO and CSX tracks. They have 115 underground mounded containers filled with natural gas and propane. Fortunately, the plant does not extend under RT. 355. Washington Gas has and follows an emergency plan that they update annually. A peak shaving plant is typically used to shave off the demand of our customers on the peak demand days of the year (coldest). Energy is stored at the plant (propane and compressed natural gas) to send into the Washington Gas Distribution Pipeline to make sure customers continue to received economical natural gas during the times where they need it most to heat their homes, businesses, etc. Washington Gas is not a transmission company. They purchase their gas from the transmission company much the same way a customer purchases gas from them.

In 2009, funding through the Capital Improvements Program began the development of Judicial Center Annex that includes a new six-story Annex attached to the existing Judicial Center and Executive Office Building that will include courtrooms and court support functions; a future County Office Building and the new District Court (completed in 2010). There are five

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

major case types that Montgomery County Circuit Court hears: criminal, civil, family, juvenile and child welfare. The total number of case filings had been in the low-mid 30,000s in the first half of 2000 but exceeded filing in years 2008 and reached 43,138 in 2009. Approximately one-third of the total filings are family and civil filings between 1997 and 2009 whereas less than twenty percent are criminal and juvenile. The court also experienced an eighteen percent increase in trials set and a twenty-one percent increase in trials held but the court believes they will see a decline with the use of Alternative Dispute Resolutions. For civil, criminal and family cases, Montgomery County ranks second behind Anne Arundel County in the four “large jurisdictions” in Maryland (Anne Arundel County, Baltimore City, Baltimore County and Prince George’s County)

The Montgomery County Detention Center – Seven Locks is responsible for the intake/processing of adult male/female offenders and will maintain a capacity of two hundred inmates. It is a “pre-trial booking facility” that takes all classifications of inmates: from traffic offenders to capital offenders. They have seventy-two hours to bond themselves or they will be taken to a correctional facility. Approximately 16,000 offenders annually arrive at the Central Processing Unit (located behind the detention center) after they have medically and psychologically cleared

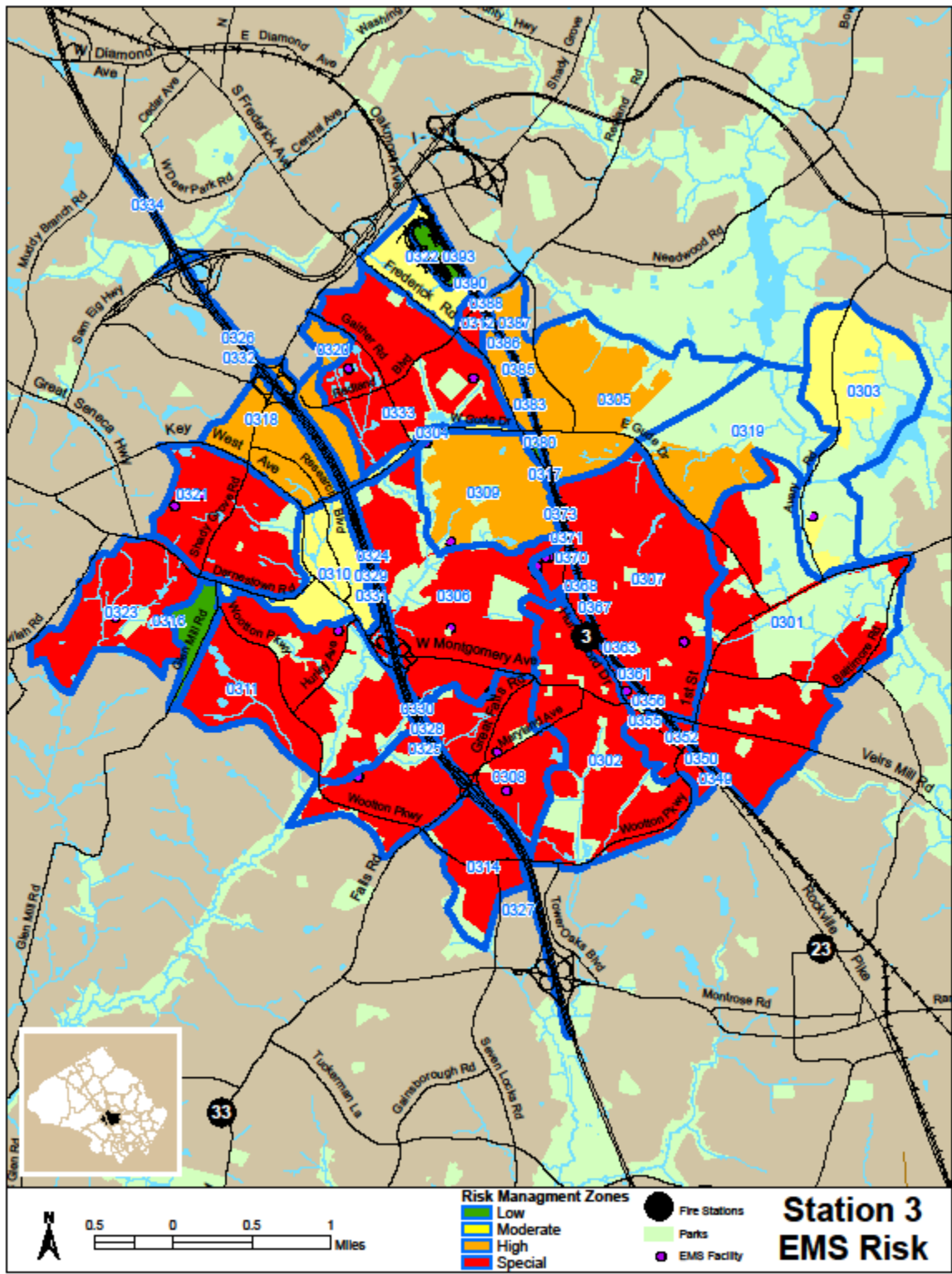


**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

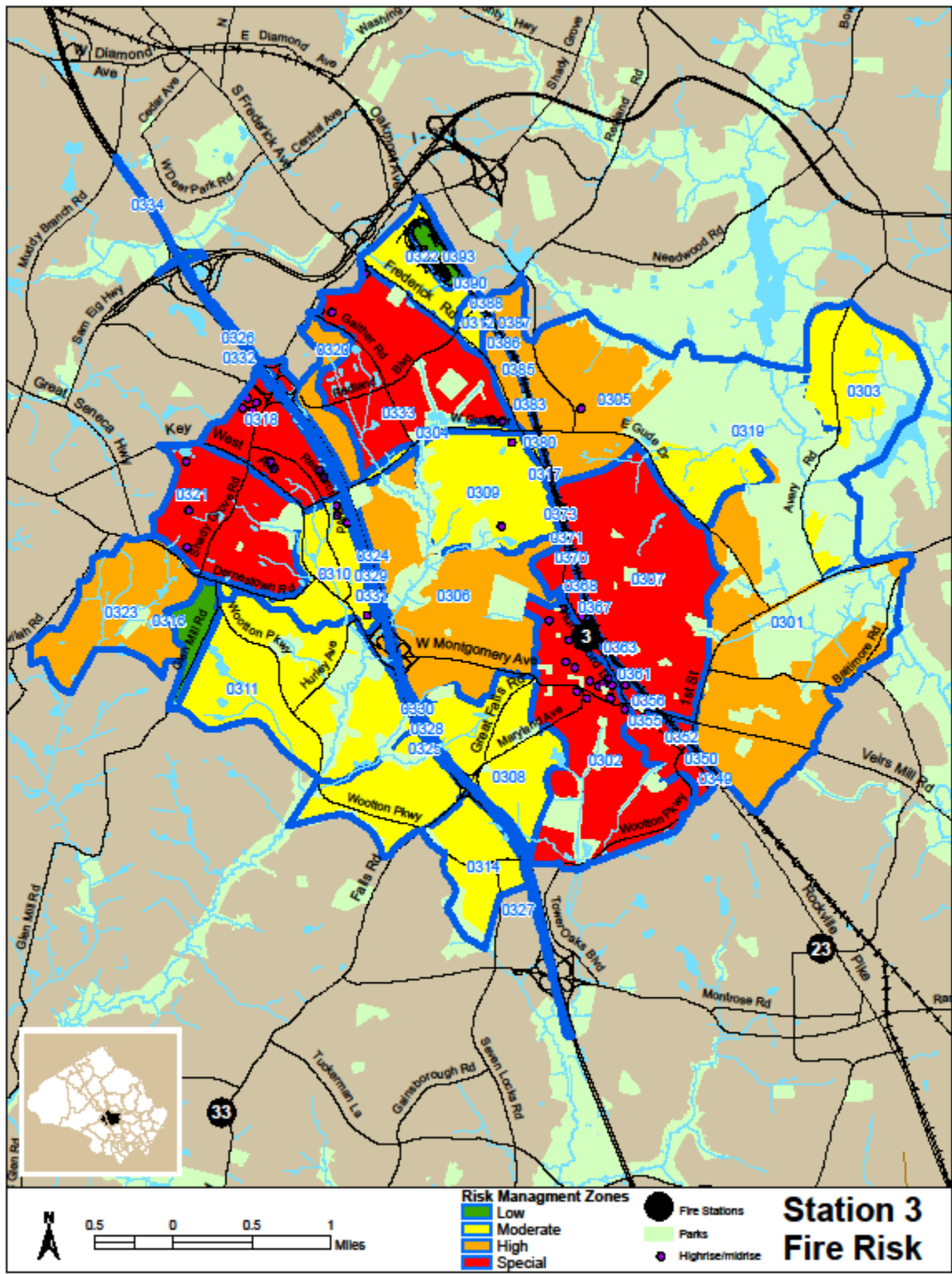
---

<b>Station 3 - # of Incidents by Call Type</b>				
<b>Fiscal Year</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013 (1st and 2nd Quarter Only)</b>
<b>Adaptive</b>	<b>1034</b>	<b>1146</b>	<b>1017</b>	<b>530</b>
<b>ALS1</b>	<b>2264</b>	<b>2258</b>	<b>2331</b>	<b>1138</b>
<b>ALS2</b>	<b>238</b>	<b>237</b>	<b>254</b>	<b>119</b>
<b>BLS</b>	<b>3803</b>	<b>3659</b>	<b>3780</b>	<b>1891</b>
<b>Explosive</b>	<b>25</b>	<b>27</b>	<b>22</b>	<b>13</b>
<b>Firefull</b>	<b>51</b>	<b>71</b>	<b>55</b>	<b>37</b>
<b>Hazmat</b>	<b>42</b>	<b>102</b>	<b>109</b>	<b>33</b>
<b>Tech Rescue</b>	<b>88</b>	<b>115</b>	<b>76</b>	<b>55</b>
<b>Water/Ice</b>	<b>N/A</b>	<b>N/A</b>	<b>1</b>	<b>N/A</b>
<b>Total Calls</b>	<b>7953</b>	<b>7980</b>	<b>8022</b>	<b>3980</b>
<b>*Note: Total category includes unfiltered calls - # may exceed sum of call types</b>				

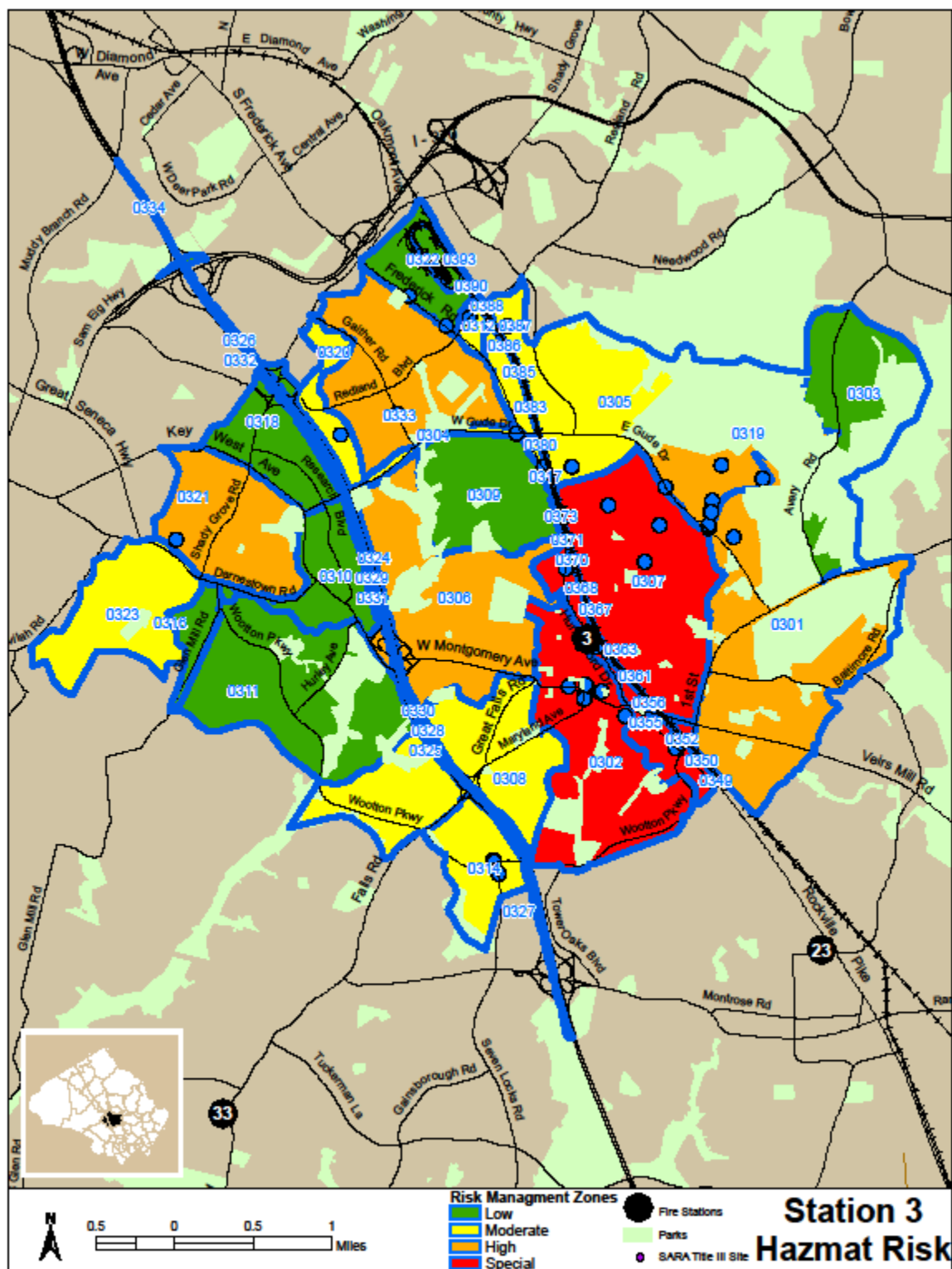
MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



# MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



# MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

## Fire Station 4

Battalion 4

Sandy Spring Station

17921 Brooke Road, Sandy Spring



### Description

- Ownership: Volunteer (51%), County (49%)
- Employees: 7 Shift Work
- Apparatus Housed Engine (AFRA), Rescue Squad, Tanker, Medic, Utility, Boat
- First Due Area: 20 mi<sup>2</sup>
- Active LOSAP Volunteers: 57
- IECS Volunteers: 42

### Overview

Station 4 sits off the road, behind a small plaza, hidden by trees. It is a big firehouse that houses a ballroom/conference area and the administration staff who manages the ballroom and the Sandy Spring volunteers. There is some interstate traffic usually going north and south on New Hampshire Avenue and west and east on RT 108. There is no METRO rail or train tracks in the first due area.<sup>66</sup> Station 4 personnel do not have the staffing to respond with all of their apparatus, so they must cross-staff the engine and the rescue squad with three people.<sup>67</sup> This deployment model is unique compared to the four person staffing model utilized county wide. Fire Station four has been included in future up staffing plans directed towards achieving four person staffing.

## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

### **High Risk Areas – Including Hazards**

There are three significant private schools in Station 4's first due area. One school is the Friends School which is a pre-K through 12 coed college preparatory day school founded in 1961. It sits on a 140-acre, wooded campus and emphasizes Quaker values. There are 568 students that attend Friends School (2010 – 2011) with sixty of the students enrolled in the boarding school. Good Counsel High School, a Catholic school that used to be located in Wheaton, is now located in Station 4's first due area. The third private school is Mater Amoris Montessori School. The school has students from the ages of 2½ to 12 years that follow the teachings of Dr. Maria Montessori.<sup>80</sup>

Crime statistics are low in the Sandy Spring area. Total crimes committed in Montgomery County in 2010 totaled 62,944. Sandy Spring and Olney were responsible for 19% of the total. On average from 2007 to 2010, there were 13,655 crime-related incidents. In 2010, the three top crimes were Larceny (2,752); Burglary (696); and, Auto Theft (300). There were forty gang-related crimes in 2010; the top gang crimes for the Sandy Spring area were Possession (3) and Distribution and Larceny (2).

Brighton Dam is in Station 4's first due area. Brighton Dam, completed in 1943, is surrounded by 6,000 acres of wooded property that comprise the WSSC portion of the Patuxent Watershed. Brighton Dam in combination with the Rocky Gorge Reservoir stores a combined surface area of 1,600 acres which is used as potable drinking water by many WSSC customers in Prince George's and Montgomery counties. WSSC sponsors a recreational program on the watershed which allows visitors to pay a fee for engaging in fishing from portions of the shorelines of reservoirs; fishing and recreational boating on areas of the reservoirs; mooring of personal boats; horseback riding on designated bridle trails; and hunting in specific areas. To respond to water rescue incidents at the Rocky Gorge Reservoir, Triadelphia Reservoir (in Station 17's area), and other bodies of water within Station 4's area, Station 4 has a rescue boat (Boat 704).

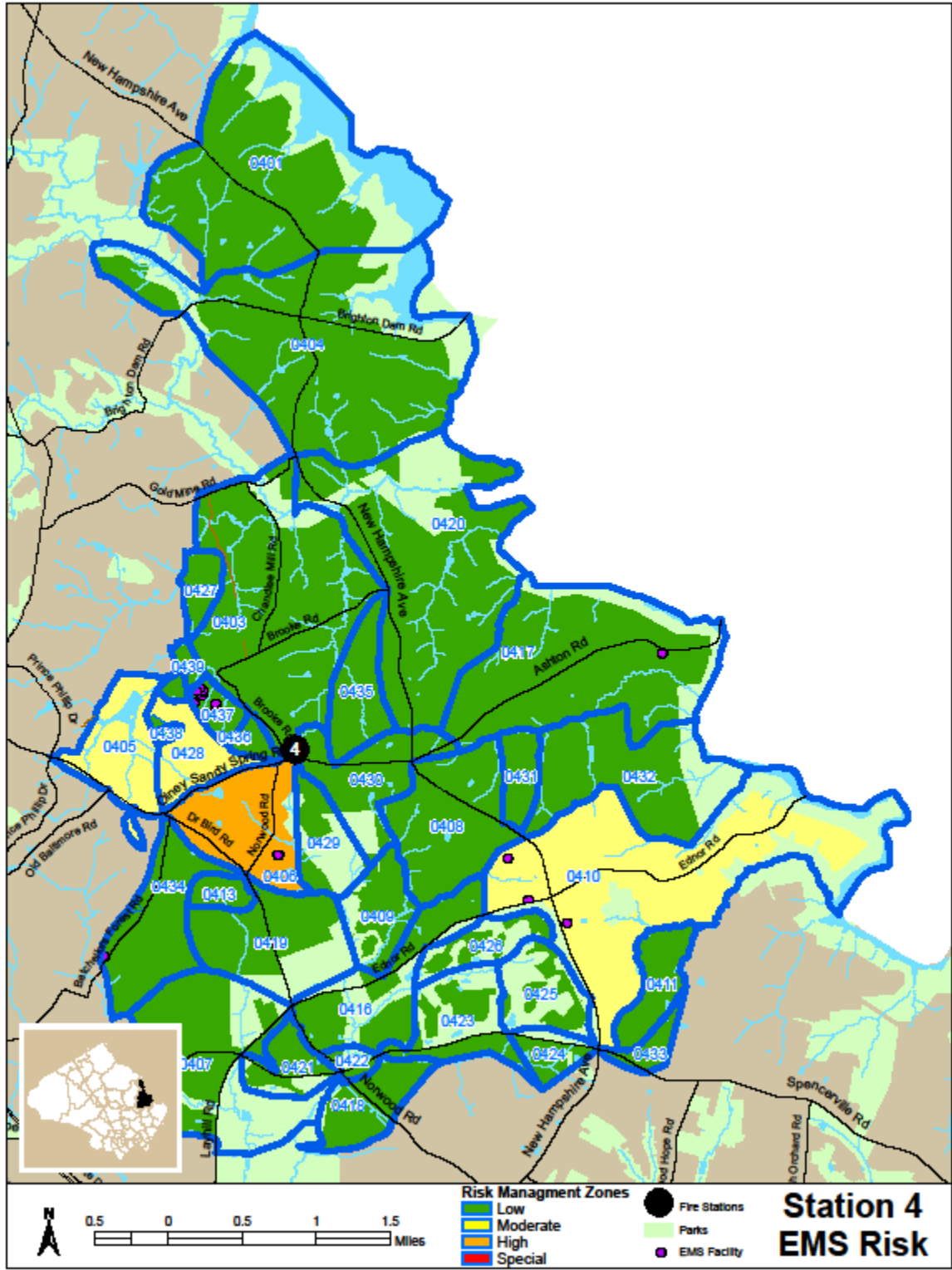
**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

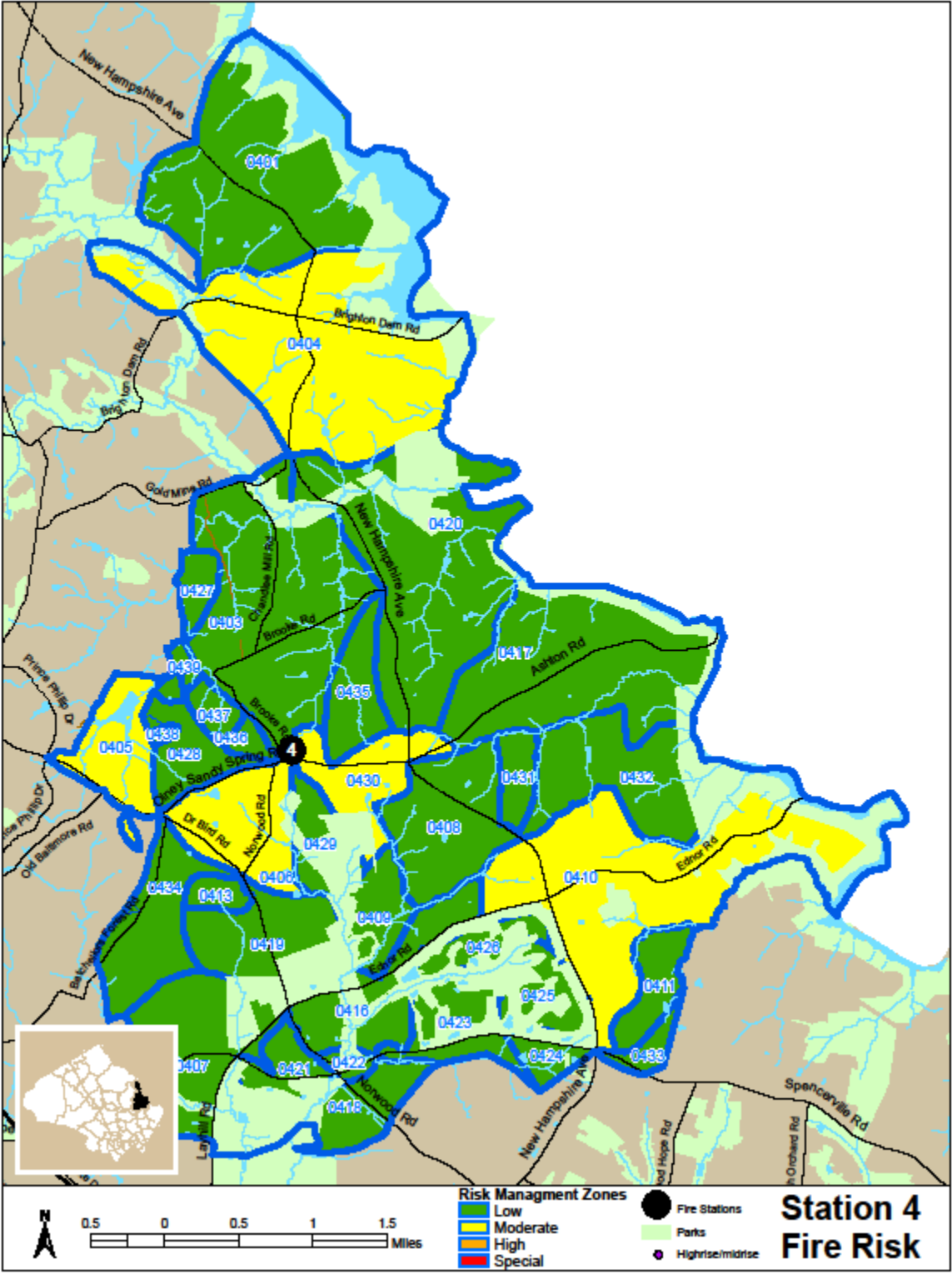
<b>Station 4 - # of Incidents by Call Type</b>				
<b>Fiscal Year</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013 (1st and 2nd Quarter Only)</b>
<b>Adaptive</b>	<b>216</b>	<b>222</b>	<b>237</b>	<b>131</b>
<b>ALS1</b>	<b>315</b>	<b>341</b>	<b>388</b>	<b>208</b>
<b>ALS2</b>	<b>39</b>	<b>50</b>	<b>43</b>	<b>19</b>
<b>BLS</b>	<b>515</b>	<b>564</b>	<b>574</b>	<b>298</b>
<b>Explosive</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>N/A</b>
<b>Firefull</b>	<b>9</b>	<b>11</b>	<b>6</b>	<b>5</b>
<b>Hazmat</b>	<b>3</b>	<b>8</b>	<b>7</b>	<b>3</b>
<b>Tech Rescue</b>	<b>N/A</b>	<b>1</b>	<b>1</b>	<b>2</b>
<b>Water/Ice</b>	<b>4</b>	<b>N/A</b>	<b>2</b>	<b>N/A</b>
<b>Total Calls</b>	<b>1167</b>	<b>1251</b>	<b>1251</b>	<b>707</b>
<b>*Note: Total category includes unfiltered calls - # may exceed sum of call types</b>				



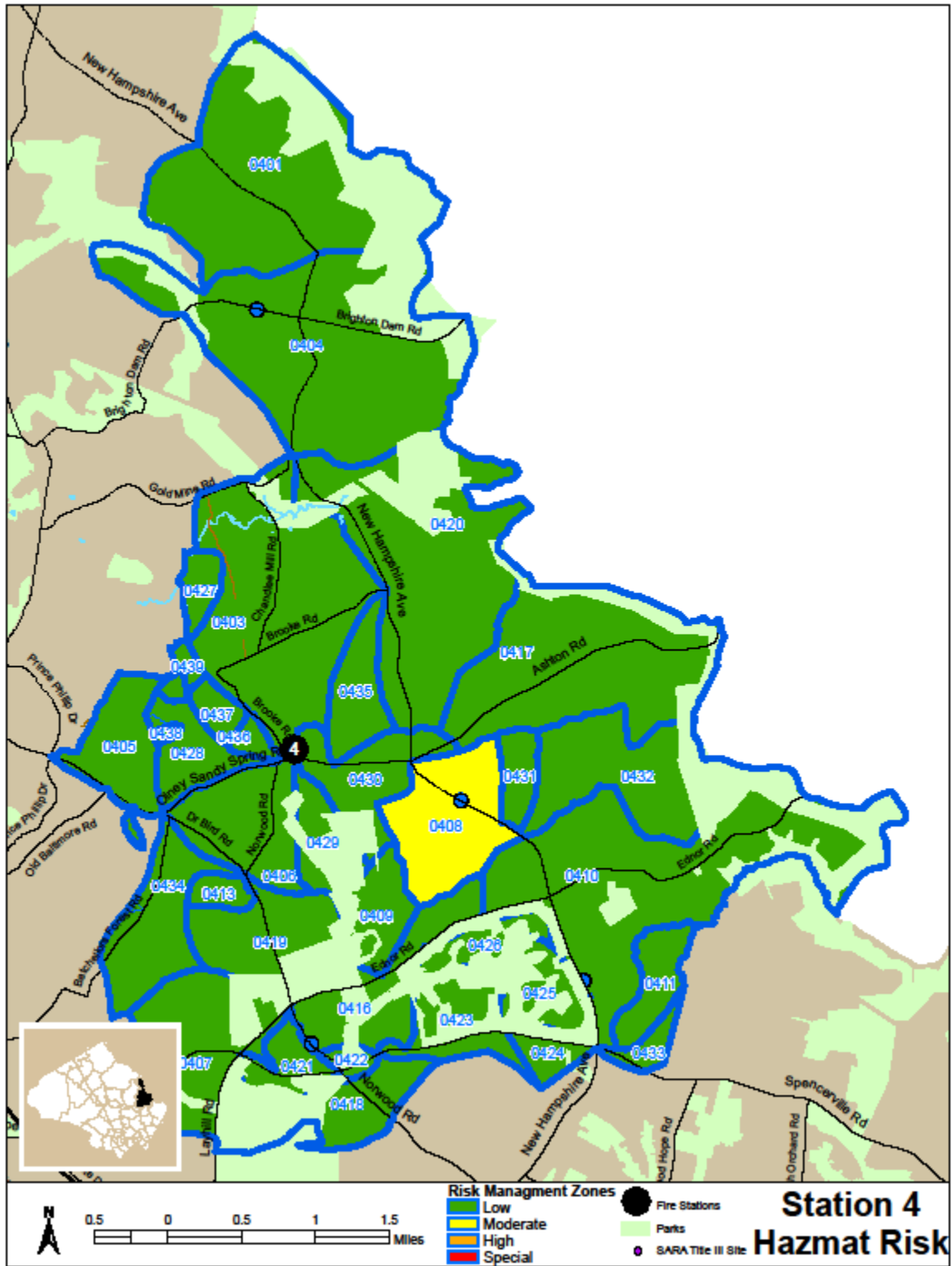
MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER







MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

### Fire Station 5

Battalion 4

Kensington Station

10620 Connecticut Avenue, Kensington



#### Description

- Ownership: Volunteer
- Employees: 5 Shift Work
- Apparatus Housed: Engine, Ambulance [Medic, Tower, Engine (Staffed by Volunteers)]
- First Due Area: 6.01 mi<sup>2</sup>
- Active LOSAP Volunteers: 107
- IECS Volunteers: 83

#### Overview

The town of Kensington came along decades before the Baltimore & Ohio Railroad constructed its train tracks through the town in 1873. However, it was the B&O Railroad that increased the population as parts of the land of Kensington were sold to build a planned Victorian community in 1890. Kensington started as a summer refuge and eventually evolved into a commuter suburb. By the end of World War II, the town's infrastructure was competed. Kensington became incorporated in 1894 and has stayed primarily a bedroom community but has its commercial enterprises including: the CSX Railroad, Antique Row, Kaiser-Permanente, art shops, restaurants, supermarkets, auto repair shops and hardware stores.

In 1899, after a large fire destroyed a church, the town started thinking about organizing a fire department which was first located in a garage. After a few political issues, the fire department was incorporated in 1925. The fire department moved a few times until it finally settled in 1946 where it stands today, on the corner of a busy, highly-traveled, six-lane avenue (Connecticut Avenue). The town of Kensington is no longer the quaint little Victorian town it set out to be but still has its little

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

sub-towns (i.e. Garret Park) that show its history.

#### **High Risk Areas – Including Hazards**

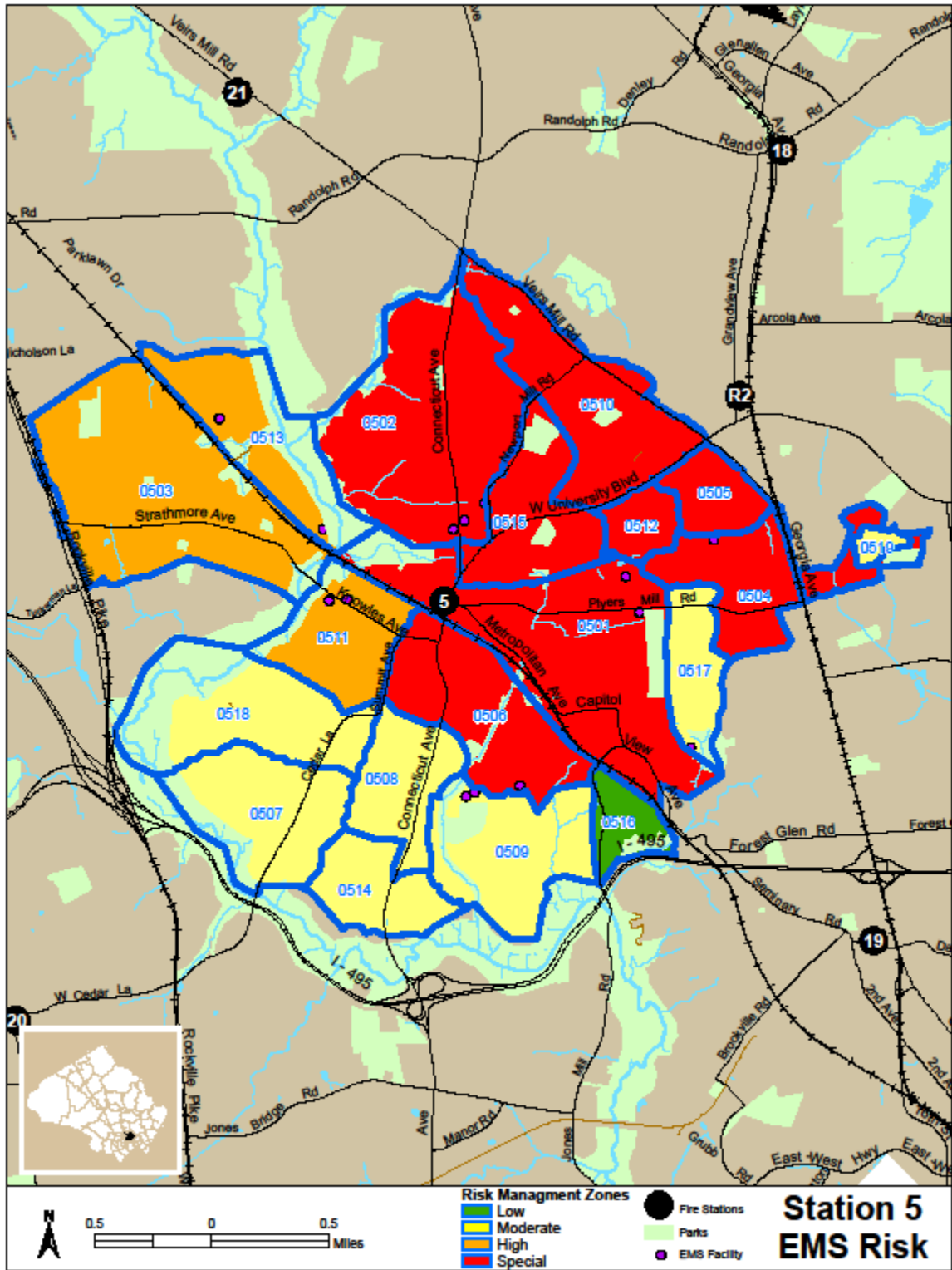
The CSX Railroad, Metropolitan Subdivision Line traverses through the middle of Station 5's first due area. This section of the track is considered one of the main rail lines for the CSX Corporation and is used for transporting both freight cargos as well as commuter rail traffic. The freight railroad component of this system carries large amounts of hazardous materials in bulk shipments throughout Montgomery County. A small portion of the underground METRO Rail system passes underneath the far eastern corner of Station 5's first due area under Georgia Avenue. There is only one METRO vent shaft that opens up in Station 5's area – the Windham Lane Shaft. There are no large interstate highways nor are there any industrial, chemical, or major hazardous materials facilities in Station 5's first due area.

**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

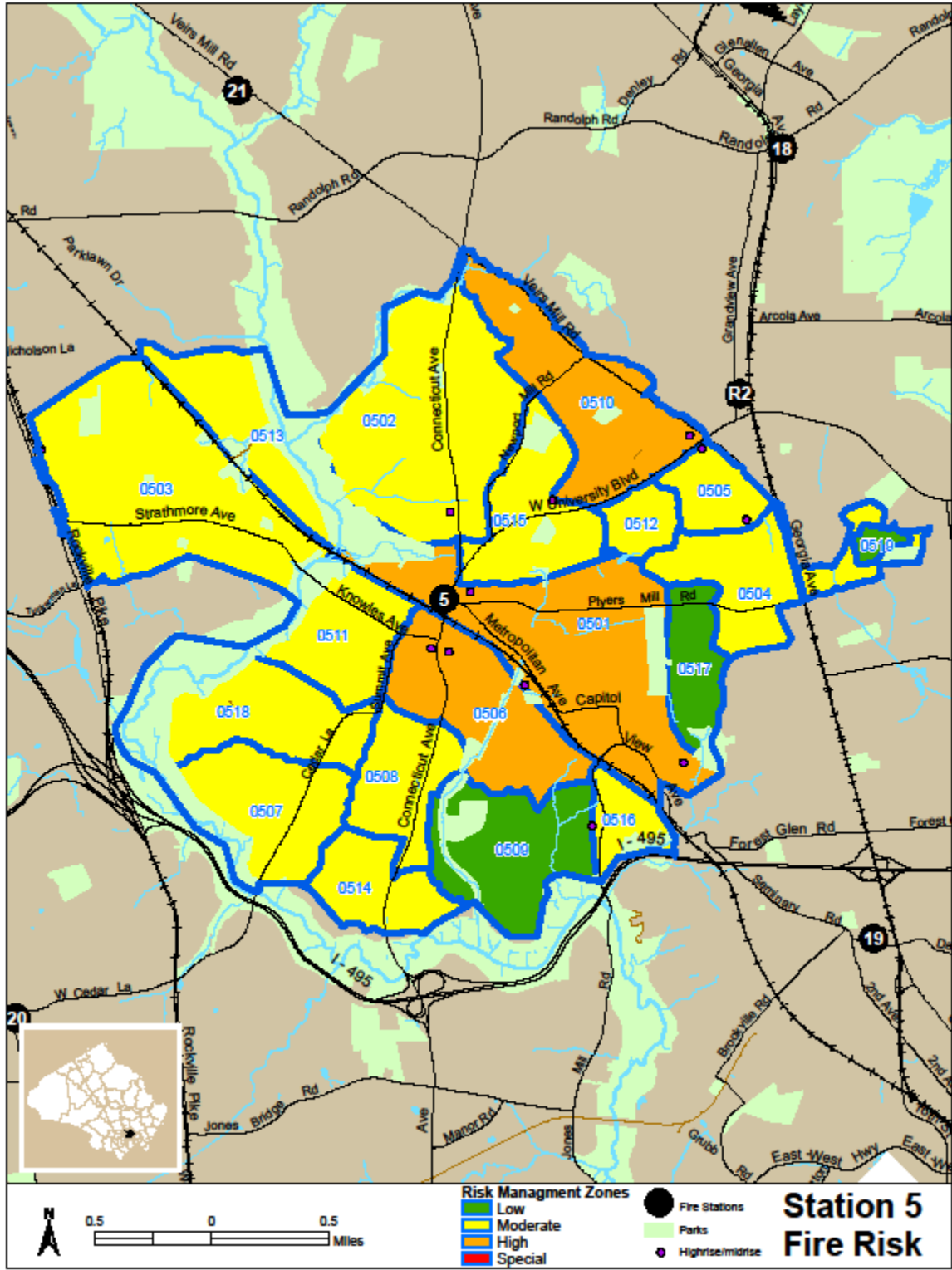
---

Station 5 - # of Incidents by Call Type				
<b>Fiscal Year</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013 (1st and 2nd Quarter Only)</b>
<b>Adaptive</b>	<b>368</b>	<b>418</b>	<b>345</b>	<b>206</b>
<b>ALS1</b>	<b>785</b>	<b>749</b>	<b>790</b>	<b>391</b>
<b>ALS2</b>	<b>104</b>	<b>102</b>	<b>85</b>	<b>43</b>
<b>BLS</b>	<b>1196</b>	<b>1163</b>	<b>1223</b>	<b>551</b>
<b>Explosive</b>	<b>6</b>	<b>4</b>	<b>10</b>	<b>3</b>
<b>Firefull</b>	<b>13</b>	<b>18</b>	<b>23</b>	<b>9</b>
<b>Hazmat</b>	<b>28</b>	<b>26</b>	<b>41</b>	<b>13</b>
<b>Tech Rescue</b>	<b>8</b>	<b>13</b>	<b>14</b>	<b>10</b>
<b>Water/Ice</b>	<b>N/A</b>	<b>1</b>	<b>N/A</b>	<b>1</b>
<b>Total Calls</b>	<b>2708</b>	<b>2687</b>	<b>2717</b>	<b>1305</b>
<b>*Note: Total category includes unfiltered calls - # may exceed sum of call types</b>				

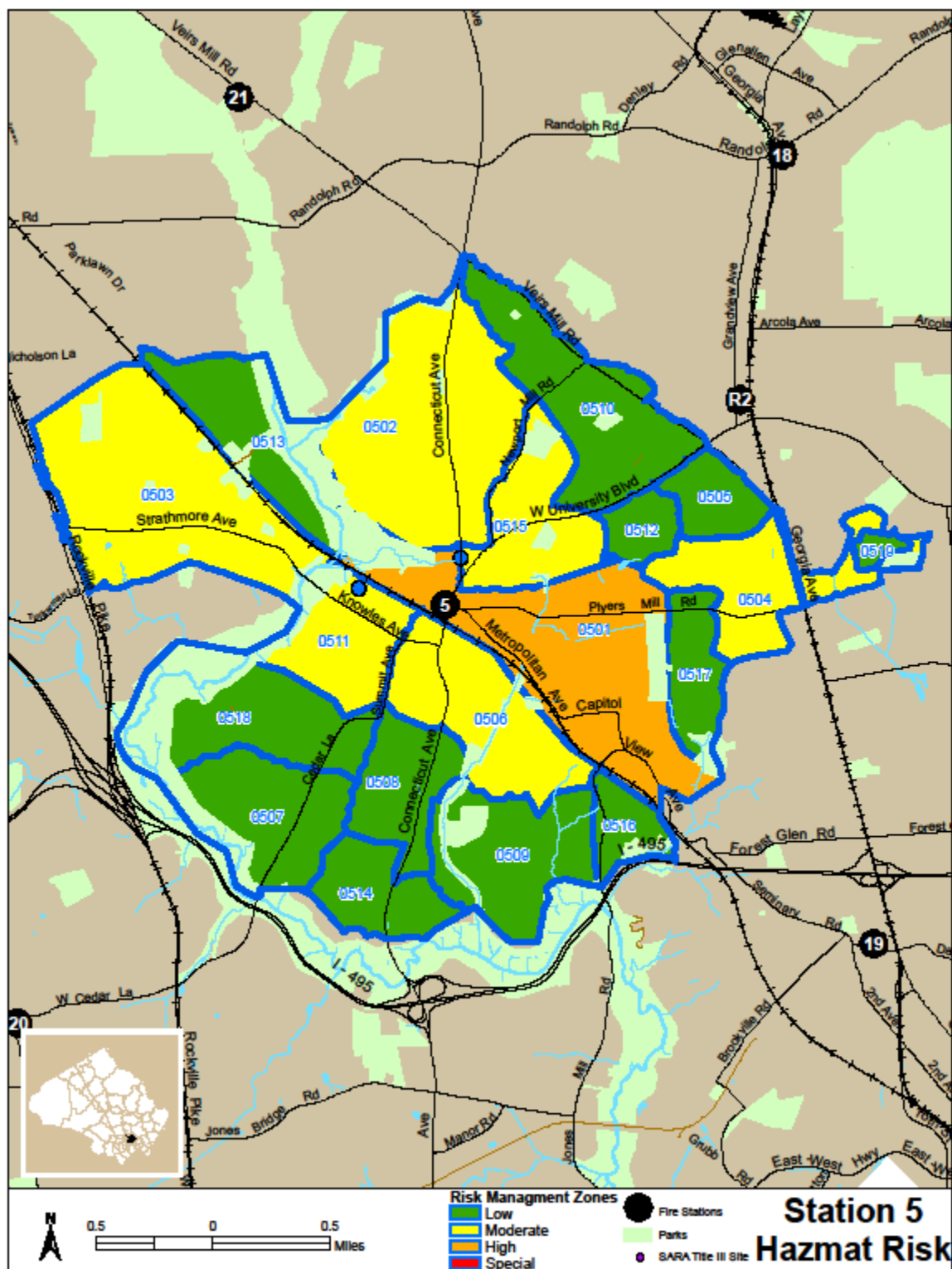
MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



# MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER





# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

### Fire Station 6

Battalion 2

Bethesda Station

6600 Wisconsin Avenue, Bethesda



#### Description

- Ownership: Volunteer
- Employees: 7 Shift Work
- Apparatus Housed: Engine (AFRA), Truck
- First Due Area: 3.95 mi<sup>2</sup>
- Active LOSAP Volunteers: 10
- IECS Volunteers: 1

#### Overview

Bethesda is northwest of Washington D.C. and is one of the most affluent and highly educated communities in the country, listed on many popular magazines' lists as a great place to live. Bethesda sits on a major thoroughfare and the original route of an ancient Native American trail. In 1805 it was developed into a toll road called the Washington and Rockville Turnpike (today known as MD Route 355) that carried tobacco and other products between Georgetown, Rockville and Frederick. Soon thereafter, a community grew surrounding the turnpike and the population started to grow. Following World War II, Bethesda expanded due to the developing government, government contractors, medical professionals and other well-known businesses making their claim on the land.

Station 6 has a dynamic combination of high-rises, residential structures, commercial businesses and shopping plazas. A unique aspect of the first due is the heavy concentration of foot traffic, which doubles during normal business hours due to commuters. There is a large quantity of night life as well including ethnic restaurants and bars.

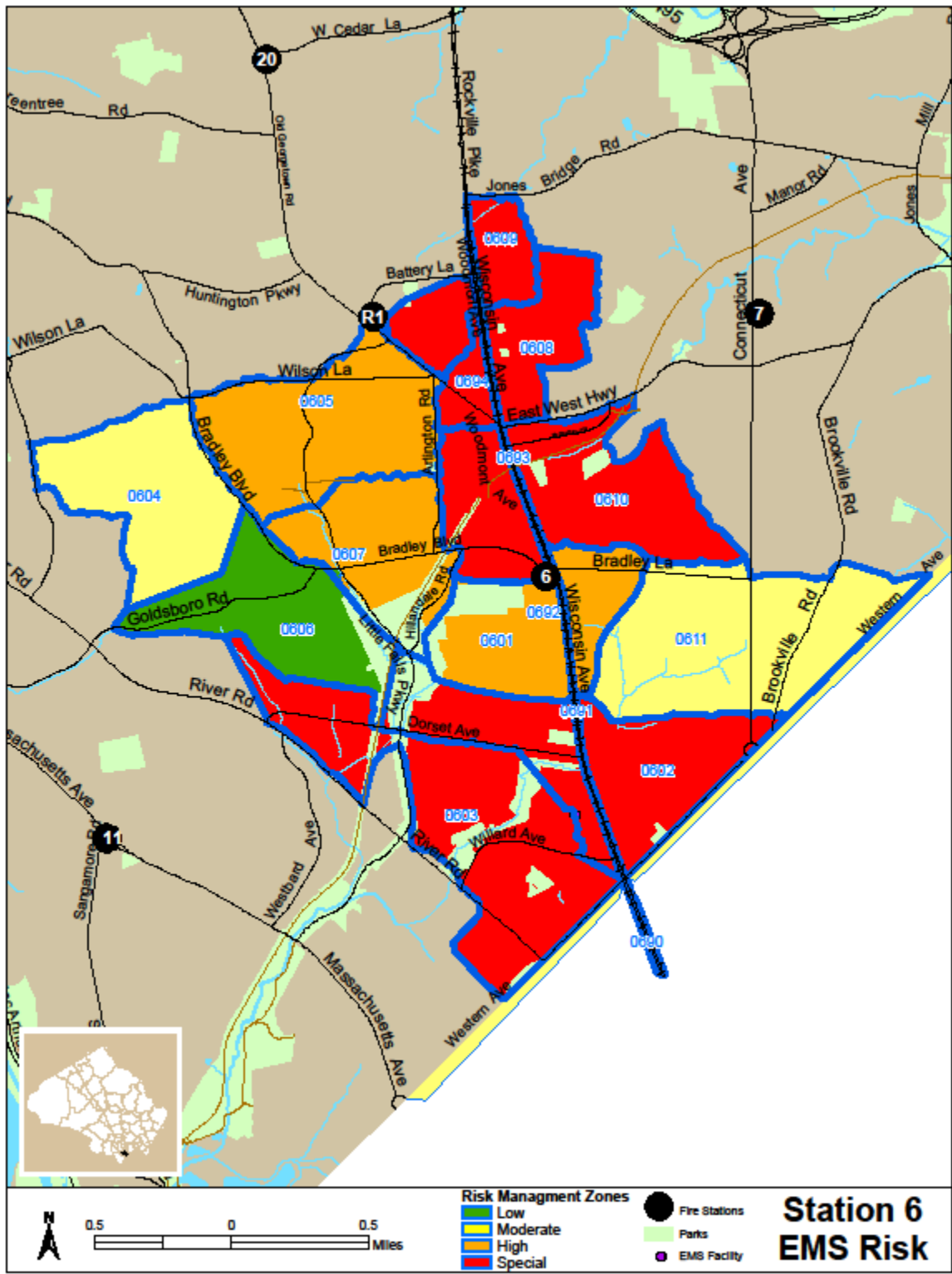
## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

### High Risk Areas – Including Hazards

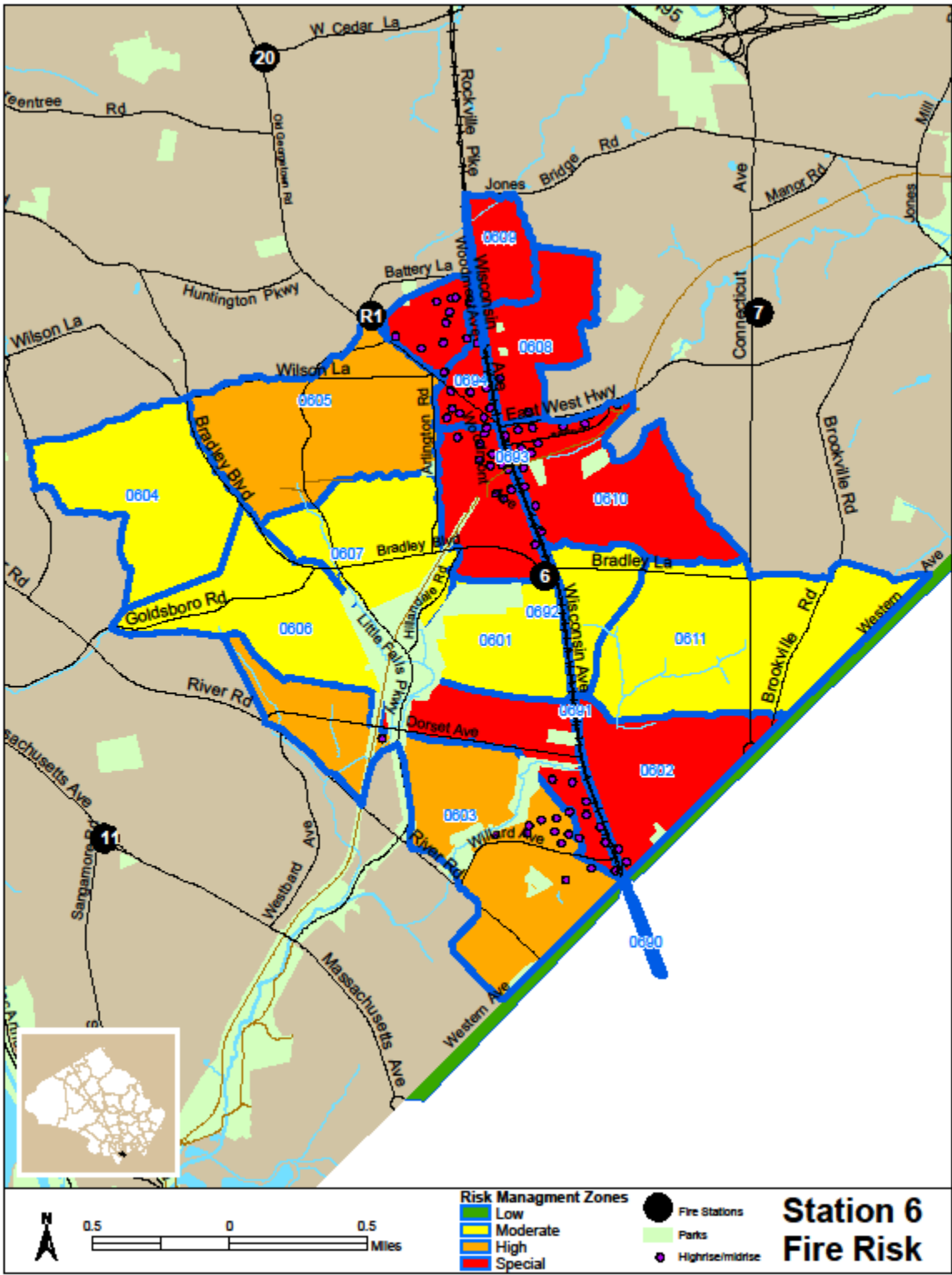
Station 6 has METRO tracks through their first due area and it services two METRO stations: Friendship Heights and Bethesda – just miles apart. METRO services many professionals, visitors, and students. In November 2010, the Friendship Heights METRO had 9,275 pedestrians entering the METRO and 9,250 pedestrians exiting the METRO during the weekdays alone. For weekends during November 2010, 8,849 pedestrians entered the METRO at Friendship Heights and 8,719 exited. In November 2010, the Bethesda METRO had 9,957 pedestrians entering the METRO and 10,148 pedestrians exiting during the weekdays alone. For weekends during November 2010, 8,380 pedestrians entered the METRO at Bethesda and 8,516 exited. There are no industrial, chemical, or biological hazmat plants and/or warehouses in Station 6's first due area.

Station 6 - # of Incidents by Call Type				
Fiscal Year	2010	2011	2012	2013 (1st and 2nd Quarter Only)
Adaptive	628	614	589	306
ALS1	577	604	627	345
ALS2	107	120	83	58
BLS	1090	1109	1124	554
Explosive	5	14	14	8
Firefull	48	34	38	12
Hazmat	20	37	45	22
Tech Rescue	74	93	83	34
Water/Ice	N/A	N/A	N/A	N/A
Total Calls	2739	2833	2773	1416
*Note: Total category includes unfiltered calls - # may exceed sum of call types				

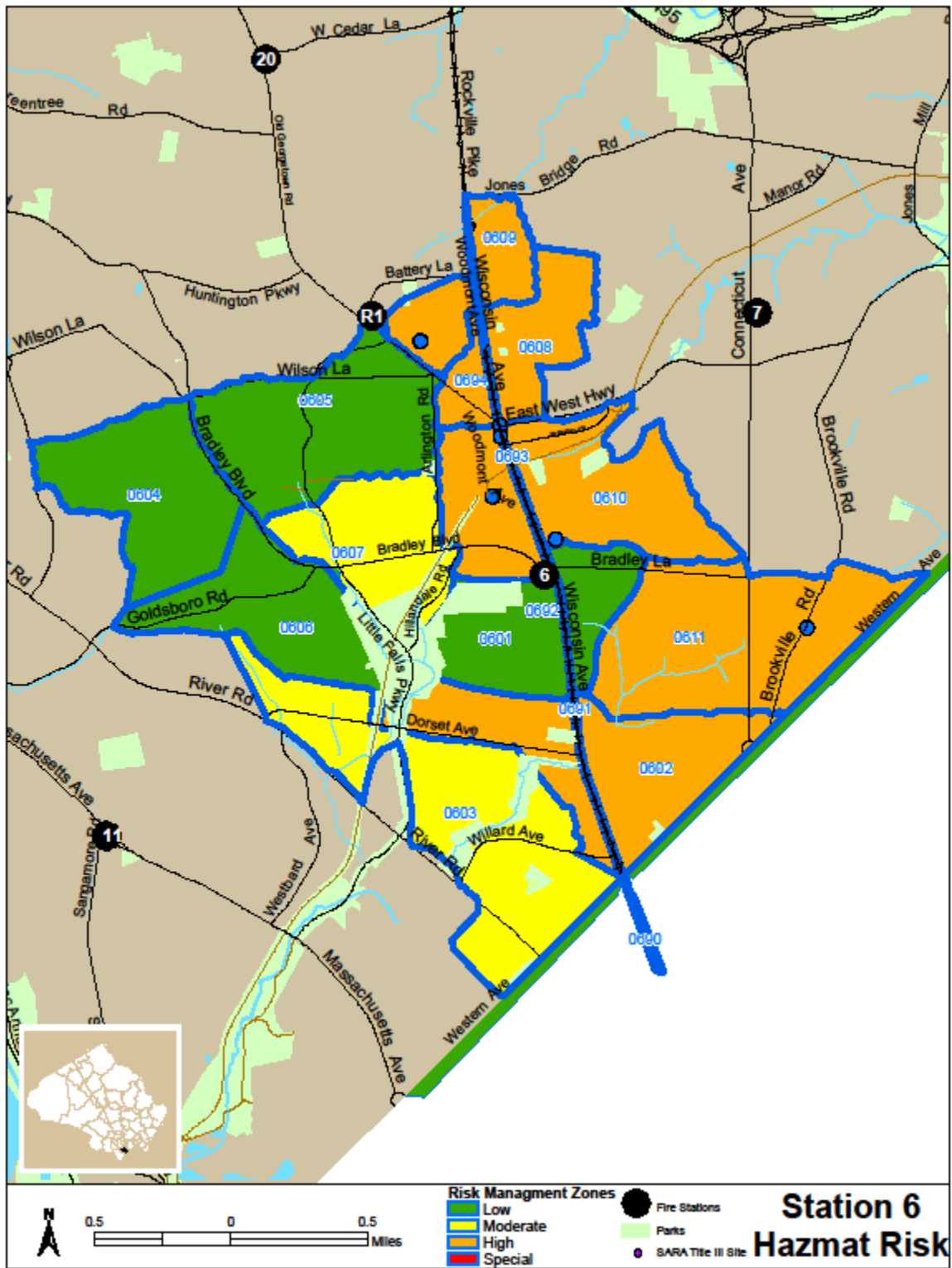
MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



\_\_\_\_\_



MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

### Fire Station 7

Battalion 2

Chevy Chase Station

8001 Connecticut Avenue, Chevy Chase



#### Description

- Ownership: Volunteer
- Employees: 4 Shift Work
- Apparatus Housed: Engine, Hazmat Support Unit, Pick-up Truck, Duty Vehicle
- Specialty Team: Hazmat
- First Due Area: 3.58 mi<sup>2</sup>
- Volunteers: 0
- IECS Volunteers: 0

#### Overview

Chevy Chase's history dates back to 1725 when Colonel Joseph Belt received a patent for 560 acres of land which he named "Chevy Chase." There are two stories of where the name came from, but no one knows for certain. The area remained farmland until two politicians bought several parcels of the land to start a "home suburb of the nation's capital" in the late 1800s. Chevy Chase's founders envisioned a distinctive community of handsome homes in a park-like setting with no suggestion of a crowded city, and businesses were mandated to stay at the boundaries. Chevy Chase and the city of Washington D.C. were connected by a streetcar service for the commuters. It is thought today that Chevy Chase remains substantially the same in what its founders envisioned; however, some may beg to differ

Station 7 is proximate to two heavily-traveled highways that have high-volume traffic at any given time or day of the week: Connecticut Avenue (RT185) and East-West Hwy (RT410). Interstate 495 runs through the northern portion of Station 7's area. Across the street from Station 7 is the affluent Columbia Country Club and nearby landmarks include the Chevy Chase Country Club, and many

## MCFRS

### COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

foreign embassies.

#### **High Risk Areas – Including Hazards**

The personnel at Station 7 must complete a one hundred-twenty hour hazmat technician certification annually which includes one hazmat drill per month. The Hazmat Team averages ten incidents per month.

There are no METRO rail or CSX tracks currently in Station 7's first due area. There is; however, a plan for "light" rail (The "Purple Line") that will operate east and west; from Bethesda to New Carrollton (Prince George's County), with connections to several METRO lines and the MARC commuter rail line. The Purple Line will run through Station 7's area in the right-of-way of an abandoned freight rail branch line. It is hoped that the Purple Line will reduce roadway gridlock in southern Montgomery County. A "light" rail is powered by an overhead wire that can operate at-grade and is compatible with pedestrians and automobile traffic. It is expected the Purple Line will largely run at grade with a few short sections that will run above or below grade. The plan envisions twenty-one stations between Bethesda and New Carrollton, with 60,000 riders a day by 2030.

Of the sixty-six mile Capital Beltway (I495), Station 7 has the worst stretch of the Beltway for collisions from Georgia Avenue to Rockville Pike<sup>145</sup>; mainly due to the winding nature of the road. This stretch of I495 has a history of serious collisions as well as many hazardous material incidents involving tractor-trailers and tankers.

There are no industrial, chemical and/or biological plants or warehouses in Station 7's first due area.

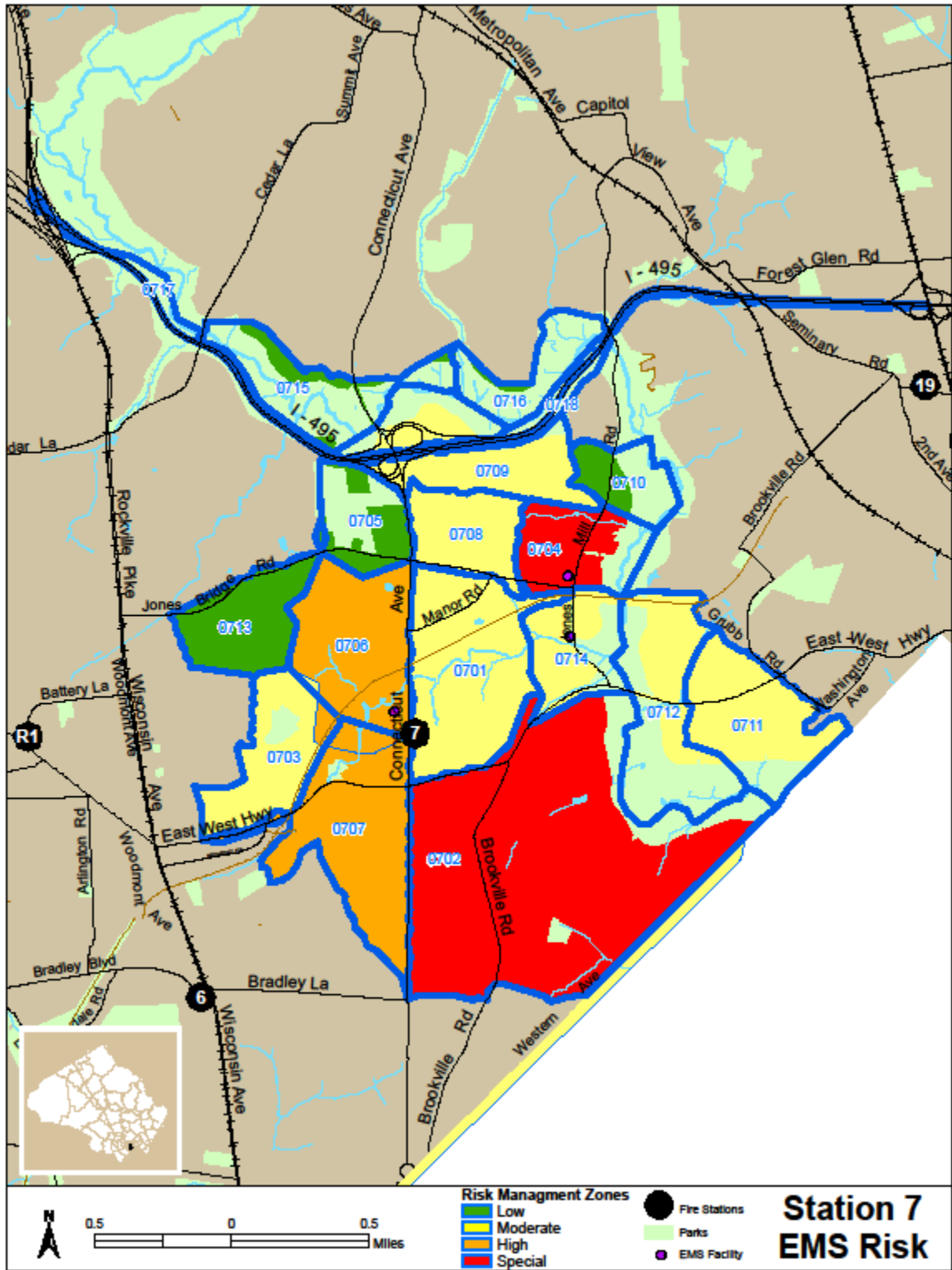
**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

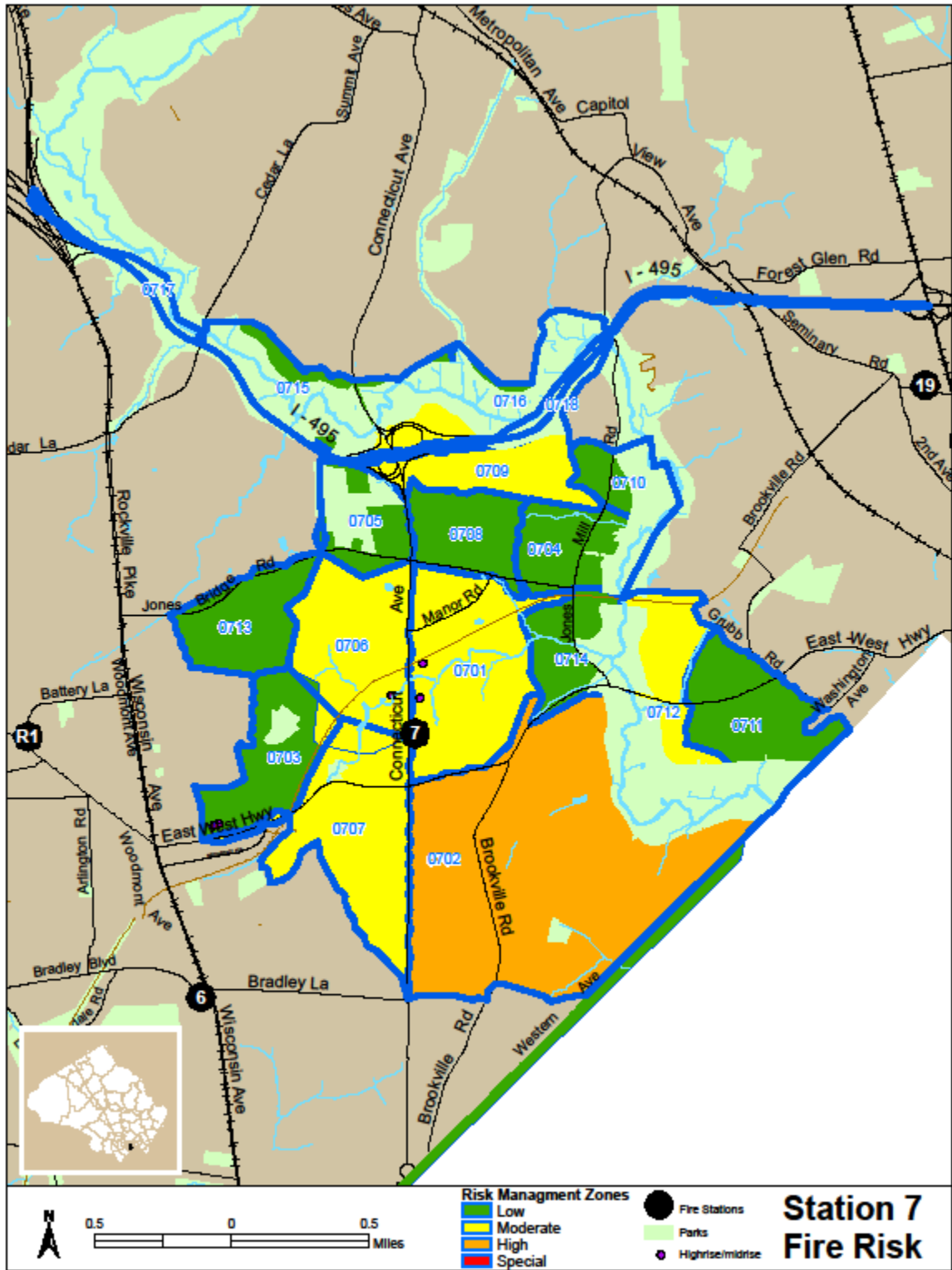
<b>Station 7 - # of Incidents by Call Type</b>				
<b>Fiscal Year</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013 (1st and 2nd Quarter Only)</b>
<b>Adaptive</b>	<b>308</b>	<b>326</b>	<b>290</b>	<b>180</b>
<b>ALS1</b>	<b>469</b>	<b>392</b>	<b>368</b>	<b>206</b>
<b>ALS2</b>	<b>50</b>	<b>50</b>	<b>45</b>	<b>23</b>
<b>BLS</b>	<b>887</b>	<b>810</b>	<b>866</b>	<b>406</b>
<b>Explosive</b>	<b>3</b>	<b>7</b>	<b>2</b>	<b>2</b>
<b>Firefull</b>	<b>13</b>	<b>9</b>	<b>8</b>	<b>11</b>
<b>Hazmat</b>	<b>10</b>	<b>22</b>	<b>12</b>	<b>16</b>
<b>Tech Rescue</b>	<b>11</b>	<b>10</b>	<b>11</b>	<b>5</b>
<b>Water/Ice</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>Total Calls</b>	<b>1941</b>	<b>1792</b>	<b>1791</b>	<b>960</b>
<b>*Note: Total category includes unfiltered calls - # may exceed sum of call types</b>				



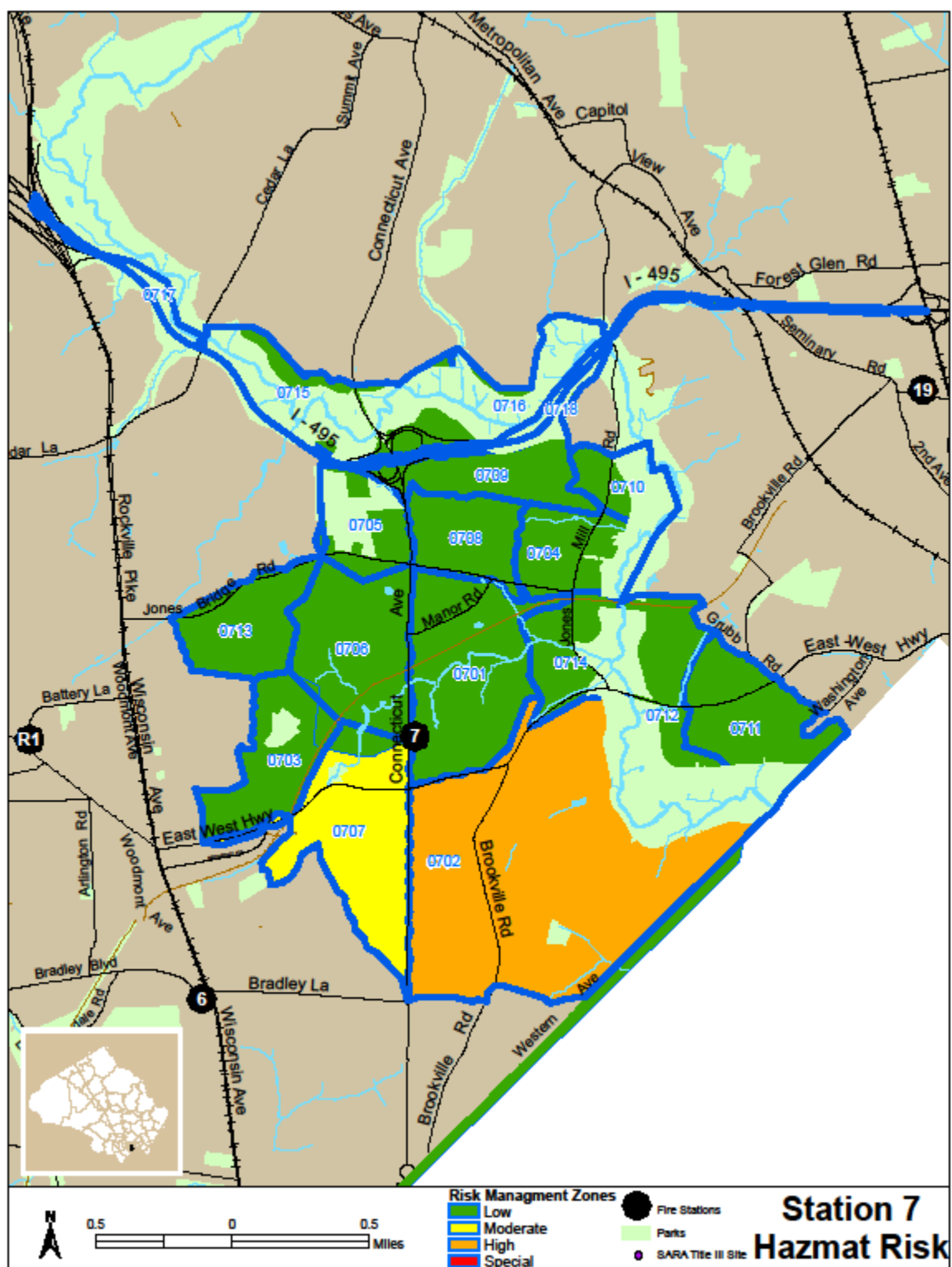
MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



# MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

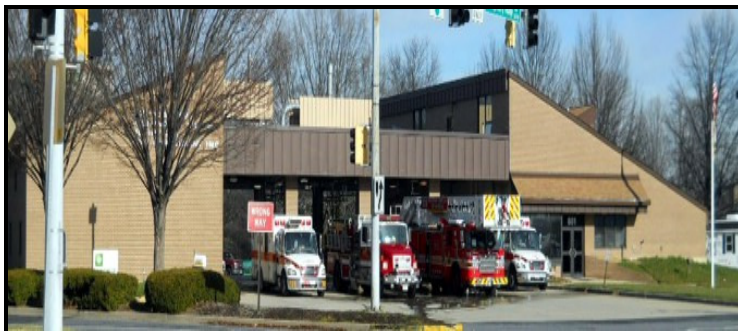
---

### Fire Station 8

Battalion 3

Gaithersburg Station

801 Russell Avenue, Gaithersburg



#### Description

- Ownership: Volunteer
- Employees: 12 Shift Work
- Apparatus Housed: Engine, Tower, Ambulance, 2 Medic Units, Brush Truck
- First Due Area: 12.73 mi<sup>2</sup>
- Active LOSAP Volunteers: 52
- IECS Volunteers: 36

#### Overview

Gaithersburg started out as an agriculture settlement in 1765 until the Baltimore and Ohio Railroad was built in 1873. At that time, while it remained primarily an agriculture settlement, it also became a vacation spot for Washingtonians – a place to relax and enjoy the summer. In 1878, Gaithersburg became incorporated, agricultural businesses expanded with the use of the B & O Railroad and the community started to develop. In 1899, the Gaithersburg Latitude Observatory was built as part of an international project to measure the earth's wobble on its polar axis. In June 1961, the National Bureau of Standards broke ground on its first Gaithersburg building bringing with it growth to the city; jobs for citizens living in the area; and, high-technology companies following in suit. In the 1970s the agricultural aspect of Gaithersburg dimmed and technology took over making it the fourth largest incorporated city in the state behind Baltimore, Frederick and Rockville.

The eastern section of the city still has the “mature” value of an old city with some of the original landmarks still in tact. The western section of the city continues to grow and change as well as be the home of major highways and interstates and many major employers in the area: IBM, Lockheed Martin, Kaiser Permanente and a plethora of biotechnology businesses.

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

#### **High Risk Areas – Including Hazards**

National Institute of Standards and Technology (NIST), part of the U.S. Department of Commerce, is the nation's first federal physical science research laboratory. The institute broke ground in Gaithersburg in 1961. The scientists and technical staff have made contributions to image processing, DNA diagnostic "chips," smoke detectors and automated error-correcting software for machine tools, to name a few. NIST sits on 593 acres in Station 8's first due area and has approximately twenty-nine buildings. NIST has its own fire department (Station 53 operating an engine and ambulance) that manages the campus' code enforcement and sprinkler systems. The fire department also runs approximately fifty EMS calls and two hundred fifty fire calls on their campus as well as assists Montgomery County in their call load on a single-pull basis. The campus also has a small nuclear reactor which is a device to initiate and control a sustained nuclear chain reaction.

The Gaithersburg Fairgrounds (mentioned above) is a major fire risk with dozens of closely-spaced, unsprinklered, wooden barns and other structures. The fire and EMS risk is particularly high during the annual Montgomery County Agricultural Fair and the Latino Festival when tens of thousands of visitors are present.

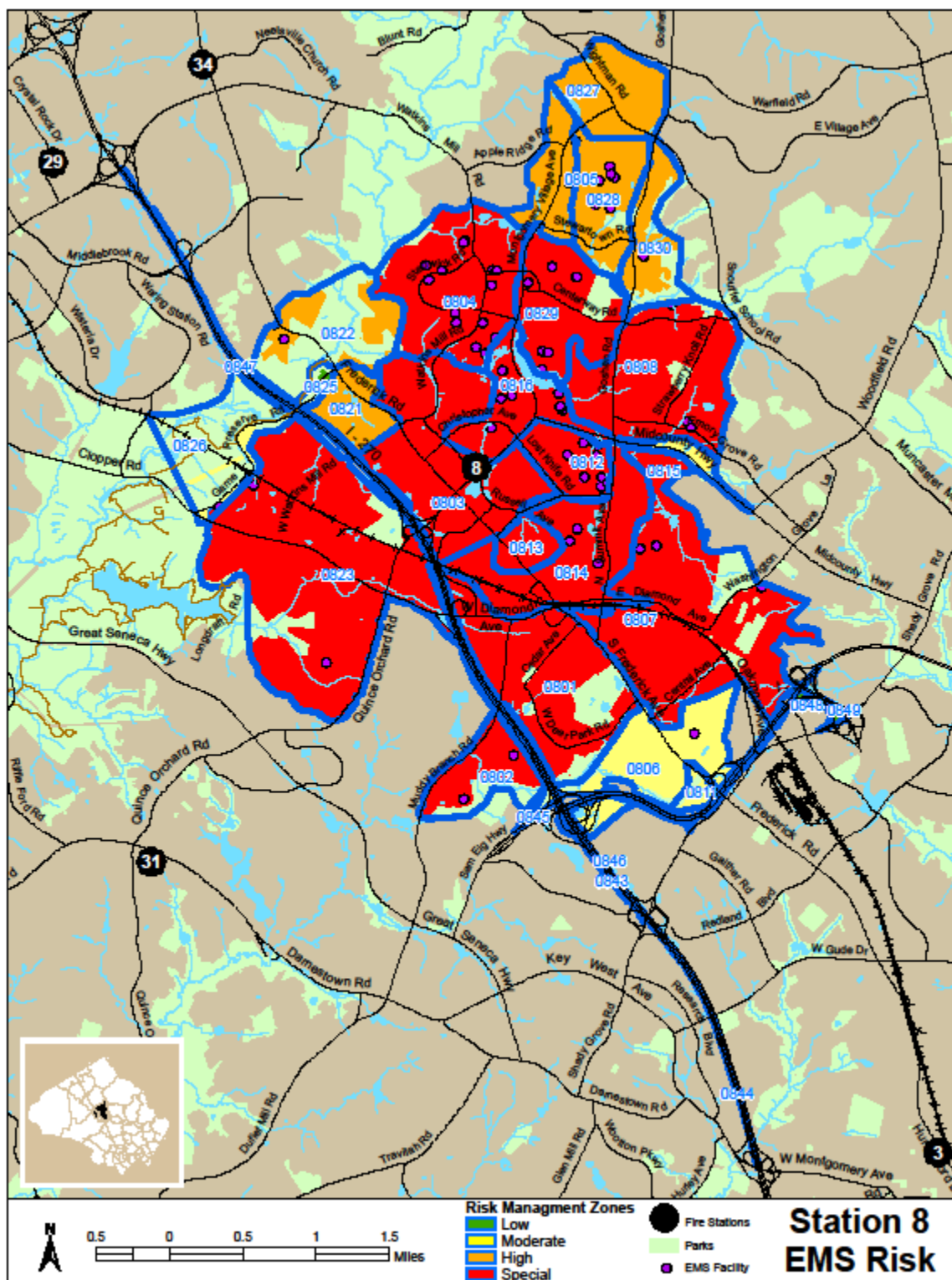
Colonial Pipeline runs underground in Station 8's first due area. It is a major interstate pipeline that runs from Houston, TX to New York and delivers finished fuel products to the East Coast.<sup>164</sup> There are also some bio firms in Station 8's area but nothing large.

Interstates 270 and 370 and the new ICC run through the first due area as well as CSX and MARC trains. There is no METRO line in Station 8's area.

**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

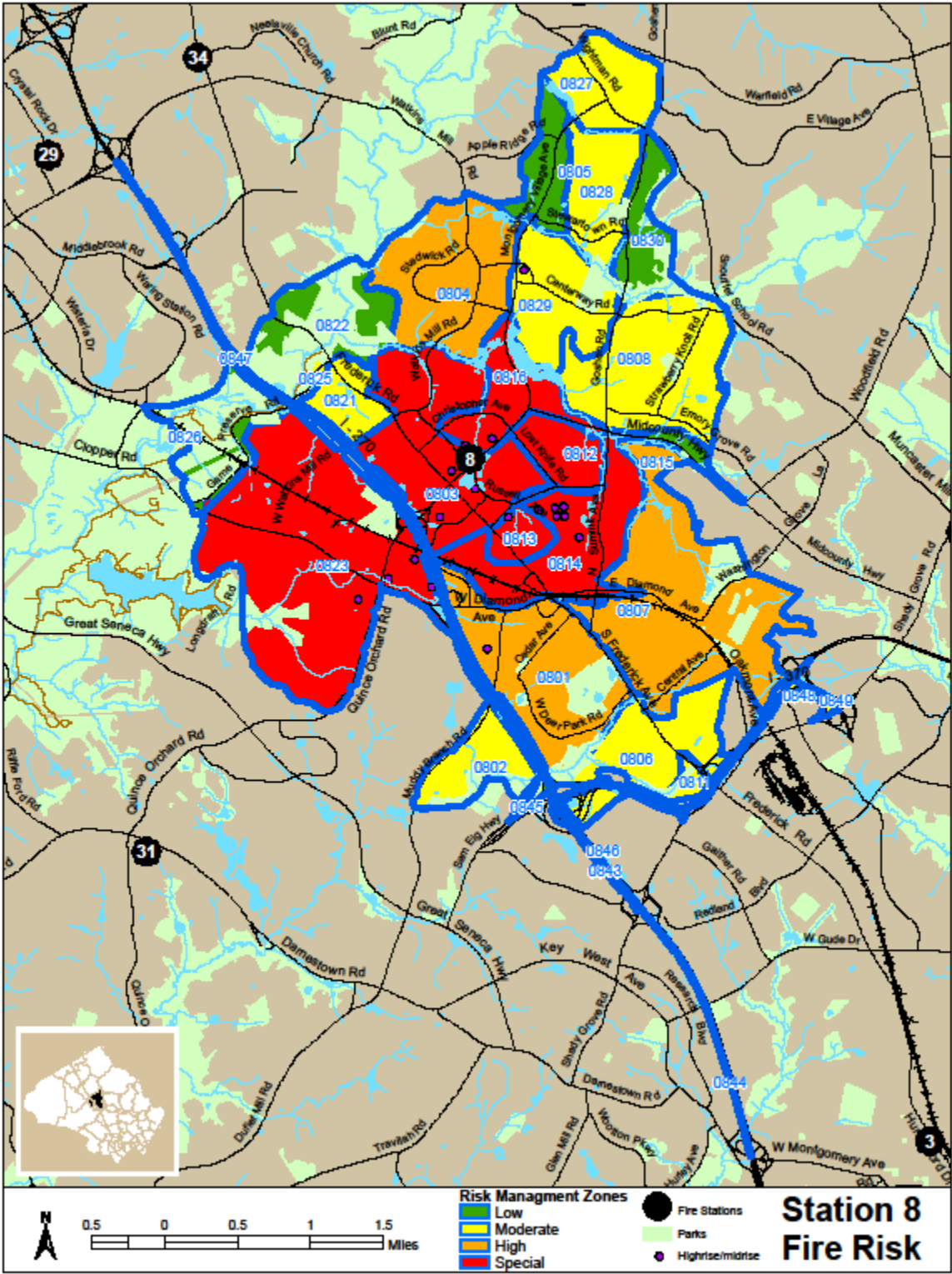
---

<b>Station 8 - # of Incidents by Call Type</b>				
<b>Fiscal Year</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013 (1st and 2nd Quarter Only)</b>
<b>Adaptive</b>	<b>1034</b>	<b>1038</b>	<b>1014</b>	<b>483</b>
<b>ALS1</b>	<b>2476</b>	<b>2352</b>	<b>2533</b>	<b>1428</b>
<b>ALS2</b>	<b>369</b>	<b>294</b>	<b>256</b>	<b>151</b>
<b>BLS</b>	<b>4164</b>	<b>3994</b>	<b>3952</b>	<b>2001</b>
<b>Explosive</b>	<b>12</b>	<b>16</b>	<b>14</b>	<b>15</b>
<b>Firefull</b>	<b>110</b>	<b>87</b>	<b>99</b>	<b>45</b>
<b>Hazmat</b>	<b>53</b>	<b>116</b>	<b>109</b>	<b>53</b>
<b>Tech Rescue</b>	<b>58</b>	<b>79</b>	<b>63</b>	<b>21</b>
<b>Water/Ice</b>	<b>N/A</b>	<b>1</b>	<b>5</b>	<b>2</b>
<b>Total Calls</b>	<b>8756</b>	<b>8391</b>	<b>8476</b>	<b>4449</b>
<b>*Note: Total category includes unfiltered calls - # may exceed sum of call types</b>				

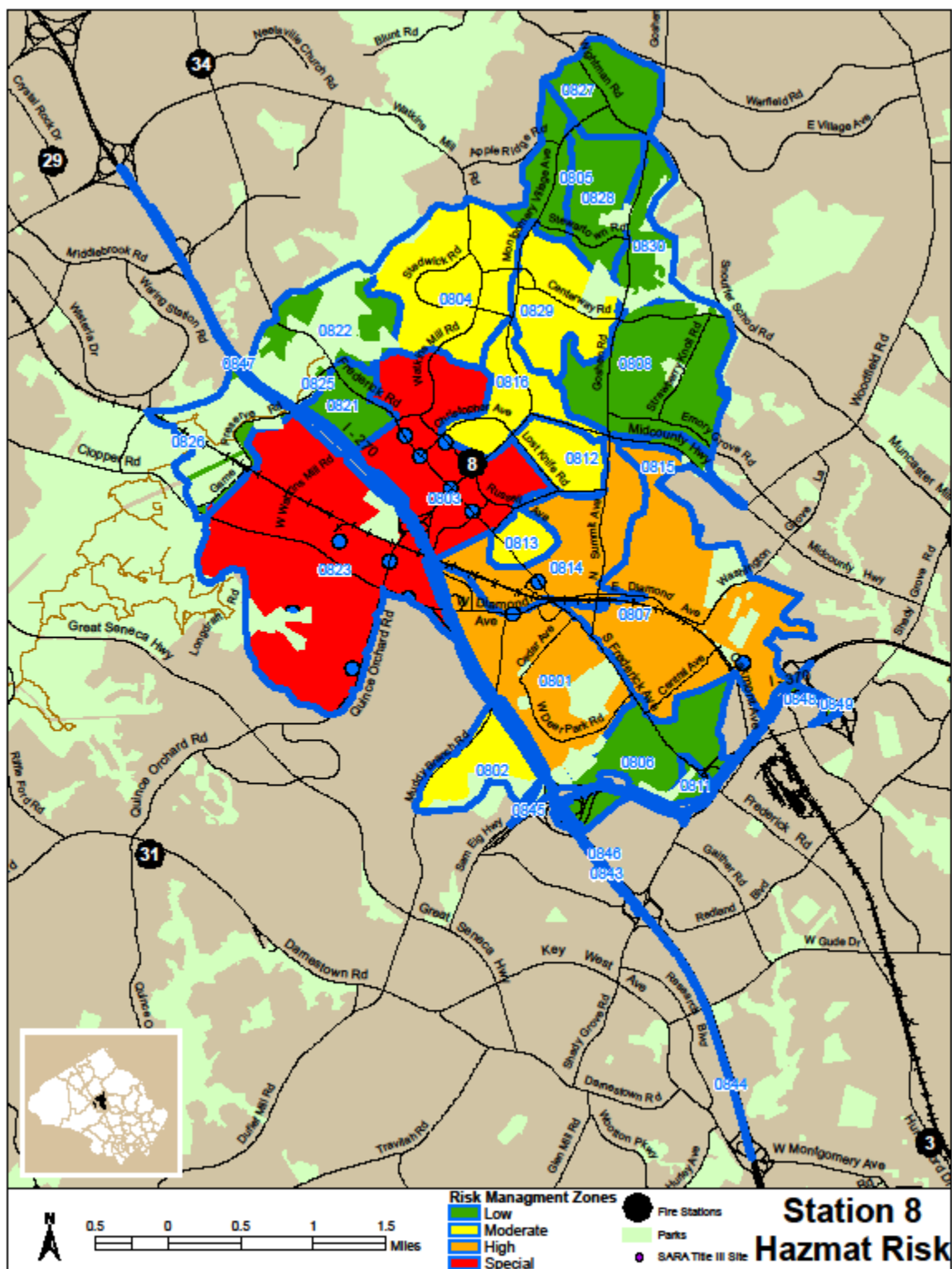




MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER







# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

### Fire Station 9

Battalion 5

Hyattstown Station

25801 Frederick Road, Clarksburg



#### Description

- Ownership: Volunteer  
Morton Building (houses both Rescue Engines and tanker)
- Employees: 3 Shift Work
- Apparatus Housed: Engine (AFRA 2 of 3 shifts), Ambulance, Tanker, 2 Brush Trucks, Utility/Plow
- First Due Area: 15.42 mi<sup>2</sup>; Also covers out-of-county area in Frederick County of 15 mi<sup>2</sup>
- Active LOSAP Volunteers: 22
- IECS Volunteers: 5

#### Overview

Hyattstown was founded by a Frederick County farmer, Jesse Hyatt, in 1798. The town was incorporated by the Maryland legislature in 1809 and with RT355 going through the area, the population grew and the town's economy was stimulated. When the Baltimore and Ohio Rail line came to the area the town's economy shifted to a more agricultural state than its original business owners: blacksmiths, carpenters, shoemakers, etc. In 1986, Hyattstown was named one of the largest groupings of relatively unaltered 19<sup>th</sup> century buildings in the U.S.<sup>169</sup> The fire department was founded on May 1929 by the citizens of the community.

Fire station 9 runs an AFRA two of the three shifts because paramedics are assigned there on those shifts. The AFRA goes into service when they are working. Station 9 is not currently a four-person AFRA due to their three-person staffing.

## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

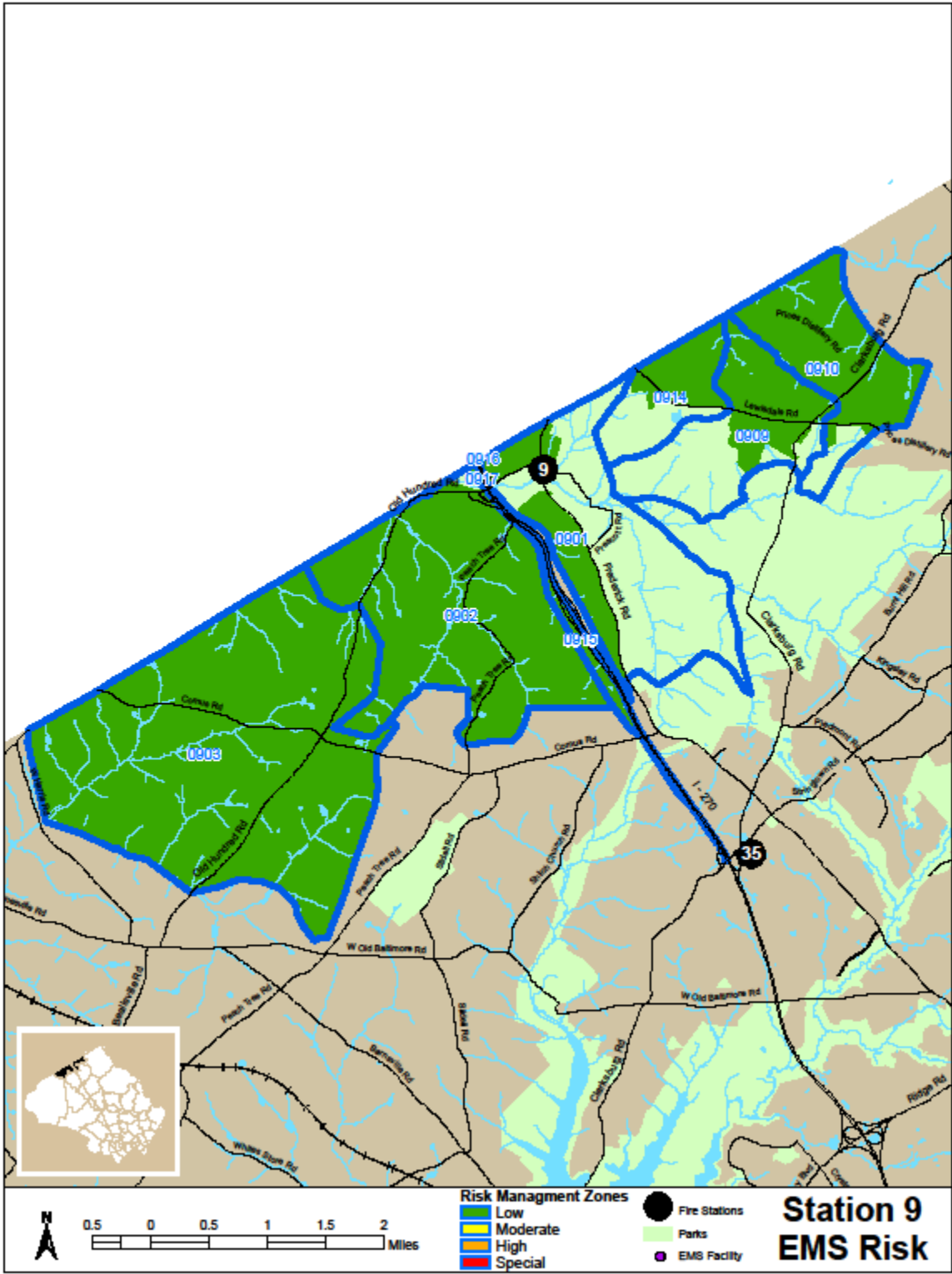
### High Risk Areas – Including Hazards

Interstate 270 runs through Station 9's first due area and is the main road network between northern Montgomery County and Frederick County. Hazardous materials are transported by truck and tankers along I270. There are no industrial, chemical, and/or biological hazardous material plants or warehouses in Station 9's area.

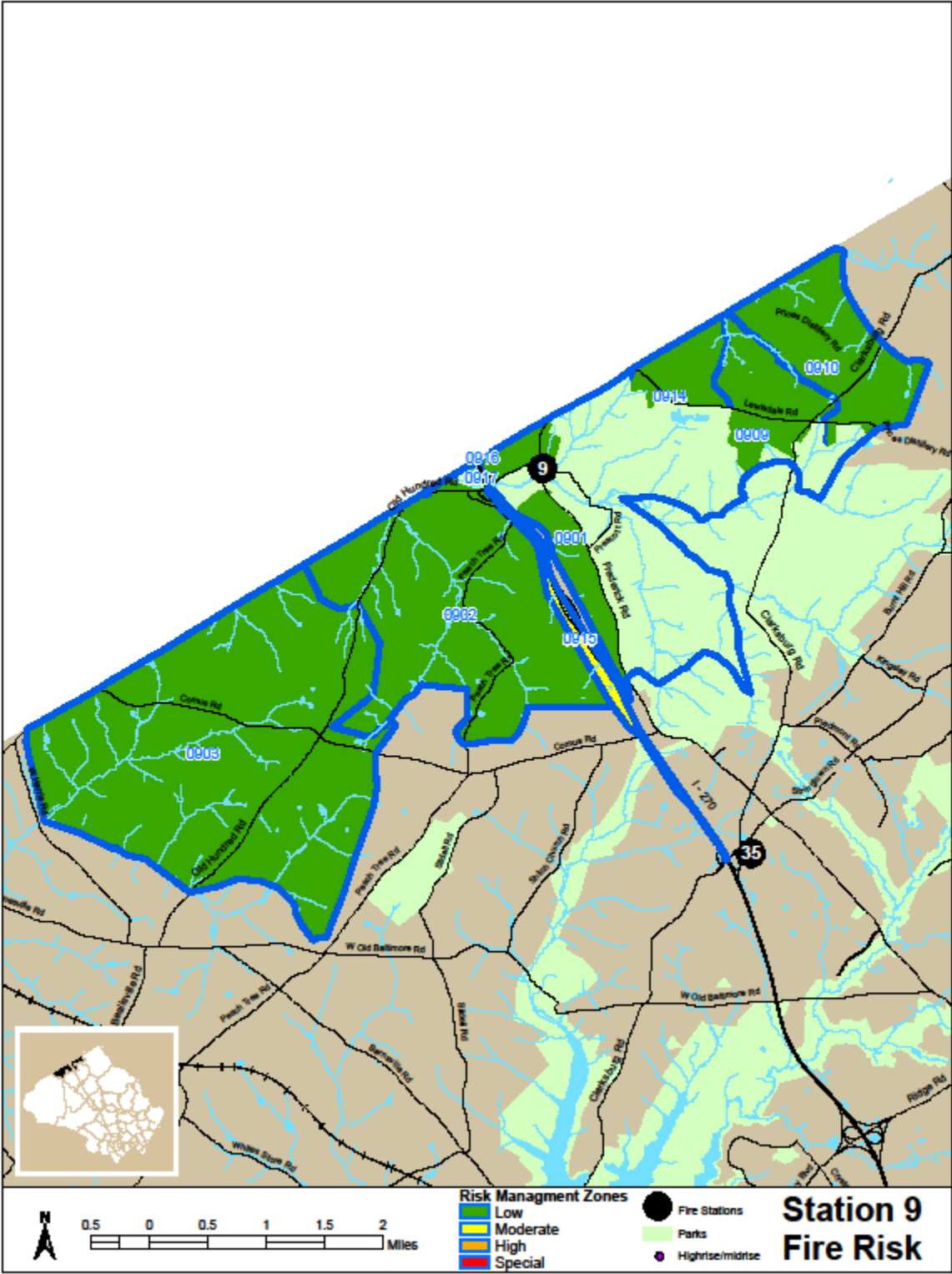
Little Bennett Park and Sugarloaf Mountain (see above) present significant risks for rescue of injured hikers/horseback riders and for brush fires. Both have limited access for fire department vehicles, making many areas of the parks difficult to reach to effect rescues and fire fighting.

Station 9 - # of Incidents by Call Type				
Fiscal Year	2010	2011	2012	2013 (1st and 2nd Quarter Only)
Adaptive	35	41	37	20
ALS1	33	44	41	24
ALS2	3	2	1	1
BLS	70	84	81	38
Explosive	1	N/A	N/A	N/A
Firefull	1	2	2	N/A
Hazmat	2	2	1	1
Tech Rescue	N/A	N/A	N/A	N/A
Water/Ice	N/A	N/A	N/A	N/A
Total Calls	168	198	181	92
*Note: Total category includes unfiltered calls - # may exceed sum of call types				

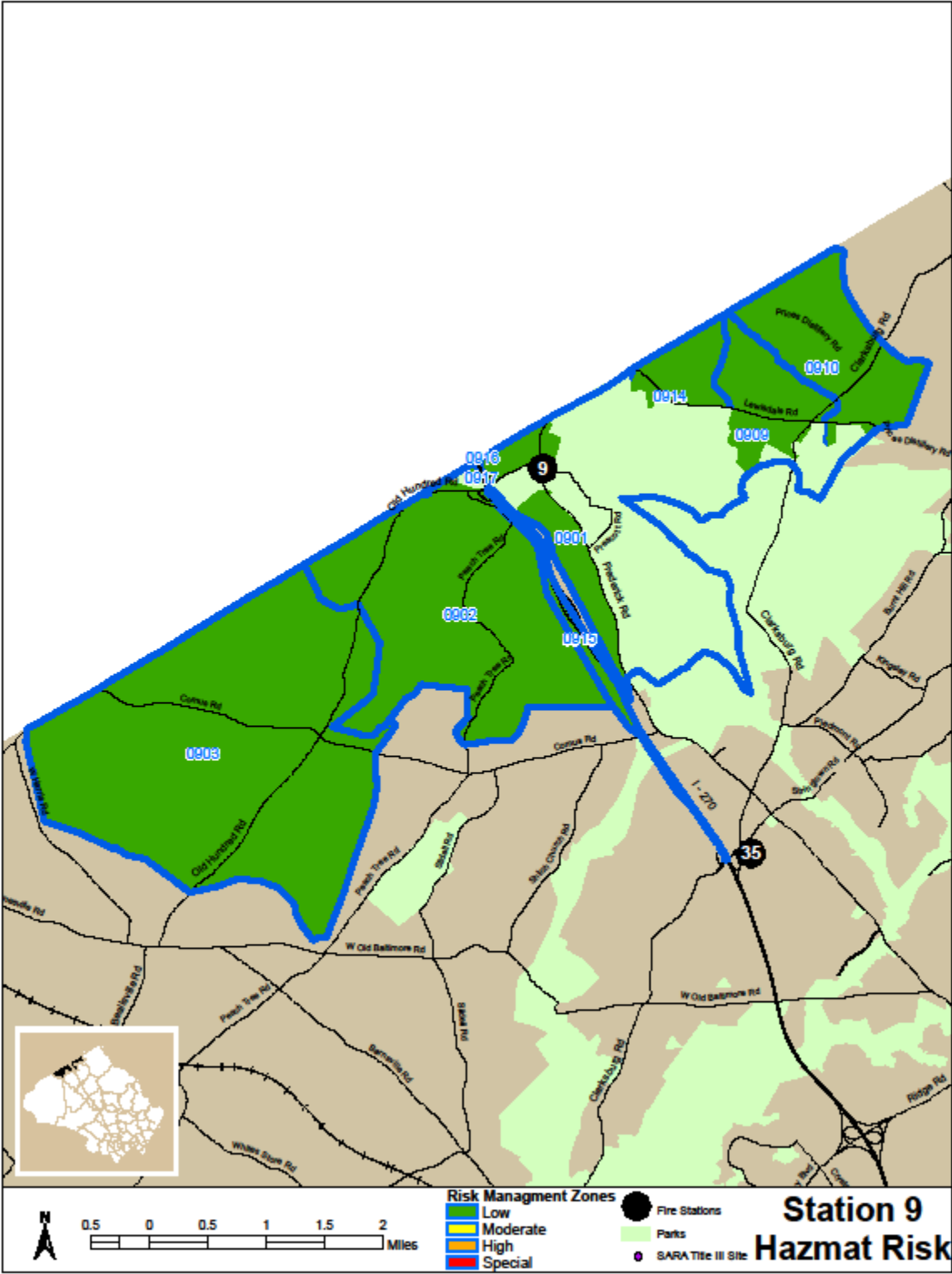
\_\_\_\_\_



MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

### Fire Station 10

Battalion 2

Cabin John Station

8001 River Road, Bethesda



#### Description

- Ownership: County
- Employees: 6 Shift Work; 2 Day Work  
(8 total on weekdays)  
(6 total on nights/weekends)
- Apparatus Housed: 2 Engines\*, 2 Ambulances\*, Tiller Truck, Brush Truck, 2 Cars, Utility, Boat Support Unit, 4 Boats \*includes reserve engine and ambulance
- Specialty Team: Swift Water Rescue
- First Due Area: 9.5 mi<sup>2</sup>
- Active LOSAP Volunteers: 50
- IECS Volunteers: 46

#### Overview

In 1930, the community started its own fire department, with the firehouse built on MacArthur Boulevard at Seven Locks Road. The firehouse became the center for community affairs and beloved by the residents of the area. In 1984, the firehouse on MacArthur Boulevard was sold and the station was moved to its present location on River Road near Seven Locks Road where it is more centrally located to serve the area more efficiently. The station is located about .1 mile from Interstate 495 – the section running between Interstate 270 and Northern Virginia.

The personnel at Station 10 are members of the River Rescue Team. They endure grueling, countless training hours to prepare for the many calls they receive for rescues on the Potomac River, C & O canal, and associated trail system (from which patients are frequently evacuated by river to a suitable extraction location. The employees need to complete a Montgomery County Swift Water



## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

Rescue Specialist Packet. The packet includes training in the areas of PPE & equipment, swimming, ropes, self rescue, ice rescue, boat operations, area, knowledge, shallow water operations, helicopter operations and low head dams. It normally takes one year of specialty assignment to cover all the topics and test on the specifics. The team then does yearly recertification on all the water skills in May.

#### **High Risk Areas – Including Hazards**

There is significant interstate traffic flowing through Station 10's first due area. There are two major interstate highways and two major parkways located in the first due: I270 spur is a 2.1 mile interstate connector that supports nearly 250,000 vehicles between I495 and I270. Station 10 also serves a portion of I495 which surrounds the United States Capital of Washington D.C. The highway is known as the Capital Beltway and supports over 250,000 vehicles daily. The Cabin John Parkway is 1.5 miles that carries significant commuter traffic between I495 and the Clara Barton Parkway. The Clara Barton Parkway is a Montgomery County commuter parkway that connects MacArthur Boulevard, I495, and terminates at Canal Road in Washington D.C. This parkway carries significant commuter traffic.

Located in Station 10's first due area is the Naval Surface Weapons Center (NSWC) at Carderock. This particular facility specializes in ship design and integration; environmental quality systems, hull forms and propulsors; structures and materials; signatures, silencing systems, and susceptibility; machinery systems; and vulnerability and survivability systems. The division's expertise span more than forty disciplines, from electrical and mechanical to engineering to computer engineering and physics. There are some classified areas that require fire department staging and may be left to burn on orders of the base commander should an incident occur. The base does maintain explosives on site and their locations are known to responders. There is a federally operated Fire Station on site (Station 52) that only operates an engine and is staffed with four personnel twenty-four hours a day.<sup>198</sup> MCFRS has a mutual aid agreement with this fire department.

Carderock, part of the C & O Canal National Historical Park located adjacent to NSWC, is probably best known for its ample rock climbing opportunities up to eighty feet directly above

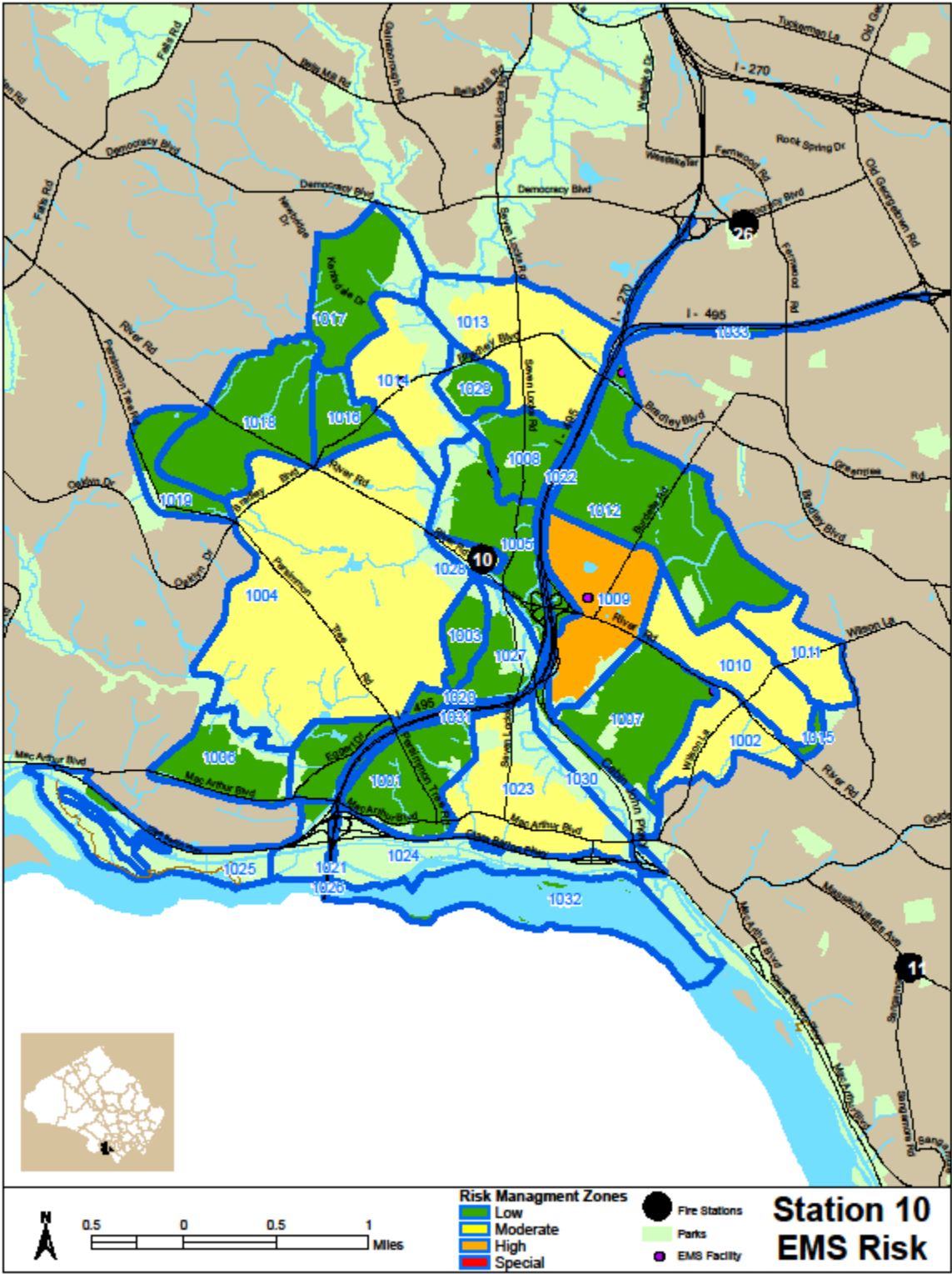


## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

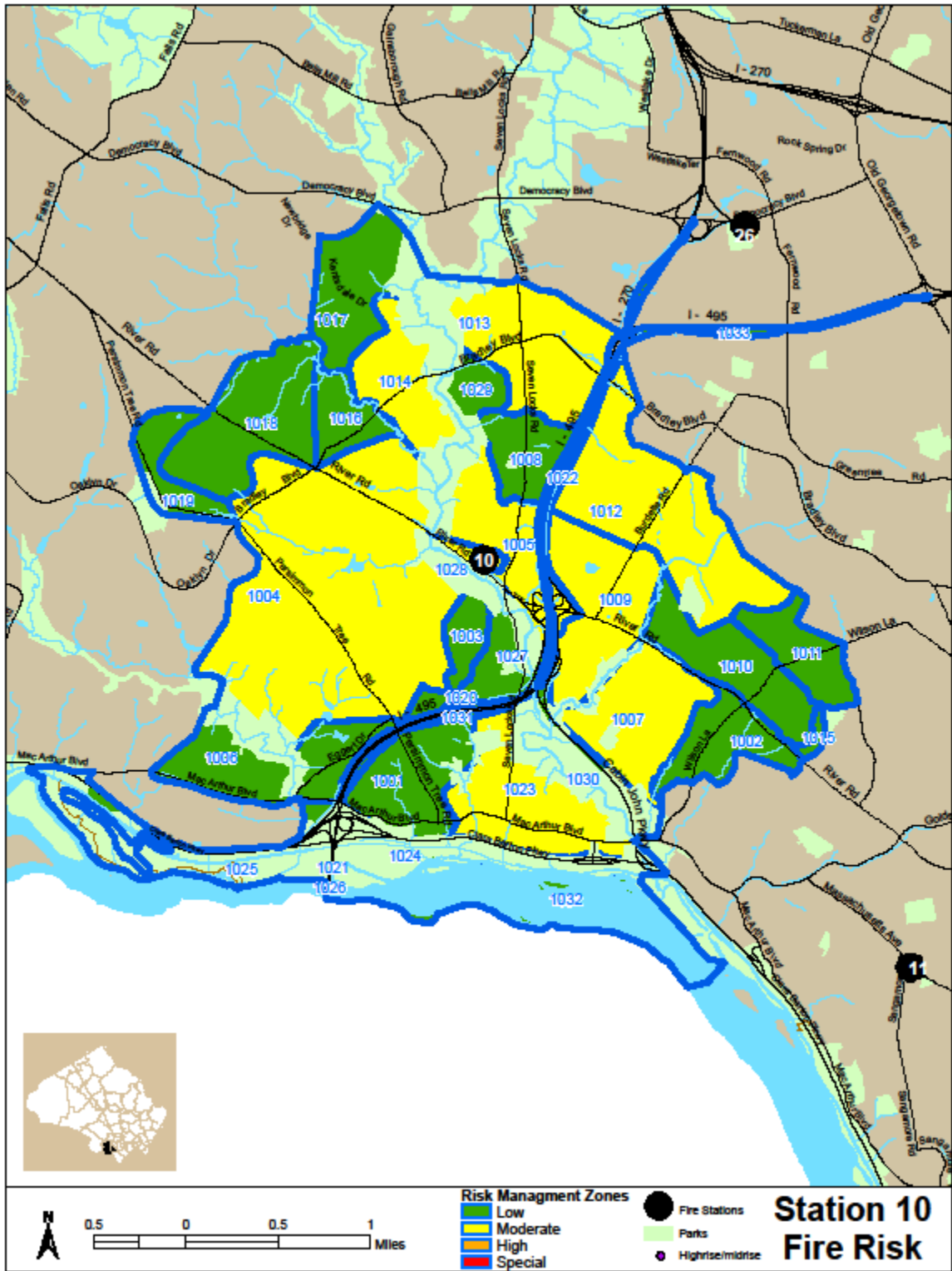
the Potomac River. Runners and hikers enjoy the picturesque sections of the canal and others enjoy the picnic areas. There are many paths that go off the canal towpath. One of them, the Billy Goat Trail, is a 4.7 mile hiking trail that follows the path between the canal and the Potomac River within the National Park. The trail has three sections: A, B, and C, with A being more difficult than the other sections. Section A is the most popular because it takes hikers through a rocky terrain, scaling a steep cliff face that has minimal foot room and scramble over huge boulders. Section B has one area where hikers traverse a sizeable rock face, and Section C is an easy walk with no real hazards. The three sections do not connect directly with each other but are connected along the C & O Canal towpath.

Station 10 - # of Incidents by Call Type				
Fiscal Year	2010	2011	2012	2013 (1st and 2nd Quarter Only)
Adaptive	359	379	271	172
ALS1	255	276	264	138
ALS2	44	38	38	25
BLS	680	595	631	290
Explosive	1	4	1	N/A
Firefull	12	6	14	8
Hazmat	9	23	25	10
Tech Rescue	3	10	7	3
Water/Ice	1	1	3	1
Total Calls	1454	1435	1361	683
*Note: Total category includes unfiltered calls - # may exceed sum of call types				

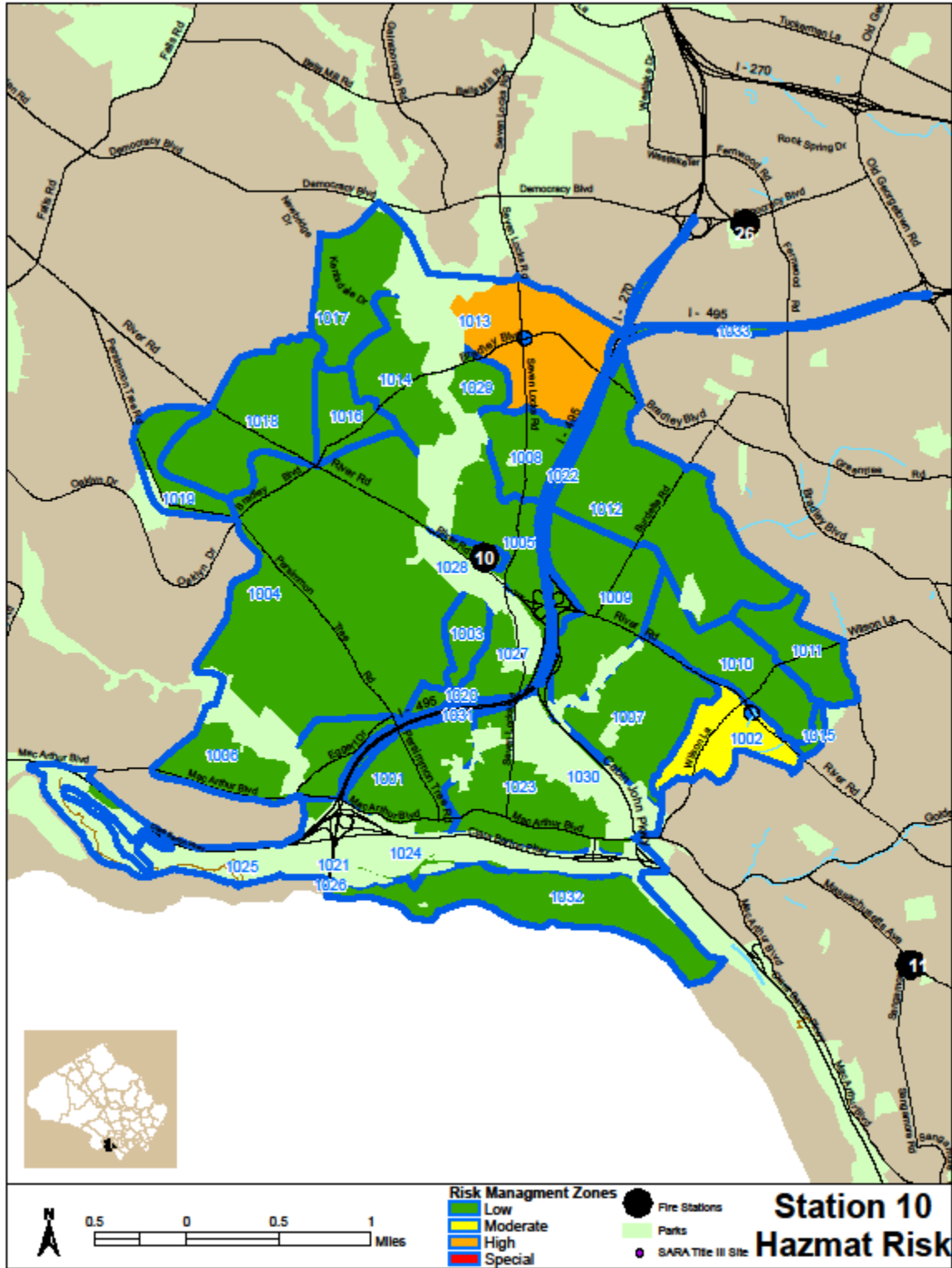
MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

### Fire Station 11

Battalion 2

Glen Echo Station

5920 Massachusetts Avenue, Bethesda



#### Description

- Ownership: Volunteer
- Employees: 5 Shift Work
- Apparatus Housed: Engine, Ambulance
- First Due Area: 5.17 mi<sup>2</sup>
- Active LOSAP Volunteers: 22
- IECS Volunteers: 24

#### Overview

Glen Echo began in 1889 when two tenacious, business-minded brothers purchased land along the Potomac River from Cabin John Creek in Maryland to the Walthonding Road area and named it Glen-Echo-On-The-Potomac. The brothers envisioned stone castles consuming the land and, in order to get people to make the stone castles, opened five quarries, one is still operating today. Trains provided easy access to and from Glen Echo but illness often plagued the area; rumors stipulate it was malaria, and the economy suffered. The brothers never gave up looking for a new way to build Glen Echo. They formed an alliance with the National Chautauqua education movement that unified Protestant churches for classes, discussions, entertainment and physical activities. The unification did not last long and the brothers decided to invest in an amusement park. In 1903, the brothers fell into severe debt with liens against the property and they finally sold the property. The park continued to entertain

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

through World War II but eventually closed in 1968. Currently the park is a Chautauqua again offering classes, dancing, etc.

Station 11 sits as a house that resembles the others in an affluent community. There are many unusual street names throughout the first due area that personnel must learn in order to know the running routes and a portion of the Potomac River and Capital Crescent Trail as well as multiple hiking trails run through the area.

#### **High Risk Areas – Including Hazards**

The Department of Defense (DOD) has one of its offices in Station 11's first due area that will become an intelligence campus. The agency has no fire department and no biological/hazardous buildings on this campus. Some of the buildings are very high security and some of the buildings do not have windows – which, to firefighters, can be extremely dangerous. There are certain buildings that if they were to catch fire would be allowed to burn with no intervention. The personnel at Station 11 mostly run EMS and Automatic Fire Alarms to the facility; there is always a police escort from the time they enter the campus until the time they leave. There are 3,000 – 3,300 employees that work on this campus. Station 11's area includes a dangerous portion of the Potomac River that includes the Brookmont Dam – a low-head dam with turbulent whitewater. The dam has been the scene of many past swift water incidents, including heroic rescues and drownings. Although the dam was modified in the mid-1980s to reduce the hydraulic effect, it still has dangerous rapids that lure risk-takers in kayaks and rafts despite an abundance of warning signs and buoys upstream.

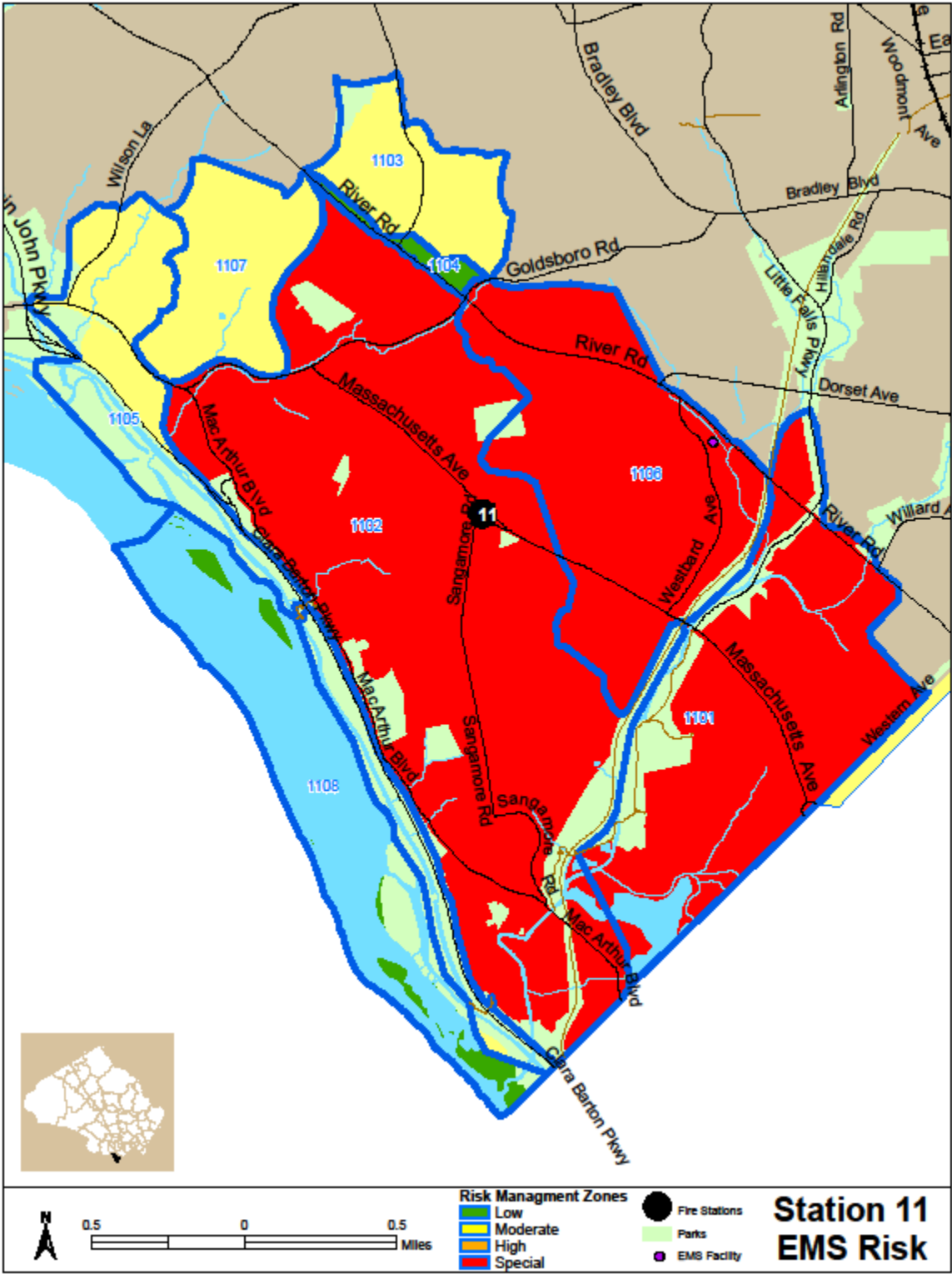
There is no high interstate traffic; METRO or railroads; and/or industrial, chemical, biological hazardous plants or warehouses.

**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

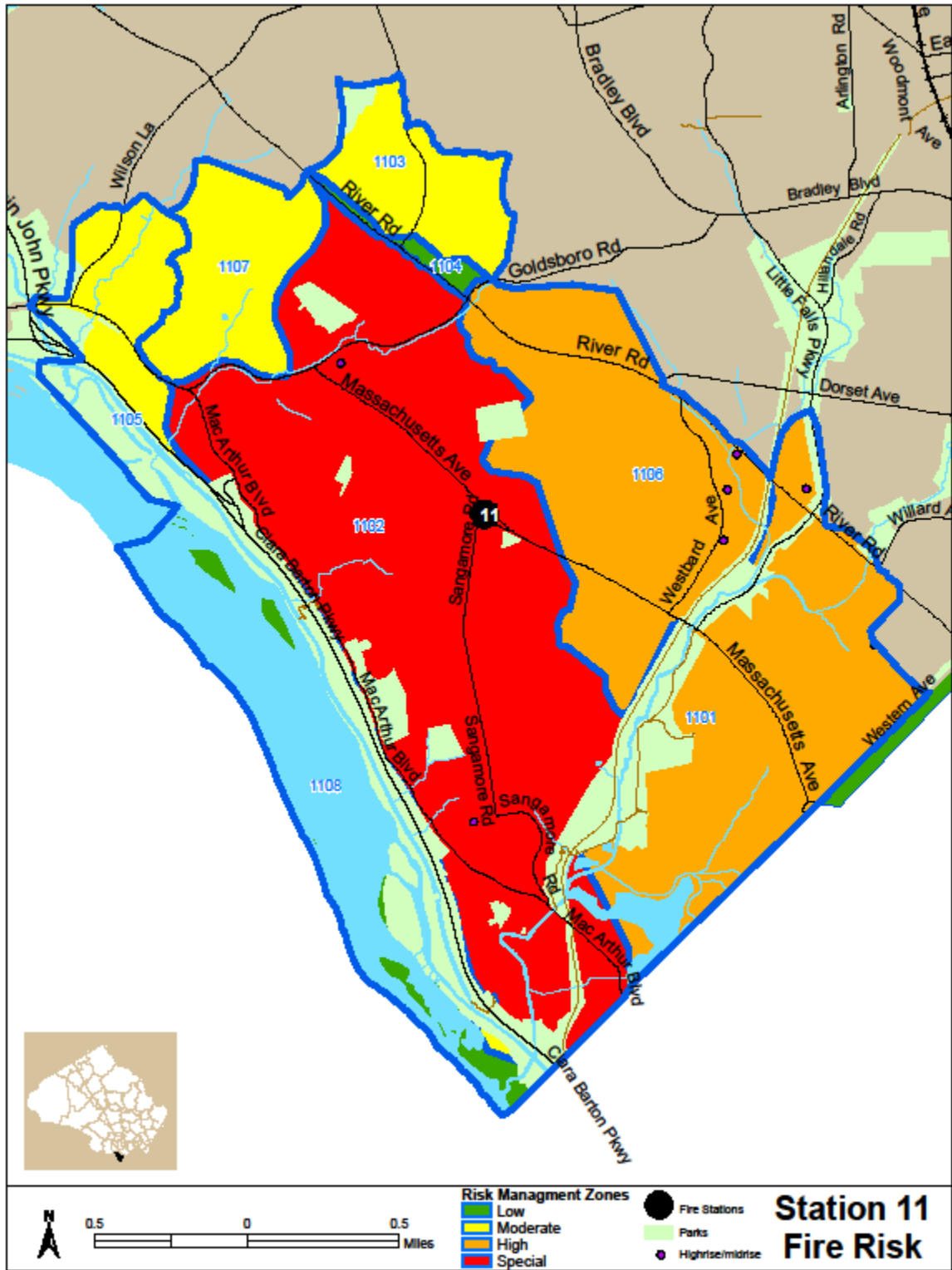
<b>Station 11 - # of Incidents by Call Type</b>				
<b>Fiscal Year</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013 (1st and 2nd Quarter Only)</b>
<b>Adaptive</b>	<b>388</b>	<b>391</b>	<b>358</b>	<b>238</b>
<b>ALS1</b>	<b>302</b>	<b>317</b>	<b>298</b>	<b>142</b>
<b>ALS2</b>	<b>51</b>	<b>48</b>	<b>52</b>	<b>29</b>
<b>BLS</b>	<b>552</b>	<b>599</b>	<b>548</b>	<b>278</b>
<b>Explosive</b>	<b>7</b>	<b>7</b>	<b>5</b>	<b>2</b>
<b>Firefull</b>	<b>18</b>	<b>13</b>	<b>12</b>	<b>5</b>
<b>Hazmat</b>	<b>13</b>	<b>27</b>	<b>36</b>	<b>16</b>
<b>Tech Rescue</b>	<b>4</b>	<b>10</b>	<b>8</b>	<b>11</b>
<b>Water/Ice</b>	<b>1</b>	<b>1</b>	<b>N/A</b>	<b>N/A</b>
<b>Total Calls</b>	<b>1461</b>	<b>1528</b>	<b>1467</b>	<b>786</b>
<b>*Note: Total category includes unfiltered calls - # may exceed sum of call types</b>				

MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

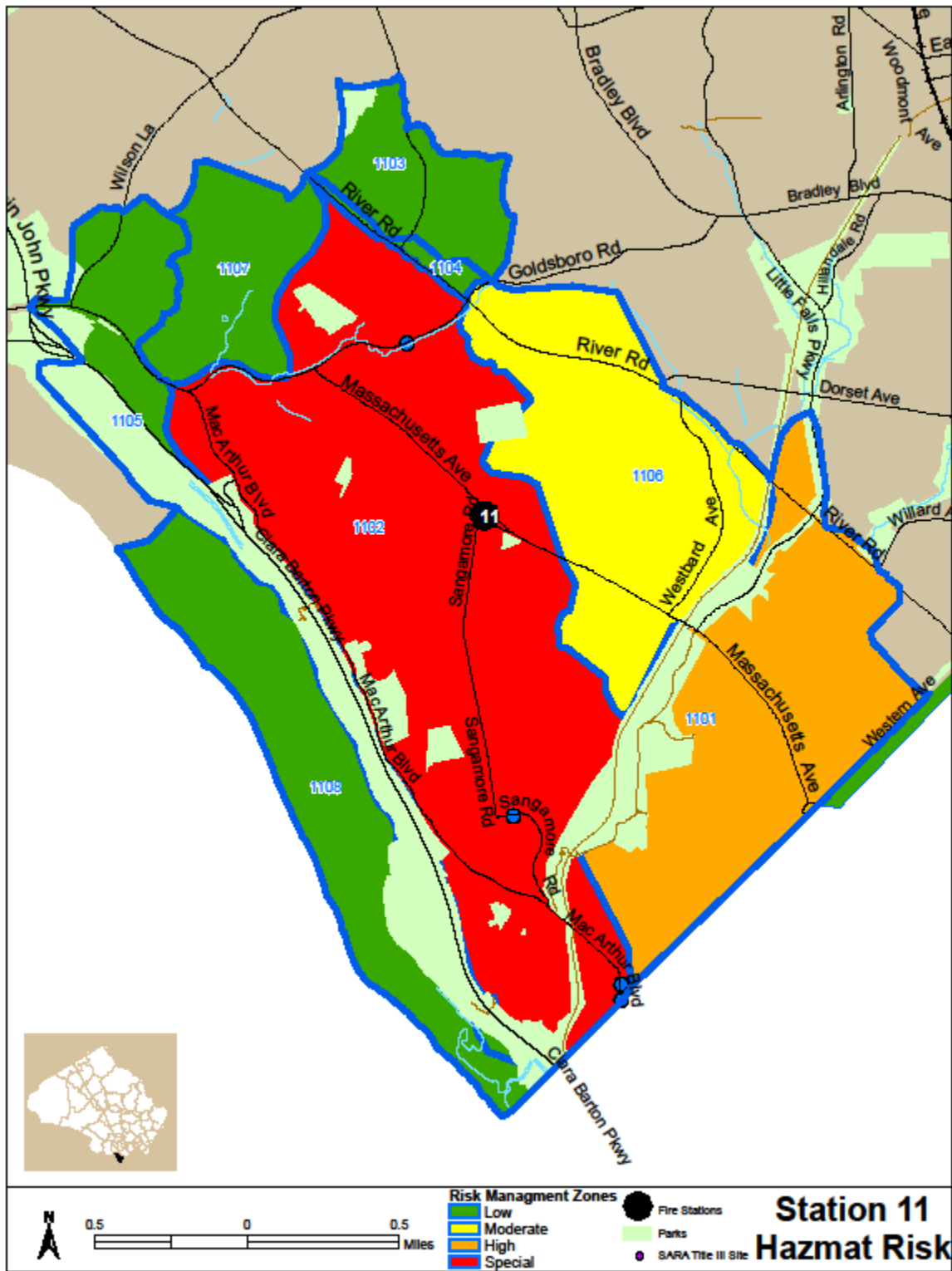




MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

### Fire Station 12

Battalion 1

Hillandale Station

10617 New Hampshire Avenue, Silver Spring



#### Description

- Ownership: Volunteer
- Employees: 10 Shift Work
- Apparatus Housed: Engine, Ambulance, Medic
- First Due Area: 6.39 mi<sup>2</sup>
- Active LOSAP Volunteers: 14
- IECS Volunteers: 17

#### Overview

The Hillandale area started with Indian settlers amid agricultural lands. European settlers made Hillandale their home in the 17<sup>th</sup> century. Early settlers were deeded land and upon their death the land was given to their heirs. One parcel of land was named Hills and Dales. During the Revolutionary War, supplies were scarce and the community was encouraged to build powder and woolen mills to increase the supply of clothing and war munitions which soon led to the areas named Powder Mill and Old Gunpowder Roads. After the Civil War, the land would remain agricultural but many families would soon develop the area and become tight knit. The volunteer fire department was incorporated and granted a charter in March 1941 further binding the ties of the community.<sup>224</sup>

Station 12 sits on highway (RT650) that connects Montgomery County to Prince George's County and the District of Columbia. About a mile south of the station is Interstate 495 (Capital Beltway) accessed from RT650, and about a mile from that interchange is the entrance ramp to Interstate 95 from I-495. Station 12 is surrounded by many homes, plazas and the sprawling U.S. Food and Drug Administration campus.

## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

### **High Risk Areas – Including Hazards**

Interstate 495 enters Montgomery County in Fire Station 12's area in a heavily developed and populated area and provides access to Northern Virginia and Interstate 270. The Interstate 495 and Interstate 95 interchange is listed as one of the worst bottlenecks in the nation which handles more than 185,000 vehicles daily. The interchange is located in Prince George's County but borders Station 12's first due area, and the resources from Station 12 respond mutual aid to this interchange on almost a daily basis. There is a great amount of hazardous materials transported on both of these interstates.<sup>236</sup> There have been numerous incidents on I-495 in Station 12's area involving hazardous materials spills and fires, including at least one tanker fire near the bridge over the Northwest Branch.

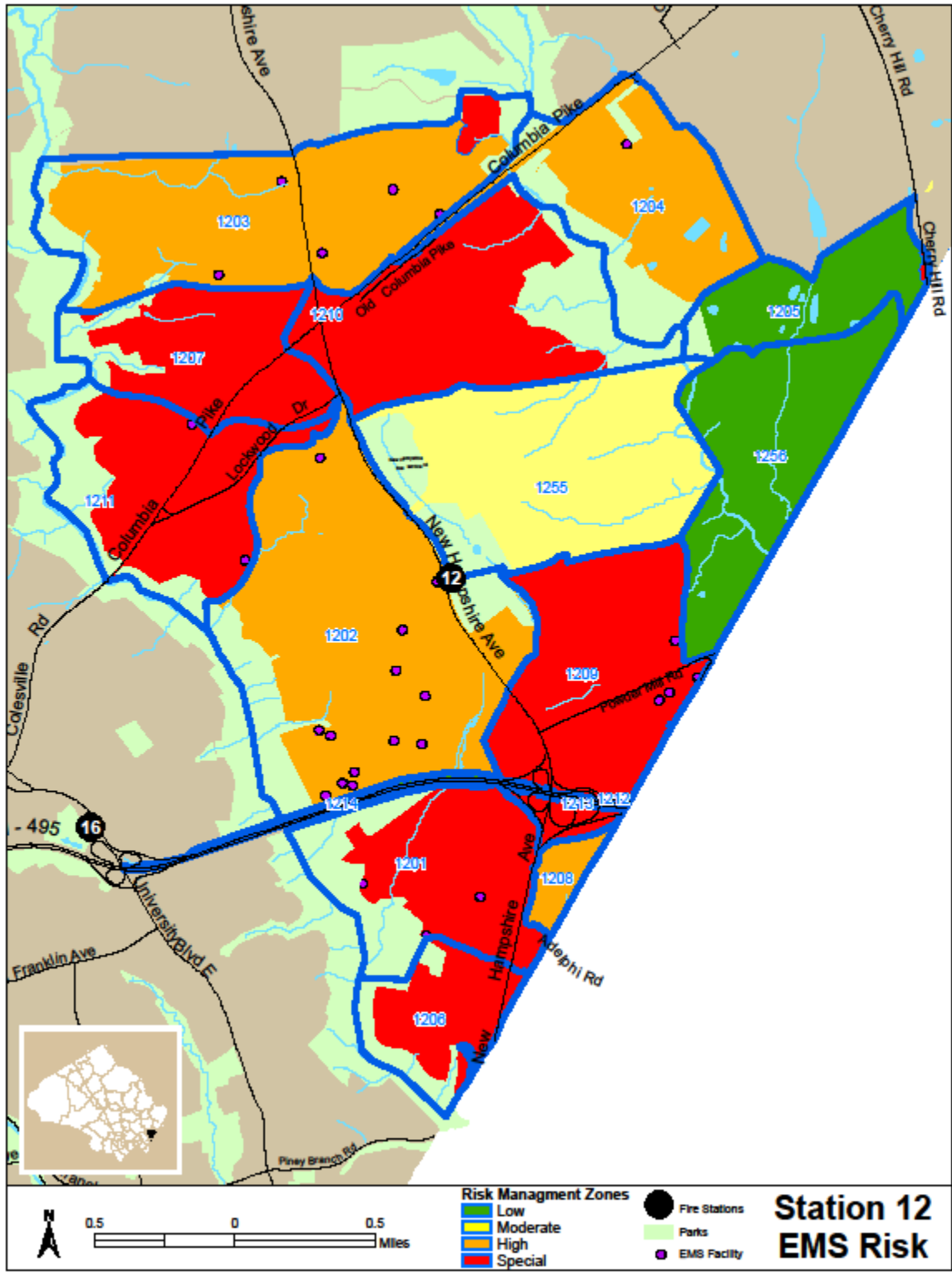
The U.S. Food and Drug Administration campus is located at 10903 New Hampshire Avenue (next to Fire Station 12). The campus has over fourteen buildings, mostly offices and some labs that are occupied by approximately 10,000 employees. The campus stores very small quantities of hazardous materials mostly in the lab building (Building 64) which is shown on a site-plan map. The U.S. Army Research Lab (ARL) located at 2800 Powder Mill Road has approximately twenty-five buildings which are currently undergoing building renovations to make it an FDA worksite. Most buildings are office space and there are no longer any major hazards there. Most of the research is conducted at the Adelphi site and is electrical and power source related.

**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

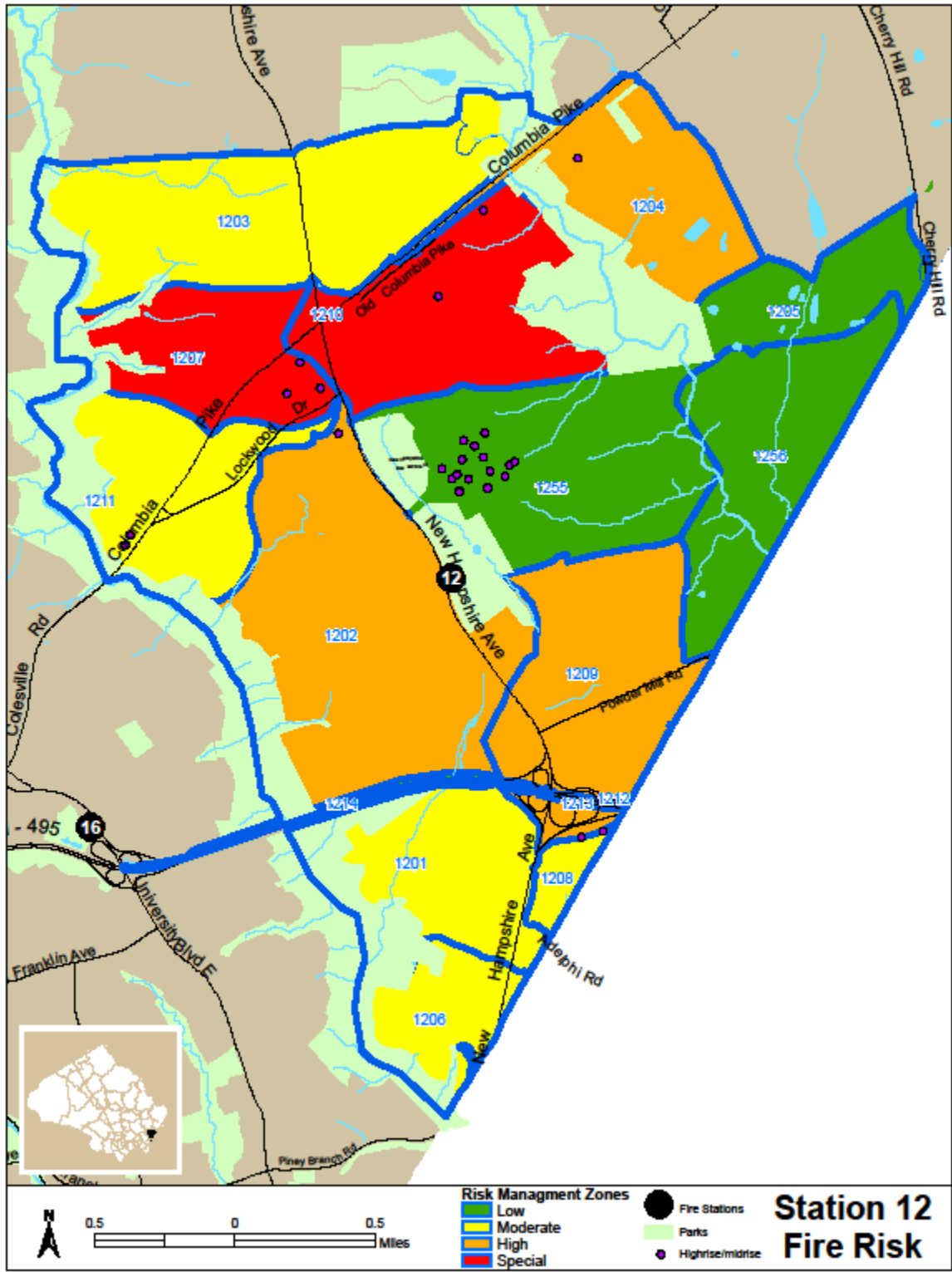
---

<b>Station 12 - # of Incidents by Call Type</b>				
<b>Fiscal Year</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013 (1st and 2nd Quarter Only)</b>
<b>Adaptive</b>	<b>461</b>	<b>470</b>	<b>414</b>	<b>214</b>
<b>ALS1</b>	<b>874</b>	<b>927</b>	<b>907</b>	<b>495</b>
<b>ALS2</b>	<b>119</b>	<b>136</b>	<b>104</b>	<b>63</b>
<b>BLS</b>	<b>1668</b>	<b>1629</b>	<b>1630</b>	<b>844</b>
<b>Explosive</b>	<b>4</b>	<b>7</b>	<b>14</b>	<b>4</b>
<b>Firefull</b>	<b>42</b>	<b>35</b>	<b>37</b>	<b>22</b>
<b>Hazmat</b>	<b>37</b>	<b>37</b>	<b>41</b>	<b>29</b>
<b>Tech Rescue</b>	<b>50</b>	<b>37</b>	<b>37</b>	<b>30</b>
<b>Water/Ice</b>	<b>N/A</b>	<b>N/A</b>	<b>1</b>	<b>1</b>
<b>Total Calls</b>	<b>3450</b>	<b>3471</b>	<b>3346</b>	<b>1777</b>
<b>*Note: Total category includes unfiltered calls - # may exceed sum of call types</b>				

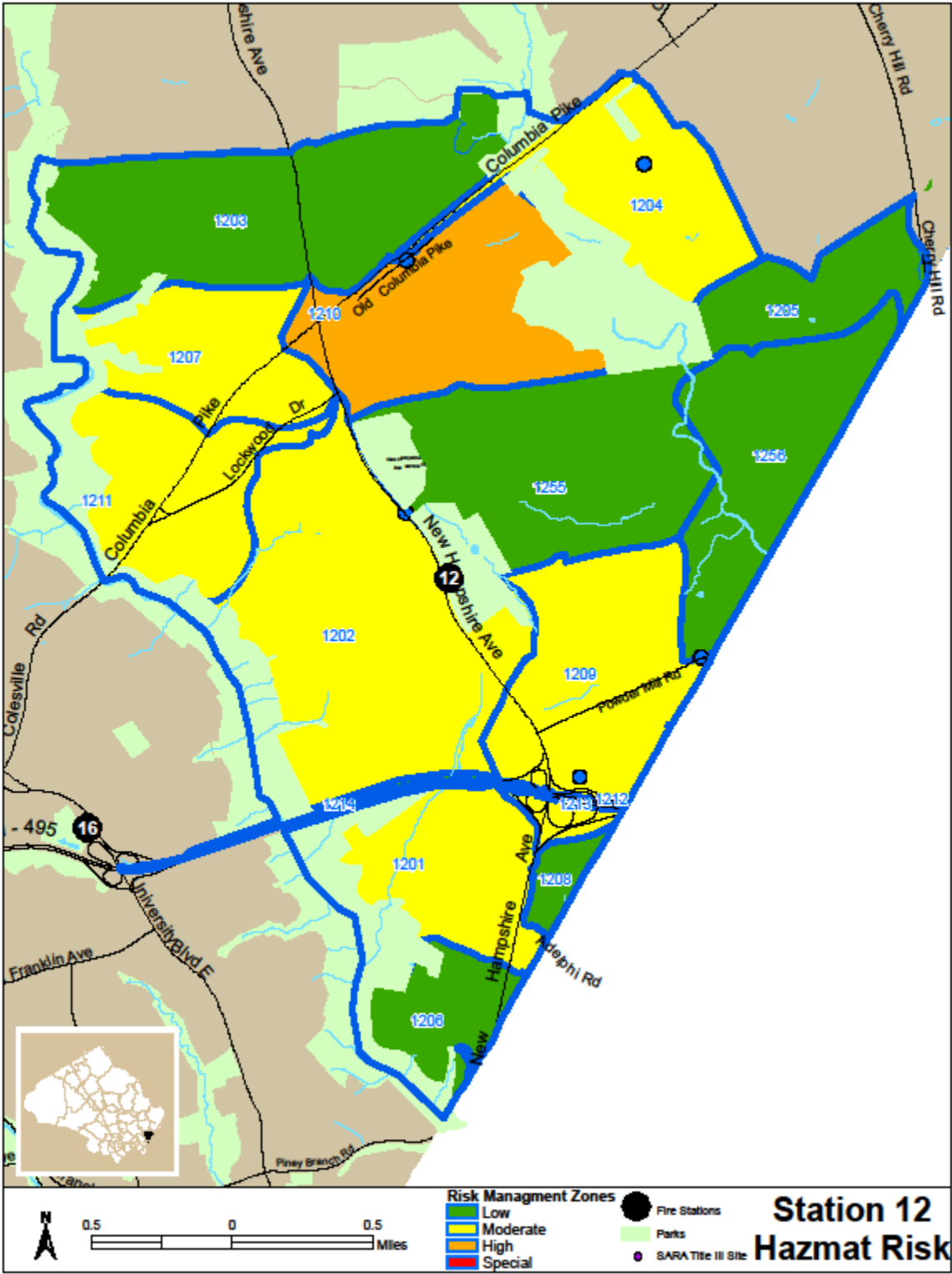
MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER





# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

### Fire Station 13

Battalion 5

Damascus Station

26334 Ridge Road, Damascus



#### Description

- Ownership: Volunteer
- Employees: 5 Shift Work
- Apparatus Housed: Engine (AFRA), Medic, Rescue Engine, All-Wheel Drive Engine, Brush Truck
- First Due Area: 33.31 mi<sup>2</sup>
- Active LOSAP Volunteers: 32
- IECS Volunteers: 20

#### Overview

Damascus is located at the intersection of two major roads, Ridge Road (Rt. 27) and Damascus Road (Rt. 108). The name comes from a biblical reference, “The Pleasant Plains of Damascus” after Damascus, Syria.<sup>241</sup> In fact, just outside of Damascus sits an Orthodox Syrian church, the only one of its kind in the area. Damascus a tight-knit community, supportive of its high school teams, its 4H community, the local fire department and surrounding jurisdictions. The town is first mentioned in the census in 1816 because it received a postal route through town. Many of the early settlers in the Damascus area were descendants of prominent families who had settled earlier in Anne Arundel County and in other parts of Montgomery County. Damascus is still is an agricultural-supported area.

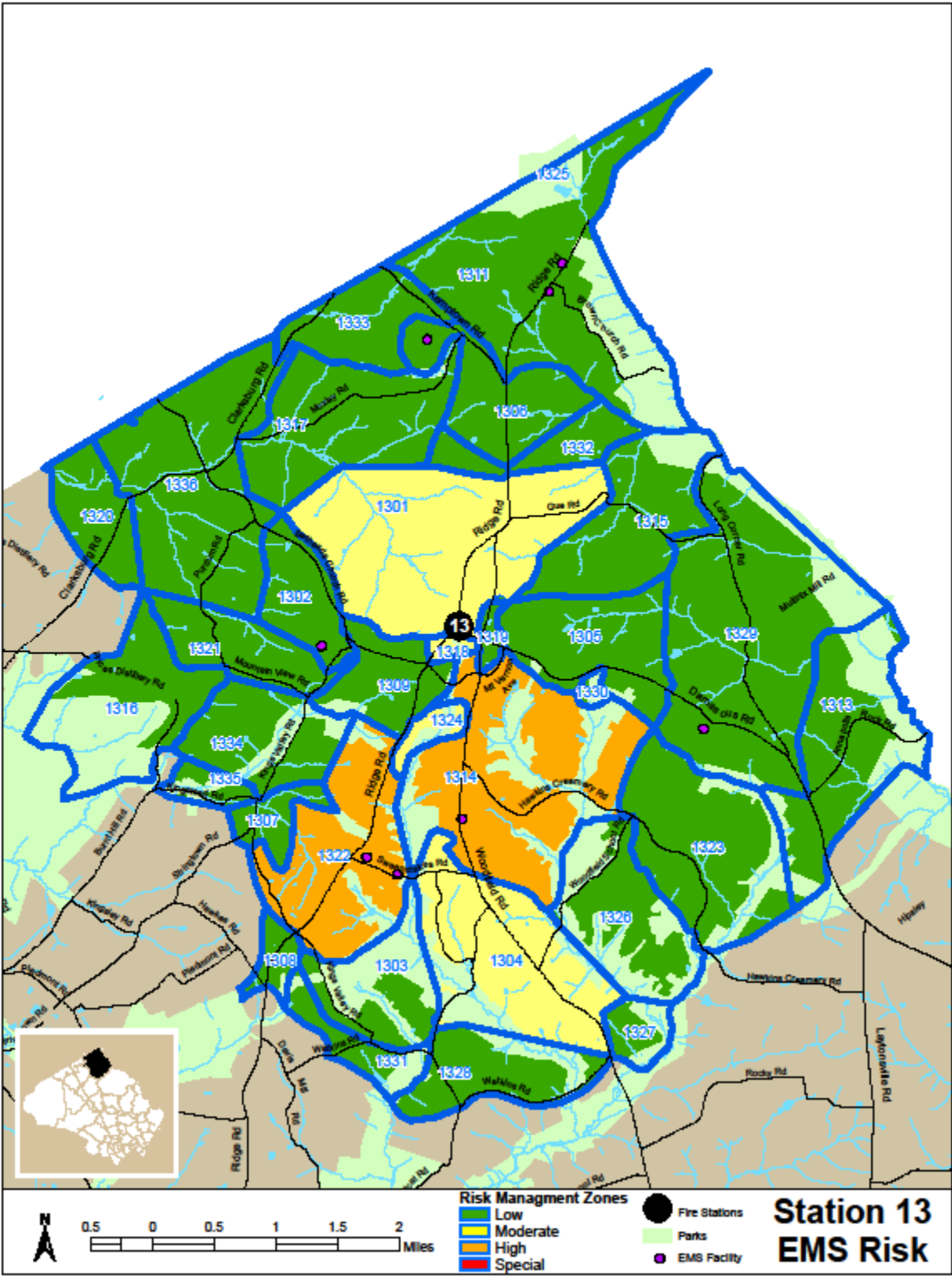
**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

**High Risk Areas – Including Hazards**

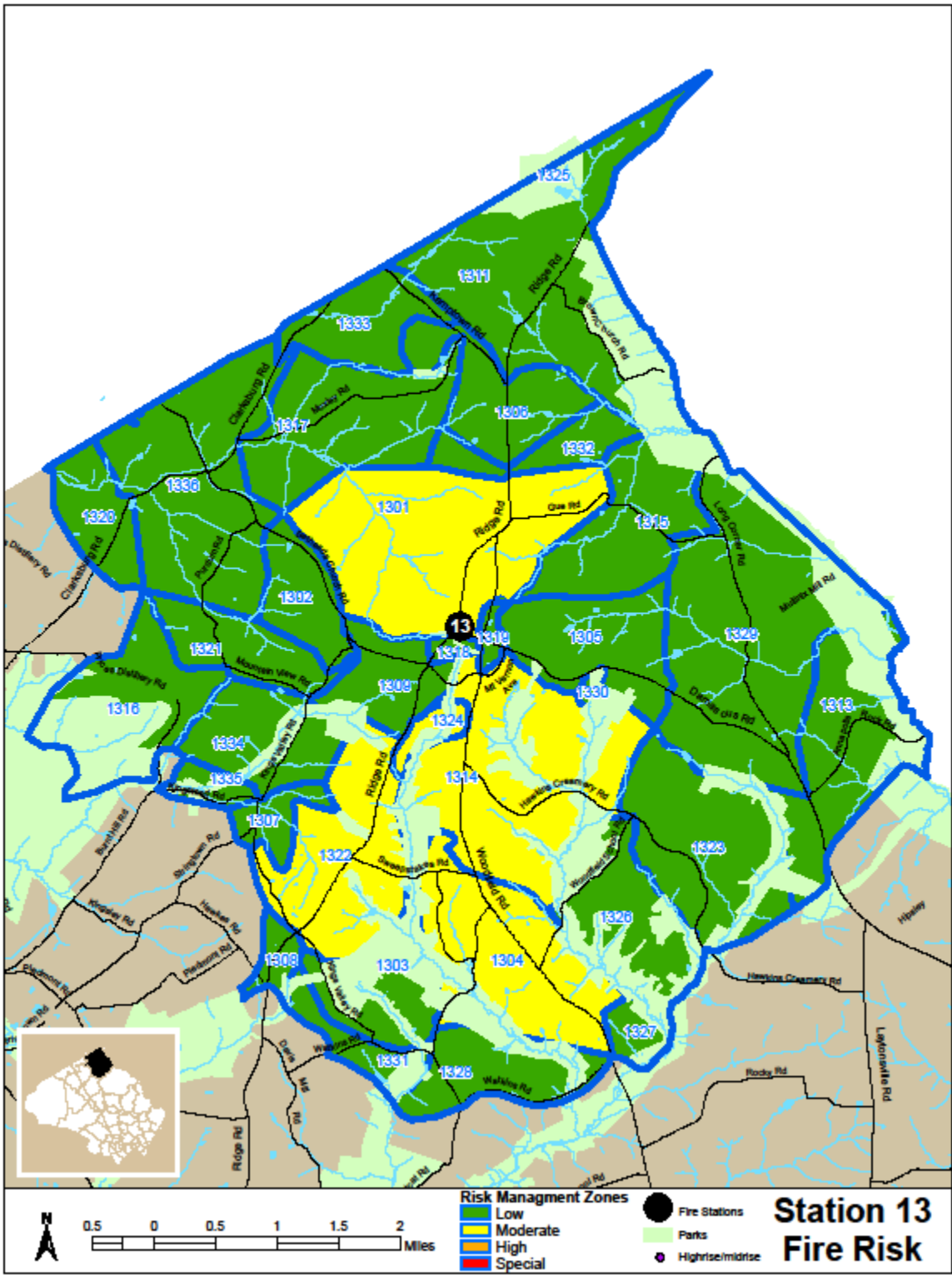
There are no METRO and/or CSX rails in Station 13's area and no high interstate traffic and no industrial and or biological hazardous material plants or warehouses in the first due area. Due to the amount of agricultural businesses in Damascus' area, there are agricultural hazardous materials: pesticides and fertilizers.

Station 13 - # of Incidents by Call Type				
Fiscal Year	2010	2011	2012	2013 (1st and 2nd Quarter Only)
Adaptive	195	206	199	92
ALS1	405	443	406	243
ALS2	64	60	65	30
BLS	566	630	527	315
Explosive	1	5	4	2
Firefull	19	14	15	9
Hazmat	6	7	15	3
Tech Rescue	1	1	1	N/A
Water/Ice	N/A	N/A	N/A	N/A
Total Calls	1341	1432	1300	742
*Note: Total category includes unfiltered calls - # may exceed sum of call types				

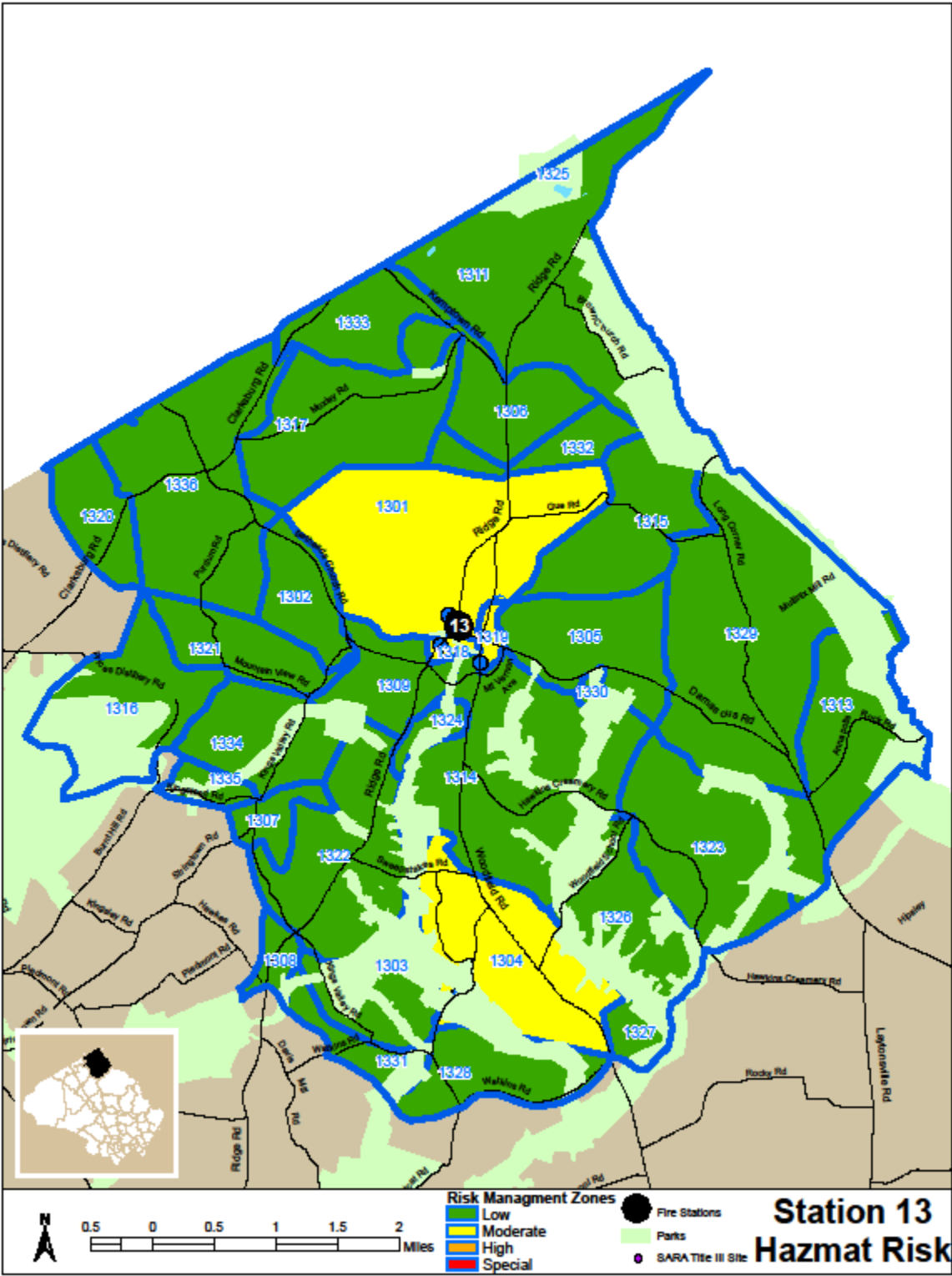
MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



\_\_\_\_\_



MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

### Fire Station 14

Battalion 5

Upper Montgomery Station

19801 Beallsville Road, Beallsville



#### Description

- Ownership: Volunteer
- Employees: 6 Shift Work
- Apparatus Housed: Engine (AFRA), Rescue Engine, Medic, E714B, Tanker, 2 Brush Trucks, 2 Boats, ATV, Canteen Unit
- First Due Area: 86.68 mi<sup>2</sup>
- Active LOSAP Volunteers: 33
- IECS Volunteers: 20

#### Overview

Station 14 protects two towns in Montgomery County: Beallsville, Poolesville, and a very small section of Barnesville – and approximately seventy-five square miles of farmland. Beallsville is an unincorporated community about three miles north of Poolesville. The majority of the Beallsville's history is encompassed with Poolesville history. In 1861, Beallsville had Union soldiers that camped out on the land due to its proximity to Rockville and to the Monocacy River and Nolands Ferry. In 1862, a second cavalry battle occurred.

Poolesville was originally part of Frederick County. In 1760, two brothers (John and Joseph Poole) came to the area, started buying parcels of land and began raising their families. In 1776, the Maryland General Assembly split the land that wasn't occupied into three; Poolesville became part of Montgomery County. In 1862 and 1864 there were several Confederate raids into the town, and

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

the Confederate Army invaded Maryland by crossing the Potomac River six miles west of Poolesville at White's Ferry. In 1867, Poolesville became incorporated by the State of Maryland. It is thirty-three miles north of Washington D.C. and is a "distant bedroom community" close to Frederick, Rockville and Leesburg, Virginia. There is one main road through the center of Poolesville -Fisher Avenue (RT107) – plus RT109 to the north. The town sits in the middle of the 90,000 plus acre Agriculture Reserve where farming remains an active part of the entire western county.

The personnel at Station 14 cross staff the engine and rescue engine; the appropriate apparatus responds as needed per the call dispatch. The Officer In Charge makes the overall decision upon the dispatch. Engine 714B is a 4 x 4 front-mounted pump that is usually used during inclement weather and to access off-road drafting sites. Most often it is used by volunteer crews to respond to calls after the career staffing has responded with E714 or RE714. When needed, the tanker is staffed by only one driver operator.

#### **High Risk Areas – Including Hazards**

White's Ferry, the only ferry still operating on the Potomac River, is a cable ferry service operating between Dickerson, MD and Leesburg, VA. The ferry can hold up to twenty-four cars/SUVs, bicyclists, motorcycles, and pedestrians. The trip across the Potomac takes five minutes to cross and two minutes to load and unload. The ferry was purchased in 1817 and improvements were made to it several times since. Due to the improvements and its connection to the Chesapeake and Ohio Canal, the ferry provided travel to surrounding communities for the farmers to sell their crops. While it is an easy way to cross the river in the absence of many bridges, the ferry does not operate without hazards and incidents. About twenty-five years ago, the ferry partially sunk due to an oversized, fully loaded cargo truck not being properly centered on the vessel. In 2006, the ferry was closed down by the U.S. Coast Guard for several days because the operator was found to be unlicensed. In 2008, passengers were evacuated from the ferry when it became stuck by large floating debris during a routine crossing. In 2009, thirty passengers were stranded on the ferry for approximately three hours when it was snagged by a floating tree. In 2010, nine vehicles and fourteen passengers were stranded on the ferry when it became hung up on floating debris. As rescuers evacuated the passengers and workers removed the debris, more debris came down the river and snapped the ferry's cable. The ferry came to rest

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

approximately one hundred fifty yards downstream with no injuries occurring.

There are several businesses in Station 14's area that work with and store radiological, chemical, biological and/or agricultural hazards: Neutron Products; Mirrant Power Generation Plant, Montgomery County Incinerator; Jamison's Agricultural; and National Institutes of Health Animal Farm/Labs. The County's standards of operations are utilized in dealing with any fire emergencies. Water supply concerns are addressed on the preplans (location of hydrant, cistern, any other sources noted). Recon tours of the facilities by Station 14 personnel have been done in the past, but there is no on-going preparedness, drills, or discussions between the personnel at Station 14 and facility personnel.

The Homestead Farm, near Poolesville, has sizeable quantities of agricultural chemicals stored for use on the farm. There are a high number of visitors at the pick-your-own farm and there is considerable risk for injuries, bee stings, heat illnesses, etc. In addition, the property and surrounding area have no hydrants to protect the Homestead market, barns, storage buildings, and farm house; although there are two on-site ponds that might serve as drafting sources.

There are CSX tracks passing through the Barnesville and Dickerson areas<sup>273</sup> in western Montgomery County and two train stations. Both CSX freight trains and MARC passenger trains use these tracks. The Chesapeake and Ohio Canal (C & O), built in 1824, runs from Georgetown, D.C. to Cumberland passing through Station 14's first due area. The canal was the main route of transportation into the 1900s for farmers to sell/receive their coal, grain and seed. Currently the C & O Canal towpath serves as a public trail for horseback riders, hikers and bikers. There is limited access to the deteriorating canal towpath in most areas necessitating the use of ATV<sup>714</sup> for emergency incidents.

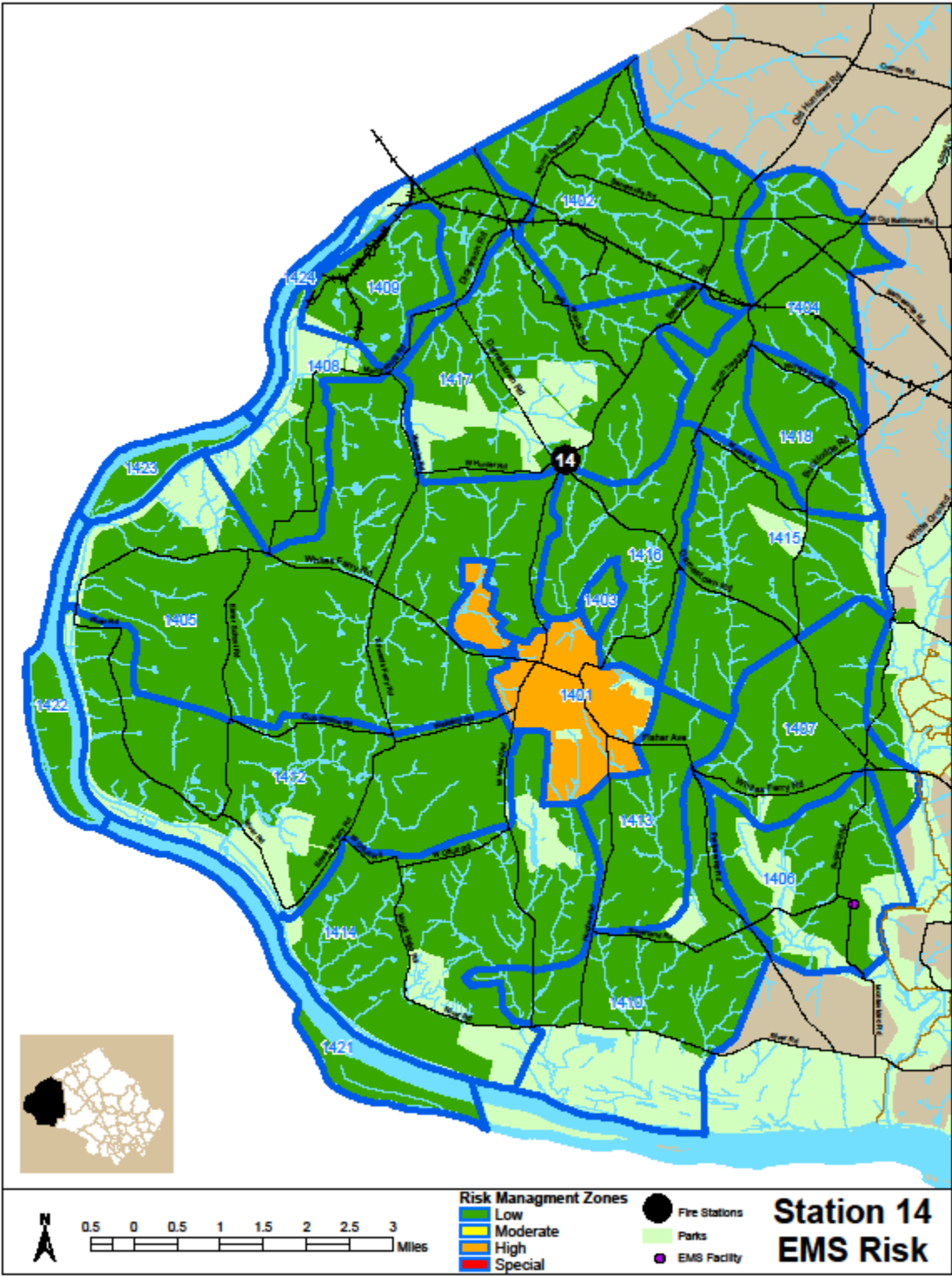


**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

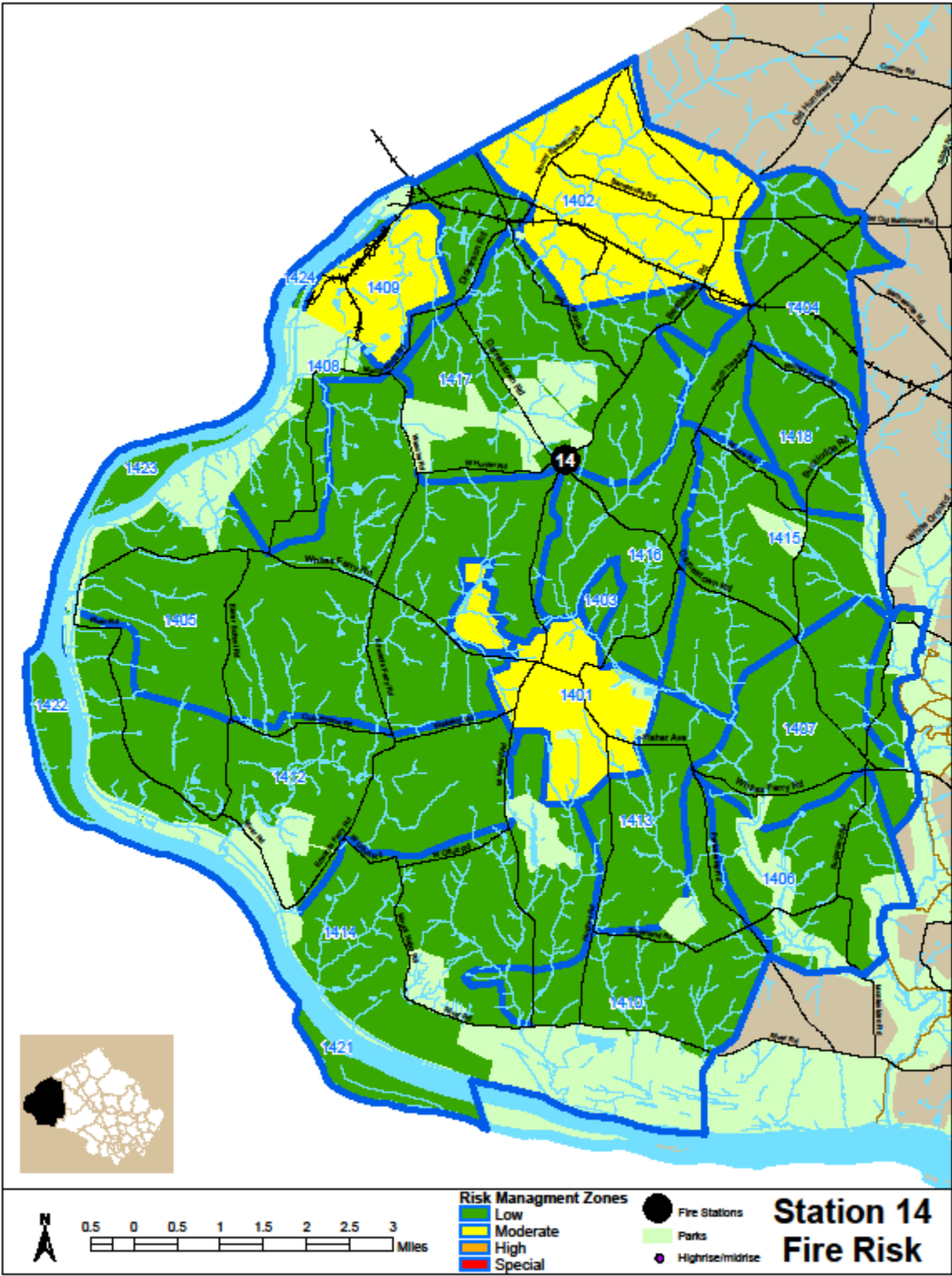
---

Station 14 - # of Incidents by Call Type				
Fiscal Year	2010	2011	2012	2013 (1st and 2nd Quarter Only)
Adaptive	113	132	121	69
ALS1	212	189	216	111
ALS2	25	23	24	12
BLS	261	267	324	144
Explosive	2	1	1	N/A
Firefull	7	15	16	3
Hazmat	6	7	2	9
Tech Rescue	2	3	6	N/A
Water/Ice	1	1	2	1
Total Calls	661	664	744	368
*Note: Total category includes unfiltered calls - # may exceed sum of call types				

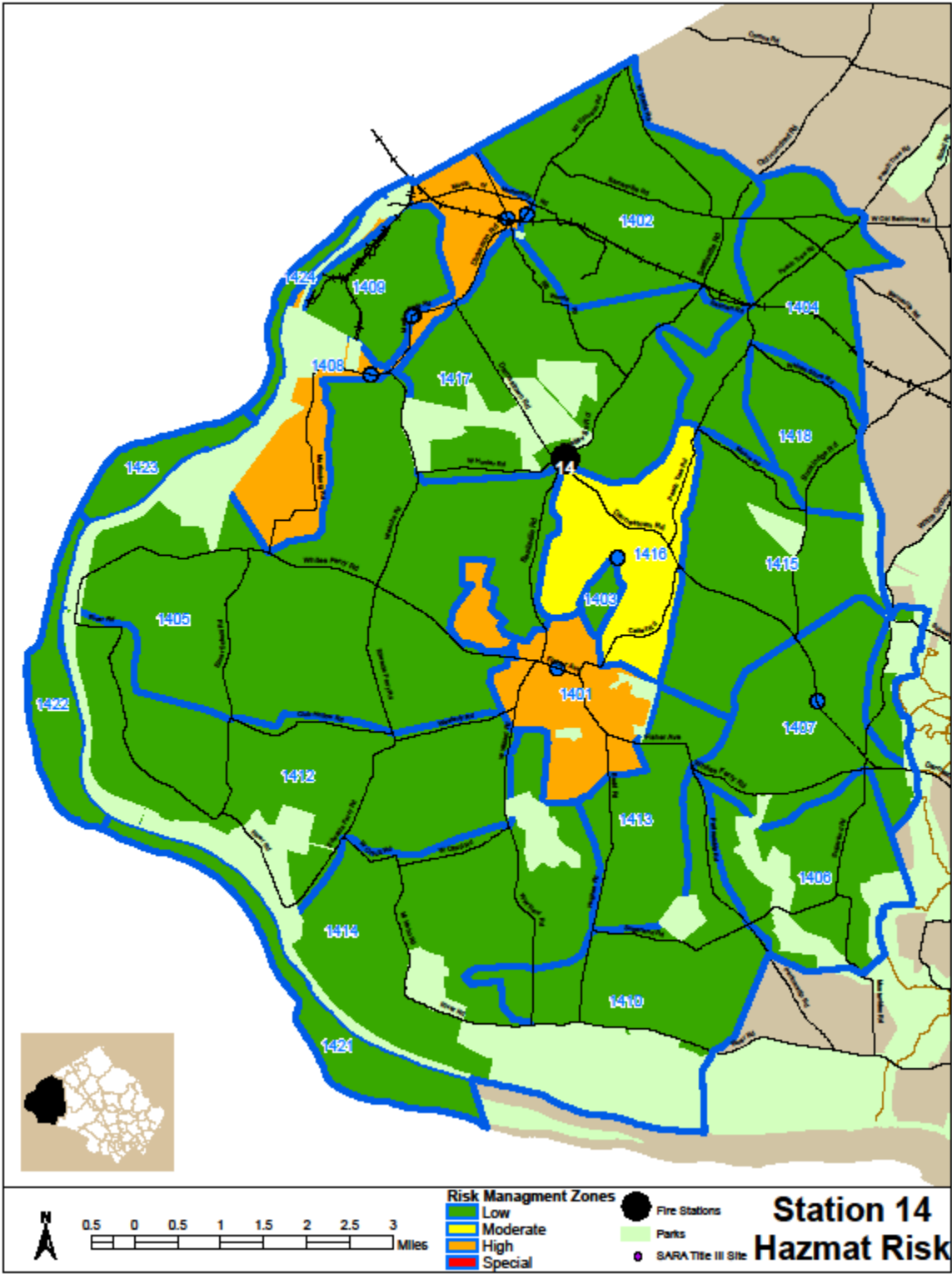
MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

### Fire Station 15

Battalion 1

Burtonsville Station

13900 Old Columbia Pike, Burtonsville



#### Description

- Ownership: County
- Employees: 6 Shift Work
- Apparatus Housed: Engine, Truck, Rescue Squad, Medic Unit, Ambulance (when the volunteers can staff it)
- First Due Area: 18.80 mi<sup>2</sup>
- Active LOSAP Volunteers: 86
- IECS Volunteers: 101

#### Overview

Burtonsville takes its name from Isaac Burton, the first postmaster in the area, who purchased all his siblings' land and became the major landowner in 1825. Burtonsville is unincorporated but is a census-designated area of Montgomery County. The fire department itself was organized in 1947 with eighteen people pledging money to get the Department started.

Station 15 sits next to a few major highways to one side (e.g. U.S. Route 29) and homes with acreage on the other. Burtonsville borders Prince George's and Howard Counties into which Burtonsville's resources find themselves running calls on a daily basis.

#### High Risk Areas – Including Hazards

U.S. RT29 runs north and south through Station 15's first due area. The roadway is a major travel route for both morning and evening rush hours. The ICC is completed and provides access east and west from I-95 in P.G. County to Georgia Avenue and beyond to I-270 in Montgomery County. There is a densely populated, low-income area adjacent to the Briggs

## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

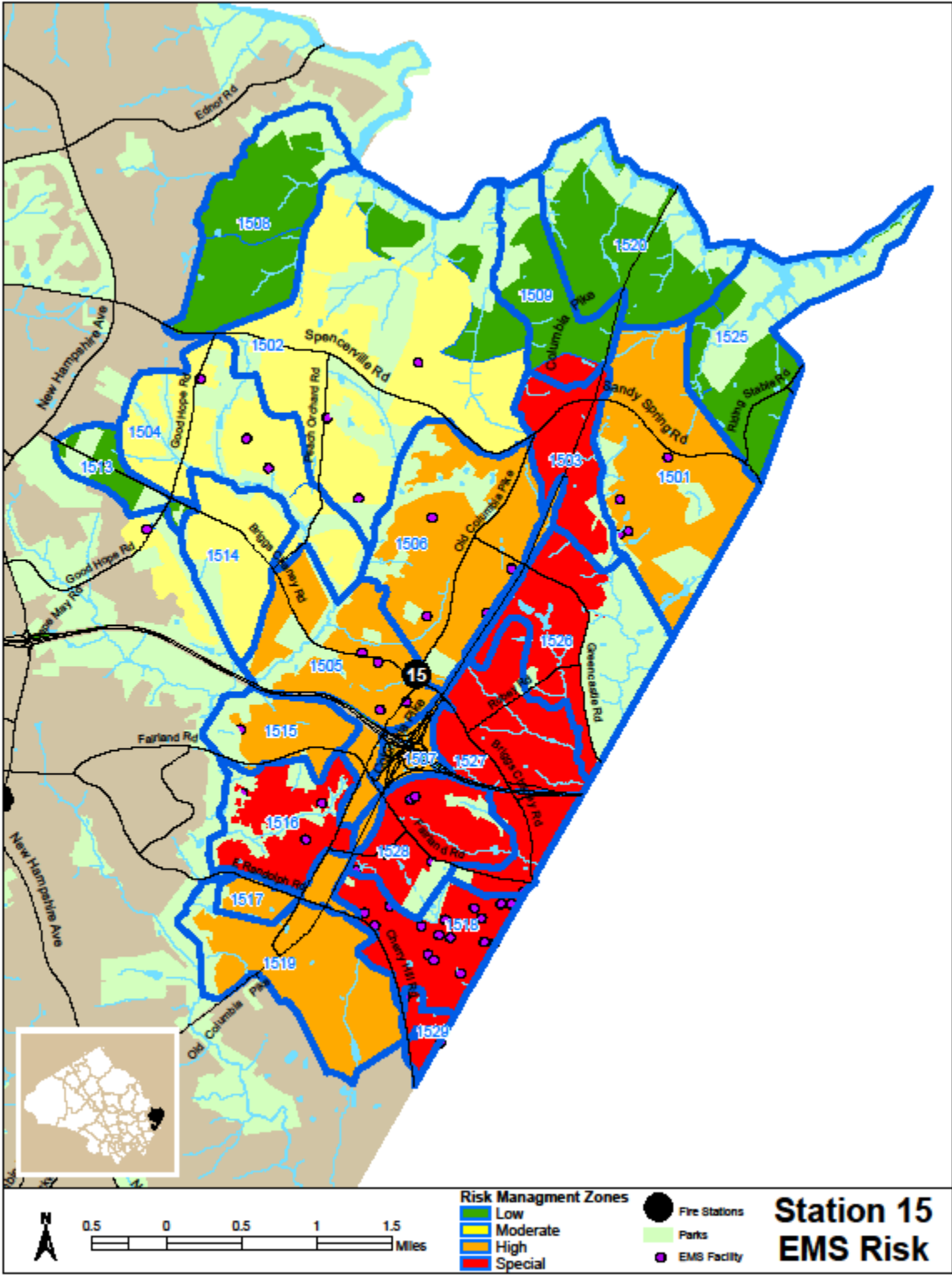
Chaney Shopping Center (mentioned above) that taxes the fire/rescue, EMS system with shootings, stabbings, fire, etc. Station 15's area has lumber and hardware open-warehouse-style stores, as well as light industrial and manufacturing buildings. There is also several landscape business warehouses housing hazardous materials related to their industry.

Rocky Gorge Reservoir is part of the WSSC reservoir system and is patrolled by WSSC police. There are public areas for picnics, shore fishing and walking trails. The walking trails can be assessed from several locations including Oak Hill Road, Batson Road, and Kruhm road in Station 15's area; however, visitors must have a WSSC permit to be on the property.

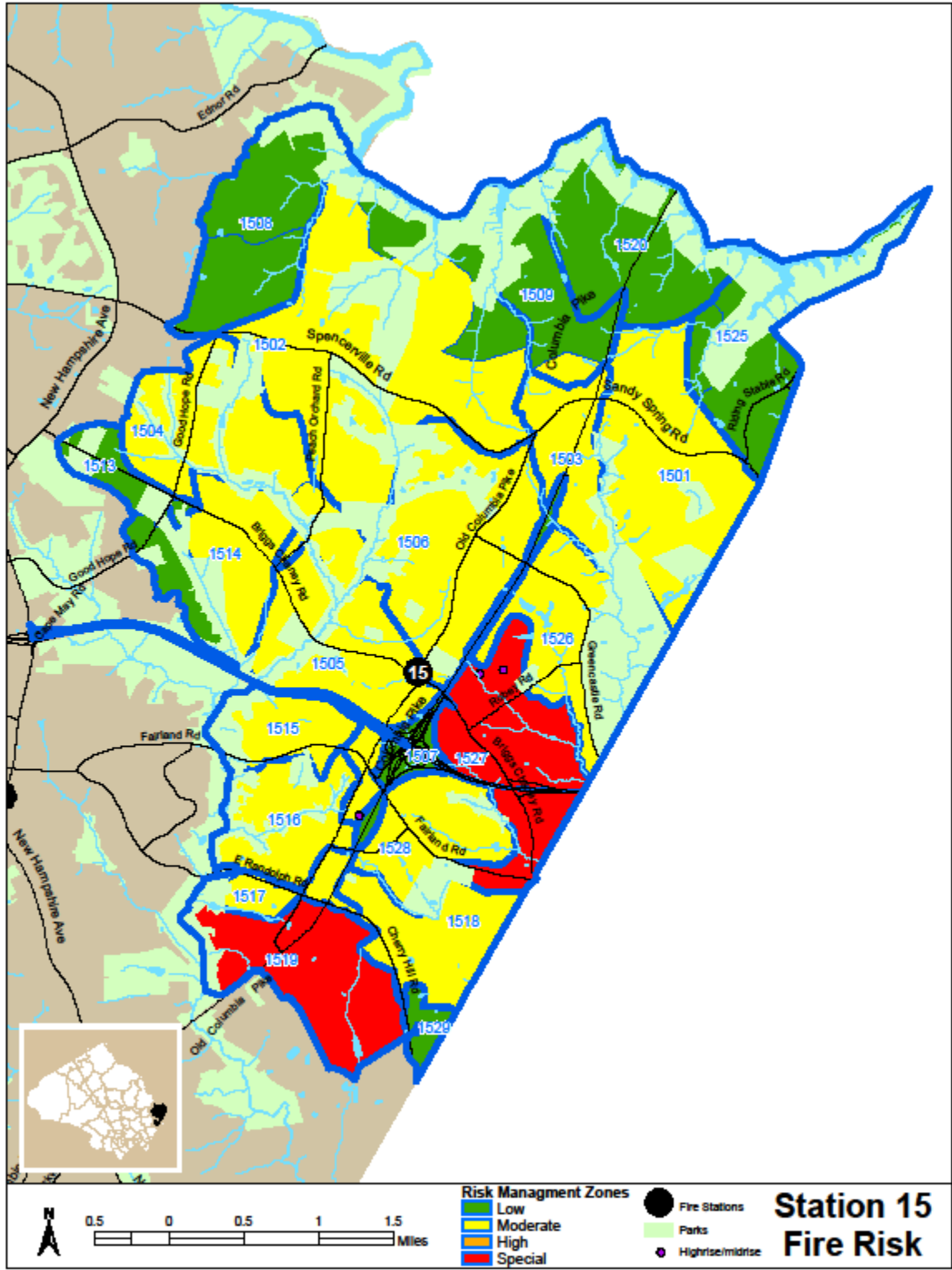
There is no METRO rail or railroads through Station 15's area.

Station 15 - # of Incidents by Call Type				
Fiscal Year	2010	2011	2012	2013 (1st and 2nd Quarter Only)
Adaptive	544	487	545	267
ALS1	1300	1277	1330	692
ALS2	142	128	144	91
BLS	1918	1891	1979	933
Explosive	7	6	22	3
Firefull	48	53	61	22
Hazmat	41	35	39	23
Tech Rescue	4	10	13	5
Water/Ice	2	N/A	1	N/A
Total Calls	4198	4072	4341	2113
*Note: Total category includes unfiltered calls - # may exceed sum of call types				

MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

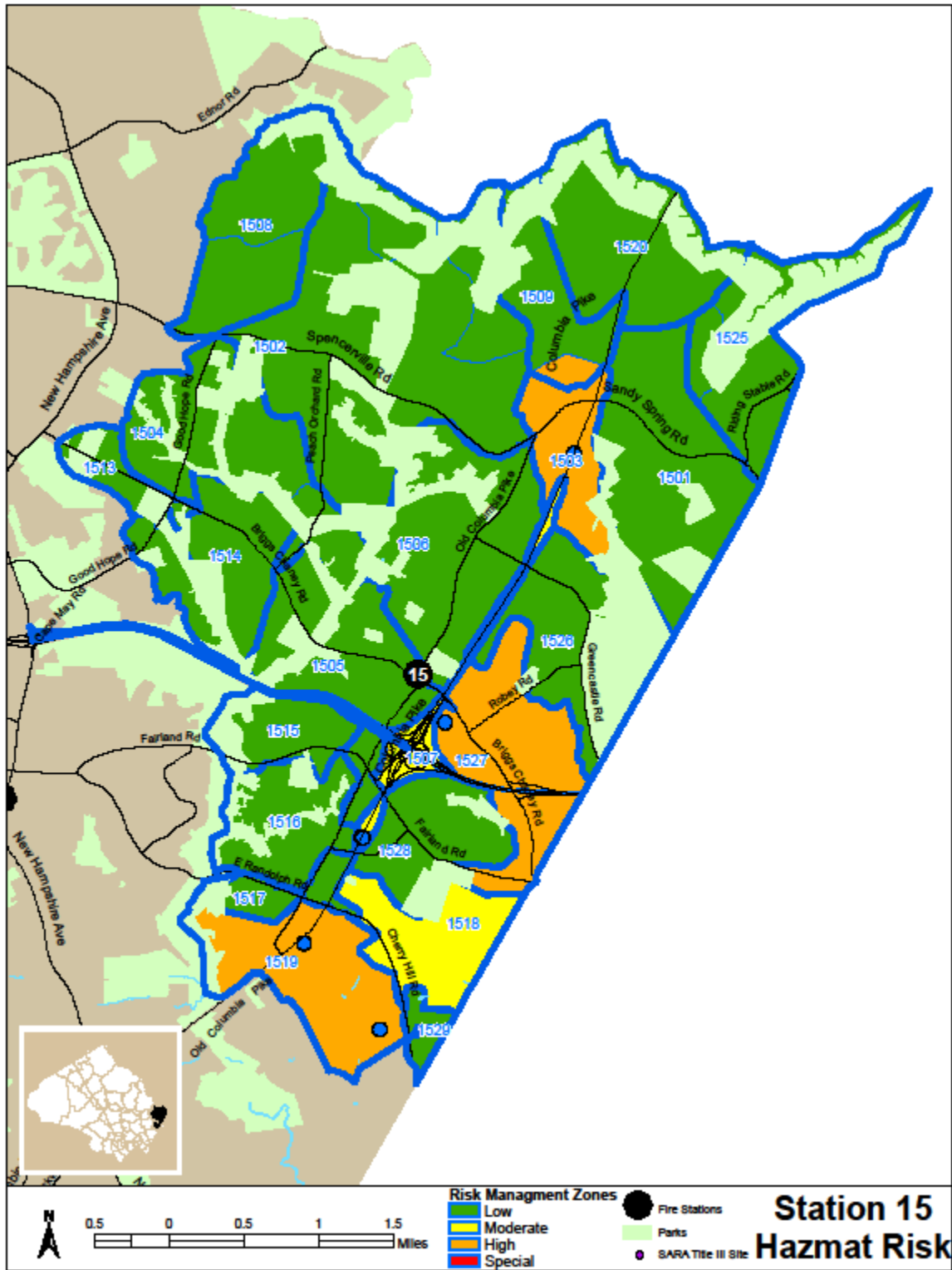


MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER





MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



# MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

## Fire Station 16

Battalion 1

Silver Spring Station

111 University Boulevard East, Silver Spring



### Description

- Ownership: Volunteer
- Employees: 9 Shift Work
- Apparatus Housed: Engine (AFRA), Truck, Ambulance
- First Due Area: 4.26 mi<sup>2</sup>
- Volunteers: totaled in with the sister company Fire Station 1

### Overview

Silver Spring Station 16 is a sister-station to Silver Spring Station 1. Station 16 is very diverse in its location as it is home to an old, urban Silver Spring with beautiful homes to one side, a huge high school (Blair H.S.) to another side and Interstate-495 on the other to complete its compliment. “Four Corners” is less than one mile away – an area of confusing traffic patterns, shopping and small restaurants/delicatessens. The majority of these businesses have been around for more than thirty years. Station 16’s area only has six residential high-rise buildings, no commercial high-rises, eight mid-rises and 140 garden apartments; and, for the most part, Station 16 resources are in an ideal location to respond to incidents on the interstate.

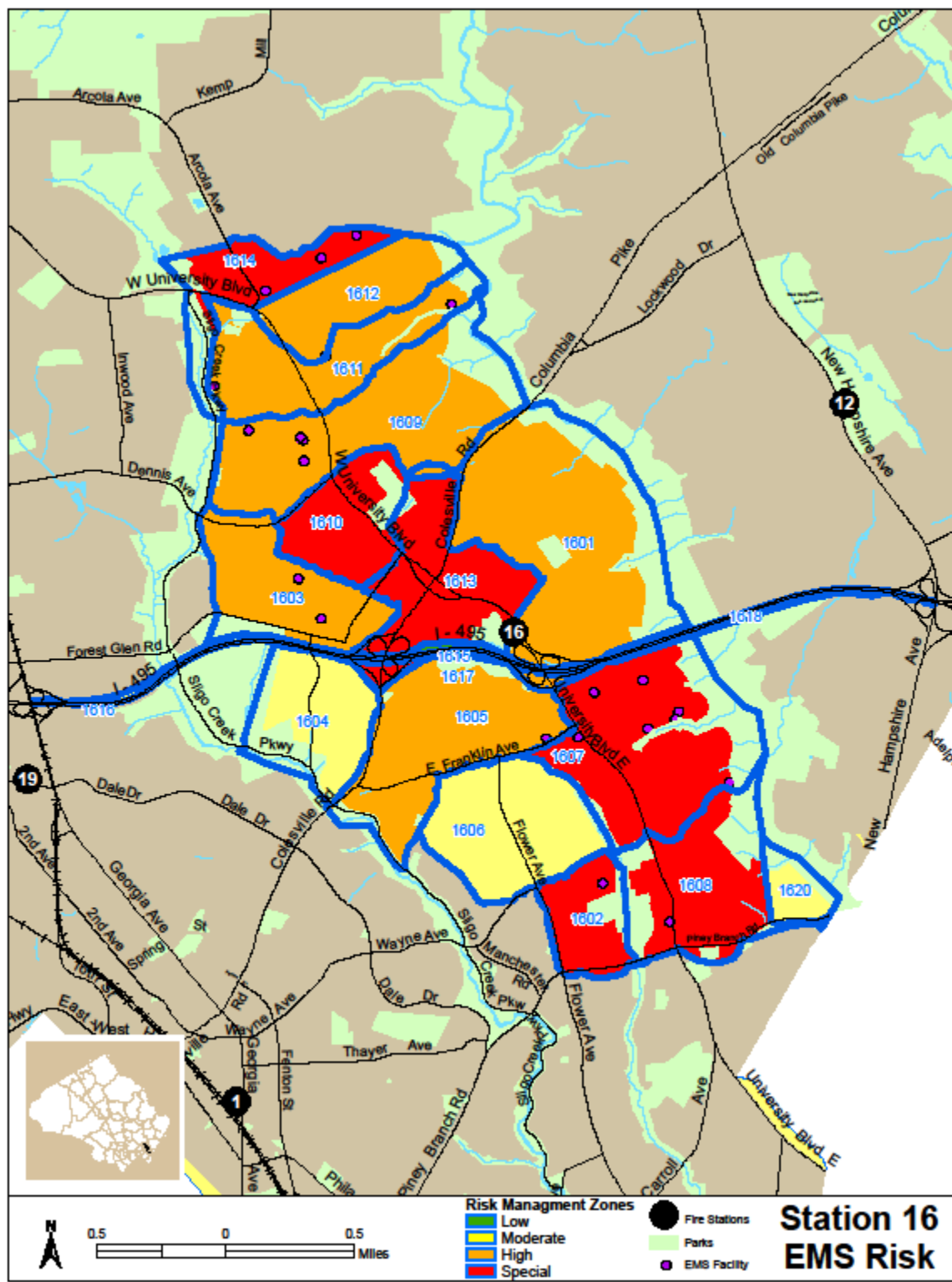
## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

### High Risk Areas – Including Hazards

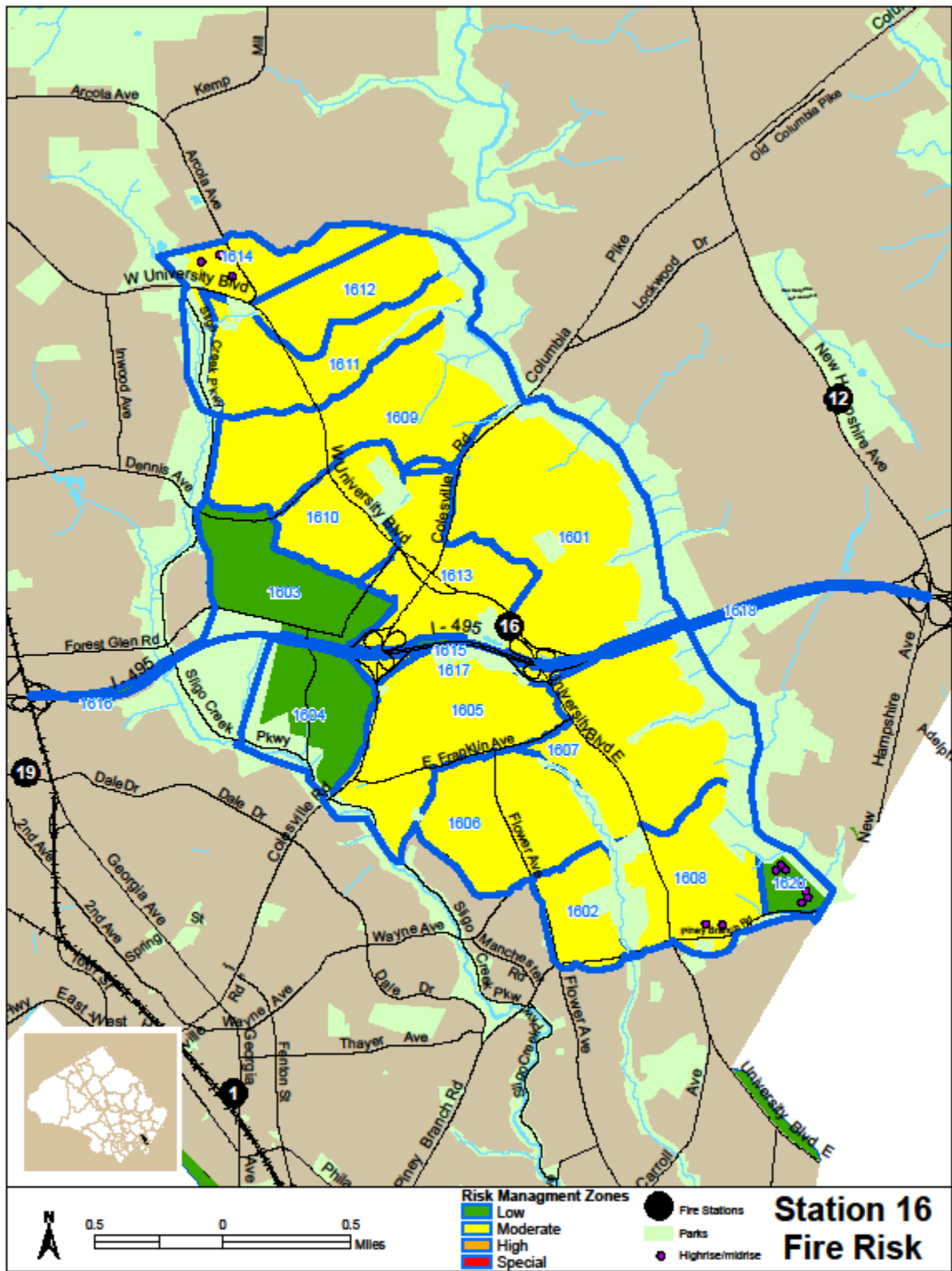
The primary hazards Silver Spring Station 16 must contend with are the many chemical and biological hazards that are transported by freight trucks on Interstate 495 on a regular basis. When an incident occurs, Interstate 495 is shut down which reeks havoc on traffic for several hours; a significant, systematic approach must be made to clear the incident without causing harm to others.

Station 16 - # of Incidents by Call Type				
Fiscal Year	2010	2011	2012	2013 (1st and 2nd Quarter Only)
Adaptive	372	458	371	221
ALS1	675	679	679	351
ALS2	113	90	80	49
BLS	1380	1377	1533	748
Explosive	7	7	10	2
Firefull	28	26	36	26
Hazmat	14	33	52	15
Tech Rescue	12	11	5	8
Water/Ice	N/A	1	N/A	1
Total Calls	2762	2852	2941	1488
*Note: Total category includes unfiltered calls - # may exceed sum of call types				

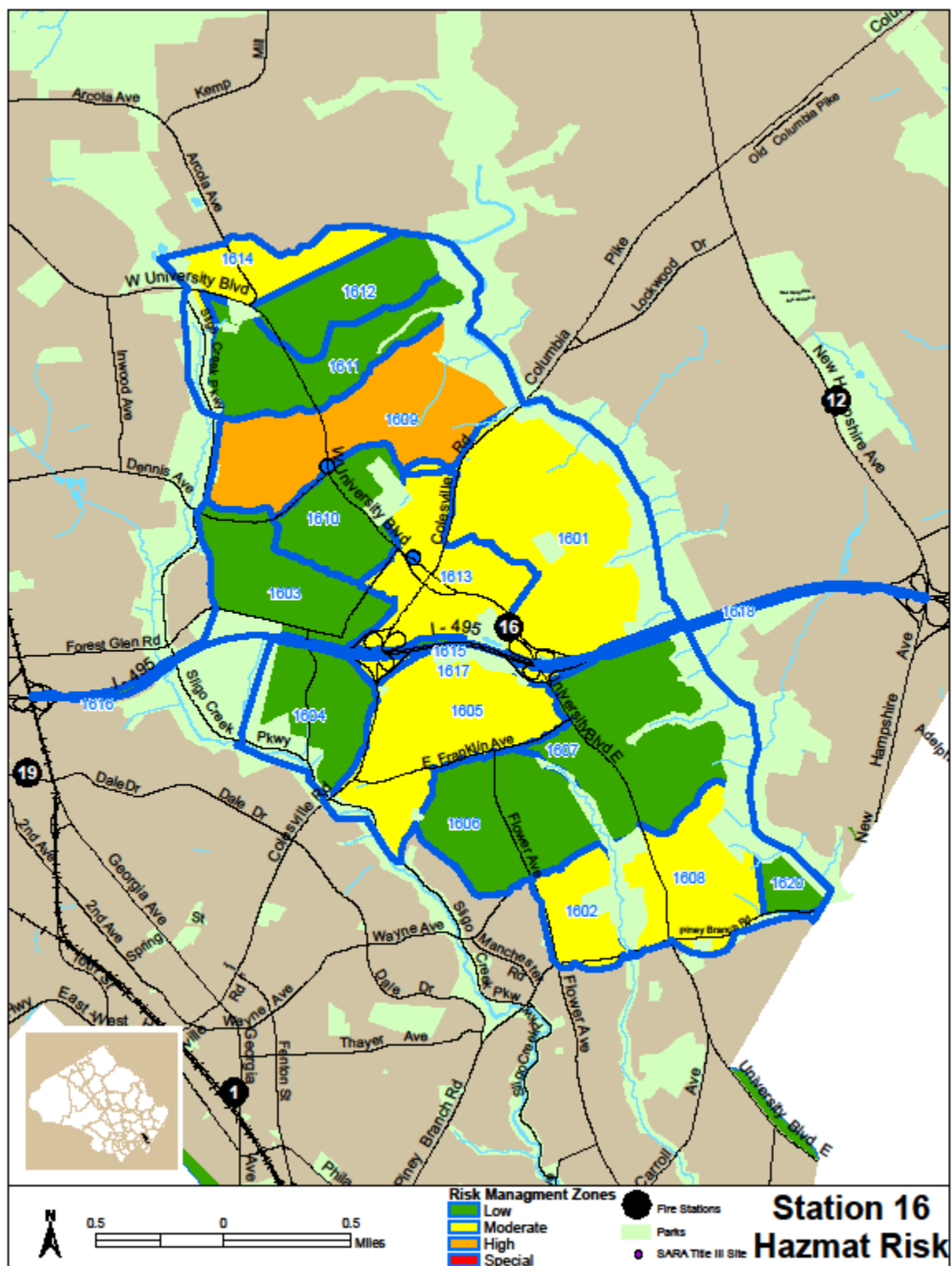
# MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



# MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

### Fire Station 17

Battalion 5

Laytonsville Station

21400 Laytonsville Road, Laytonsville



#### Description

- Ownership: Volunteer
- Employees: 9 total  
(6 Shift Work; 3 Day Work)
- Apparatus Housed: Engine (AFRA), Squad, Ambulance, Tanker, Brush Truck Extra Apparatus: Engine 717B (4WD), Engine/Tanker, Utility, Canteen
- First Due Area: 41.43 mi<sup>2</sup>
- Active LOSAP Volunteers: 50
- IECS Volunteers: 43

#### Overview

Laytonsville, a quiet, quaint town, sits between Damascus and Olney and northeast of Gaithersburg. Laytonsville was originally known as “Cracklintown” for the bread that was made locally. About one quarter mile north of the fire house is the first major road through Laytonsville, Brink-Sundown Road, which was built in the early 1800s. Soon after Brink-Sundown Road was built, Route 108 was added which provided a major artery for farmers to take their cattle and pigs to sell. Laytonsville was a successful area due to farming in the area; the quality of the soil was fertile and well-drained mainly due to the red clay underneath. Laytonsville was incorporated in 1892. The town itself remains small, consisting primarily of old single-family homes, a few small businesses, two churches, a small shopping center, gas station, an elementary school, Stadler’s Nursery, and the fire station. The town lacks municipal water and sewer system, however, a WSSC water line will be extended to town along RT108 within the next five years, so the town will eventually have hydrants.

## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

### **High Risk Areas – Including Hazards**

Davis Airport, near the intersection of Hawkins Creamery Road and RT108, is a privately-owned, public-use airport. It sits on 40.7 acres and has a runway that is 2005' x 25'. There is approved underground electricity in place for the surrounding buildings and runway lighting. The airport has a grass (which the new owners have surveyed the land for an asphalt landing strip soon to be laid) landing strip, no control tower, and no hangars. Only small passenger planes use this airport and store them on the outside premises. There is housing immediately west of the airport on Pocahontas Drive.

Also in Laytonsville Station 17's first-due area is a former U.S. Army Nike Site which is a fifteen-acre former missile launch site on Riggs Road plus a nine-acre former control area on nearby Zion Road. The Riggs Road site is now operated by the Federal Emergency Management Association and the Zion Road sites is operated by CSAAC (see above). Project Nike was a U.S. Army project initiated in May 1945 by Bell Laboratories, to develop a line-of-sight anti-aircraft missile system. From 1953 until 1962, the property was used by the Army as part of a defense system designed to defend against foreign bomber and missile penetrations. It was deactivated in 1962. In 1985, 1995 and subsequent years, confirmation studies have been conducted in and around the launch area to check for radiological contamination. Depending on which report is read, several samples concluded there was some contamination in groundwater and standing water.

The Leachate plant at the former landfill, located on RT108 near Riggs Road, has chemicals for water treatment. The glass blowing facility on Hawkins Creamery Road has significant amounts of propane for use in its on-site kilns. Most of the former landfill has been converted to a nature area (i.e. Blue Marsh Nature Area) that includes multi-use trails open to the public. Other than these two facilities at the former landfill, there are no industrial, chemical, and/or biological hazardous material plants and/or warehouses in the first due area. Three golf courses in Station 17's area; however, store moderate quantities of fertilizers and pesticides for use on the grounds. In addition, Stadler's Nursery stores and sells lawn/garden fertilizers and pesticides.



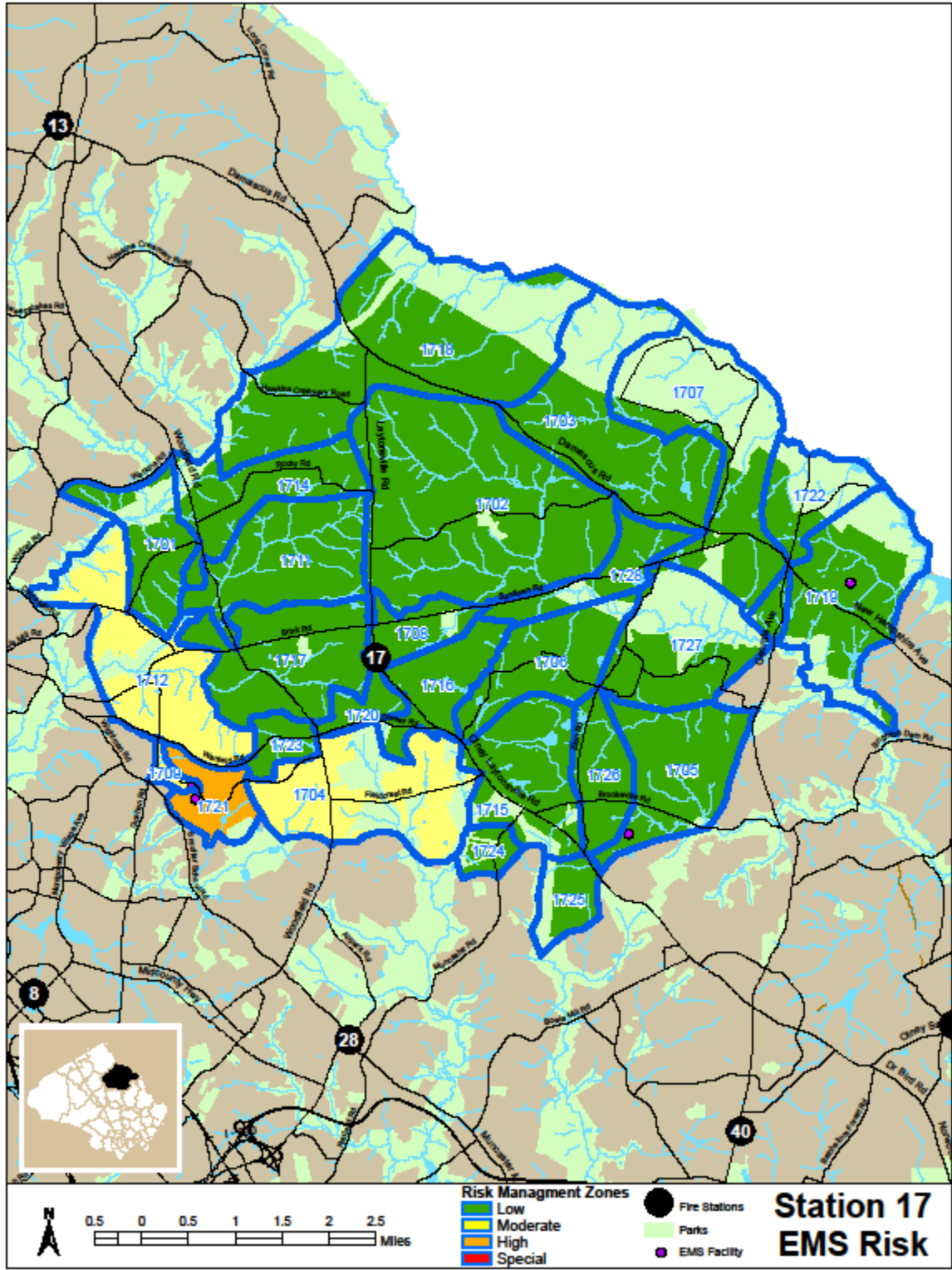
## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

There is no high interstate highway, METRO rail or railroad line in Station 17's first due area.

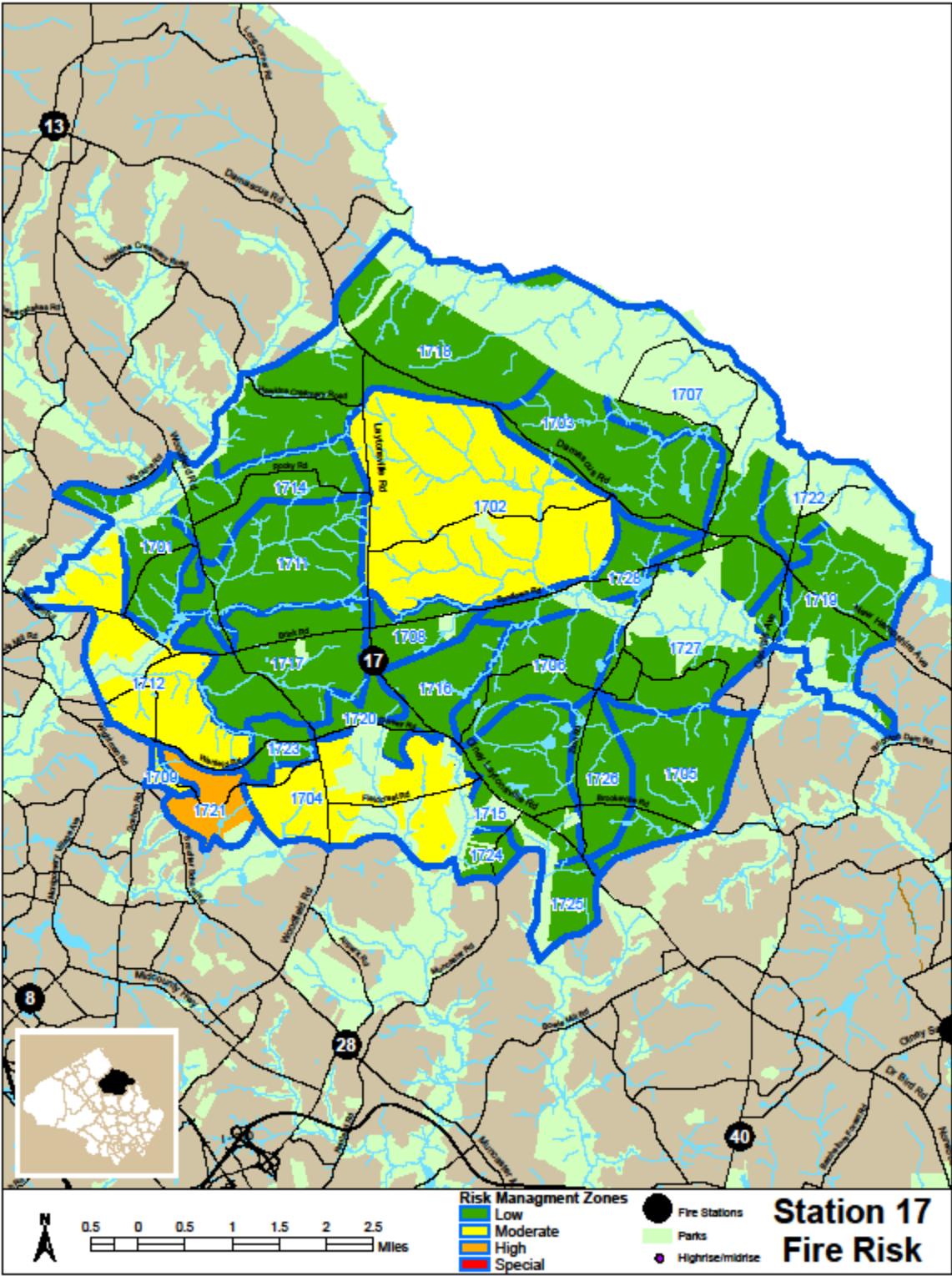
Station 17 - # of Incidents by Call Type				
Fiscal Year	2010	2011	2012	2013 (1st and 2nd Quarter Only)
Adaptive	193	184	189	114
ALS1	282	281	322	160
ALS2	36	30	36	22
BLS	401	425	397	225
Explosive	1	3	5	2
Firefull	12	16	12	7
Hazmat	8	10	10	4
Aviation	N/A	N/A	N/A	1
Water/Ice	1	1	N/A	N/A
Total Calls	994	1012	1022	564
*Note: Total category includes unfiltered calls - # may exceed sum of call types				

**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

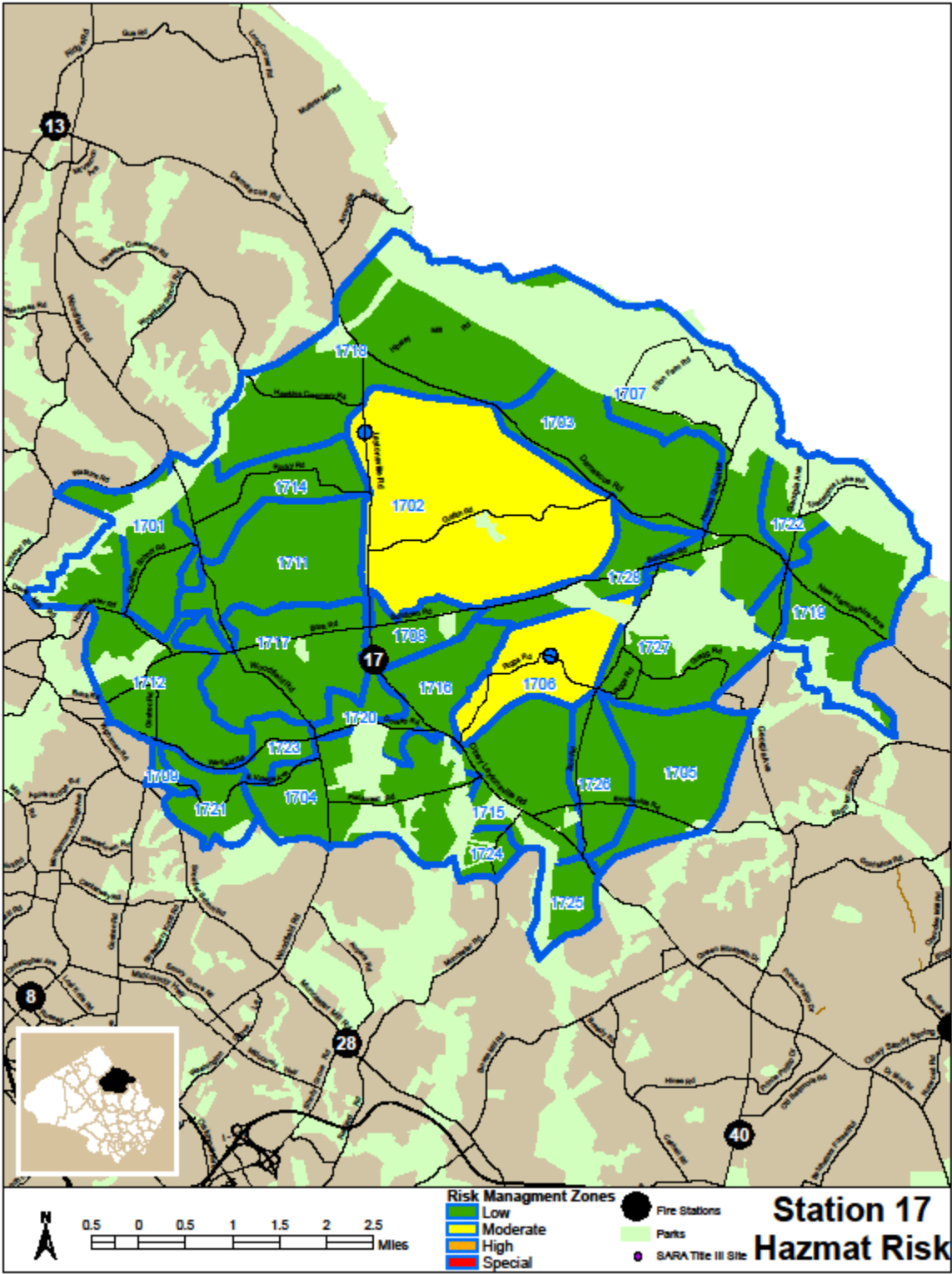
---



MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

### Fire Station 18

Battalion 4

Kensington Station

12251 Georgia Avenue, Wheaton



#### Description

- Ownership: Volunteer
- Employees: 7 Shift Work
- Apparatus Housed: Engine (AFRA), Truck
- First Due Area: 8.73 mi<sup>2</sup>
- Volunteers: totaled in with the sister company Fire Station 5

#### Overview

Station 18 sits on the corner of a very large intersection; heavily traveled, six lanes going in every direction. Station 18 is an older station that hasn't changed, built in 1953, carries with it a weathered look from years of use and resembles a single-family house. The fire house will soon be relocated to a different location within the next three to four years to accommodate a new traffic pattern for the intersection. The firehouse is flanked by garden apartments, a police station, METRO, World War II era bungalows and a small shopping plaza. It is rare that Station 18 has a quiet night.

#### High Risk Areas – Including Hazards

METRO services many professionals, visitors, and students. Station 18 has two underground METRO rails (Wheaton and Glenmont) and a METRO rail yard within the first due area. The Glenmont maintenance yard is the “B” side ending of the red line in Montgomery

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

County. The METRO rail itself parallels under Georgia Avenue from Glenmont down through the District of Columbia. In addition to the METRO stations there are several water supply, fan, and vent shafts along the METRO rail line. In November 2010, the Glenmont METRO Station, located in Station 18's area, had 5,660 pedestrians entering the station and 5,399 pedestrians exiting the station during the weekdays alone. For weekends during November 2010, 4,267 pedestrians entered the METRO at Glenmont and 4,171 exited. In November 2010, the Wheaton METRO Station had 4,239 pedestrians entering the station and 4,154 pedestrians exiting during the weekdays alone. For weekends during November 2010, 4,159 pedestrians entered the METRO at Wheaton and 4,093 exited.

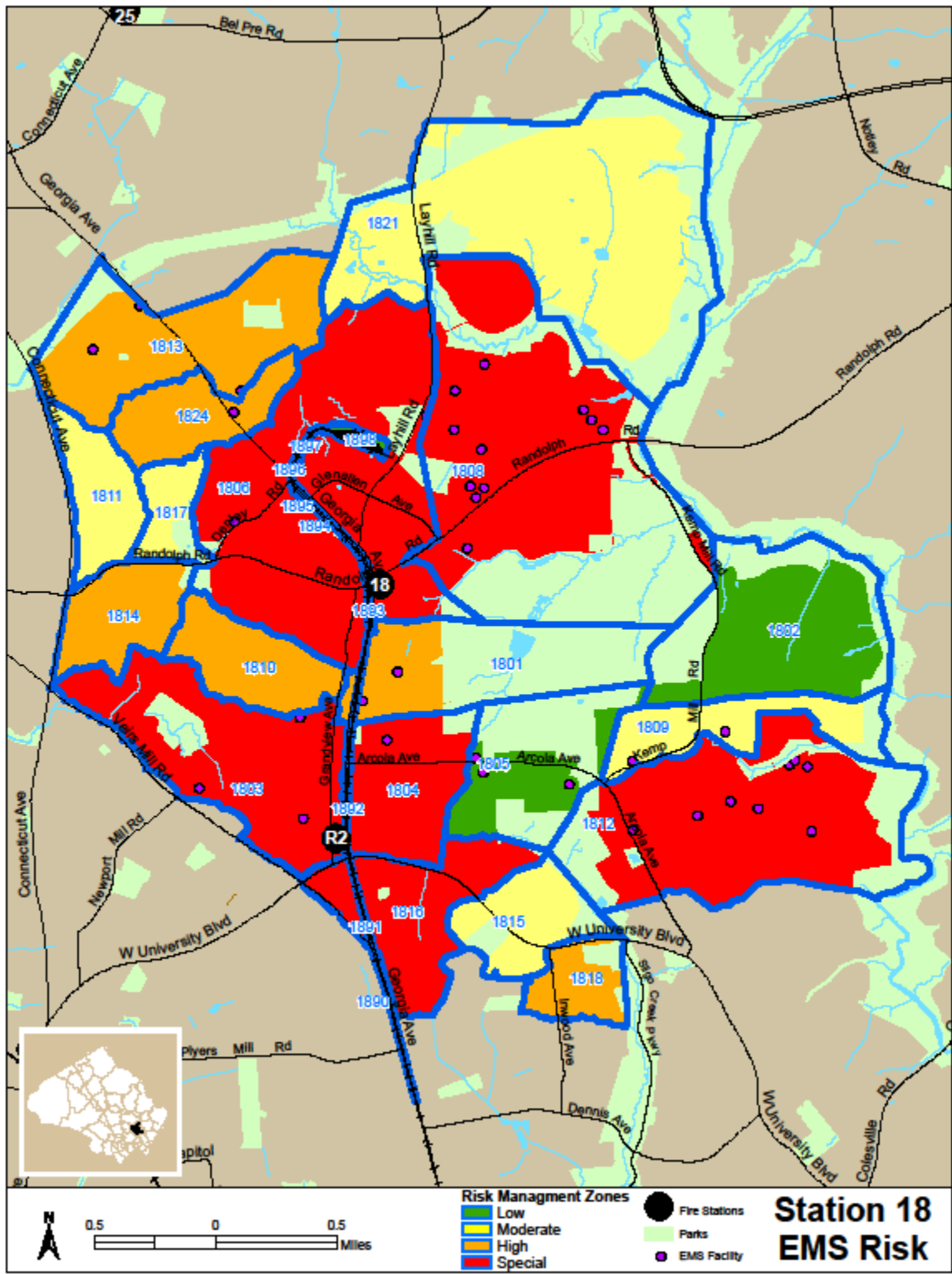
There are no interstate roads in Station 18's first due area but there are several State roads that have a high volume of traffic. Some of these roads include Georgia Avenue (RT97) which goes from Howard County to Washington D.C.; Randolph Road (a County road) which connects Prince George's County to Rockville; Veirs Mill Road (RT586) that connects Rockville to Wheaton and University Boulevard (RT193) which connects Kensington to Prince George's County. There are no industrial, chemical, biological hazmat plants or warehouses in the first due area.

**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

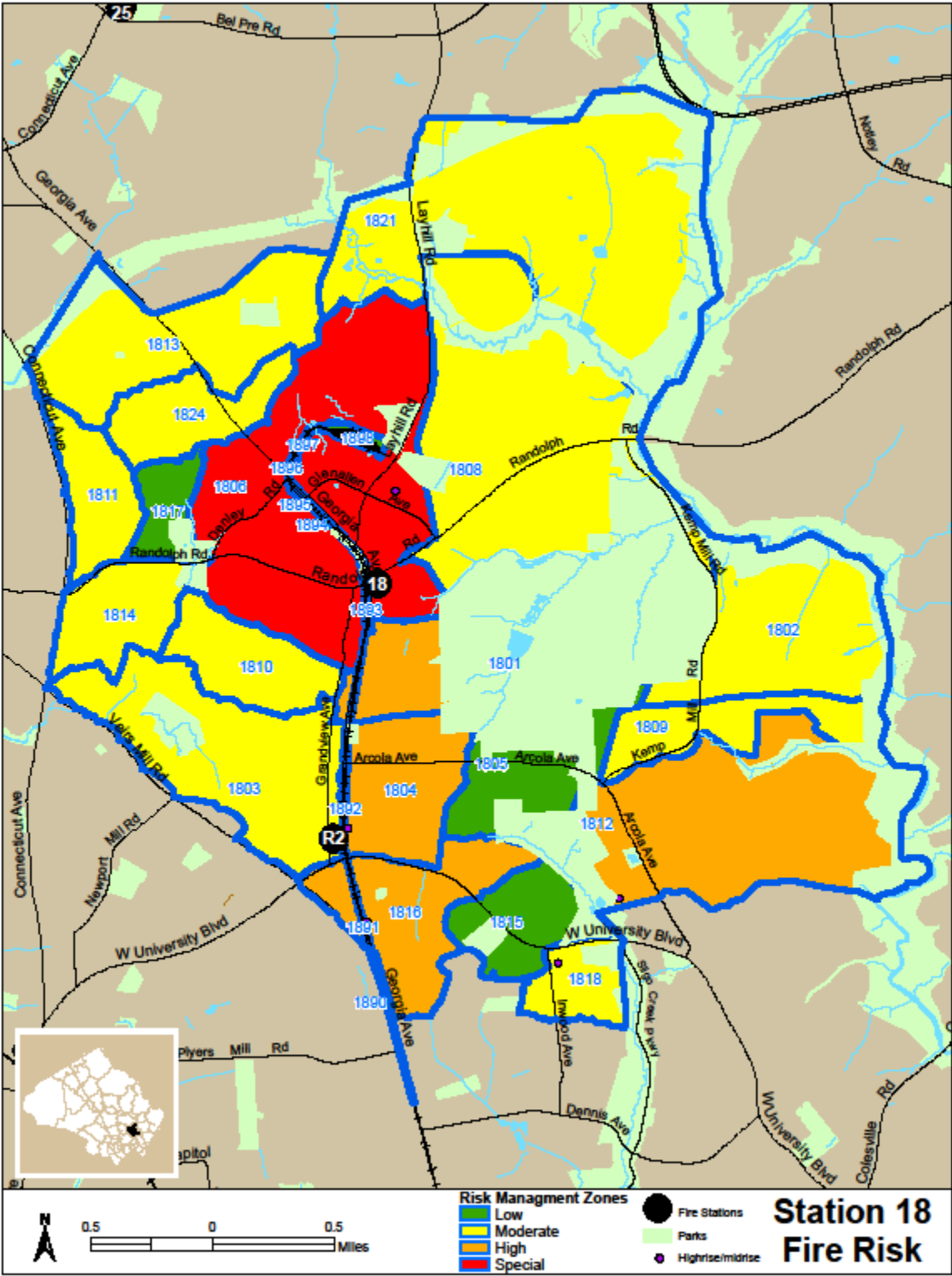
<b>Station 18 - # of Incidents by Call Type</b>				
<b>Fiscal year</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013 (1st and 2nd Quarter Only)</b>
<b>Adaptive</b>	<b>361</b>	<b>423</b>	<b>325</b>	<b>175</b>
<b>ALS1</b>	<b>709</b>	<b>757</b>	<b>787</b>	<b>365</b>
<b>ALS2</b>	<b>107</b>	<b>114</b>	<b>108</b>	<b>64</b>
<b>BLS</b>	<b>1213</b>	<b>1205</b>	<b>1280</b>	<b>624</b>
<b>Explosive</b>	<b>4</b>	<b>9</b>	<b>8</b>	<b>2</b>
<b>Firefull</b>	<b>25</b>	<b>35</b>	<b>32</b>	<b>14</b>
<b>Hazmat</b>	<b>22</b>	<b>24</b>	<b>35</b>	<b>21</b>
<b>Tech Rescue</b>	<b>11</b>	<b>9</b>	<b>37</b>	<b>36</b>
<b>Water/Ice</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>Total Calls</b>	<b>2586</b>	<b>2696</b>	<b>2742</b>	<b>1356</b>
<b>*Note: Total category includes unfiltered calls - # may exceed sum of call types</b>				

MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

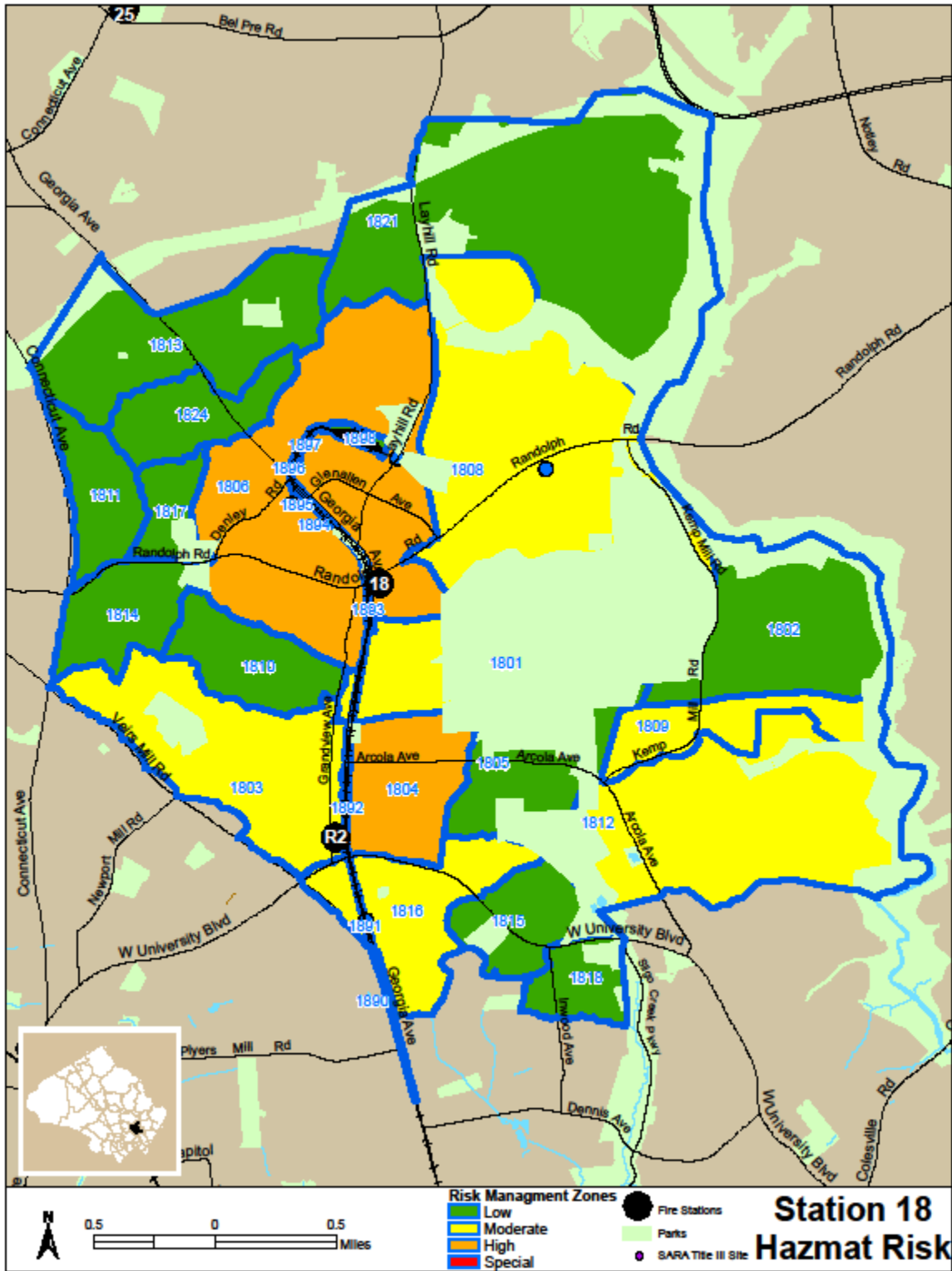




MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

### Fire Station 19

Battalion 1

Silver Spring Station

1945 Seminary Road, Silver Spring



#### Description

- Ownership: County
- Employees: 7 Shift Work
- Apparatus Housed: Engine, Truck, Ambulance (staffed by volunteers sporadically), SU719 (no dedicated staff)
- First Due Area: 3.79 mi<sup>2</sup>
- Volunteers: totaled with the sister company Fire Station 1

#### Overview

Silver Spring Station 19 is a sister-station to Silver Spring Station 1. Station 19 is tucked between a major six-lane highway (Georgia Avenue MD97), a small shopping center, a vast neighborhood of old homes, and near Walter Reed Army Medical Annex. Station 19's area has the urban feel but is still filled with quaint, large, old homes; some have been remodeled inside but they have the same 'old home feeling' with the same fire hazards of old homes: concealed spaces and poke-through holes; exterior slate roofing, small crevices and openings. Remarkably, looking at the many homes in Station 19's first due area, most people would never know Station 19's outlying area is filled with warehouses and other commercial occupancies packed with chemical/biological hazards as well as apartment high-rises, a plethora of mid-rises with tight streets, three miles of the Capital Beltway (Interstate 495 – both inner and outer loops) and the hustle and bustle of downtown Silver Spring less than two miles away.

## MCFRS

### COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

#### **High Risk Areas – Including Hazards**

On the outskirts of the Forest Glen Annex are many warehouse-type facilities housing many different businesses, from cake decorating, to automotive body work/repair, to dry cleaning. Many different hazards are prominent in this area. There are two 24-hour staffed nursing homes and one hospital (Holy Cross) in Silver Spring Station 19's first due area. The employees at Station 19 have run a number of calls to Holy Cross, mostly alarm bells, odors and helicopter stand-bys. The unfortunate aspect of running fire calls to Holy Cross is the location of the hydrant on side alpha and the receiving-circle for patient drop off/pick up. Traffic in the circle proves to be difficult for the engine driver and tower driver to maneuver their units into an advantageous tactical position.

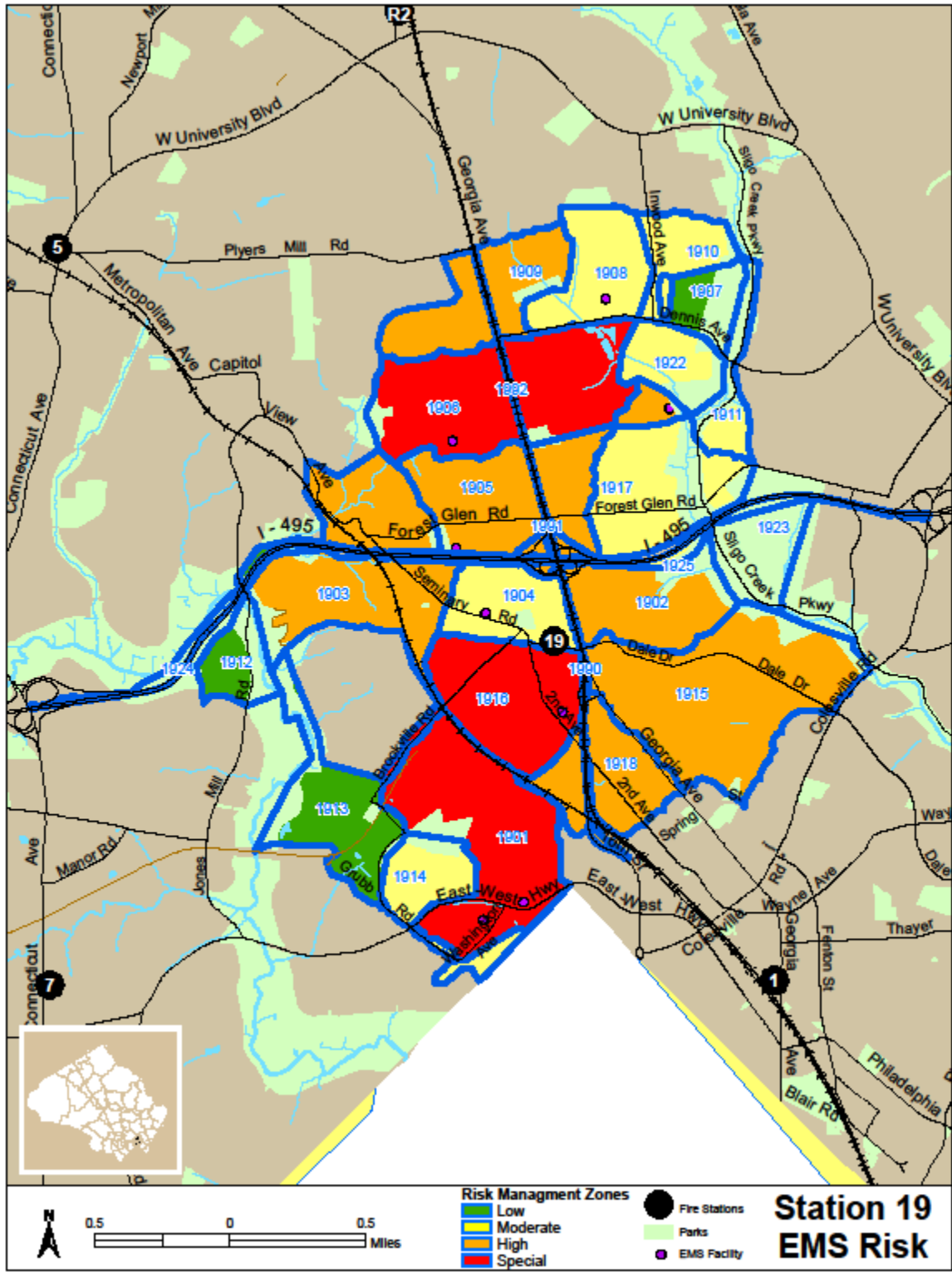
Fire Station 19 resources also respond to the Forest Glen METRO Station. The majority of the tracks are below grade with a small section above ground. The actual station is twenty stories below grade; the deepest in METRO's system; and there are no escalators. Instead, there is a bank of six elevators, "that supply very fast access (at a rate of seventeen feet per second) between station and the surface" as well as a staircase for emergency use. Each elevator car has a "trap door" on the side that opens and allows a rescuer to "feather" the car to a slim platform to make access to another car for rescue purposes. The Forest Glen METRO Station is the only station equipped with smoke doors to protect customers during a train fire and evacuation. The personnel at Station 19 conduct drills perform elevator rescues, water supply calculations for the extreme depth, and knowledge of the elevator machine room. Station 19 personnel also conduct drills on how to work with each other in regard to communication when there is an elevator emergency as the elevator room is nowhere near the elevators. In November 2010, the Forest Glen METRO Station had 2,271 pedestrians entering the METRO and 2,149 exiting the METRO during weekdays alone. For weekends in November 2010, 1,577 pedestrians entered the METRO and 1,536 exited.

**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

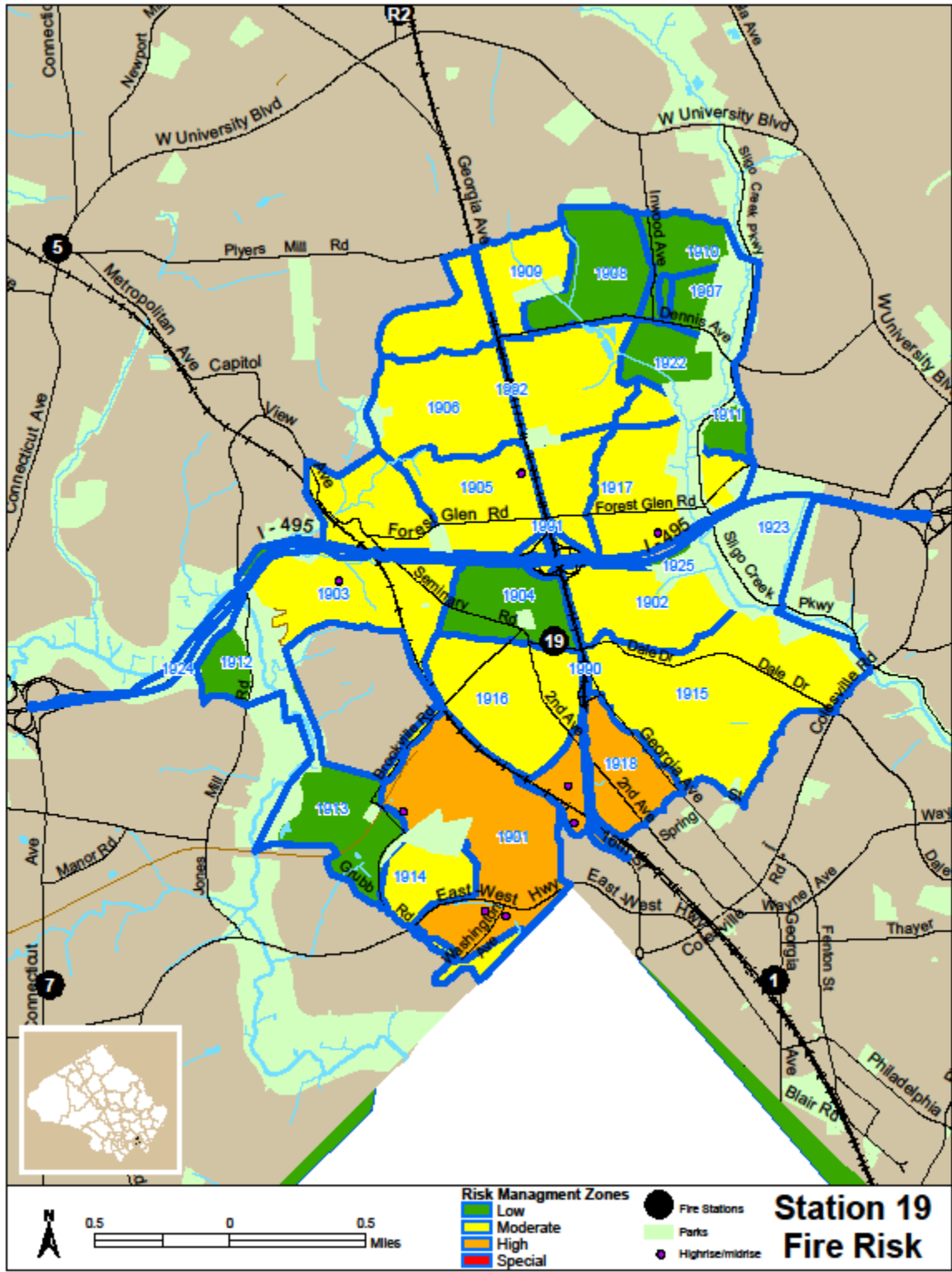
---

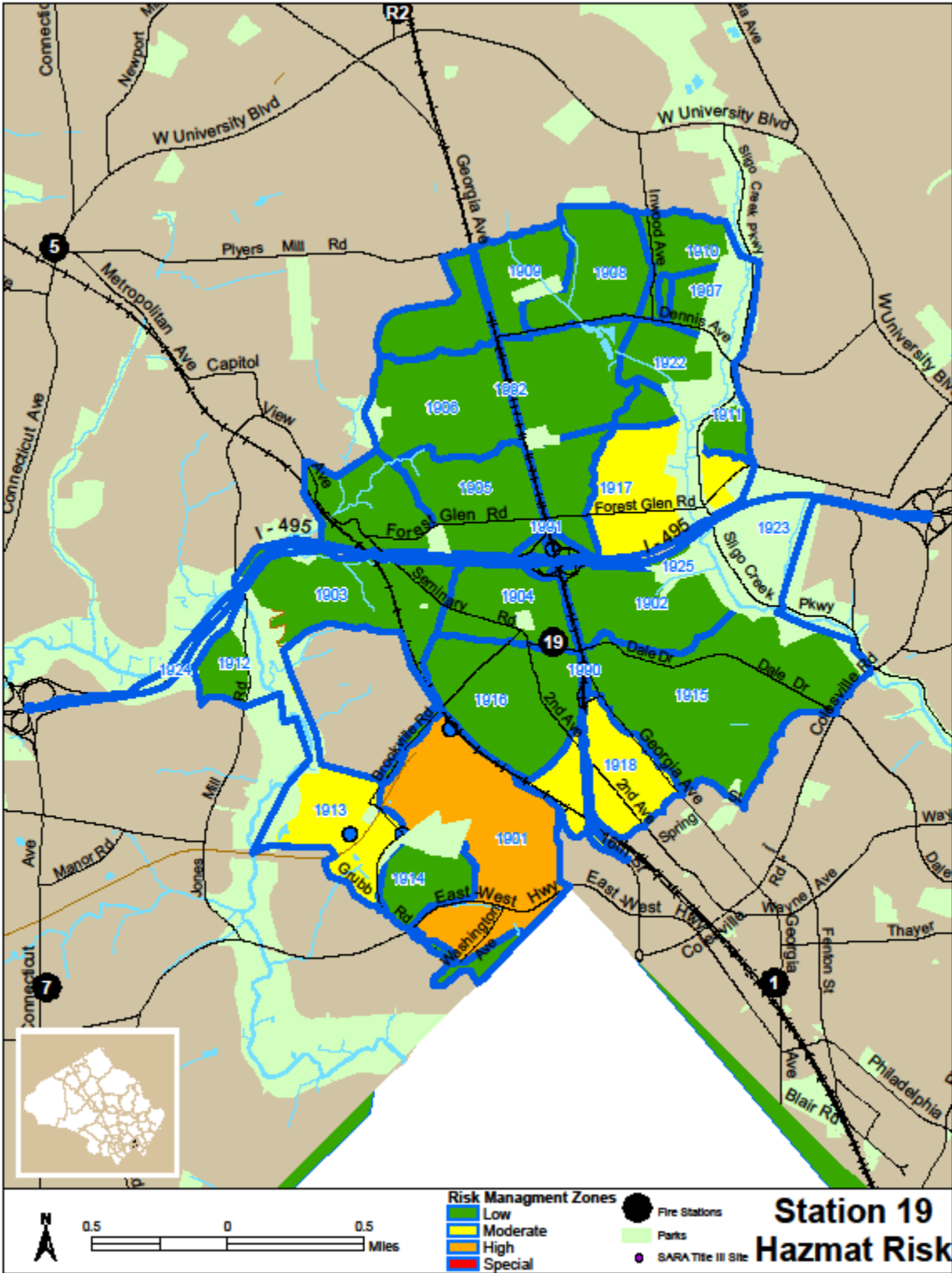
<b>Station 19 - # of Incidents by Call Type</b>				
<b>Fiscal Year</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013 (1st and 2nd Quarter Only)</b>
<b>Adaptive</b>	<b>332</b>	<b>398</b>	<b>355</b>	<b>175</b>
<b>ALS1</b>	<b>535</b>	<b>592</b>	<b>583</b>	<b>282</b>
<b>ALS2</b>	<b>78</b>	<b>98</b>	<b>80</b>	<b>36</b>
<b>BLS</b>	<b>995</b>	<b>1000</b>	<b>1047</b>	<b>554</b>
<b>Explosive</b>	<b>7</b>	<b>7</b>	<b>4</b>	<b>2</b>
<b>Firefull</b>	<b>16</b>	<b>32</b>	<b>25</b>	<b>12</b>
<b>Hazmat</b>	<b>14</b>	<b>24</b>	<b>31</b>	<b>12</b>
<b>Tech Rescue</b>	<b>32</b>	<b>32</b>	<b>36</b>	<b>16</b>
<b>Water/Ice</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>Total Calls</b>	<b>2226</b>	<b>2364</b>	<b>2319</b>	<b>1179</b>
<b>*Note: Total category includes unfiltered calls - # may exceed sum of call types</b>				

MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER







# MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

## Fire Station 20

Battalion 2

Bethesda Station

9041 Old Georgetown Road, Bethesda



### Description

- Ownership: Volunteer
- Employees: 3 Shift Work
- Apparatus Housed: Engine
- Specialty Team: Hazmat
- First Due Area: 4.05 mi<sup>2</sup>
- Volunteers: totaled in with the sister company Fire Station 6

### Overview

Bethesda, Station 20, is surrounded by important institutions, not only for their medical breakthroughs and clandestine facilities but for the employment opportunities given to the area. The businesses and institutions bring a large number of people into Station 20's first due area during rush hour but also the two federal hospitals and research facilities bring people from all over the world. Scattered around the different facilities are quiet residential communities that have been settled for the most part since WWII.

Because it is a hazmat house, two certified hazmat technicians must comprise at least two of the three-person staffing on the engine. The engine responds to hazmat incidents for additional staffing for the Hazmat Team, and Station 20 personnel certify annually by completing NFPA 472 competencies which is completed as a monthly drill. Station 20 also houses the scheduling office for the operations of Montgomery County Fire Rescue.

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

#### **High Risk Areas – Including Hazards**

Station 20 has METRO tracks through their first due area and it services two METRO stations: Grosvenor and Medical Center – just miles apart. The Grosvenor station serves a heavily-populated residential area and the Medical Center station services two large federal properties: NIH and the Walter Reed National Military Medical Center. METRO also services many other professionals, visitors, and students. In November 2010, the Grosvenor METRO had 5,546 pedestrians entering the METRO and 5,213 pedestrians exiting the METRO during the weekdays alone. For weekends during November 2010, 4,125 pedestrians entered the METRO at Grosvenor and 4,019 exited. In November 2010, the Medical Center METRO had 5,436 pedestrians entering the METRO and 5,375 pedestrians exiting during the weekdays alone. For weekends during November 2010, 1,810 pedestrians entered the METRO at Medical Center and 1,684 exited.

The National Institutes of Health (NIH) is an agency of the United States Department of Health and Human Services and is the primary agency of the government responsible for biomedical and health-related research. NIH has twenty-seven separate institutes, centers and offices formed as subsidiaries. NIH's research is divided into two parts: the Extramural Research Program (works with research outside NIH) and the Intramural Research Program or IRP (works with research inside NIH). The IRP is the largest biomedical research institute on Earth with over 1,200 principle investigators and over 4,000 postdoctoral fellows. The IRP is responsible for many scientific accomplishments: discovery of fluoride, the use of lithium to manage bi-polar disorder, the creation of vaccines against hepatitis, influenza and human papillomavirus. Knowing this, it is assumed there is a plethora of hazardous materials on campus; however, it is unknown just how many and to what extent. Since September 11, 2001, the campus is fenced in and heavily guarded. The campus also has its own federally operated fire department with which MCFRS has a mutual aid agreement. NIH Aerial Tower 751 responds frequently to off-campus structure fires in Montgomery County, and NIH Ambulance 751 responds occasionally off-campus as well to EMS incidents in the County.

Directly across from the entrance to NIH is the entrance to Walter Reed National Military

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

Medical Center (WRNMMC) – a tri-service medical center for Army, Navy and Air Force. WRNMMC is now the largest and most renowned military center, best known for its care to seriously injured soldiers and the President. WRNMMC – known then as the “National Naval Medical Center” -was first built in 1940, at the direction of President Roosevelt, and has since ensued many renovations; the latest in 2005 with the closure and integration of military facilities. The original facility was designed to hold 1,200 beds for wounded soldiers. Post World War II, temporary buildings were added to accommodate up to 2,464 wounded soldiers. Due to President Roosevelt’s paralysis, the hospital had offered to have an appointed White House doctor assist him with medical issues. Since then, other Presidents have received their medical services at WRNMMC. In 1975, Building 10, a seven-story, 500 bed inpatient facility, with a combined area of more than 880,000 square feet was started, completed and stands as the trademark of WRNMMC<sup>368</sup>. The campus is fenced in and guarded by military personnel.

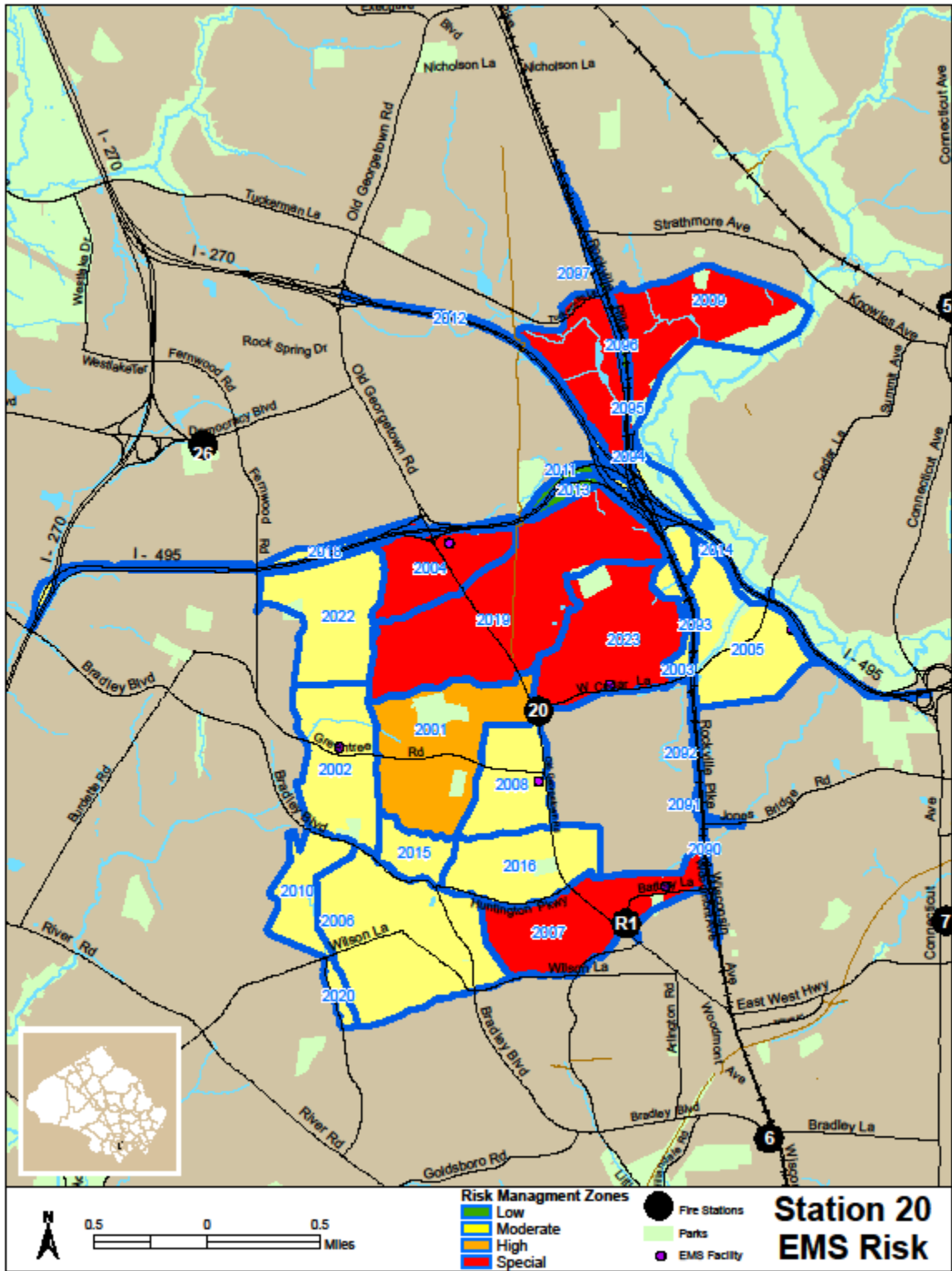
Station 20 has only a small section of interstate highway in the first due consisting of I-495 and a segment of I-270. Station 20 covers 2.6 miles of the Inner Loop and 3 miles of the Outer Loop of I-495; and I-270 northbound from I-495 to Old Georgetown Road for 1.5 miles. During incidents in the opposing lanes, Station 20 will also run the “opposite assignment” for the same area. Other than National Institutes of Health and Walter Reed National Military Medical Center, there are no industrial, chemical or biological hazmat plants and/or warehouses in the first due area.

**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

Station 20 - # of Incidents by Call Type				
<b>Fiscal Year</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013 (1st and 2nd Quarter Only)</b>
<b>Adaptive</b>	<b>343</b>	<b>329</b>	<b>297</b>	<b>170</b>
<b>ALS1</b>	<b>431</b>	<b>421</b>	<b>467</b>	<b>268</b>
<b>ALS2</b>	<b>56</b>	<b>50</b>	<b>58</b>	<b>13</b>
<b>BLS</b>	<b>980</b>	<b>1016</b>	<b>987</b>	<b>460</b>
<b>Explosive</b>	<b>6</b>	<b>13</b>	<b>9</b>	<b>1</b>
<b>Firefull</b>	<b>15</b>	<b>19</b>	<b>14</b>	<b>6</b>
<b>Hazmat</b>	<b>12</b>	<b>31</b>	<b>30</b>	<b>18</b>
<b>Tech Rescue</b>	<b>35</b>	<b>32</b>	<b>40</b>	<b>24</b>
<b>Water/Ice</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>Total Calls</b>	<b>2048</b>	<b>2092</b>	<b>2056</b>	<b>1031</b>
<b>*Note: Total category includes unfiltered calls - # may exceed sum of call types</b>				

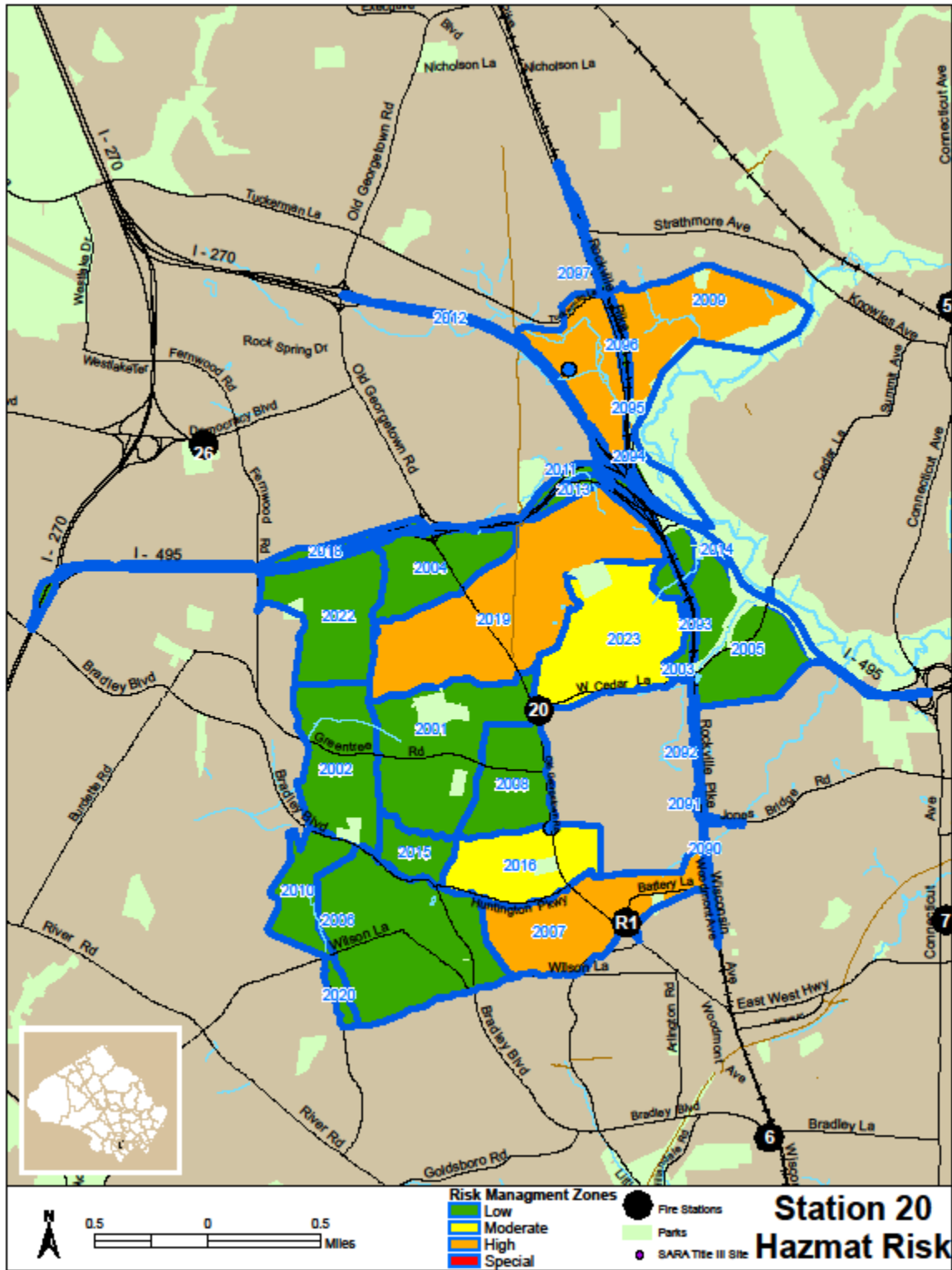
MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



\_\_\_\_\_



MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER





# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

### Fire Station 21

Battalion 4

Kensington Station

12500 Veirs Mill Road, Rockville



#### Description

- Ownership: Volunteer
- Employees: 6 Shift Work
- Apparatus Housed: Engine (AFRA), Ambulance
- First Due Area: 4.05 mi<sup>2</sup>
- Volunteers: totaled in with the sister company Fire Station 5

#### Overview

This fire house was built in 1962 to service the needs of the “Veirs Mill Village” area. The station sits on the corner of Veirs Mill Road and Gaynor Road. The area has changed immensely since the station was first built. It has grown in size, not by buildings, but in the number of people and their diverse demographics. The traffic is significant during rush hours and there are a number of bike trails that lead to the Washington D.C. area along Rock Creek.

#### High Risk Areas – Including Hazards

There are no METRO or CSX Rails in Station 21’s first due area; however, it is surrounded by the Wheaton, Glenmont, Twinbrook, Rockville and White Flint METRO stations. The CSX rails border the area near Ashley Drive.

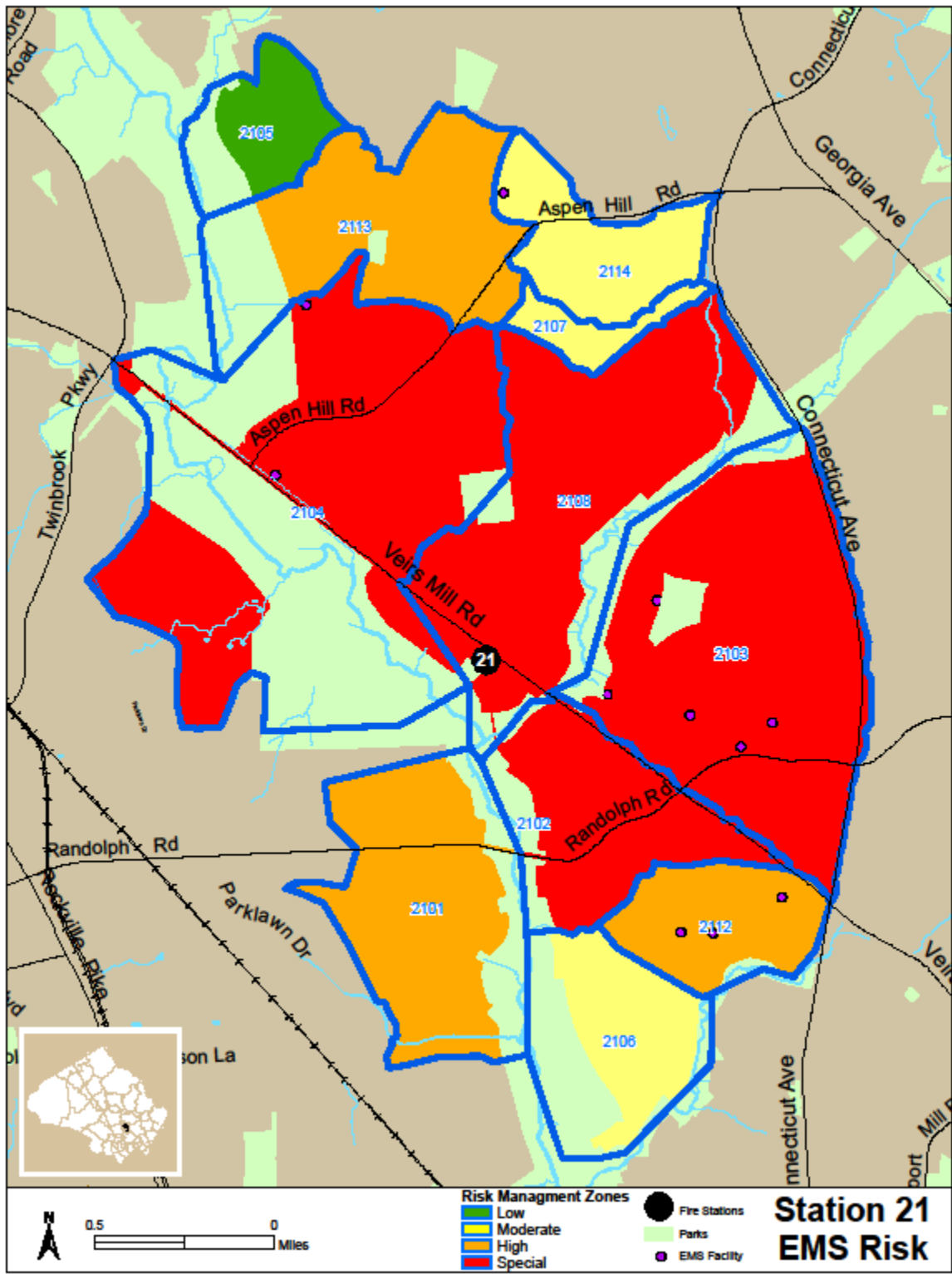


## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

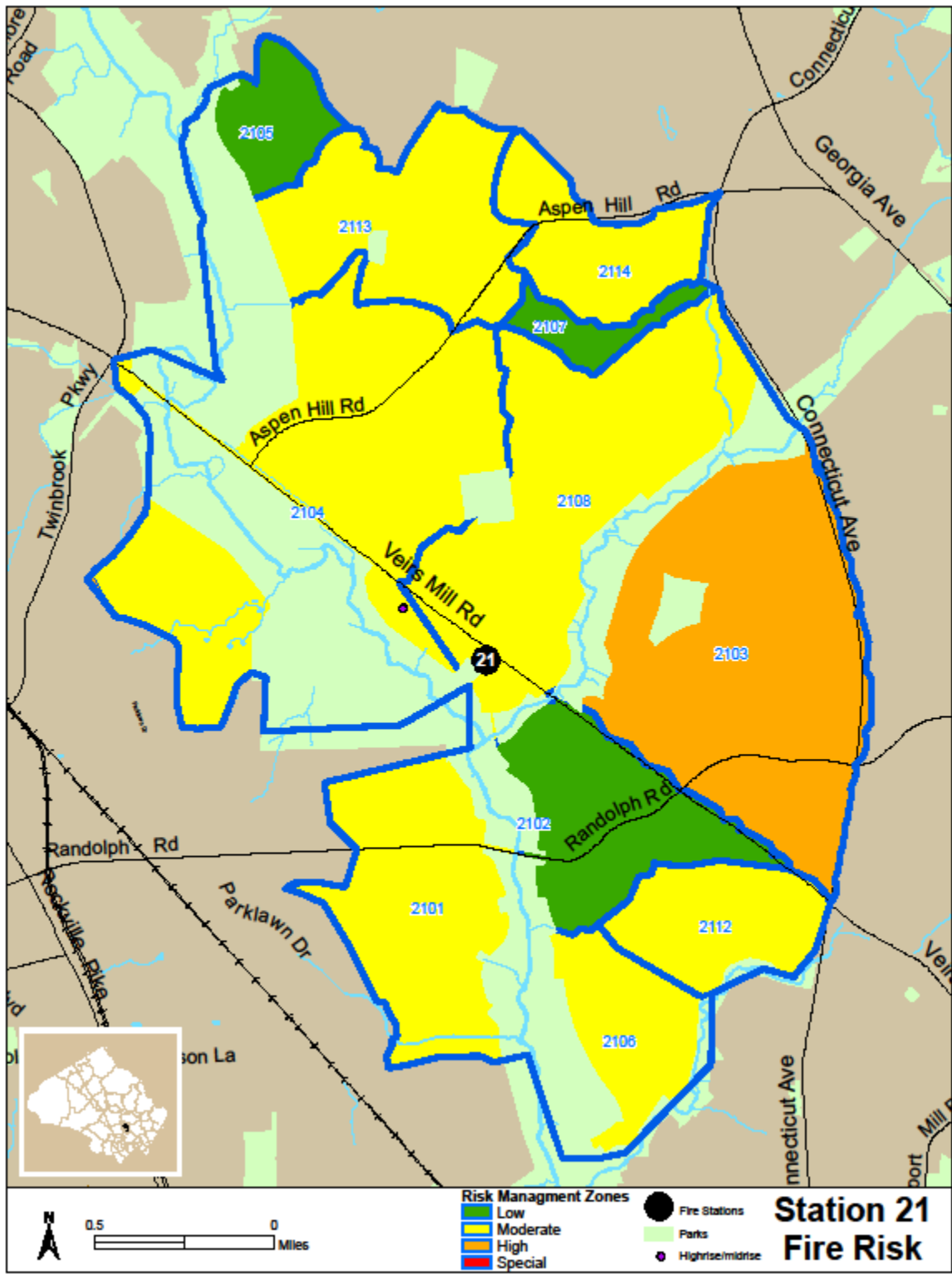
There is a Verizon building located at Connecticut and Veirs Mill Roads. The building houses electrical equipment and a large battery room. In addition, the building is approximately one-third sprinklered. There are two medical office complexes: one contains a townhouse-style office structure and the other is a four-story non-sprinklered office building. There is also a PEPCO building in Station 21's area that is windowless and full of electrical equipment. There is a large private club pool with chemical storage at Veirs Mill and Connecticut Avenue One store, Unique Bazaar has an extremely heavy fire load due to the nature of its business and its donation intake process. It is located in one of the strip-style malls along with other stores.

Station 21 - # of Incidents by Call Type				
Fiscal Year	2010	2011	2012	2013 (1st and 2nd Quarter Only)
Adaptive	255	328	230	109
ALS1	636	617	607	331
ALS2	102	93	98	37
BLS	1024	979	1006	502
Explosive	2	8	3	2
Firefull	13	11	18	14
Hazmat	13	25	19	16
Tech Rescue	6	24	33	8
Water/Ice	N/A	1	N/A	N/A
Total Calls	2157	2204	2132	1087
*Note: Total category includes unfiltered calls - # may exceed sum of call types				

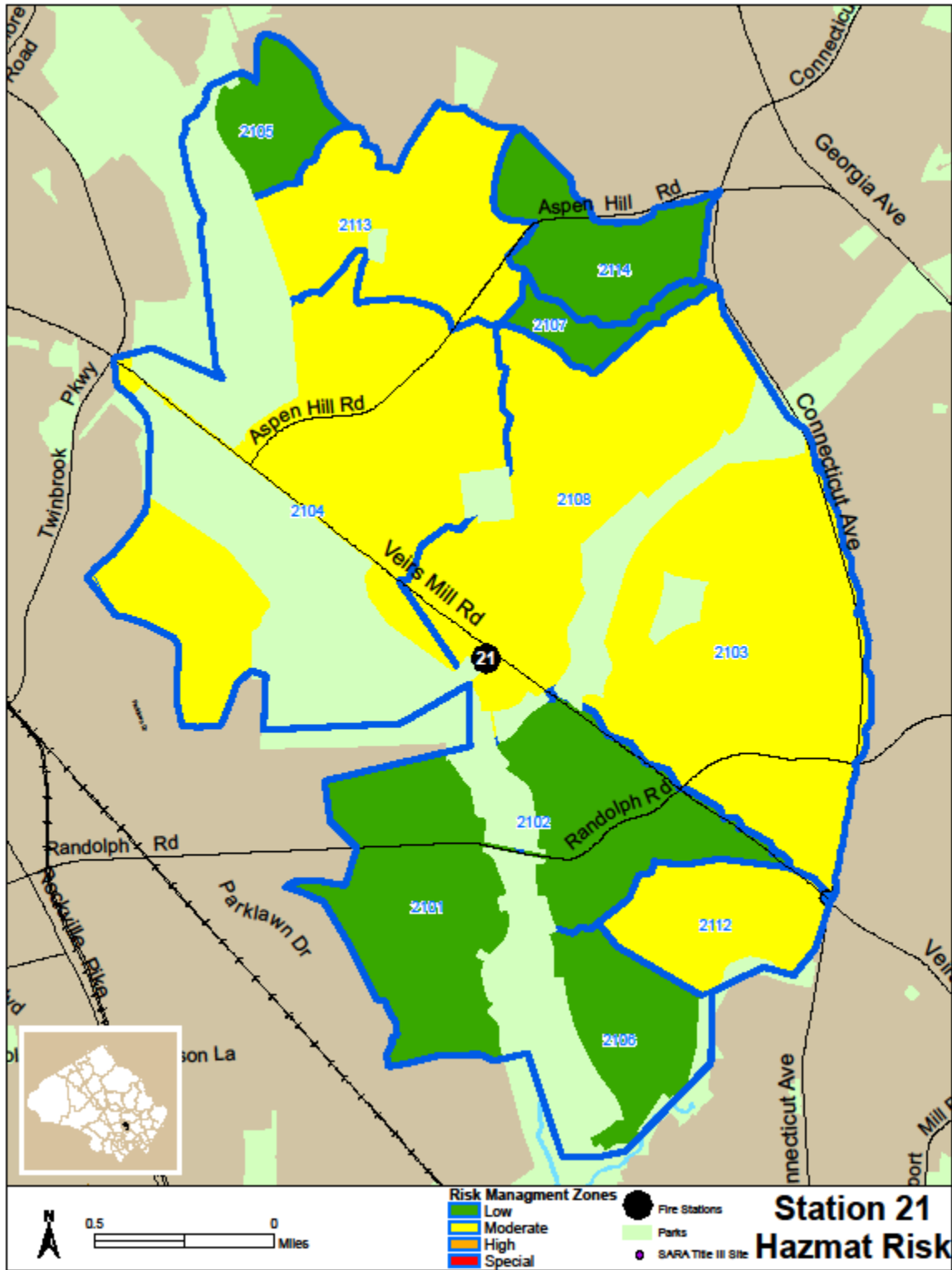
MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

### Fire Station 22

Battalion 5

Kingsview Station

18910 Germantown Road, Germantown



#### Description

- Ownership: County
- Employees: 8 Shift Work
- Apparatus Housed: Engine (AFRA), Ambulance Tanker, MAB 722, MCSU722, SU722
- First Due Area: 20.53 mi<sup>2</sup>

#### Overview

Station 22 is a new station that opened for service in February 2009. It was the first new/additional fire station in Montgomery County in twenty-five years. The station is 16,150 square feet, one level, includes six apparatus bays, separate administrative and living spaces and workout room. The station sits on a 3.9 acre lot. The fire department protects residences, businesses, schools and a large recreational facility.

#### High Risk Areas – Including Hazards

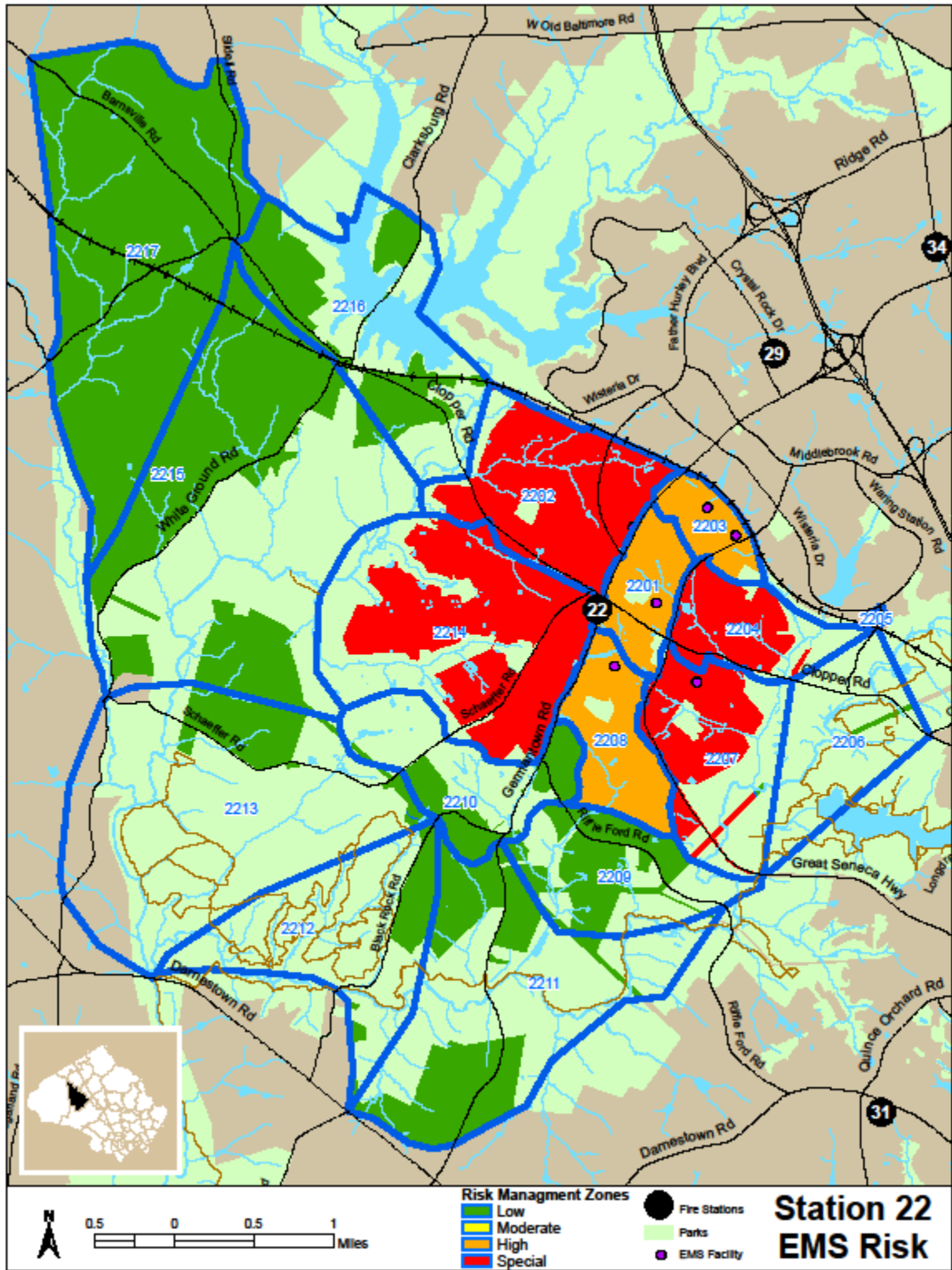
There is one hazardous materials dry-box storage facility for medical/pharmaceutical production located at 18830 Germantown Road. There is a County-owned waste water treatment plant for the greater Germantown area in Station 22's first due area. Personnel at Station 22 have been told to meet at the front gate and information will be passed to the OIC of the unit from plant operators. There is no standard operating procedure or special dispatch to the plant.

## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

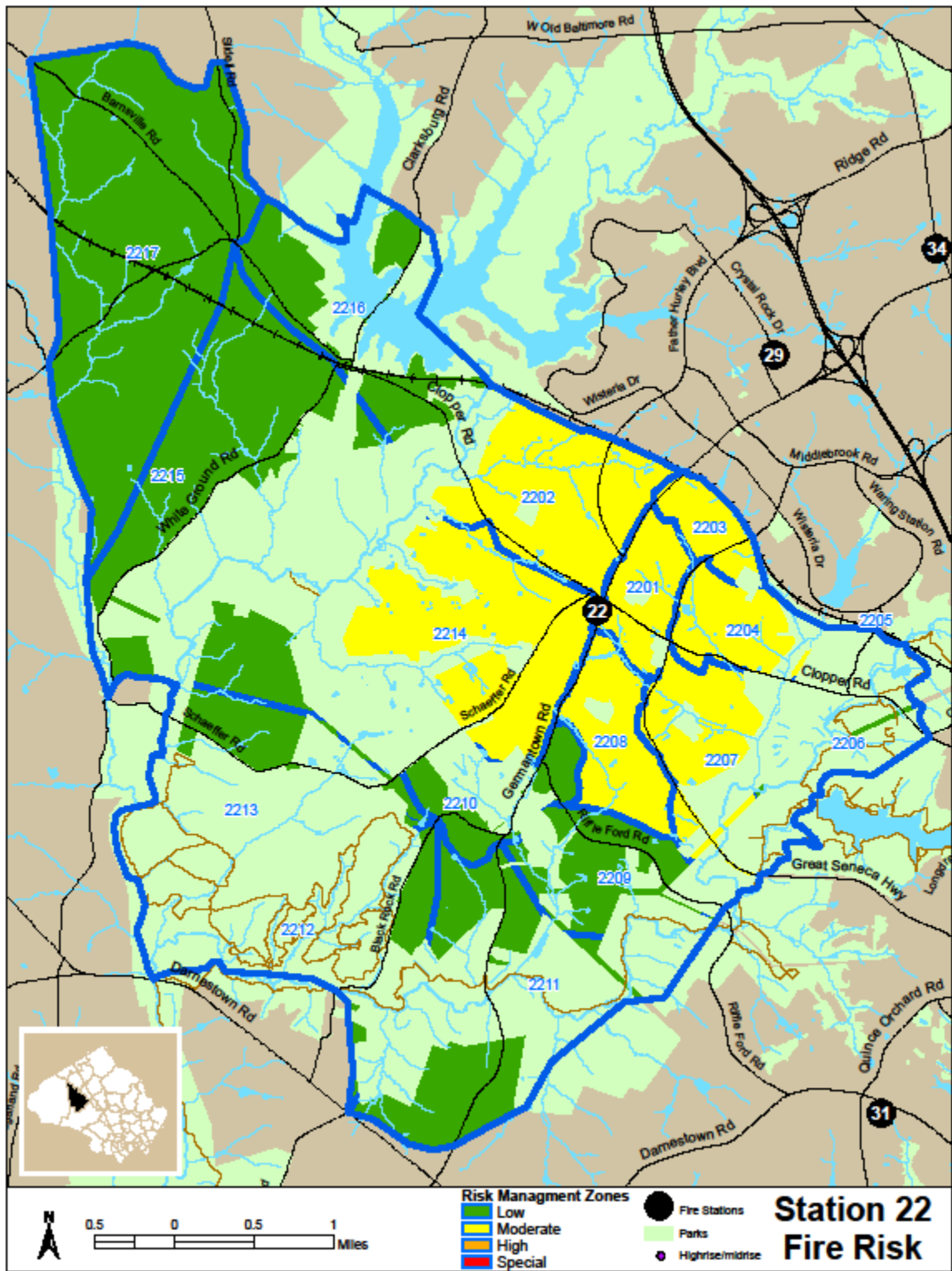
A very small portion of the CSX train rail runs through Station 22's first due area upon which hazardous materials and other freight are transported. There is no interstate in Station 22's area; however, there are three heavily traveled highways – State Routes 117, 118 and 119.

Station 22 - # of Incidents by Call Type				
Fiscal Year	2010	2011	2012	2013 (1st and 2nd Quarter Only)
Adaptive	286	279	261	214
ALS1	519	452	469	495
ALS2	70	57	66	63
BLS	718	715	763	844
Explosive	4	3	5	4
Firefull	21	20	19	22
Hazmat	14	14	16	29
Tech Rescue	1	5	4	30
Water/Ice	N/A	1	2	1
Total Calls	1825	1696	1742	971
*Note: Total category includes unfiltered calls - # may exceed sum of call types				

MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

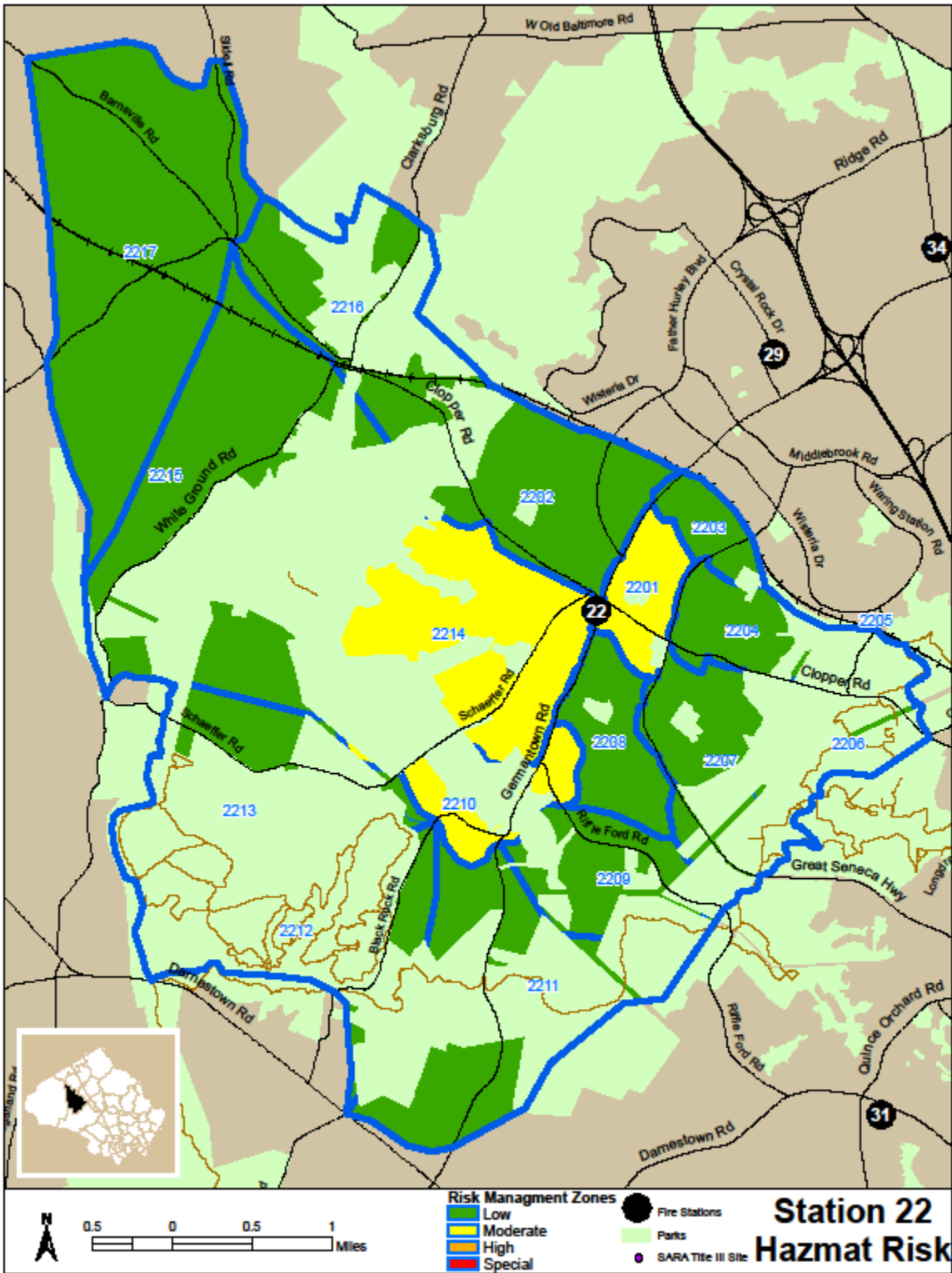


MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER





© 2014 Pearson Education, Inc. or its affiliate(s). All rights reserved.



# MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

## Fire Station 23

Battalion 3

Rockville Station

121 Rollins Avenue, Rockville



### Description

- Ownership: Volunteer
- Employees: 11 Shift Work
- Apparatus Housed: Engine (AFRA), Tower, Ambulance, Medic Unit
- First Due Area: 6.58 mi<sup>2</sup>
- Volunteers: totaled in with the sister company Fire Station 3

### Overview

Rockville Station 23 is a sister-station to Rockville Station 3. Station 23 is located on the southern boundary of the City of Rockville, in the vicinity of a six-lane RT355, strip malls, nursing homes and rehabilitation facilities, high-rise residences and offices as well as single family homes, townhomes and garden apartments. Station 23 was built in 1963 and its first due area is diverse in terms of culture, household income, occupancy type and building construction. It is the quintessential “city” firehouse with a high volume of calls during the day and on weekends.

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

#### **High Risk Areas – Including Hazards**

Station 23 has both the METRO tracks and the CSX railroad running through their first due area and it services two METRO stations: Twinbrook and White Flint – just miles apart. The CSX has a high-volume of commuter-passenger trains going to and from work as well as many cargo trains. There is a gated CSX railroad track on Randolph Road that runs through a high-flow traffic area in Rockville which sets traffic back for long periods at a time during rush-hour time. There have been numerous pedestrians and several train versus vehicle collisions at this particular point in the railroad system; mainly due to its openness, free-access, and high-volume of vehicle and pedestrian traffic.

METRO services many professionals, visitors, and students. In November 2010, the Twinbrook METRO, located in Station 23's area, had 4,524 pedestrians entering the METRO and 4,436 pedestrians exiting the METRO during the weekdays alone. For weekends during November 2010, 3,176 pedestrians entered the METRO at Twinbrook and 3,051 exited. In November 2010, the White Flint METRO had 4,063 pedestrians entering the METRO and 3,982 pedestrians exiting during the weekdays alone. For weekends during November 2010, 2,683 pedestrians entered the METRO at White Flint and 2,561 exited.

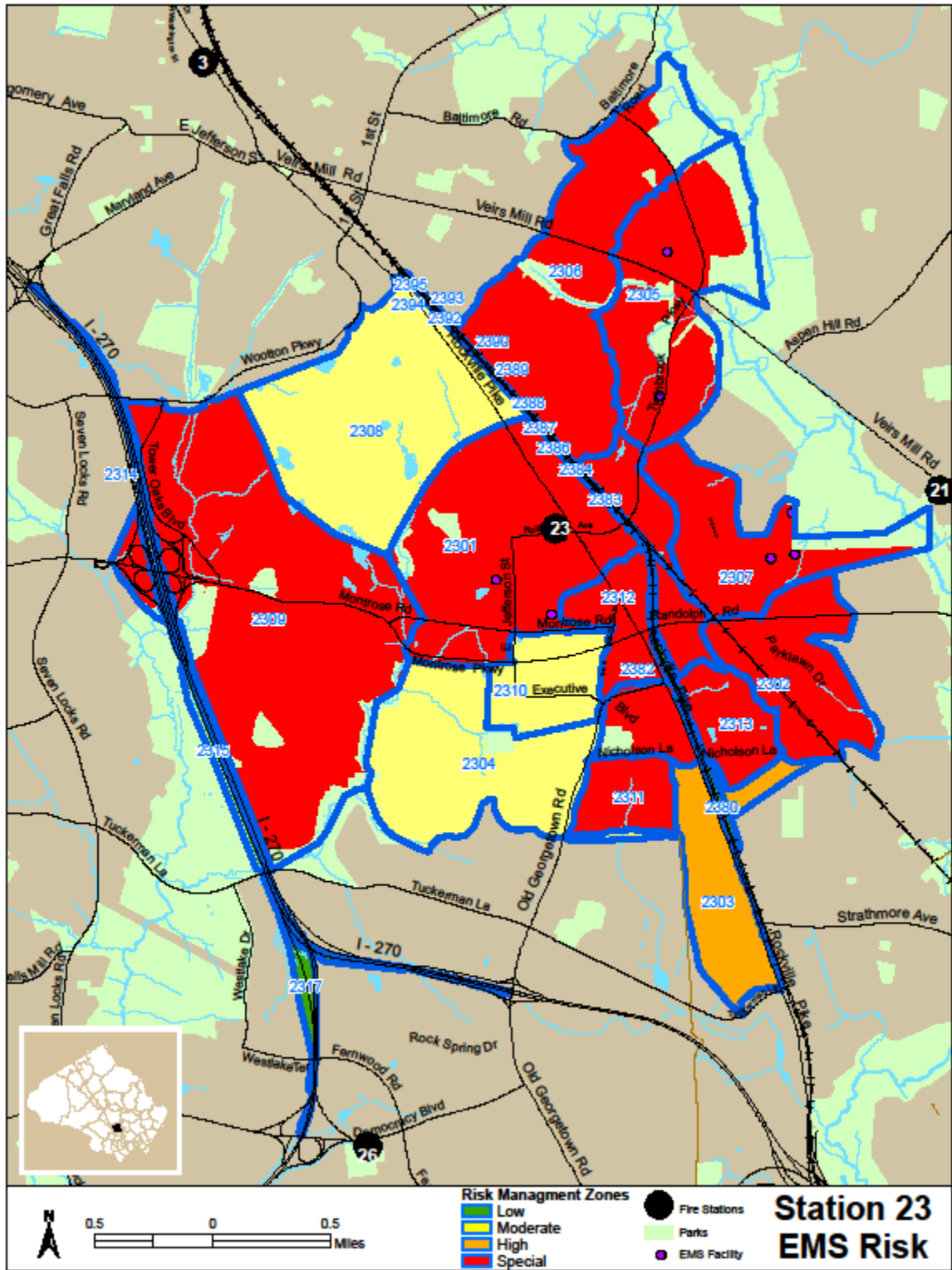
Station 23 also has the Parklawn Building in its first due area. The greatest risk factor, a life safety risk, is the enormous occupant load of 12,000 plus people when full. Currently, it is under a five-year renovation and is being partially occupied. It is a sprinklered building and upon its completion will have an upgraded sprinkler system. Assisting in the safe evacuation of the number of occupants during a fire would be a difficult task requiring a lot of firefighters even though the employees have fire drills. The building sits right on the street, separated by only a sidewalk and surrounded by other businesses. There is nowhere for evacuees to go. The risk factor associated with the renovation would be secondary to this risk factor.

**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

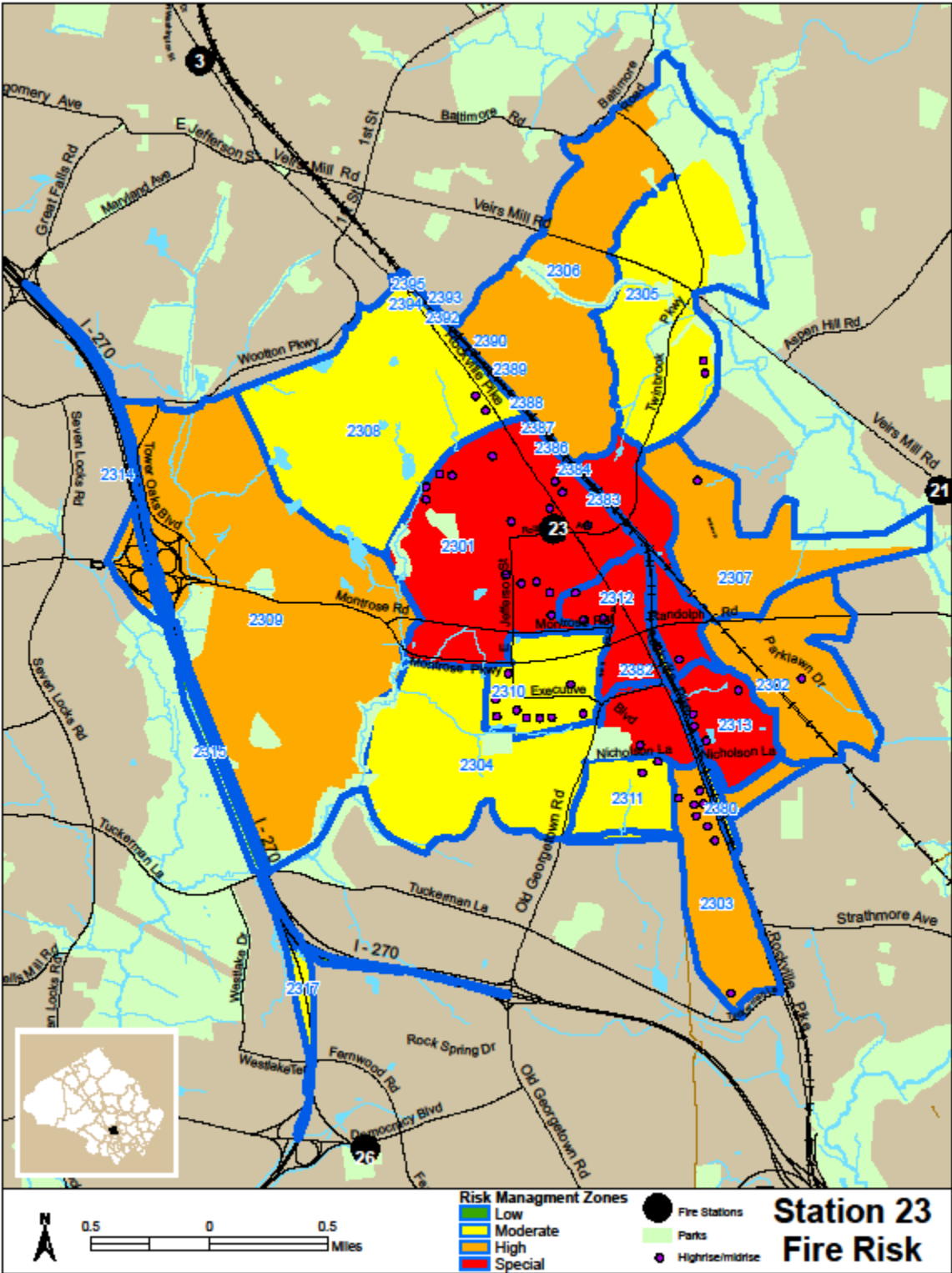
---

<b>Station 23 - # of Incidents by Call Type</b>				
<b>Fiscal Year</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013 (1st and 2nd Quarter Only)</b>
<b>Adaptive</b>	<b>773</b>	<b>864</b>	<b>863</b>	<b>481</b>
<b>ALS1</b>	<b>1483</b>	<b>1478</b>	<b>1524</b>	<b>735</b>
<b>ALS2</b>	<b>198</b>	<b>178</b>	<b>180</b>	<b>100</b>
<b>BLS</b>	<b>2597</b>	<b>2602</b>	<b>2692</b>	<b>1278</b>
<b>Explosive</b>	<b>18</b>	<b>30</b>	<b>38</b>	<b>19</b>
<b>Firefull</b>	<b>38</b>	<b>30</b>	<b>42</b>	<b>20</b>
<b>Hazmat</b>	<b>31</b>	<b>62</b>	<b>58</b>	<b>18</b>
<b>Tech Rescue</b>	<b>63</b>	<b>97</b>	<b>84</b>	<b>46</b>
<b>Water/Ice</b>	<b>N/A</b>	<b>1</b>	<b>N/A</b>	<b>1</b>
<b>Total Calls</b>	<b>5627</b>	<b>5767</b>	<b>5941</b>	<b>2921</b>
<b>*Note: Total category includes unfiltered calls - # may exceed sum of call types</b>				

MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER





# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

### Fire Station 24

Battalion 1

Hillandale Station

13216 New Hampshire, Silver Spring



#### Description

- Ownership: Volunteer
- Employees: 6 Shift Work
- Apparatus Housed: Engine (AFRA), Ambulance, Brush Truck
- First Due Area: 10.37 mi<sup>2</sup>
- Volunteers: totaled in with the sister company Fire Station 12

#### Overview

Station 24 sits on the corner of New Hampshire Avenue (RT650) and less than a quarter of a mile from Randolph Road; a major intersection in Montgomery County. Station 24 is known for the many churches it protects as well as its elderly population. It is surrounded by quaint communities and small plazas.

There is no METRO Rail or railroad in Station 24's first due area. Further there are no industrial, chemical, or biological hazardous material plants and/or warehouses in the first due.

There are a significant number of churches in Station 24's first due area. Many of the churches have intricate and unique construction and due to their age are not fully or partially sprinklered. The community would suffer significantly should an incident occur.

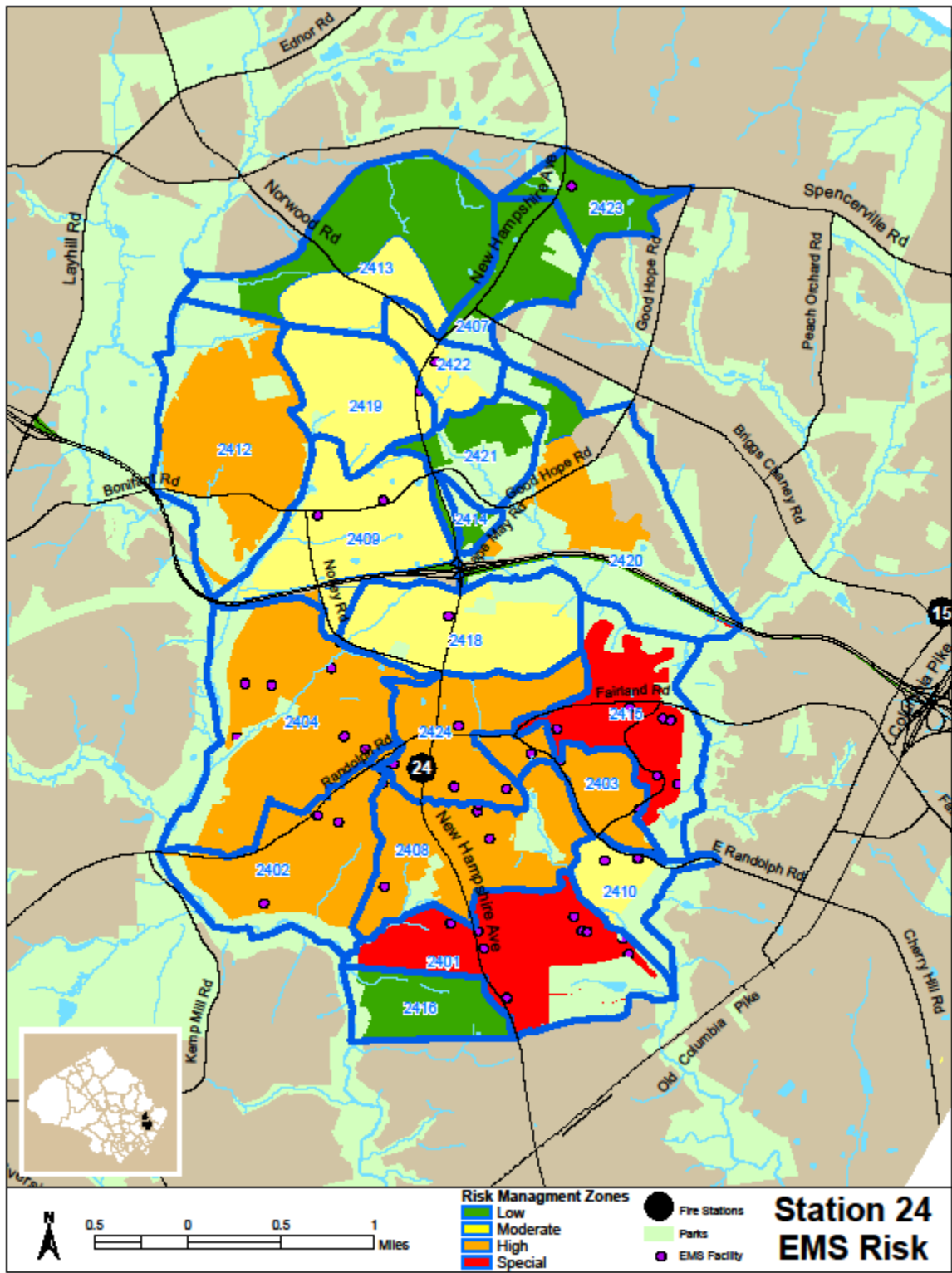


**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

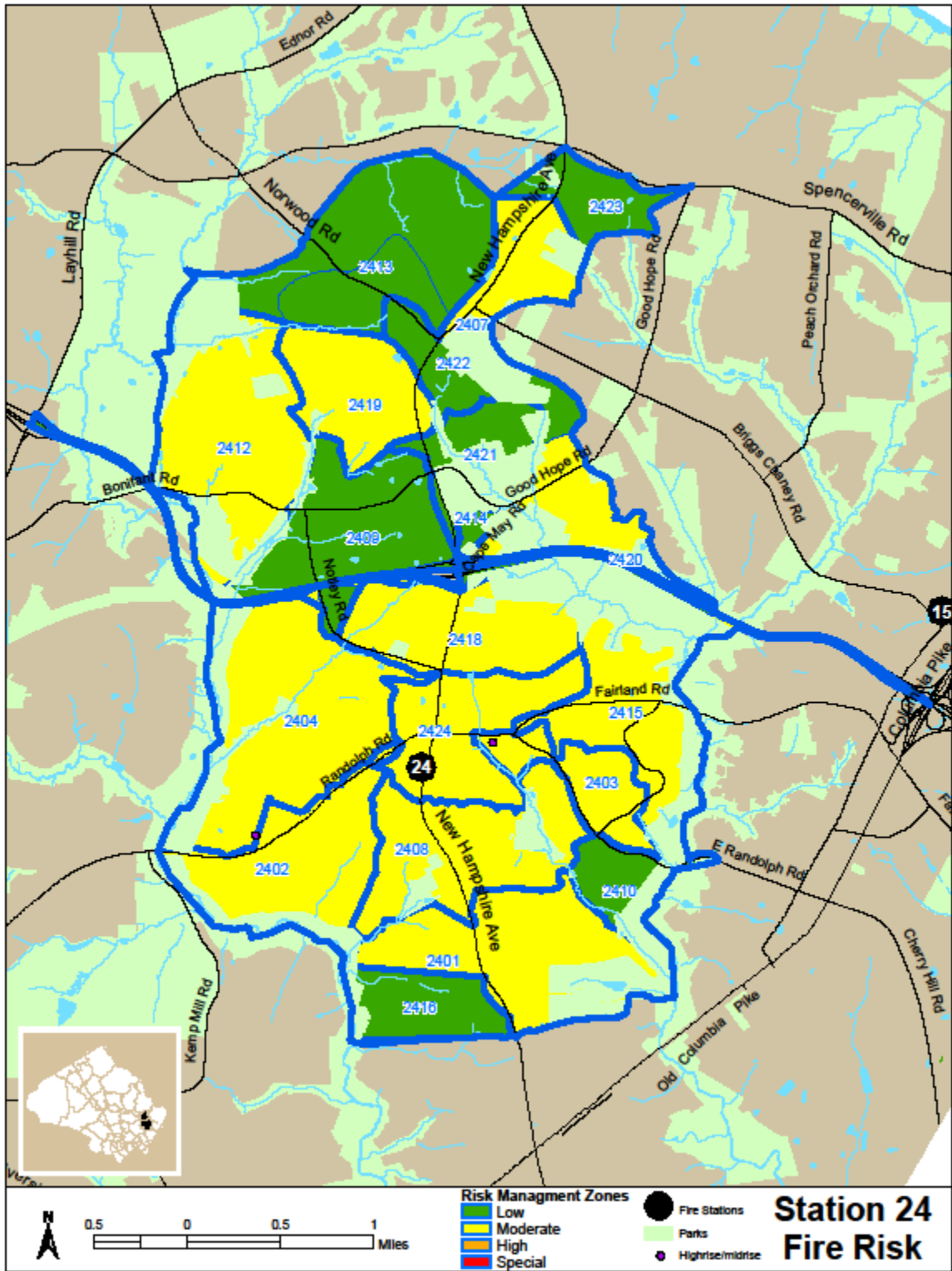
---

<b>Station 24 - # of Incidents by Call Type</b>				
<b>Fiscal Year</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013 (1st and 2nd Quarter Only)</b>
<b>Adaptive</b>	<b>270</b>	<b>342</b>	<b>303</b>	<b>174</b>
<b>ALS1</b>	<b>684</b>	<b>665</b>	<b>668</b>	<b>360</b>
<b>ALS2</b>	<b>89</b>	<b>115</b>	<b>98</b>	<b>52</b>
<b>BLS</b>	<b>1032</b>	<b>1100</b>	<b>1046</b>	<b>486</b>
<b>Explosive</b>	<b>5</b>	<b>15</b>	<b>5</b>	<b>3</b>
<b>Firefull</b>	<b>19</b>	<b>26</b>	<b>19</b>	<b>12</b>
<b>Hazmat</b>	<b>9</b>	<b>17</b>	<b>29</b>	<b>8</b>
<b>Tech Rescue</b>	<b>3</b>	<b>10</b>	<b>7</b>	<b>3</b>
<b>Water/Ice</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>Total Calls</b>	<b>2238</b>	<b>2436</b>	<b>2331</b>	<b>1177</b>
<b>*Note: Total category includes unfiltered calls - # may exceed sum of call types</b>				

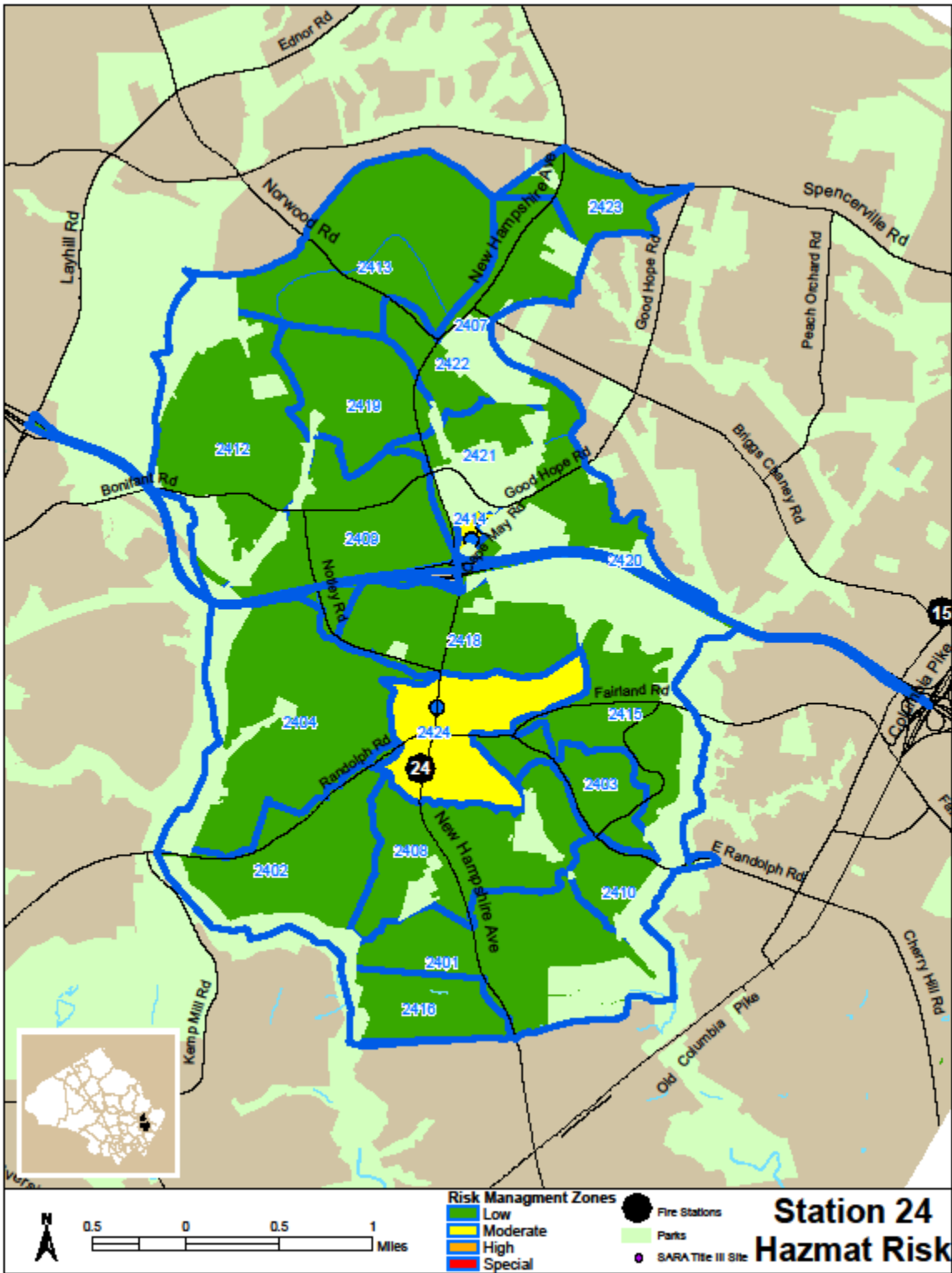
MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



\_\_\_\_\_



# **MCFRS**

## **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

### **Fire Station 25**

Battalion 4

Kensington Station

14401 Connecticut Avenue, Silver Spring



#### **Description**

- Ownership: County
- Employees: 11 Shift Work
- Apparatus Housed: Engine (AFRA), Truck, Medic Ambulance
- Specialty Teams: US&R, HAZMAT, Swift Water
- First Due Area: 10.81 mi<sup>2</sup>
- Volunteers: totaled in with the sister company Fire Station 5

#### **Overview**

Station 25 protects the area of Aspen Hill and its residents. The area is heavily populated and has the “largest population of elderly residents in the County (and a very) diverse resident population.”

Station 25 is surrounded by a combination of vastly used roads, warehouse-style stores and a large retirement community. Station 25 is considered a special operations station; however, not everyone is cross-trained with US&R and Hazmat. Some employees are trained in US&R; some employees are trained in Hazmat; some employees are trained in Swift Water; and some are cross-trained in all disciplines.

#### **High Risk Areas – Including Hazards**

The typical residence in the area is of ordinary, light-weight construction with an average of thirty-five to forty years old. The average square footage is between 1,500 and 2,000 square feet. MCFRS personnel rarely come across sub-divided basements. There are fifteen residential

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

buildings, one office building and approximately 1,000 garden apartments in Station 25's first due area. There are a dozen unsprinklered buildings, most of which are free-standing buildings such as gas stations and fast food facilities. There are a few warehouse-type commercial buildings: Home Depot, Giant Foods, K-Mart and Michaels Arts and Crafts.

Leisure World is a private, age-restricted, fenced-in, 610 acre community staffed by gatehouses and security. There are approximately 8,500 people residing in Leisure World which is sub-divided into twenty-nine housing associations. Located on the property are such amenities as an eighteen-hole golf course, two clubhouses, dining facilities, a medical center with pharmacy and an indoor and outdoor swimming pool. The property is comprised of townhouses, single-family homes, garden apartments and high-rise apartments. The property does not offer any long-term care or assisted living. Leisure World publishes their own emergency plan for their residents.

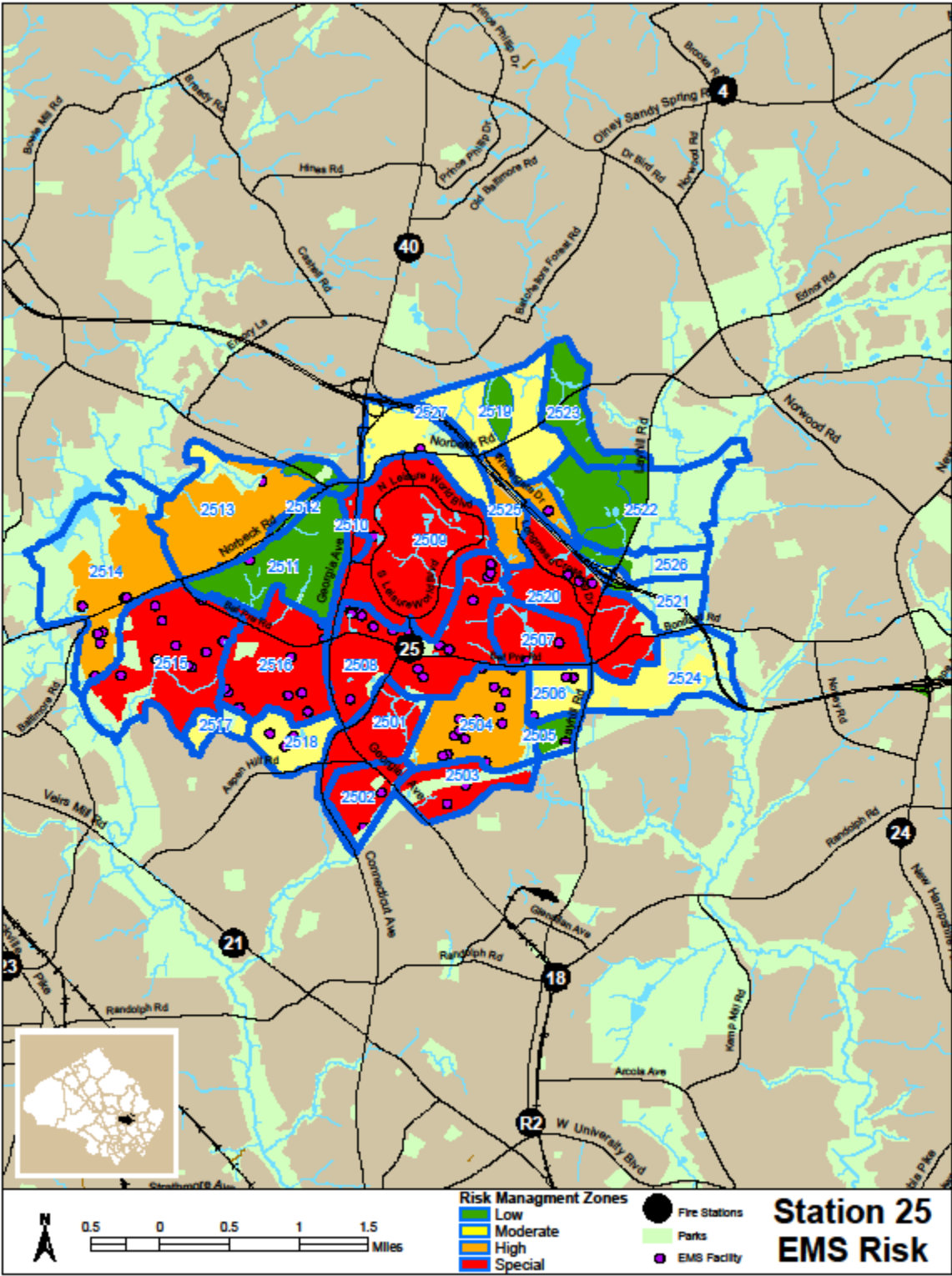
Station 25 has four nursing facilities and six group homes that the personnel have come across. The exact number of group homes is uncertain because they open and close almost monthly. Kensington, Station 25 is served entirely by municipal water; therefore fire hydrants are available throughout. There are no significant draftable water sources in the first due. There are no METRO or CSX rails in Station 25's area nor are there any industrial, chemical, biological hazardous plants and/or warehouses.

**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

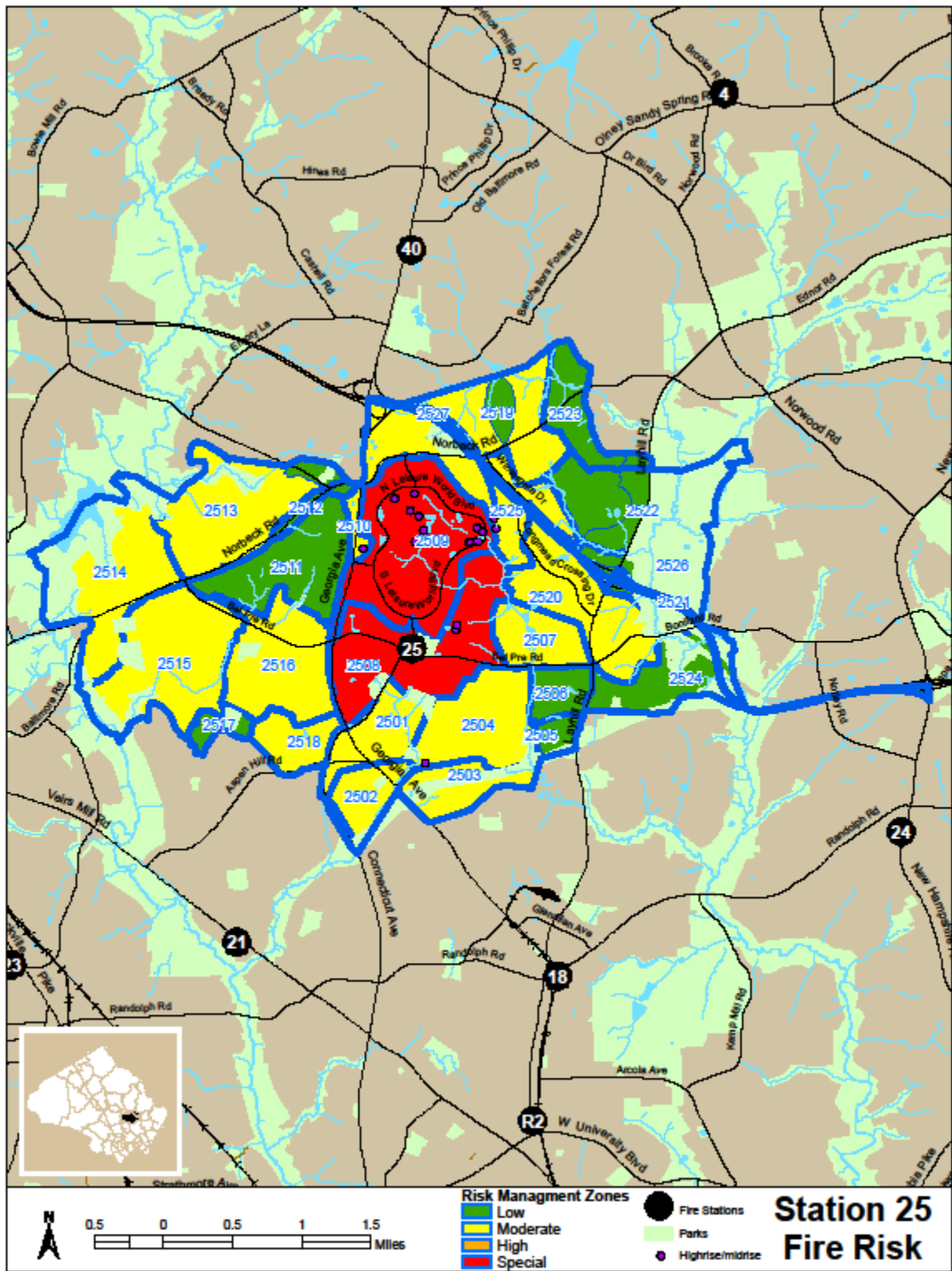
<b>Station 25 - # of Incidents by Call Type</b>				
<b>Fiscal Year</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013 (1st and 2nd Quarter Only)</b>
<b>Adaptive</b>	<b>613</b>	<b>646</b>	<b>560</b>	<b>299</b>
<b>ALS1</b>	<b>1994</b>	<b>2145</b>	<b>2060</b>	<b>1119</b>
<b>ALS2</b>	<b>304</b>	<b>270</b>	<b>249</b>	<b>136</b>
<b>BLS</b>	<b>3582</b>	<b>3894</b>	<b>3837</b>	<b>1896</b>
<b>Explosive</b>	<b>6</b>	<b>10</b>	<b>9</b>	<b>3</b>
<b>Firefull</b>	<b>53</b>	<b>51</b>	<b>55</b>	<b>27</b>
<b>Hazmat</b>	<b>25</b>	<b>72</b>	<b>67</b>	<b>36</b>
<b>Tech Rescue</b>	<b>17</b>	<b>23</b>	<b>31</b>	<b>26</b>
<b>Water/Ice</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>Total Calls</b>	<b>7594</b>	<b>8089</b>	<b>7927</b>	<b>4075</b>
<b>*Note: Total category includes unfiltered calls - # may exceed sum of call types</b>				

MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

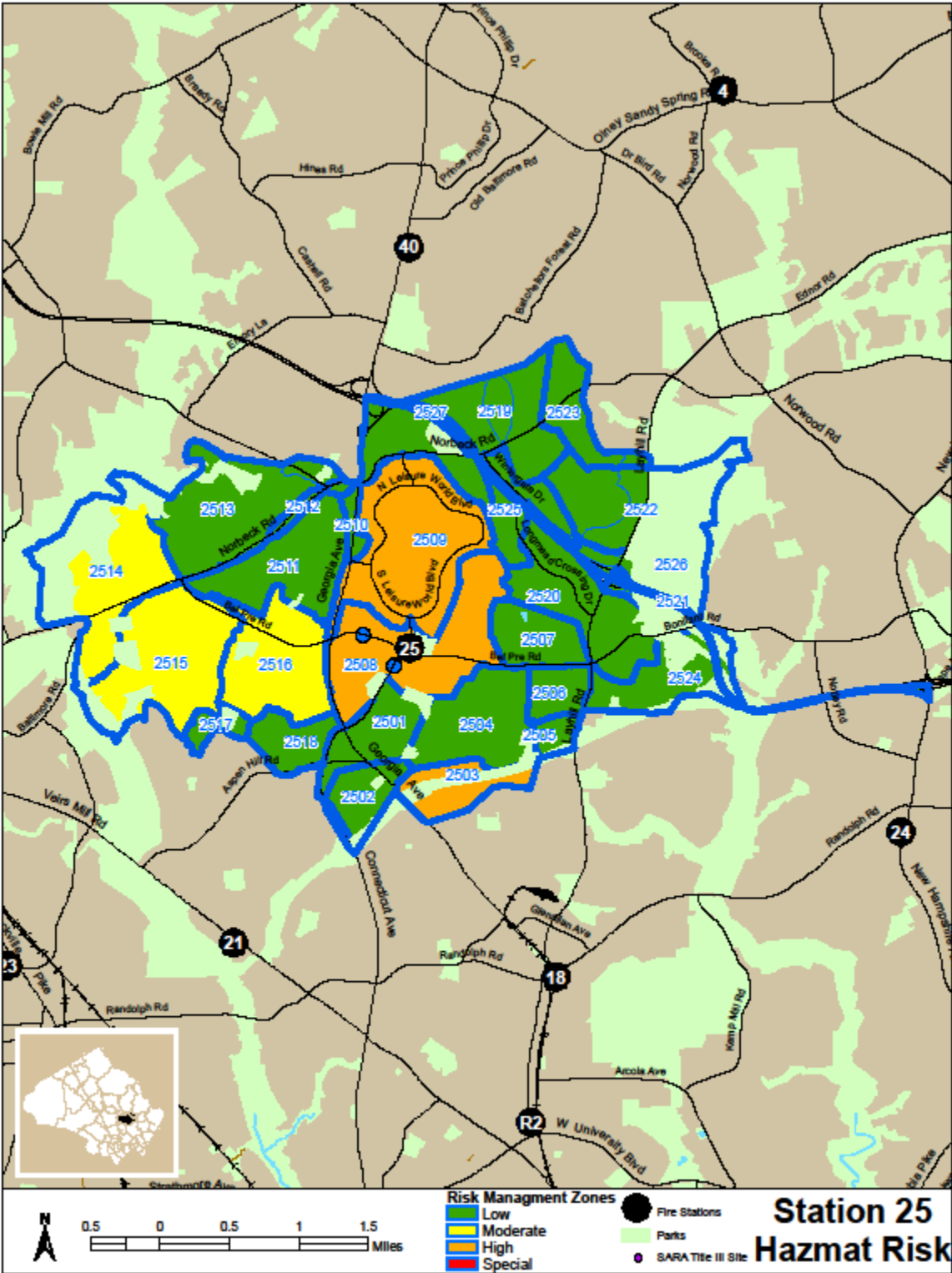




MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



# MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

## Fire Station 26

Battalion 2

Bethesda Station

6700 Democracy Boulevard, Bethesda



### Description

- Ownership: Volunteer
- Employees: 3 Shift Work
- Apparatus Housed: Engine
- First Due Area: 6.51 mi<sup>2</sup>
- Volunteers: totaled in with the sister company Fire Station 6

### Overview

Station 26 sits amidst a business conglomerate with a huge campus and many employees, medical facilities and doctor's offices, a heavily traveled interstate and a large shopping mall (Montgomery Mall). Single-family homes comprise much of Station 26's area, including some large, high-value homes. A mixture of townhouses, garden apartments, and residential high-rises are present in the vicinity of the Montgomery Mall. There are also three shopping centers in Station 26's area: Cabin John, Wildwood, and Georgetown Square.

The personnel at Station 26 are very few as they have only a three-person staffed engine. Employees from Bethesda Chevy Chase Rescue Squad (BCC) staff an ambulance at Station 26 Monday through Friday 0700 thru 1900 and BCC volunteers staff the ambulance at night and on the weekends.

## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

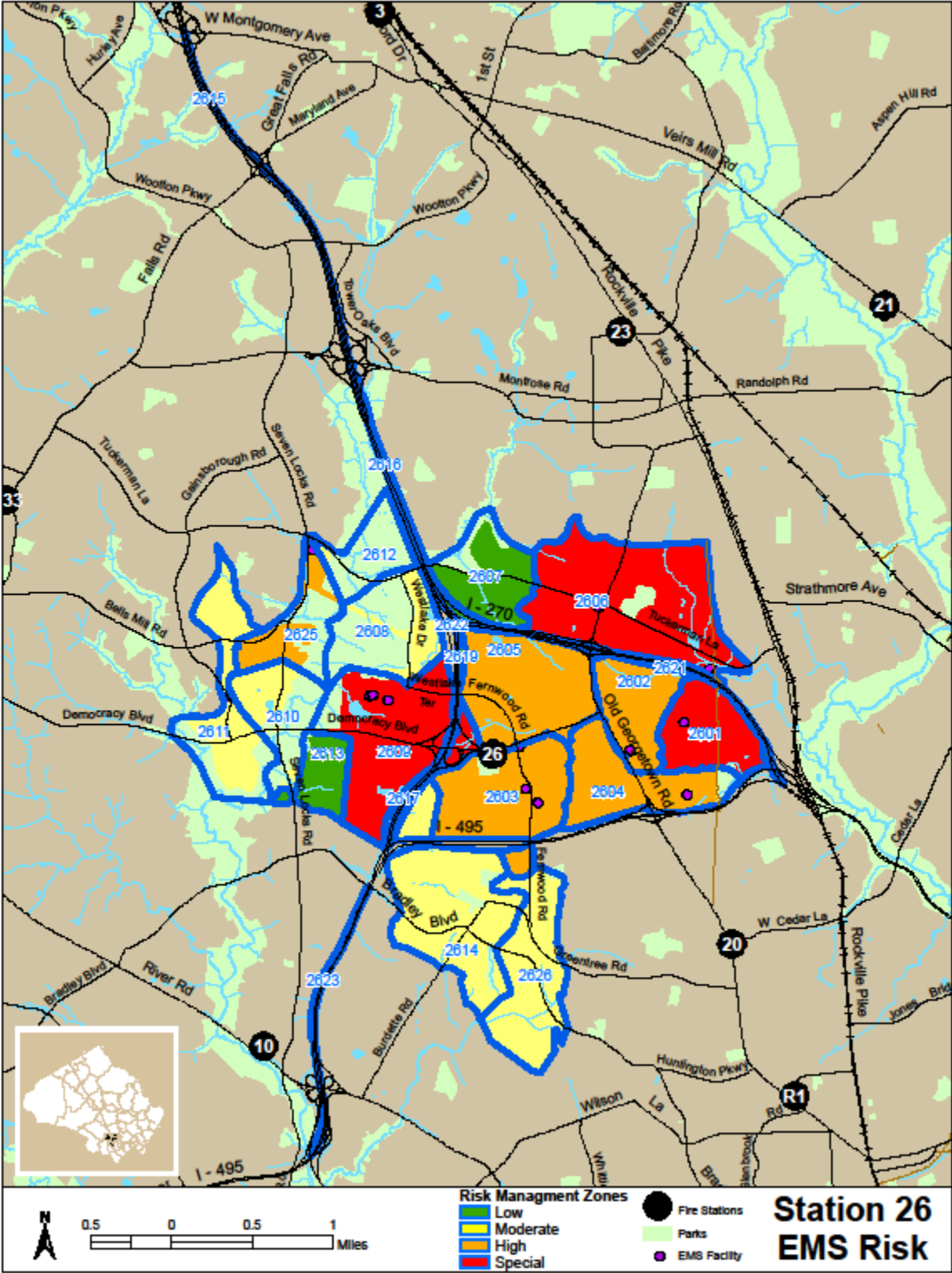
### High Risk Areas – Including Hazards

There is a large PEPCO substation in which high voltage power lines merge and power is redistributed at lower voltages. This location also houses the operations center for all of PEPCO's monitoring of power distribution throughout the Maryland and Washington, D.C. area. The operations center monitors power line distribution in the system and dispatches crews when power outages occur.

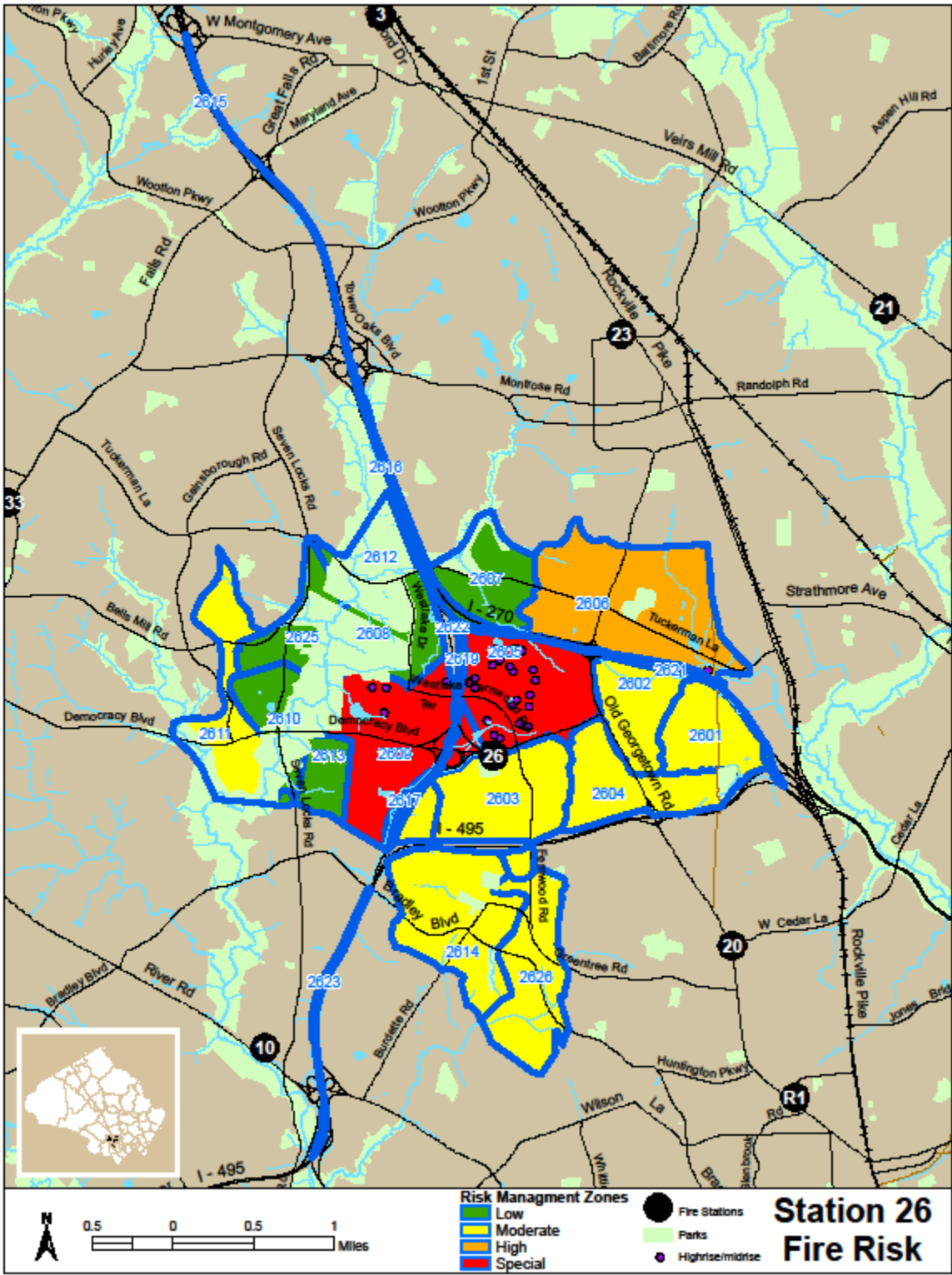
Station 26 has two large presence of interstate highways in its first due area. The merge from I270 Split and I270 Spur for Virginia and Silver Spring; Outer and Inner Loop of I495 from Old Georgetown Road to River Road. It is reported that over 180,000 vehicles use the I270 merge daily.

Station 26 - # of Incidents by Call Type				
Fiscal Year	2010	2011	2012	2013 (1st and 2nd Quarter Only)
Adaptive	514	620	507	298
ALS1	890	866	866	459
ALS2	114	81	110	51
BLS	1450	1470	1444	754
Explosive	5	6	10	1
Firefull	14	17	20	10
Hazmat	16	31	35	22
Tech Rescue	15	20	24	14
Water/Ice	N/A	N/A	N/A	N/A
Total Calls	3179	3260	3181	1691
*Note: Total category includes unfiltered calls - # may exceed sum of call types				

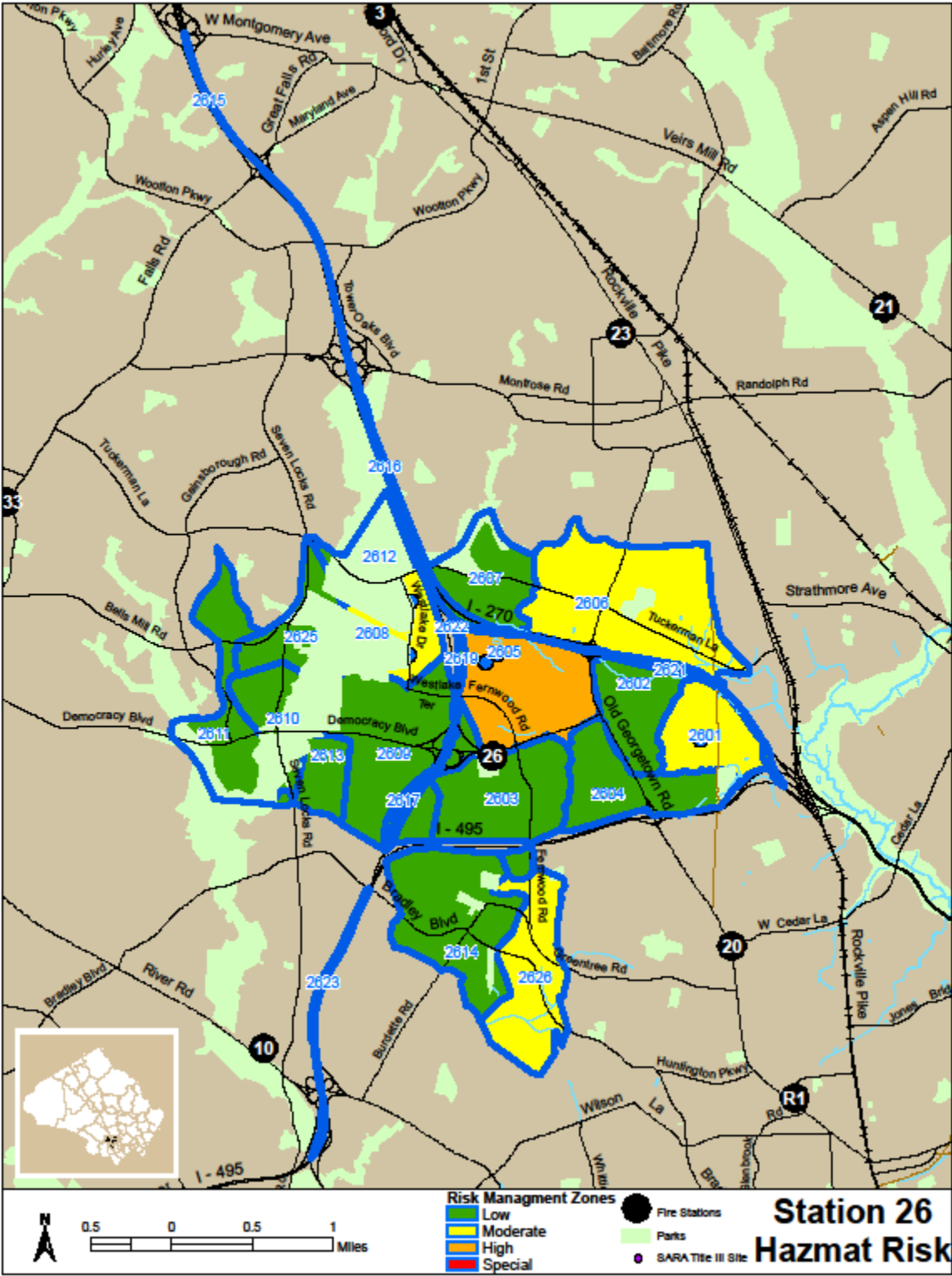
MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



\_\_\_\_\_



MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER





# **MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

## **Fire Station 28**

Battalion 3

Gaithersburg Station

7272 Muncaster Mill Road, Derwood



### **Description**

- Ownership: Volunteer
- Employees: 6 Shift Work
- Apparatus Housed: Engine (AFRA), Ambulance, HM728
- First Due Area: 16.35 mi<sup>2</sup>
- Volunteers: totaled in with the Sister Company Fire Station 8

### **Overview**

Station 28 sits on the corner of heavily traveled cross roads: Shady Grove Road and Muncaster Mill Road. The firehouse is located about four miles southeast of its sister station (Station 8) and its first-due area has many of the same characteristics as Station 8's area but also has its differences. Station 28 is known for the amount of churches in its first due area as well as Lake Needwood and the Montgomery County Airpark.

### **High Risk Areas – Including Hazards**

The Montgomery County Airpark (GAI) first opened in 1960 with a single-dirt runway that ran north and south. Gradually it expanded into an asphalt runway 4,021 feet long that aligns



## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

northwest and southeast and is seventy feet wide. GAI is one of Maryland's busiest General Aviation Airports among the forty-three in the state. The Airpark resides on one hundred thirty-eight acres of land that is entirely closed in by an eight foot chain-link fence. GAI operates twenty-fours, seven days a week and is only closed if the runway is being plowed or there is a disabled aircraft on the runway. The Airport Manager assumes the role as the overall safety coordinator for the facility and is responsible for the publishing and updating of the emergency procedure manual; further, the manager is the only person who can shut down the airport in the event of an emergency. GAI is a non-towered airport and in the absence of tower personnel giving directions to pilots while in the air, each pilot in command makes their own decision whether they should or should not land. For this very reason, the need for the runway to open as soon as possible after an incident is dire.

GAI has a cafeteria, several aircraft hangars, an electrical vault and a fuel farm. There are no fire protection systems within the facility. There is only one access to the airfield and that is secured by a key pad code box and chain-link fence. Airpark personnel exercise great discretion over when to call 911; however, when they do, they will give the operator incident details and try to open the access gate for emergency apparatus.

Also in Station 28's first due area, there is Chesapeake Petroleum fuel storage and distribution; Geomet Lab which is a chemical testing lab; and, several storage facilities on Cessna Avenue – a lot dealing with aircraft support, storage of fertilizers for lawn services, a lot of vehicle maintenance and light-industrial type occupancies surrounding the airpark. There is also a pool supply business with products containing hazardous materials – chlorine, muriatic acid, oxidizers, etc.

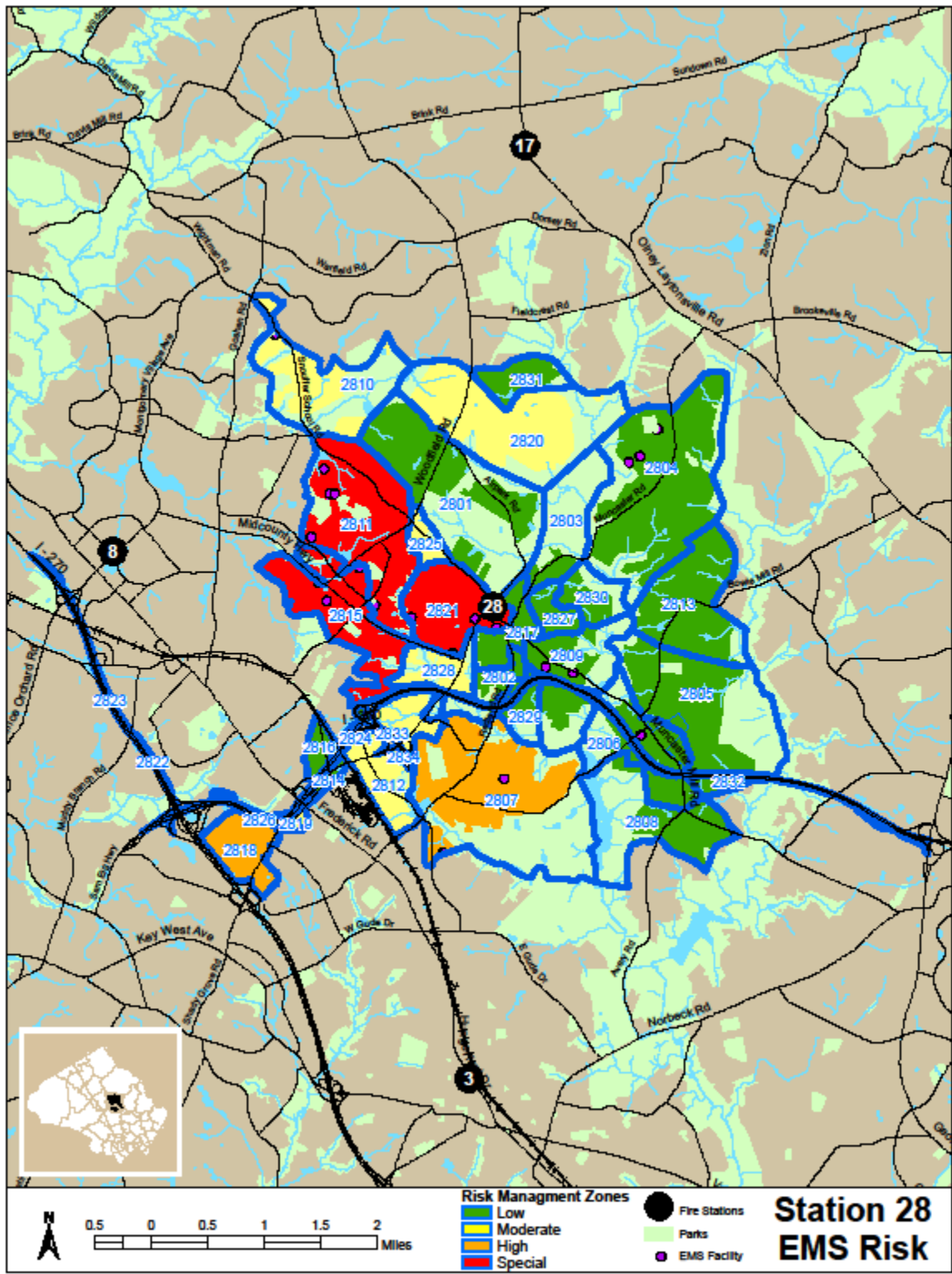
Station 28 protects a small portion of Interstates 270 and 370 and the new ICC (MD200). Some of the METRO facilities are in Station 28's first due; however, due to the entrance locations, they are listed within Station 3's first due area. It is a toss up between Station 28 and Station 3 for the Shady Grove METRO Red Line and METRO Maintenance Yard in responding for calls. There are CSX and MARC train rails running through Station 28's first due area.

**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

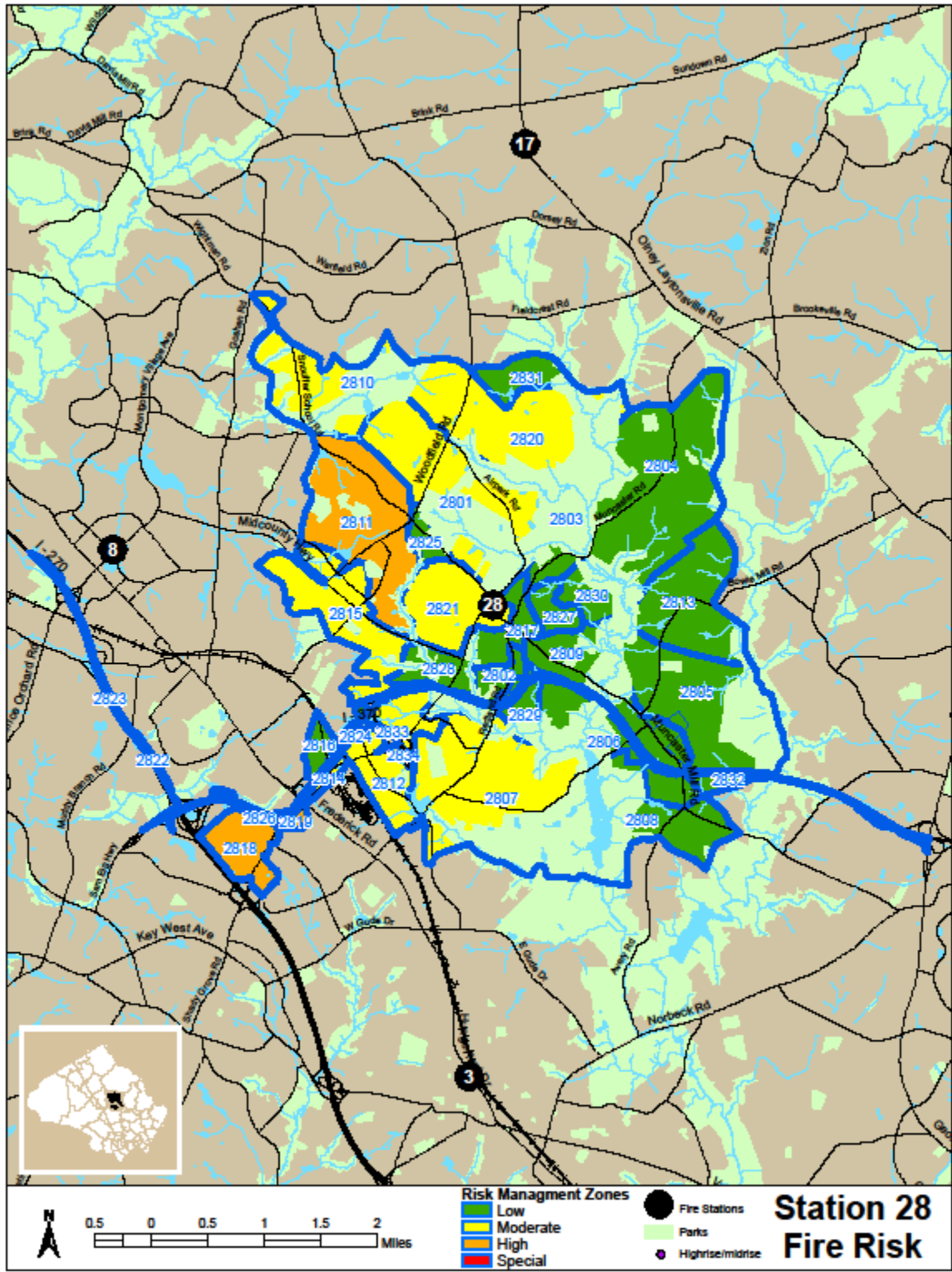
Freight trains transporting hazardous materials travel through the area daily.

<b>Station 28 - # of Incidents by Call Type</b>				
<b>Fiscal Year</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013 (1st and 2nd Quarter Only)</b>
<b>Adaptive</b>	<b>396</b>	<b>386</b>	<b>326</b>	<b>194</b>
<b>ALS1</b>	<b>723</b>	<b>700</b>	<b>733</b>	<b>399</b>
<b>ALS2</b>	<b>94</b>	<b>102</b>	<b>96</b>	<b>42</b>
<b>BLS</b>	<b>1206</b>	<b>1240</b>	<b>1203</b>	<b>638</b>
<b>Explosive</b>	<b>9</b>	<b>18</b>	<b>10</b>	<b>4</b>
<b>Firefull</b>	<b>28</b>	<b>30</b>	<b>23</b>	<b>9</b>
<b>Hazmat</b>	<b>13</b>	<b>31</b>	<b>41</b>	<b>18</b>
<b>Tech Rescue</b>	<b>N/A</b>	<b>2</b>	<b>3</b>	<b>1</b>
<b>Aviation</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>N/A</b>
<b>Total Calls</b>	<b>2592</b>	<b>2627</b>	<b>2592</b>	<b>1385</b>
<b>*Note: Total category includes unfiltered calls - # may exceed sum of call types</b>				

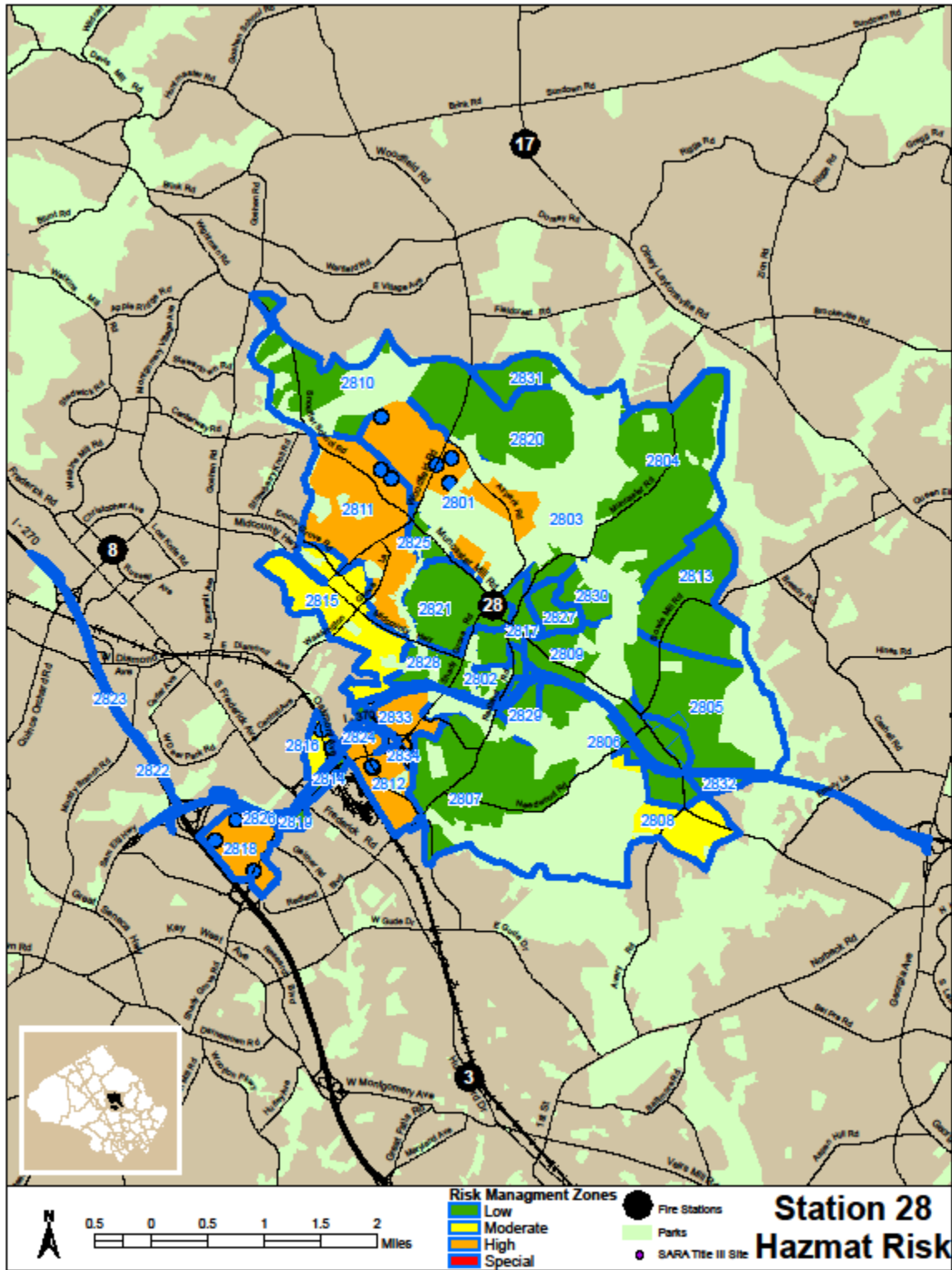
MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

### Fire Station 29

Battalion 5

Germantown Station

20001 Crystal Rock Drive, Germantown



#### Description

- Ownership: County
- Employees: 9 Shift Work
- Apparatus Housed: Engine (AFRA), Squad, Medic, US&R P-Van, Boat, Boat Support unit, Bravo Engine (Volunteer run), 2 Ambulances (Volunteer run)
- First Due Area: 4.68 mi<sup>2</sup>
- Active LOSAP Volunteers: 46
- IECS Volunteers: 58

#### Overview

Germantown is a “planned” city governed by Montgomery County Government to preserve the farmland and forests and to restrict development to the area where I270 runs when the highway was built. Germantown spans across I270 and is approximately twenty-five miles from Washington, D.C. and is the second largest incorporated city in Maryland. In 1972 when the planned city was built, Germantown was a rural farming village of about 1,000 people. The Native Americans were the first people on the land but the European settlers soon found their way there from the port of Georgetown. The first settlers were three brothers who inherited the land. They each had adjoining farms and soon other farmers joined in the area. The first farmers grew tobacco, wheat, corn and flax. Mills were essential to the farmers and soon they were built

– some still stand today. Many of the first settlers were of the Presbyterian faith and several were German immigrants who set up many stores in the area. The area soon became known as “German Town.” The Baltimore & Ohio Railroad soon came to Germantown and the city turned into a “railroad” community with trains that came several times a day.<sup>477</sup>

Germantown Fire Department sits among businesses, the 5<sup>th</sup> District County Police Station, shops

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

and restaurants, garden-style apartments, I270 and thoroughfares. The employees of Station 29 are Urban Search & Rescue qualified (US&R). The Urban Search and Rescue Maryland Task Force 1 (MD-TF1) Team is the only federally funded team in the State of Maryland which is a part of the Federal Emergency Management Agency's Urban Search and Rescue System<sup>478</sup>. The County staffs two teams with similar technical rescue capabilities: technical rescue group for local response and the FEMA US&R Task Force for federal response. Some members are part of either team per their preference while others are part of both teams. Each member has a certain level of training they must obtain before they can be deployed. Further, each member is assigned a particular discipline they train in. All members of the shifts at Station 29 are on the local technical rescue team, and most are also members of the US&R team. Station 29 also houses some of the canines that are deployed with activation. The local team has a rigorous monthly training regimen, and the federal team has training quarterly that is just as rigorous and demanding. Once the employees return from training, they still have to respond to calls that can be very challenging due to the uniqueness of the first due area.

#### **High Risk Areas – Including Hazards**

Less than one mile away from Station 29 is the Department of Energy, a federal government subsidiary that focuses on America's security and prosperity by addressing its energy, environmental and nuclear challenges through transformative science and technology solutions. The personnel at Station 29 are unable to access the campus without police escort. All medical emergency calls go through their security to be called in to 911.

Black Hills Regional Park is also in Station 29's area; although portions of the park are located in Station Areas 22 and 35. Black Hills Lake resides inside the park and is more than 2,000 acres; a primary reason why Station 29 has a rescue boat. Many people use the lake for a wide variety of outdoor activities. There are also picnic tables, playgrounds, and walking trails. The lake also has an earth dam; the lake in conjunction with the dam was designed as back up water supply for the metropolitan area.

There are CSX and MARC train rails running northwest to southeast through Station 29's area, with CSX trains transporting large quantities of hazardous materials. Interstate 270



**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

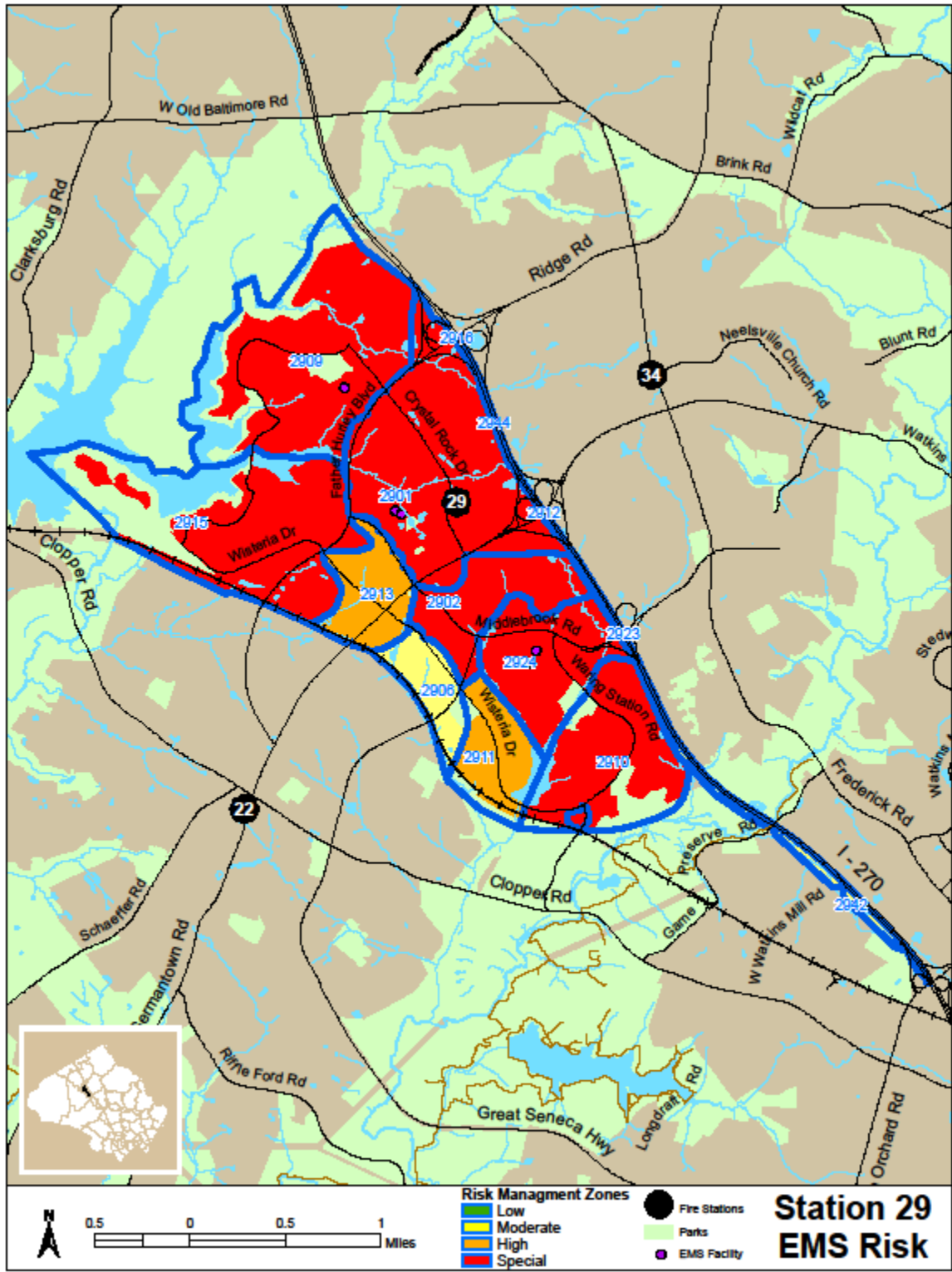
---

runs northwest to southeast through the first due as well upon which hazardous materials are regularly transported. Other than the possible hazardous materials at the Department of Energy, there are no other industrial, chemical and/or biological hazardous materials plants or warehouses.

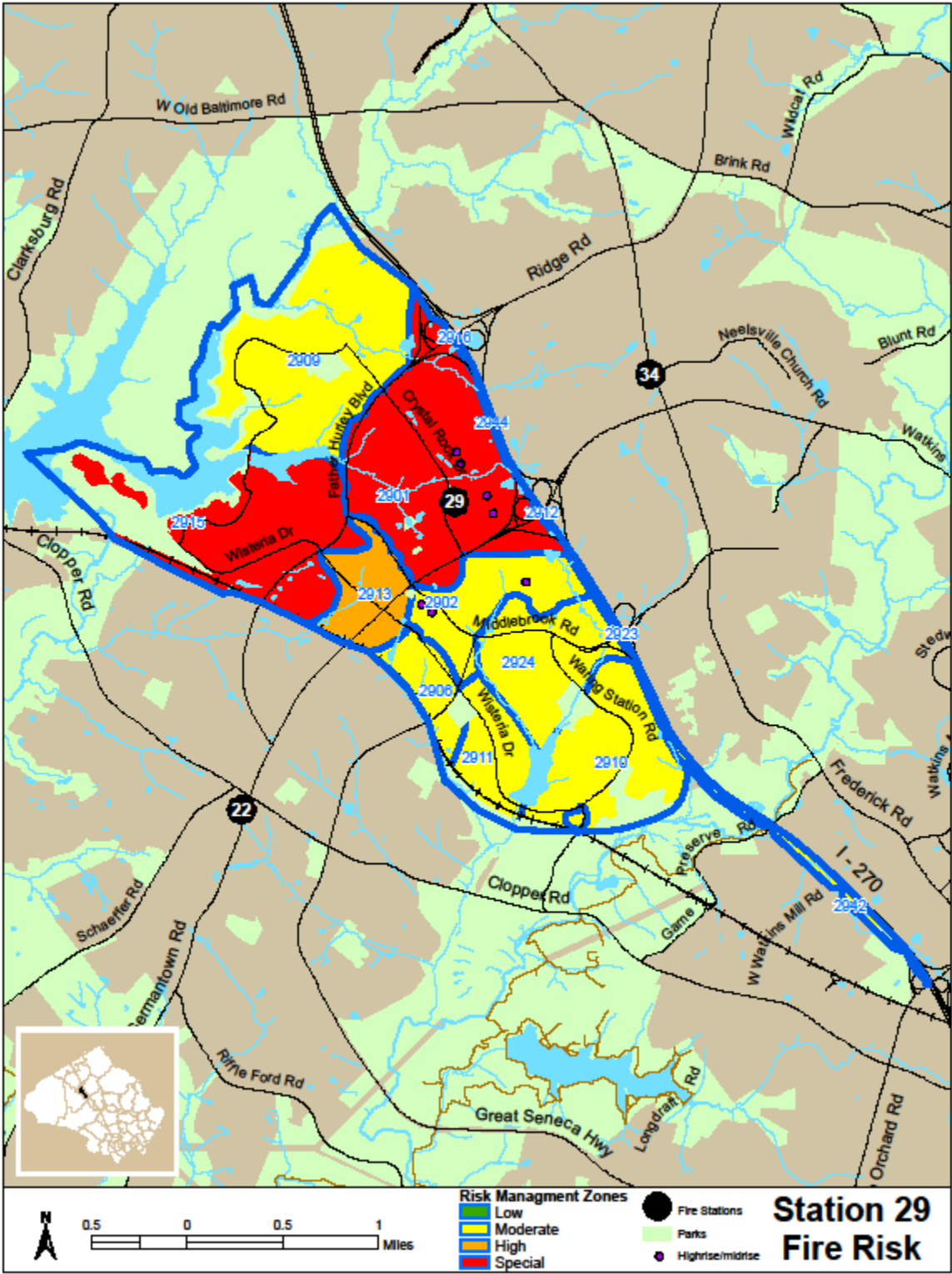
<b>Station 29 - # of Incidents by Call Type</b>				
<b>Fiscal Year</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013 (1st and 2nd Quarter Only)</b>
<b>Adaptive</b>	<b>510</b>	<b>327</b>	<b>344</b>	<b>201</b>
<b>ALS1</b>	<b>1036</b>	<b>708</b>	<b>789</b>	<b>395</b>
<b>ALS2</b>	<b>121</b>	<b>77</b>	<b>93</b>	<b>71</b>
<b>BLS</b>	<b>1575</b>	<b>1071</b>	<b>1143</b>	<b>547</b>
<b>Explosive</b>	<b>9</b>	<b>12</b>	<b>10</b>	<b>7</b>
<b>Firefull</b>	<b>31</b>	<b>31</b>	<b>39</b>	<b>16</b>
<b>Hazmat</b>	<b>12</b>	<b>27</b>	<b>28</b>	<b>14</b>
<b>Tech Rescue</b>	<b>6</b>	<b>6</b>	<b>5</b>	<b>N/A</b>
<b>Water/Ice</b>	<b>N/A</b>	<b>N/A</b>	<b>2</b>	<b>N/A</b>
<b>Total Calls</b>	<b>5782</b>	<b>4786</b>	<b>5160</b>	<b>1549</b>
<b>*Note: Total category includes unfiltered calls - # may exceed sum of call types</b>				



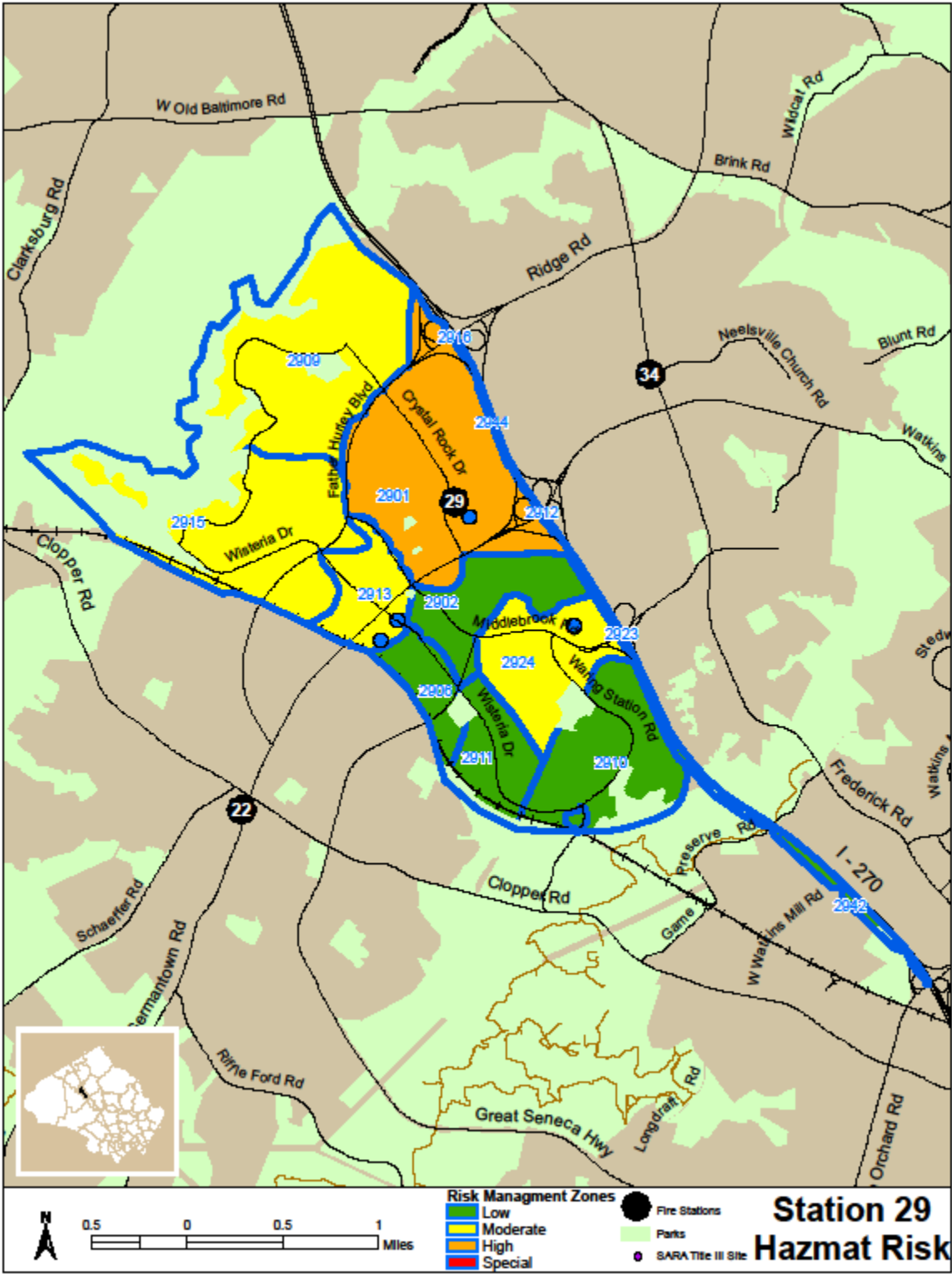
MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

### Fire Station 30

Battalion 2

Cabin John Station

9404 Falls Road, Potomac



#### Description

- Ownership: Volunteer
- Employees: 6 Shift Work
- Apparatus Housed: Engine (AFRA), Medic, Tanker, Brush Truck, Boat, Support Unit, Utility Truck, 7 Boats
- Specialty Team: Swift Water Rescue
- First Due Area: 17.21 mi<sup>2</sup>
- Volunteers: totaled in with the sister company Fire Station 10

#### Overview

Cabin John Station 30 is very diverse in its location and size compared to its sister station (Station 10). Station 30 is an old house with an extended garage that sits off Falls Road, nestled in the trees, surrounded by houses three times bigger. Falls Road is significantly traveled as it connects Rockville to Potomac.

Station 30 is home to the Swift Water Rescue Team where the employees need to complete a Montgomery County Swift Water Rescue Specialist Packet. The packet includes training in the areas of PPE & equipment, swimming, ropes, self rescue, ice rescue, boat operations, area knowledge, shallow water operations, helicopter operations and low head dams. It normally takes one year of specialty assignment to cover all the topics and test on the specifics. The team then does yearly recertification on all the water skills in May. It requires four training days for each shift to accomplish. Additionally, each shift gets one training day per month. Generally this covers a missed recertification or weather dependent skills such as ice rescue or boat operator skills.

## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

### **High Risk Areas – Including Hazards**

The Washington Suburban Sanitary Commission (WSSC) has one water filtration plant and Rockville City has another water filtration plant located in Station 30's first due area. The WSSC facility is the primary supplier of potable water for both Montgomery County and Prince George's County. A total of four water mains supply the two counties: one at 48", two at 60", and one at 96". The supply of water comes from a raw water intake placed along the Potomac River, and has a maximum daily output of 280 million gallons. There are many different chemicals stored onsite for the treatment of water. These chemicals are transported daily to the plant via truck through the Potomac Village and residential areas of Station 30's first due area. Also large quantities of waste from the treatment process is stored on site and transported for disposal over Potomac area roads. The City of Rockville's plant is much smaller but has all of the same hazards as the WSSC plant.

Station 30 shares mostly the same issues as Station 10 pertaining to the Chesapeake and Ohio (C & O) Canal National Park and Potomac River; however, the portion of the Potomac River between Great Falls and Old Angler's Inn (in Station 30's area) is very swift and turbulent, leading to many swift water rescues of unwary river users. There is no METRO or railroad tracks in Station 30's first due area as well as no interstate traffic.

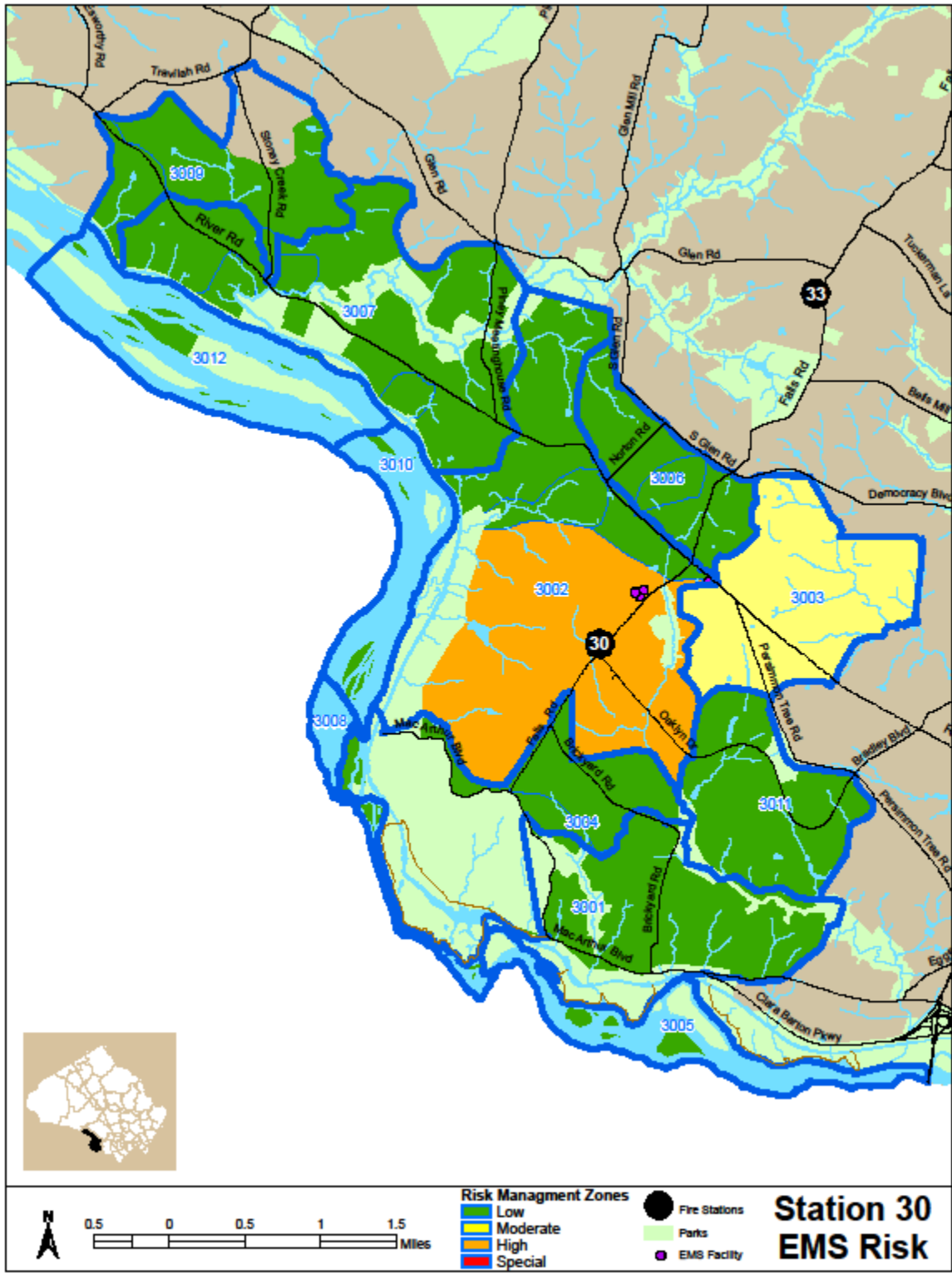
Aside from water-related risks, the largest risk in Station 30's area is exceptionally large single-family homes many of which are sprinklered unless built before 2004 when County Code mandated sprinklers in new home construction. A working fire in one of these unsprinklered homes can easily require 2<sup>nd</sup> or 3<sup>rd</sup> alarm fire-rescue resources and fire loss can easily exceed \$2 million.

**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

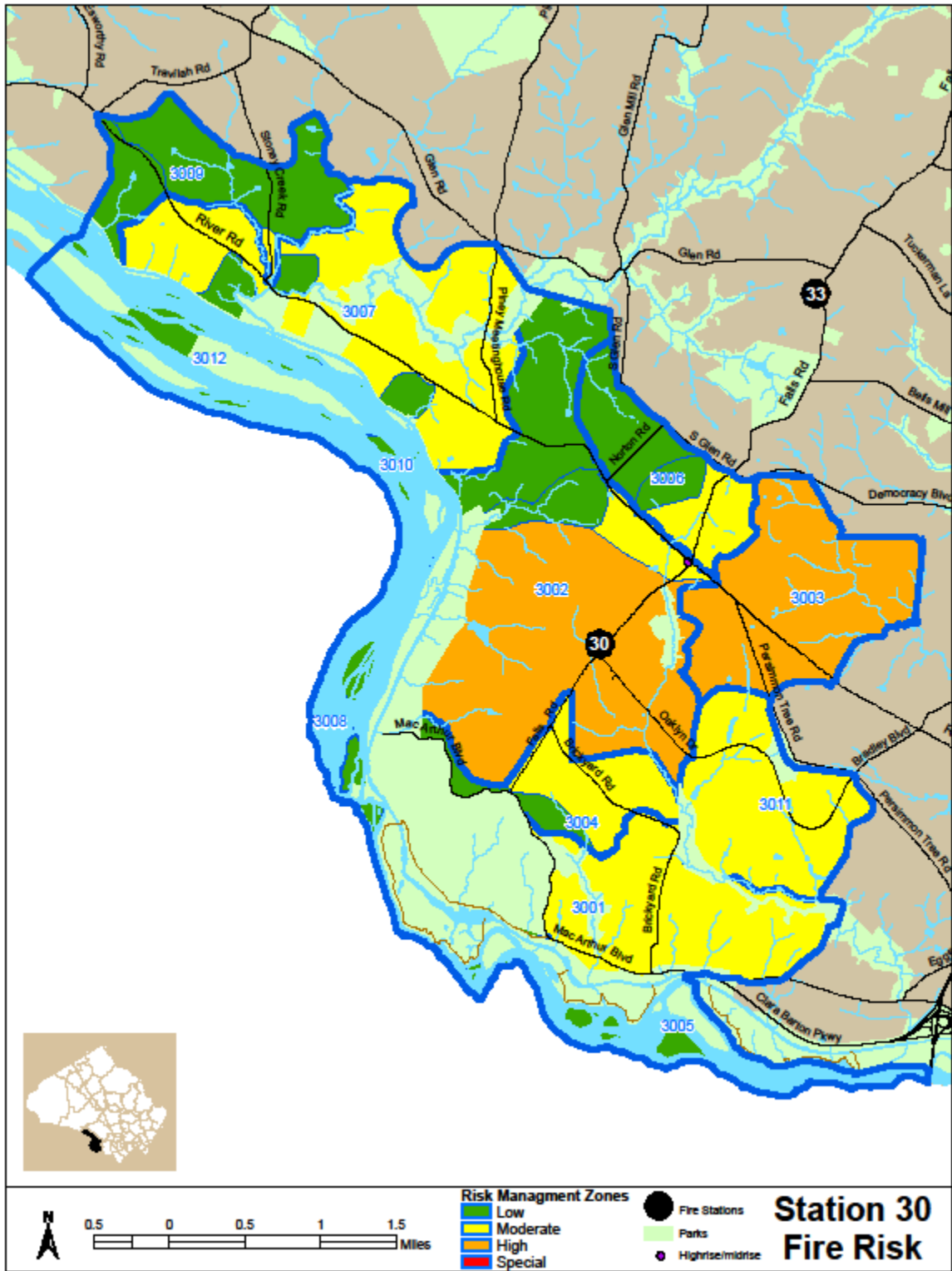
Station 30 - # of Incidents by Call Type				
<b>Fiscal Year</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013 (1st and 2nd Quarter Only)</b>
<b>Adaptive</b>	<b>346</b>	<b>339</b>	<b>317</b>	<b>193</b>
<b>ALS1</b>	<b>188</b>	<b>191</b>	<b>234</b>	<b>113</b>
<b>ALS2</b>	<b>29</b>	<b>28</b>	<b>33</b>	<b>11</b>
<b>BLS</b>	<b>301</b>	<b>340</b>	<b>356</b>	<b>168</b>
<b>Explosive</b>	<b>1</b>	<b>1</b>	<b>4</b>	<b>3</b>
<b>Firefull</b>	<b>11</b>	<b>6</b>	<b>12</b>	<b>11</b>
<b>Hazmat</b>	<b>11</b>	<b>24</b>	<b>23</b>	<b>7</b>
<b>Tech Rescue</b>	<b>12</b>	<b>29</b>	<b>30</b>	<b>10</b>
<b>Water/Ice</b>	<b>14</b>	<b>N/A</b>	<b>1</b>	<b>N/A</b>
<b>Total Calls</b>	<b>971</b>	<b>1029</b>	<b>1093</b>	<b>558</b>
<b>*Note: Total category includes unfiltered calls - # may exceed sum of call types</b>				

MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER





MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER







# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

### Fire Station 31

Battalion 3

Rockville Station

12100 Darnestown Road, North Potomac



#### Description

- Ownership: County  
Also a US&R Warehouse
- Employees: 12 Shift Work
- Apparatus Housed: Engine (AFRA), Tiller Truck, Boat, Medic Unit, Tanker, Brush Truck, US&R Support Units
- First Due Area: 38.49 mi<sup>2</sup>
- Volunteers: totaled in with the sister company Fire Station 3

#### Overview

Station 31 sets back off of RT 28, one of Montgomery County's most traveled roads. Due to the different aspects of this first due area and the additional specialized response tasks the employees are trained for, the employees have to be ready for a differing approach depending on the call dispatched. Station 31 has the third largest first due area in Montgomery County. However, the two stations with the most square mileage (Stations 14 and 17) do not, in any comparison, have the population density or the diverse demographics as Station 31's area. The Station 31 resources could be dispatched to a city-like area within their first due: business, residential or medical facility; to a rural area with hundreds of acres surrounding a house with no water source; to a US&R incident: national, State or local; or to the Potomac River for a rescue. There are a wide range of call types that emanate from Station 31.

Station 31 houses the Urban Search and Rescue Maryland Task Force 1 (MD-TF1) Team (the only federally funded team in the State of Maryland) which is a part of the Federal Emergency Management Agency's Urban Search and Rescue System. Vehicles, tools, equipment, and supplies needed for a disaster response are housed at a warehouse on Station 31's property. The County staffs

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

two teams with similar technical rescue capabilities: technical rescue group for local response and the FEMA US&R Task Force for federal response. Some members are part of either team per their preference while others are part of both teams. Each member has a certain level of training they must obtain before they can be deployed. Further, each member is assigned a particular discipline they train in. All members of the shifts at Station 31 are on the local technical rescue team, and most are also members of the US&R team. Station 31 also houses many of the canines that are deployed with activation. The local team has a rigorous monthly training regimen, and the federal team has training quarterly that is just as rigorous and demanding. Once the employees return from training, they still have to respond to calls that can be very challenging due to the uniqueness of the first due area.

#### **High Risk Areas – Including Hazards**

Alfred D. Noyes Children's Center (Noyes) is a regional detention facility serving youths from ages twelve to eighteen located next to RICA. Noyes has a capacity for fifty seven youths that get intensive supervision and services at the least restrictive level of care consistent with public safety who have violated the law or who are a danger to themselves or others. Each person receives five hours of academic instruction five days a week and participates in life skills, recreation and leisure activities.

Station 31 has only a small section of interstate highway in the first due consisting of I-370 and a very small segment of I-270. Truck 731 is the first due extrication apparatus to a larger area of I-270 and I-370. There is not a large number of interstate responses. Station 31 has a large concentration of bio-tech firms with testing laboratories as well as manufacturing facilities. The largest of these are Human Genome Sciences and MedImmune. Human Genome Sciences is a biopharmaceutical corporation that uses the human DNA sequence to develop protein and antibody drugs. As of 2008, Human Genome Sciences has drugs under development to treat such diseases as hepatitis C, systemic lupus erythematosus, anthrax disease, cancer, rheumatoid arthritis and HIV/AIDS.<sup>529</sup> MedImmune is a biotechnology development enterprise that produces drugs for the prevention of respiratory infections in infants, a nasal spray influenza vaccine, and MedImmune made a rapid response with a vaccine to the H1N1

## MCFRS

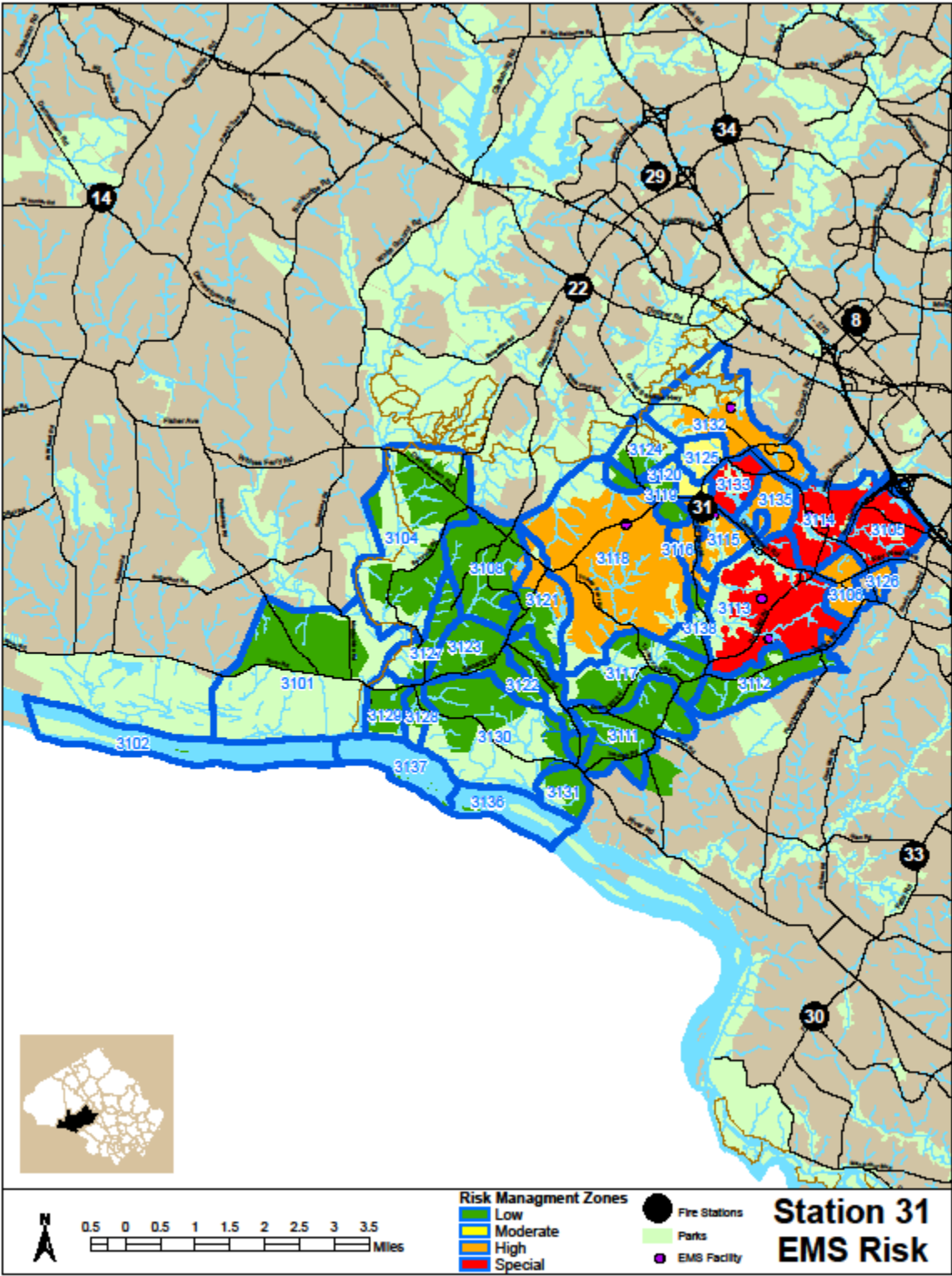
### COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

virus. The State of Maryland-sponsored technology development campus, adjacent to the Public Service Training Academy houses a number of smaller bio-tech firms that change frequently. Their hazardous materials uses are typically smaller in quantities. The potential within Station 31's response area for incidents involving hazardous materials and/or biological agents is very high.

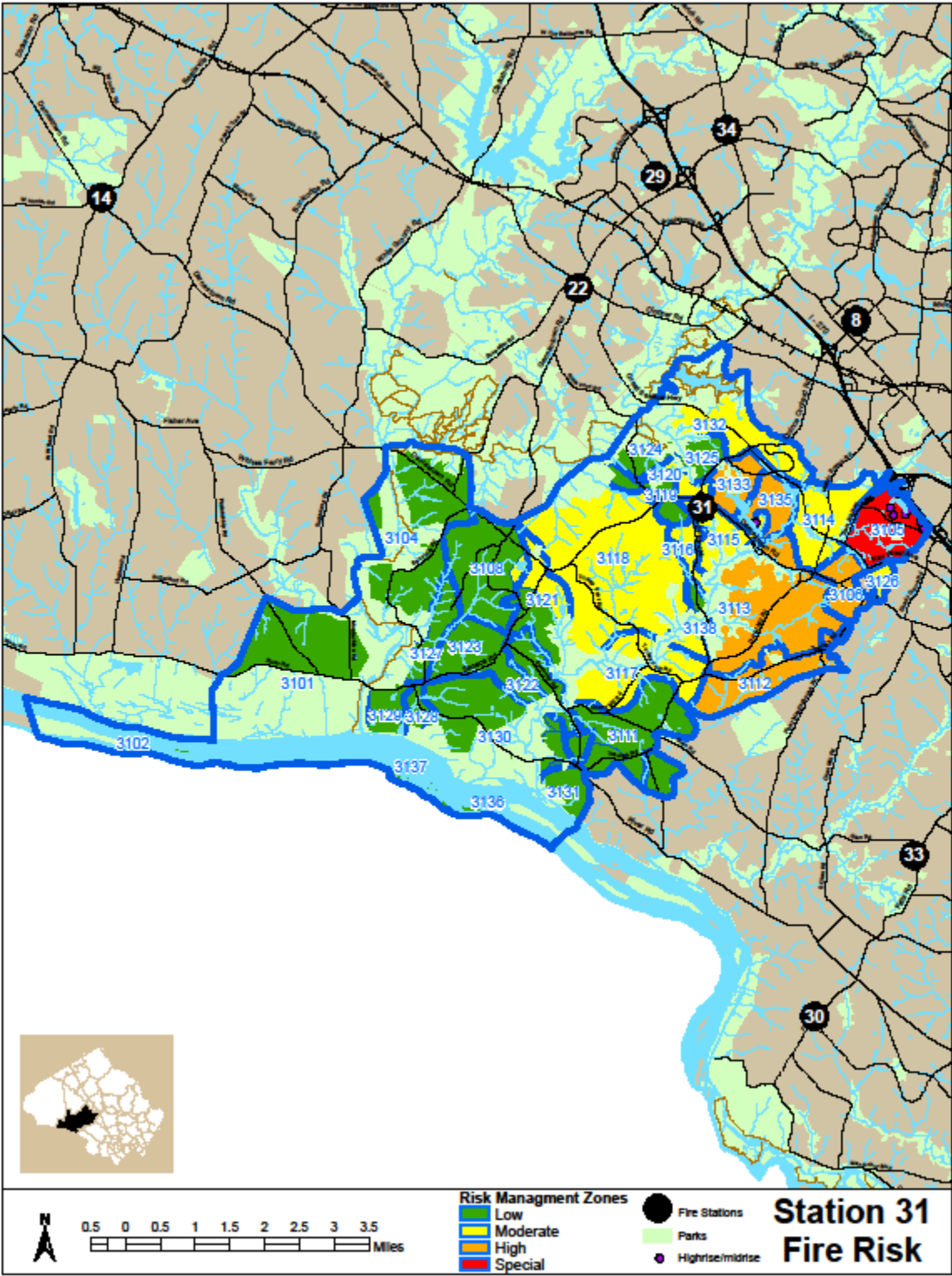
Station 31's area does border the Adventist Health Care – Shady Grove Hospital campus and responds to their facilities and the nearby nursing home regularly.

Station 31 - # of Incidents by Call Type				
Fiscal Year	2010	2011	2012	2013 (1st and 2nd Quarter Only)
Adaptive	675	652	628	327
ALS1	874	943	910	530
ALS2	120	129	139	95
BLS	1426	1385	1369	717
Explosive	12	9	9	5
Firefull	40	34	44	21
Hazmat	29	47	61	35
Tech Rescue	24	22	24	10
Water/Ice	2	1	N/A	1
Total Calls	3441	3513	3504	1918
*Note: Total category includes unfiltered calls - # may exceed sum of call types				

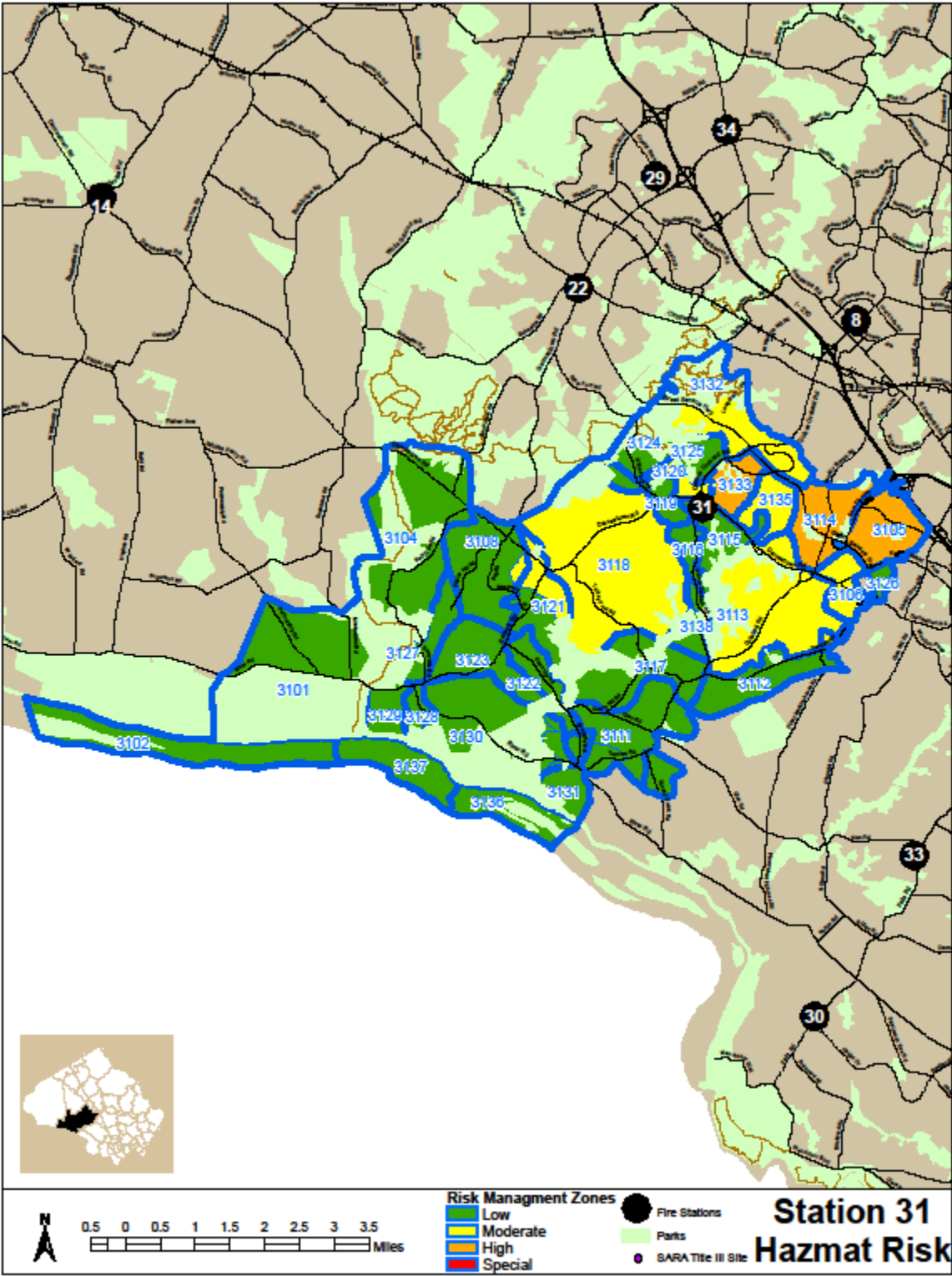
MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER





# MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

## Fire Station 33

Battalion 3

Rockville Station

11430 Falls Road, Potomac



### Description

- Ownership: Volunteer
- Employees: 6 Shift Work
- Apparatus Housed: Engine (AFRA), Ambulance, MAU733, Canteen, Brush Truck
- First Due Area: 15.09 mi<sup>2</sup>
- Volunteers: totaled in with the sister company Fire Station 3

### Overview

Station 33 sets in the plush setting of Potomac, Maryland, an affluent section of Montgomery County with prominent and prosperous business owners, judges, attorneys and doctors comprising many of the residents. Station 33 sits on a heavily traveled two-lane road (Falls Road) that winds through Potomac from Rockville to Falls Road – the entrance to Great Falls National Park (which is in Station 30's area). Station 33, only minutes from Washington DC, Virginia and downtown Rockville, protects mostly single-family homes but also nursing homes and assisted-living facilities -the large institutional type as well as those established within converted single family homes -and a few shopping plazas.

Station 33's area mainly consists of single family homes that average thirty years of age and a far lesser number of townhouses. The square footage of the homes range from 1,000 to 40,000 square feet with the average being between 6,000 and 7,000 square feet. The personnel at



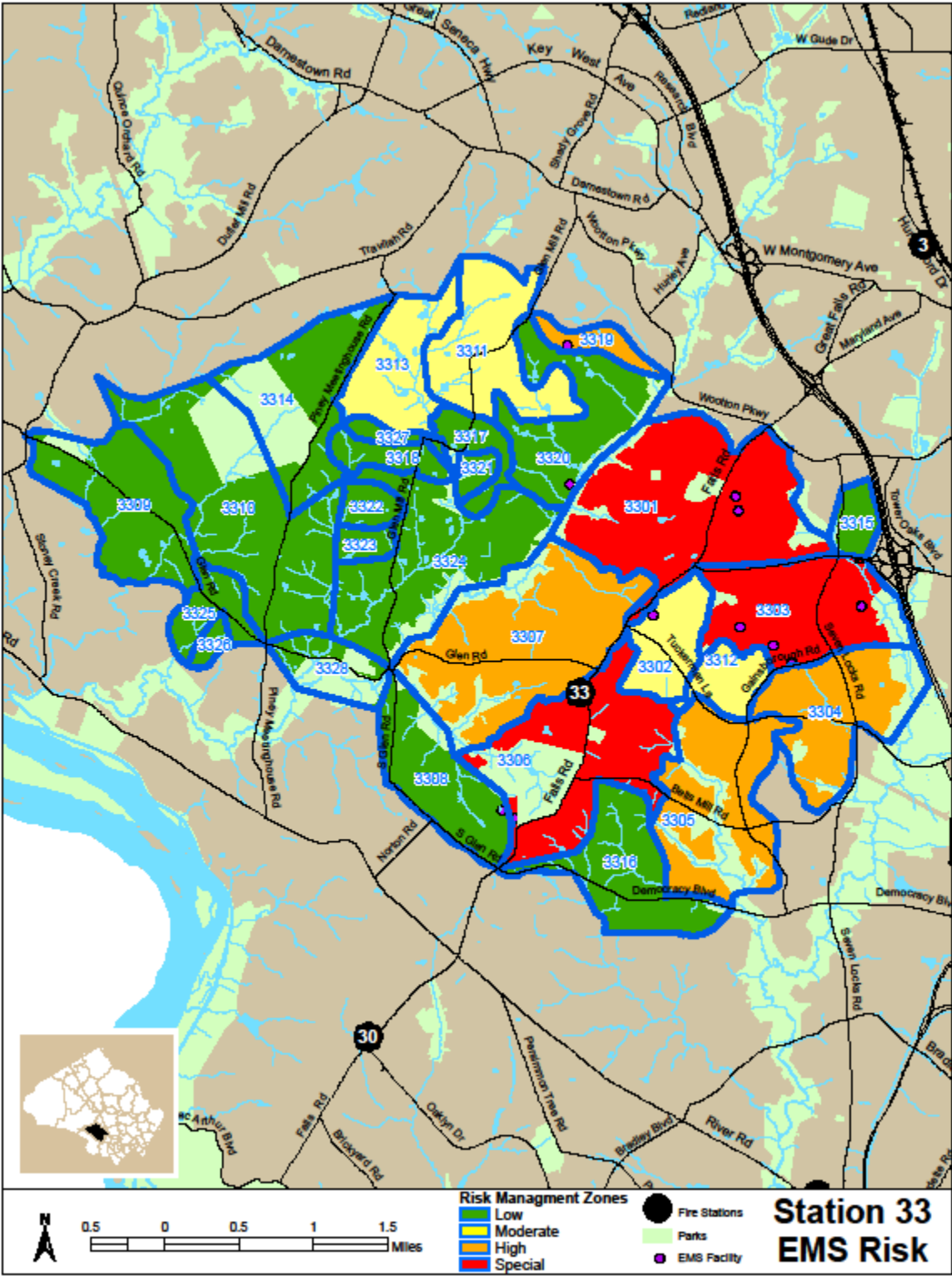
## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

Station 33 have not come across any subdivided basements or apartments living within single-family homes. There is no interstate traffic; industrial, chemical or biological hazmat plants; or warehouses in the first due. There are four high-rise buildings and there are no garden apartments. The station personnel believe all of the commercial buildings are sprinklered with very few single family homes being sprinklered.

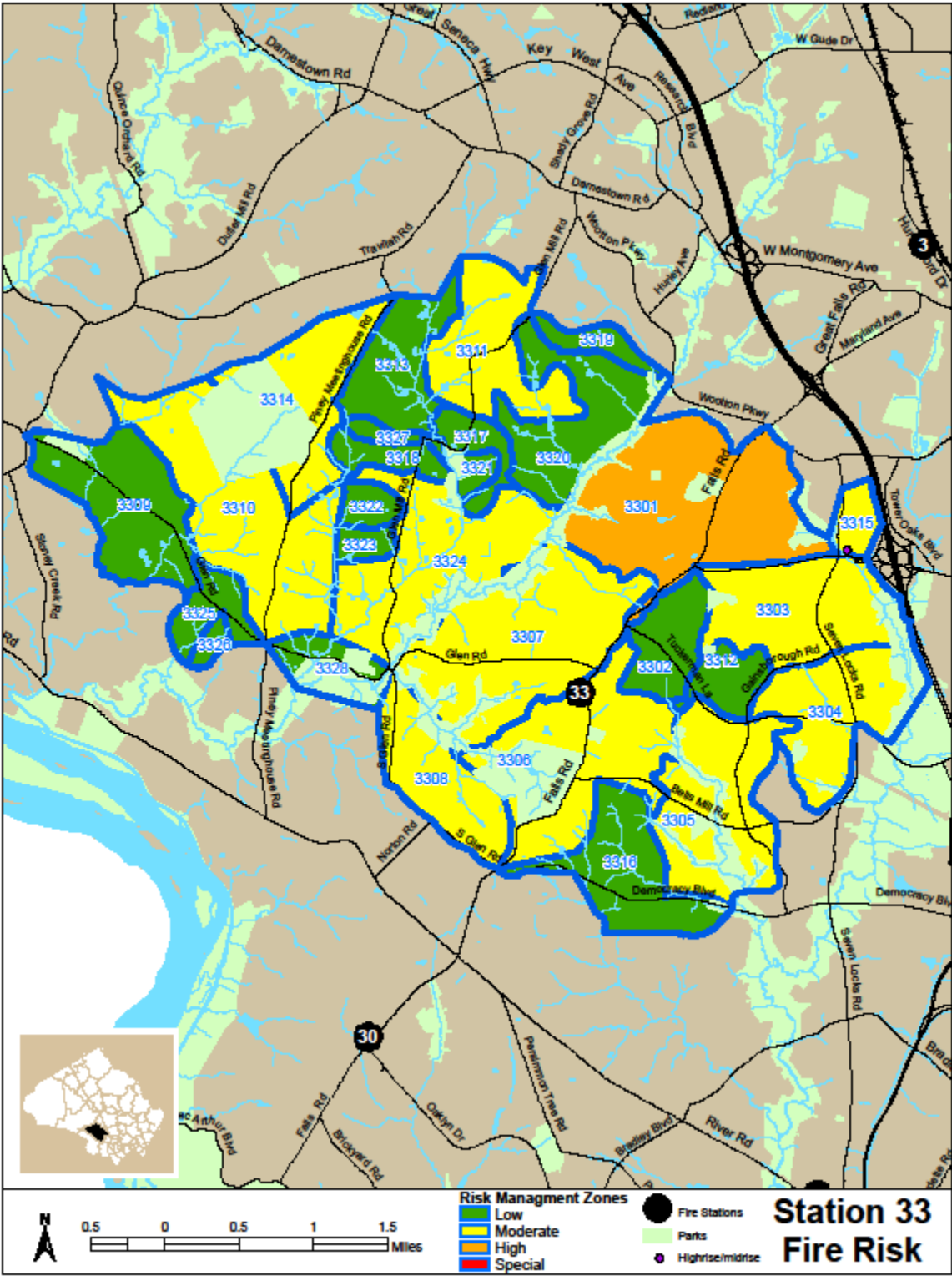
Station 33's area is not served entirely by municipal water. There are a number of draftable water sources in Station 33's first due area including multiple small ponds, pools, underground cisterns and streams.

Station 33 - # of Incidents by Call Type				
Fiscal Year	2010	2011	2012	2013 (1st and 2nd Quarter Only)
Adaptive	445	456	449	209
ALS1	711	679	645	369
ALS2	79	74	83	57
BLS	937	970	936	478
Explosive	5	2	5	5
Firefull	22	21	18	5
Hazmat	17	41	39	22
Tech Rescue	2	4	5	N/A
Water/Ice	N/A	N/A	N/A	N/A
Total Calls	2382	2429	2325	1235
*Note: Total category includes unfiltered calls - # may exceed sum of call types				

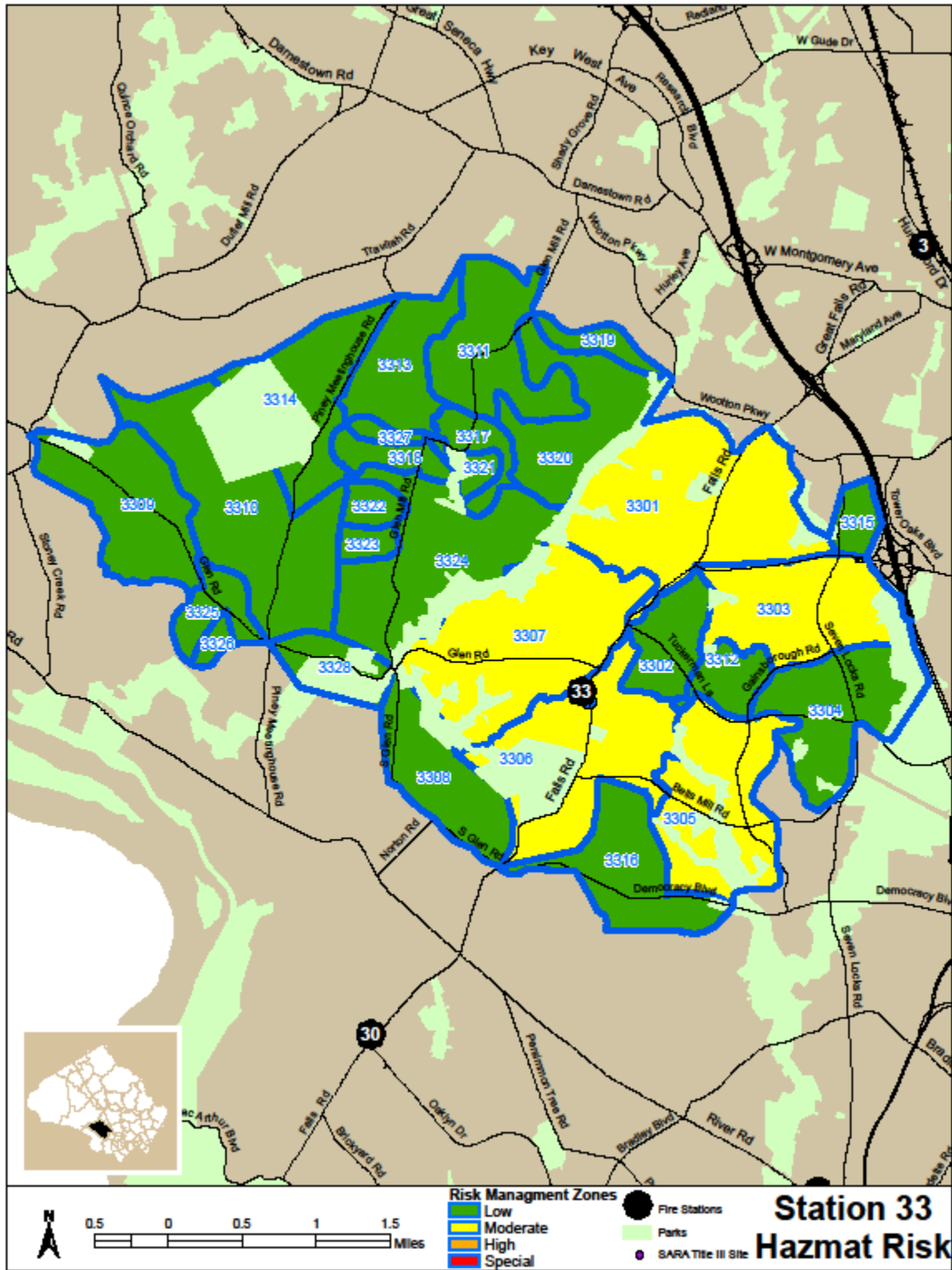
MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

### Fire Station 34

Battalion 5

Germantown Station

20633 Boland Farm Road, Germantown



#### Description

- Ownership: County
- Employees: 10 Shift Work
- Apparatus Housed: Engine, Tower, Ambulance, Battalion Chief
- First Due Area: 13.26 mi<sup>2</sup>
- Volunteers: None

#### Overview

Station 34 is the newest station built in Montgomery County – its placement helps with the call load between Station 8 and Station 29. Station 34 is a state-of-the-art fire service facility. It is 22,000 square feet, has four drive-through apparatus bays, an industrial-sized kitchen, a spacious weight room, and several sleeping cubicles. Fire Station 34 was placed in service on September 11, 2010. Staffing for Engine 734 and Ambulance 734 was largely created by de-staffing Truck 712 and Ambulance 709; Aerial Truck 729 was transferred with its attendant personnel from Fire Station 29. While Fire Station 34 is not a specialty house, several Urban Search & Rescue personnel who transferred from Station 29 maintain their team membership. The station also regularly hosts satellite elements of the Swift Water Rescue Team when the station is up-staffed for weather emergencies (i.e. hurricanes, etc.).

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

#### **High Risk Areas – Including Hazards**

There are several light industrial/electronic and biotechnological firms within Station 34's area. All of these are located off of either Observation Drive north of Ridge Road or off Seneca Meadows Parkway. Two of the more notable businesses are: JDSU, which makes electronic test equipment and Intrexon which researches cures for cancer.

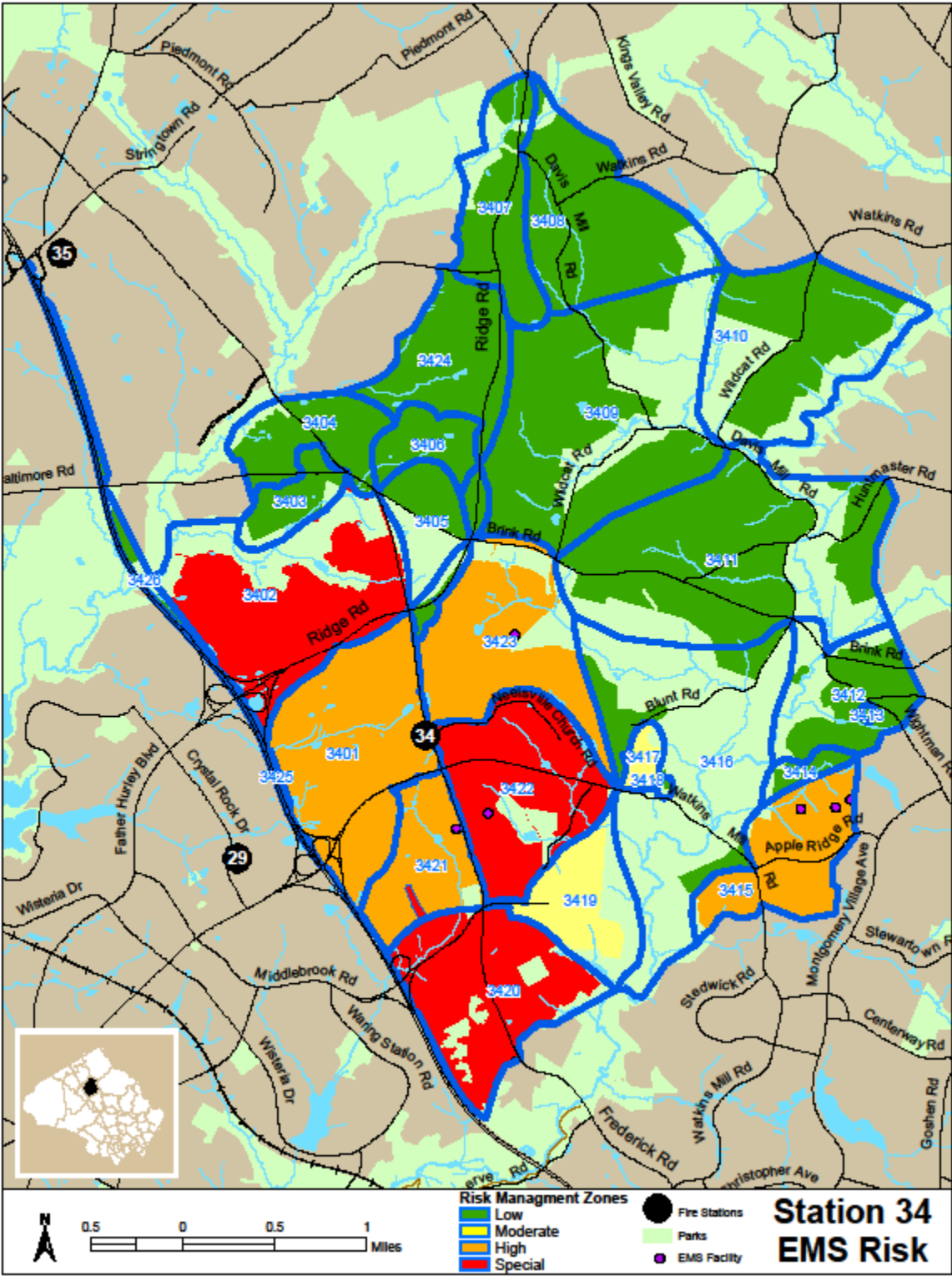
A few miles of Interstate 270 runs through Station 34's first due area, and there is no METRO rail or railroad.

Butler's Orchard Farm, sits between Germantown and Damascus, and has sizeable quantities of agricultural chemicals stored for use on the farm. There are a high number of visitors at the pick-your-own farm and there is considerable risk for injuries, bee stings, heat illnesses, etc. In addition, the property (and surrounding area not facing Rt. 27) has no hydrants to protect Butler's Orchard's market, barns, storage buildings, and farm houses; although there is at least one on-site pond that might serve as a drafting source.

**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

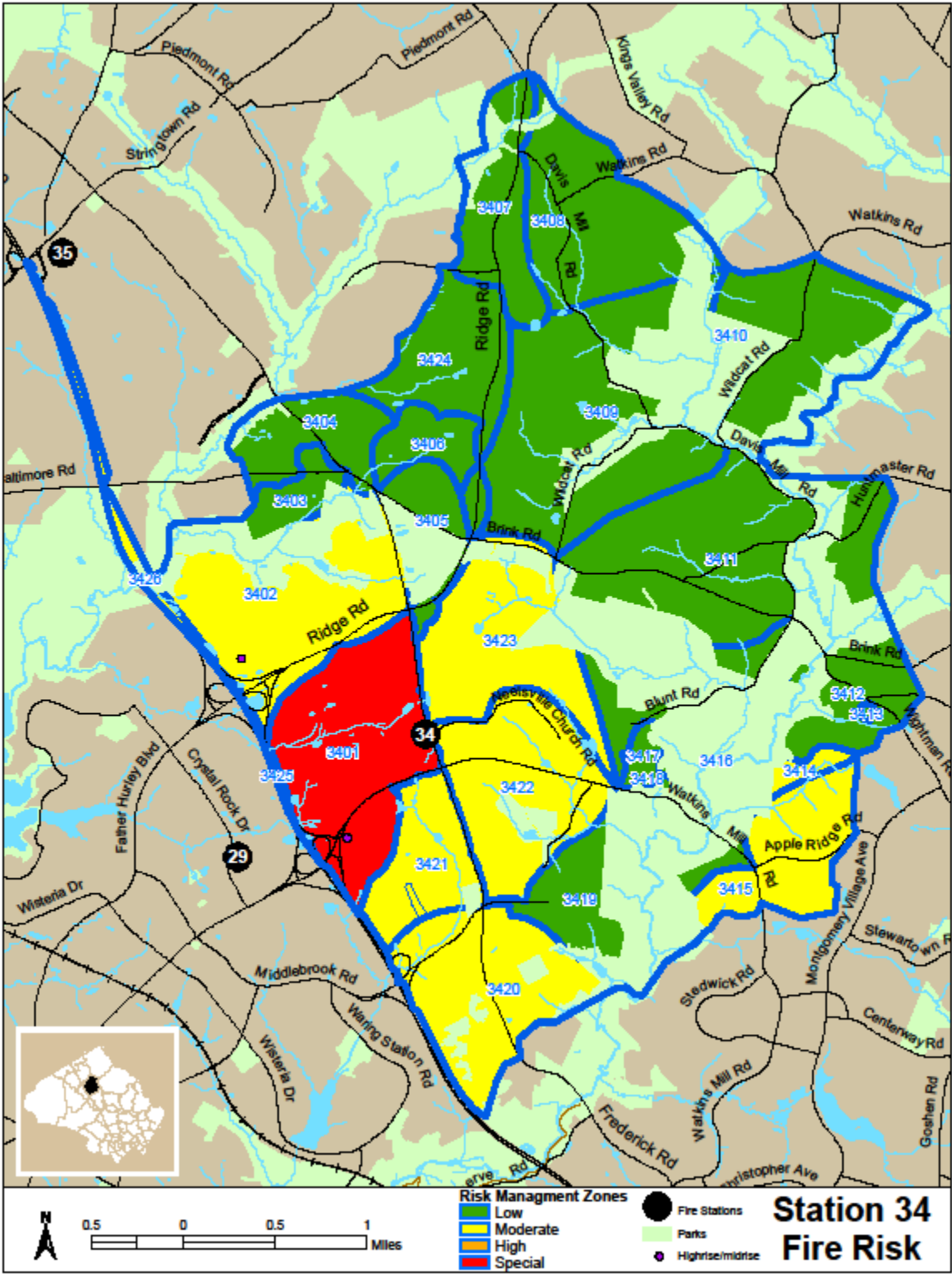
<b>Station 34 - # of Incidents by Call Type</b>				
<b>Fiscal Year</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013 (1st and 2nd Quarter Only)</b>
<b>Adaptive</b>	<b>105</b>	<b>315</b>	<b>350</b>	<b>161</b>
<b>ALS1</b>	<b>230</b>	<b>671</b>	<b>625</b>	<b>350</b>
<b>ALS2</b>	<b>29</b>	<b>93</b>	<b>85</b>	<b>41</b>
<b>BLS</b>	<b>339</b>	<b>995</b>	<b>995</b>	<b>512</b>
<b>Explosive</b>	<b>1</b>	<b>15</b>	<b>7</b>	<b>8</b>
<b>Firefull</b>	<b>9</b>	<b>24</b>	<b>21</b>	<b>17</b>
<b>Hazmat</b>	<b>10</b>	<b>32</b>	<b>33</b>	<b>15</b>
<b>Tech Rescue</b>	<b>N/A</b>	<b>4</b>	<b>6</b>	<b>2</b>
<b>Water/Ice</b>	<b>N/A</b>	<b>N/A</b>	<b>1</b>	<b>1</b>
<b>Total Calls</b>	<b>779</b>	<b>2304</b>	<b>2255</b>	<b>1188</b>
<b>*Note: Total category includes unfiltered calls - # may exceed sum of call types</b>				

MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

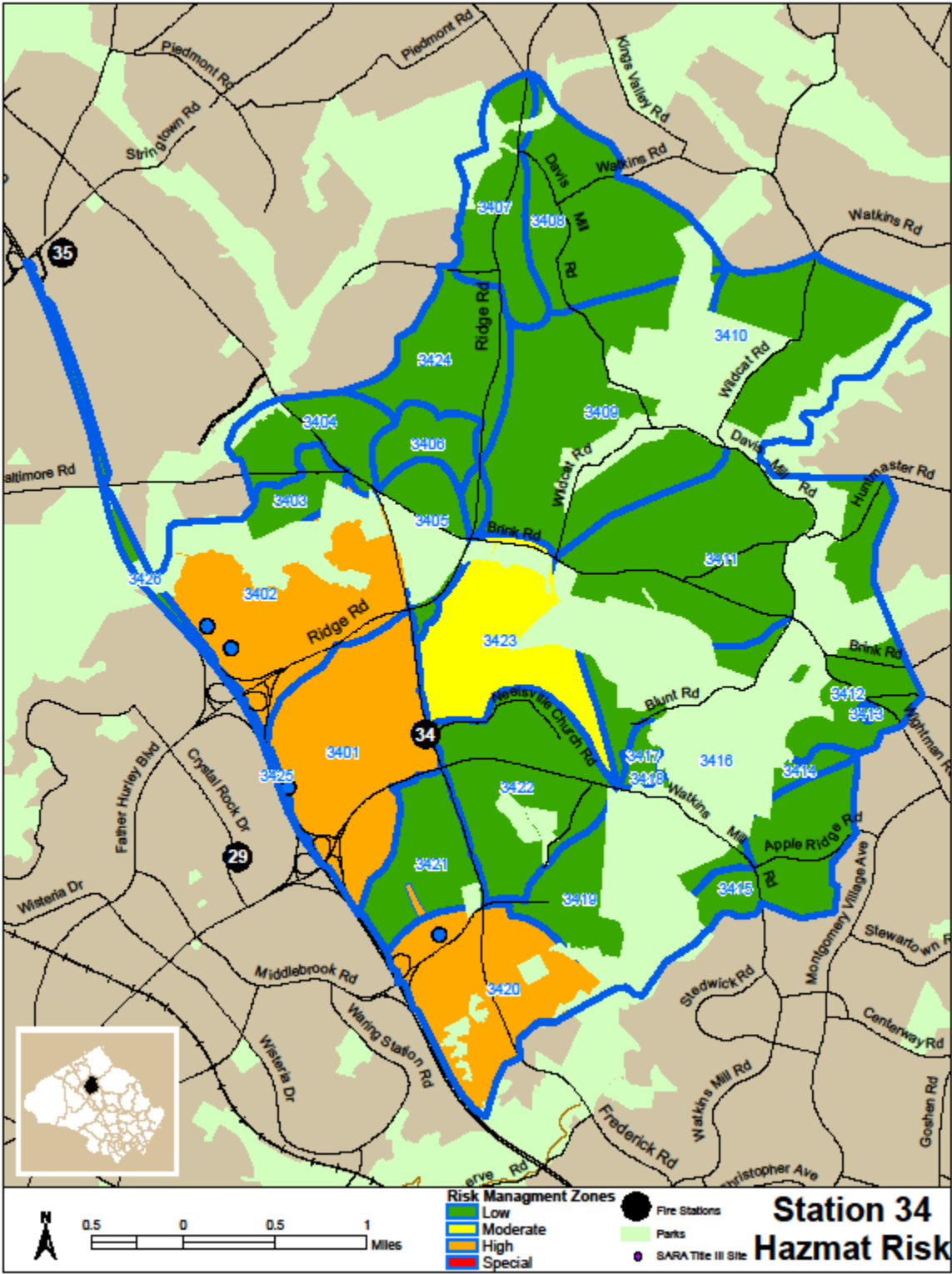




MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

### Fire Station 35

Battalion 5

Clarksburg Station

22610 Gateway Center Drive, Suite 300, Clarksburg



#### Description

- Ownership: County (Leased Interim facility)
- Employees: 9 Shift Work
- Apparatus Housed: Engine (AFRA), Truck, Medic Unit
- First Due Area: 21.47 mi<sup>2</sup>
- Volunteers:

#### Overview

Clarksburg is named for a Native American trader John Clark; however, it is uncertain if he ever actually lived in Clarksburg. The area hosted armies during the French and Indian War and by 1875 Clarksburg was a major town in the northern part of the County. The construction of the Baltimore and Ohio railroad undermined Clarksburg's economy and soon it became somewhat of a ghost town. Currently, Clarksburg is growing at a very fast pace with new homes, a diverse population, parks and plazas being developed. In recent years it was discovered that many new houses had been built too close together, closer together than the minimum distance required by zoning laws, roads built too narrow for fire trucks to pass and community facilities built without adequate permits or approvals by local building codes and laws. At this time, Station 35 is operating from leased space in an office park. A permanent fire house will be built in Clarksburg within the next five years about one mile from the interim facility.

## **MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

### **High Risk Areas – Including Hazards**

Approximately five miles of I-270 pass going through Station 35's area carrying heavy rush hour traffic and many vehicles transporting hazardous materials. There are no industrial, chemical, and/or biological hazardous material plants and/or warehouses. Further there is no METRO rail or railroad in the first-due area.

The Montgomery County Correctional Facility is located in Station 35's first due area and is responsible for the custody and care of male and female offenders who are either in a pre-trial status or serving sentences of up to eighteen months. The facilities current capacity is 1,028 inmates.

Little Bennett Park (see above) presents significant risks for rescue of injured hikers/horseback riders and for brush fires. There is limited access for fire department vehicles, making many areas of the parks difficult to reach to effect rescues and fire fighting.

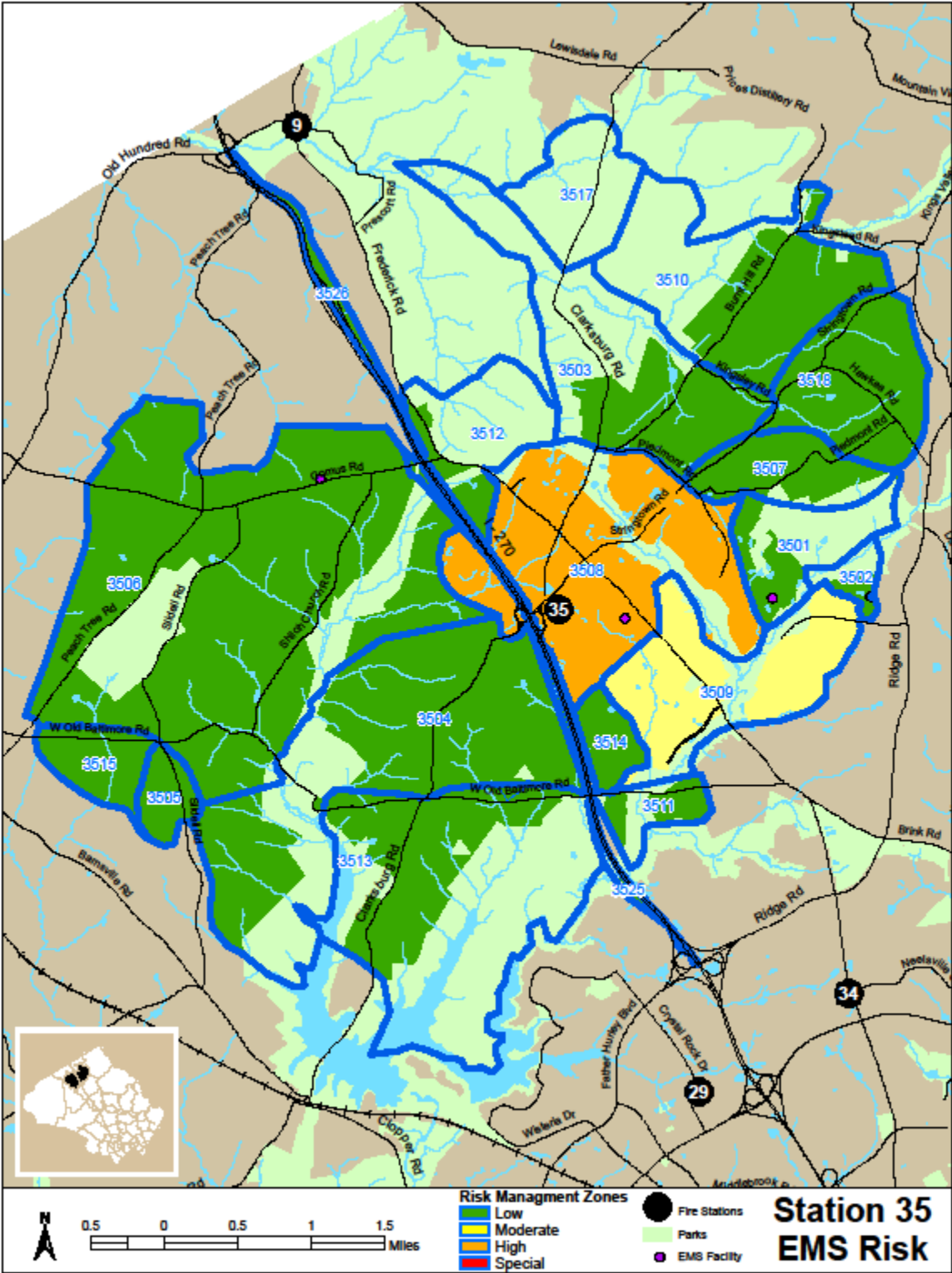
The site where West Old Baltimore Road crosses Ten Mile Creek presents a water-related risk following heavy rain or snow melt. There is no bridge at this crossing, so vehicles ford the creek on a daily basis which becomes dangerous, if not impossible, when the creek is flowing high and motorists are too foolish to stay away from the ford whether or not temporary barricades have been set up. This crossing has been the site of several swift water rescues by MCFRS when vehicles have become struck midstream or swept downstream in high water. Because West Old Baltimore Road has been designated as an "Exceptional Rustic Road" by the County, a bridge has not been installed at this crossing in order to preserve the road's historical characteristics. Despite the safety issue, it would be very difficult to amend the County Code and the County's Rustic Road Functional Master Plan to have the ford replaced by a bridge.

**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

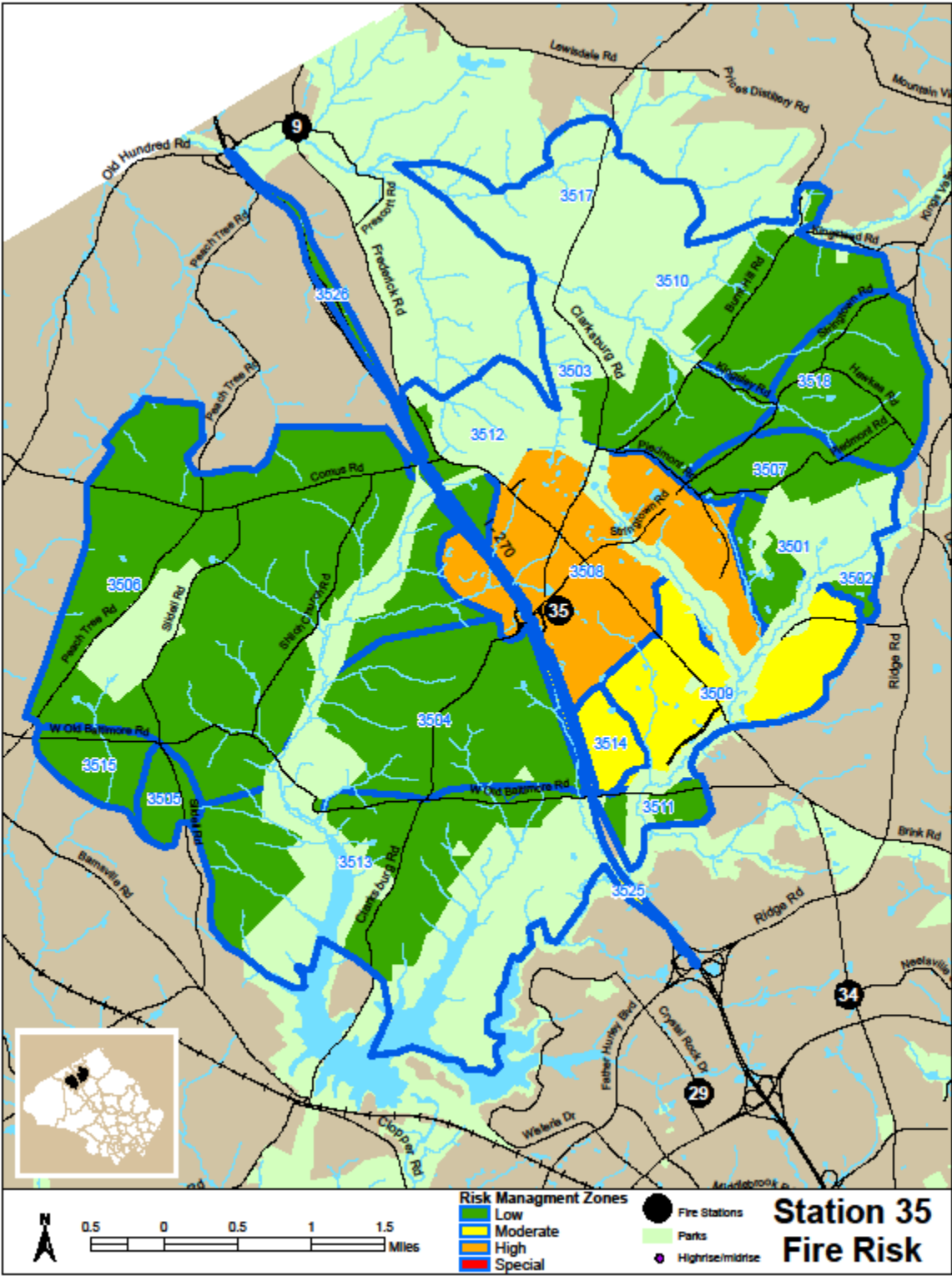
---

Station 35 - # of Incidents by Call Type				
<b>Fiscal Year</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013 (1st and 2nd Quarter Only)</b>
<b>Adaptive</b>	<b>135</b>	<b>133</b>	<b>161</b>	<b>79</b>
<b>ALS1</b>	<b>268</b>	<b>209</b>	<b>251</b>	<b>143</b>
<b>ALS2</b>	<b>38</b>	<b>44</b>	<b>33</b>	<b>15</b>
<b>BLS</b>	<b>404</b>	<b>389</b>	<b>408</b>	<b>204</b>
<b>Explosive</b>	<b>1</b>	<b>N/A</b>	<b>4</b>	<b>1</b>
<b>Firefull</b>	<b>5</b>	<b>6</b>	<b>8</b>	<b>3</b>
<b>Hazmat</b>	<b>7</b>	<b>15</b>	<b>23</b>	<b>19</b>
<b>Tech Rescue</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>N/A</b>
<b>Water/Ice</b>	<b>N/A</b>	<b>1</b>	<b>2</b>	<b>1</b>
<b>Total Calls</b>	<b>923</b>	<b>877</b>	<b>992</b>	<b>508</b>
<b>*Note: Total category includes unfiltered calls - # may exceed sum of call types</b>				

MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

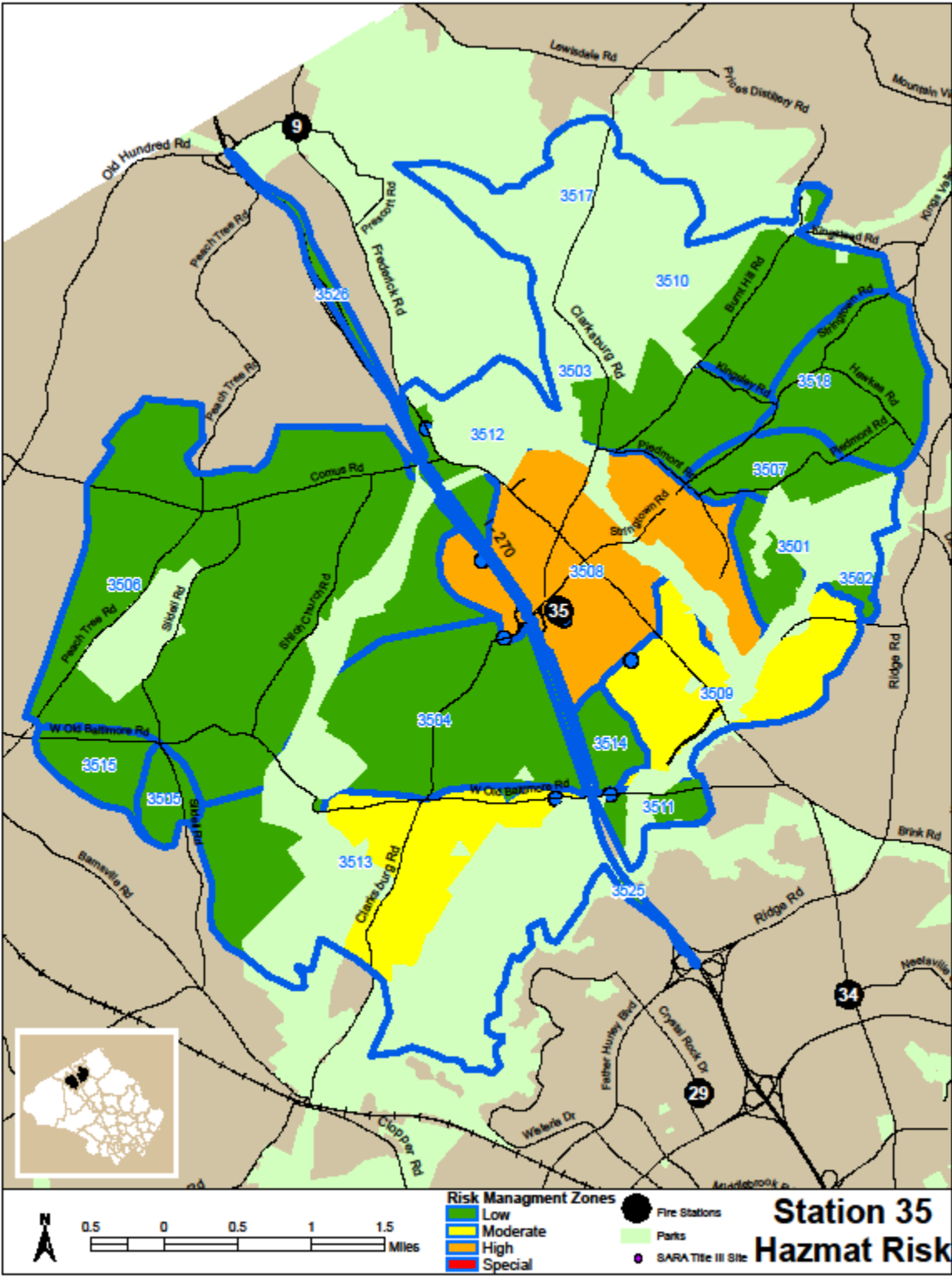


MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER





MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER





# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

### Fire Station 40

Battalion 4

Sandy Spring Station

16911 Georgia Avenue, Olney



#### Description

- Ownership: Volunteer
- Employees: 5 total  
(3 Shift Work; 2 Day Work)
- Apparatus Housed: Engine (740A, 740B), Truck, Ambulance, Brush Truck, Air Boat, Canteen
- First Due Area: 16.79 mi<sup>2</sup>
- Volunteers: totaled in with the sister company Fire Station 4

#### Overview

Sandy Spring Station 40 services a large part of the “newer” Sandy Spring with many more commercial businesses in their first due area. Station 40 sits on a four-lane, much-traveled road (Georgia Avenue). The area has grown immensely with single family homes, town homes and businesses within the last fifteen to twenty years and its families are prideful and close-knit. Station 40’s area has no METRO rail or railroad in their first due area and the only interstate traffic is that of Georgia Avenue. There are no industrial, chemical, biological, hazmat plants or warehouses. The engine at station 40 is not an AFRA. The truck at station 40 is a Quint by design; however, runs as a truck by order of the Fire Chief.<sup>571</sup> During the day, the ambulance is staffed from 0700 to 1700 and the remaining three personnel cross-staff all the other units. At all other times, all units are cross staffed by the three shift-personnel with volunteer assistance if they show up.

Station 40 protects four nursing homes, four group homes and one hospital. The hospital has a high-rise component of six stories and has the common hazards of any hospital. There are two strip shopping centers at RT108 and Rt97. One of the shopping centers is fully sprinklered

**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

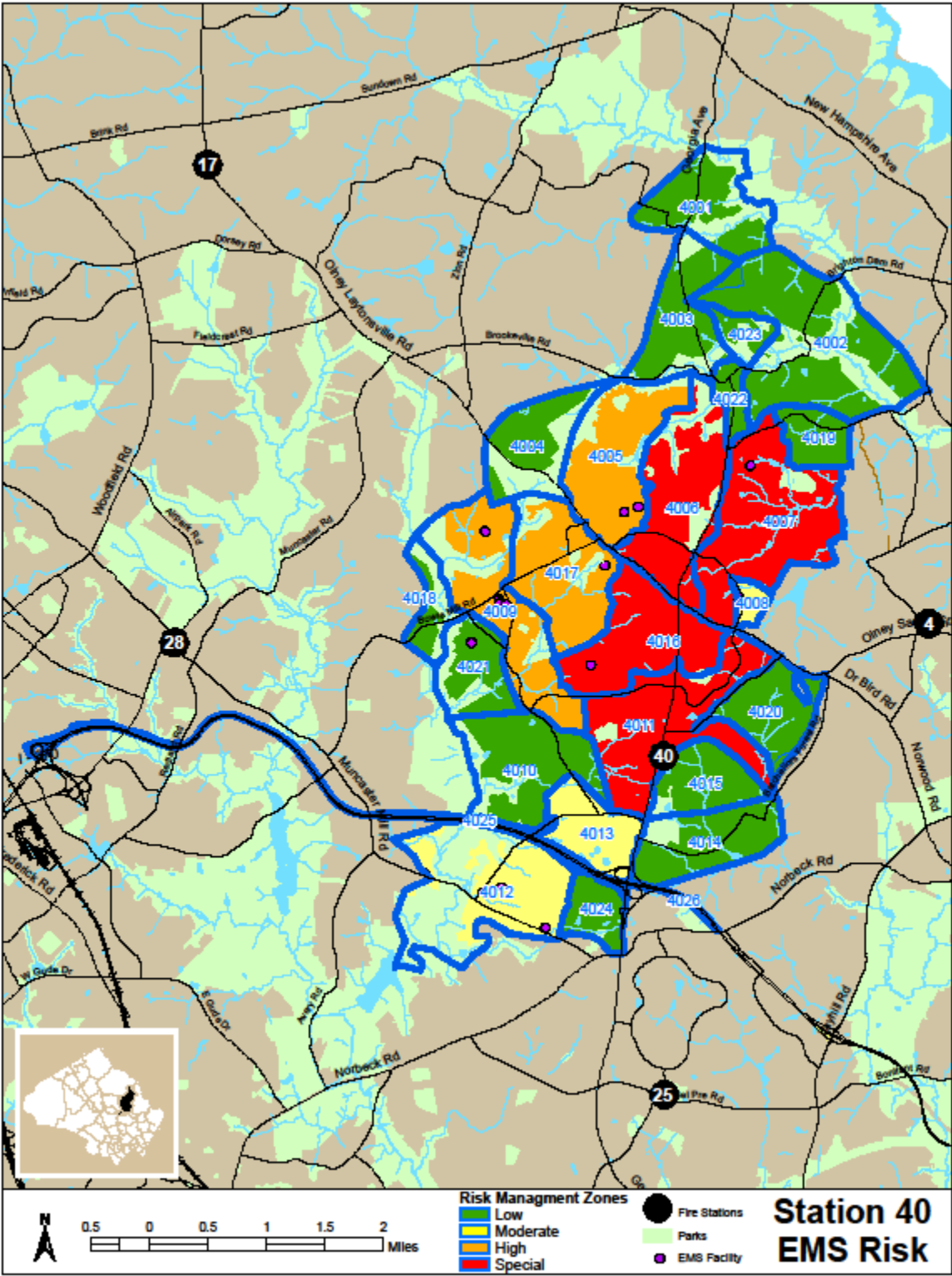
---

and the other is only partially sprinklered. There is nothing unusual about them as they are typical for Montgomery County.

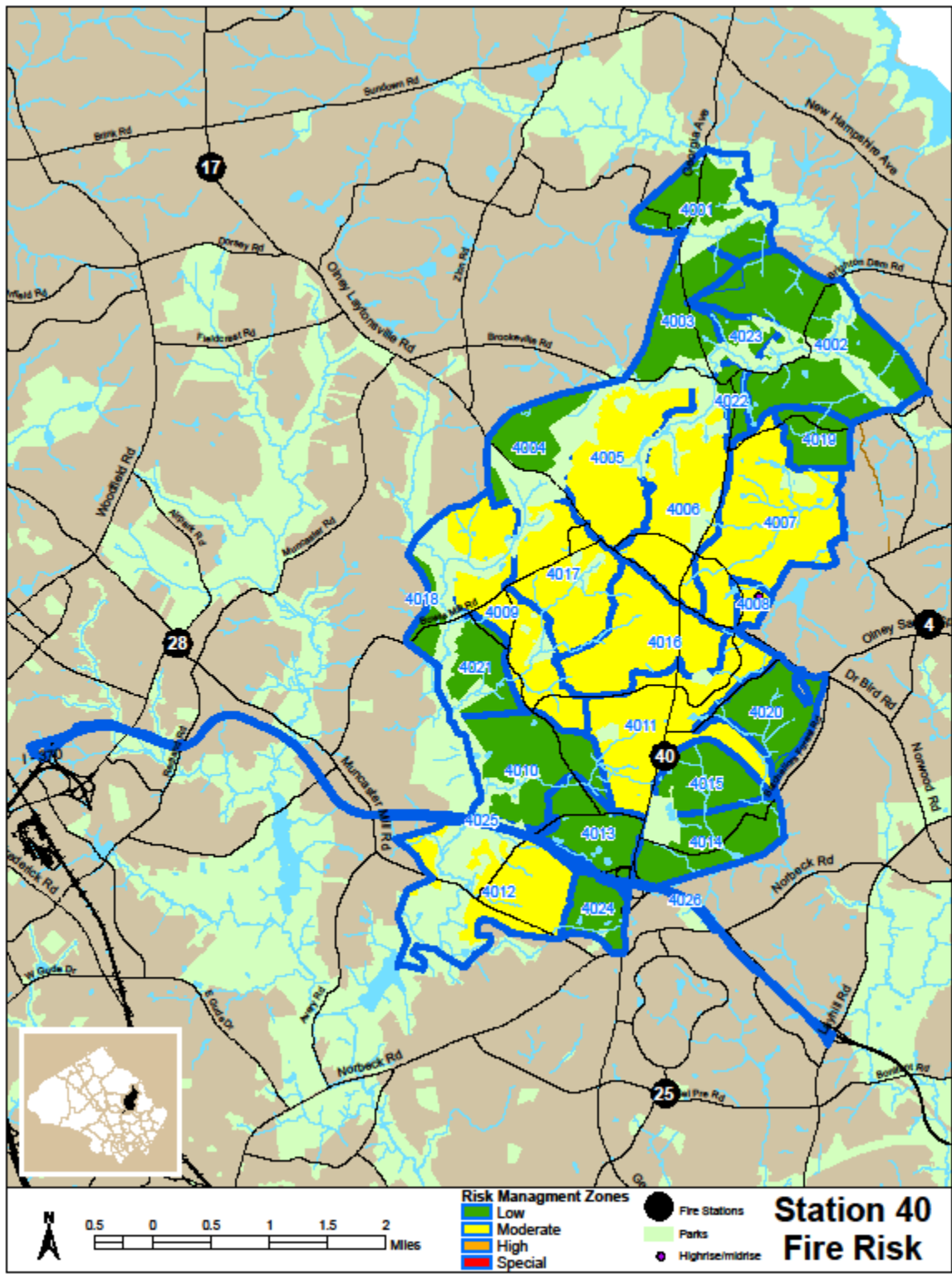
Station 40's area is not served entirely by municipal water and there are draftable water sources in the area including, a pond on Golden Valley, a cistern in the area of 18100 Bowie Mill Road and a pool is kept full for rural water-supply incidents at Camp Bennett.

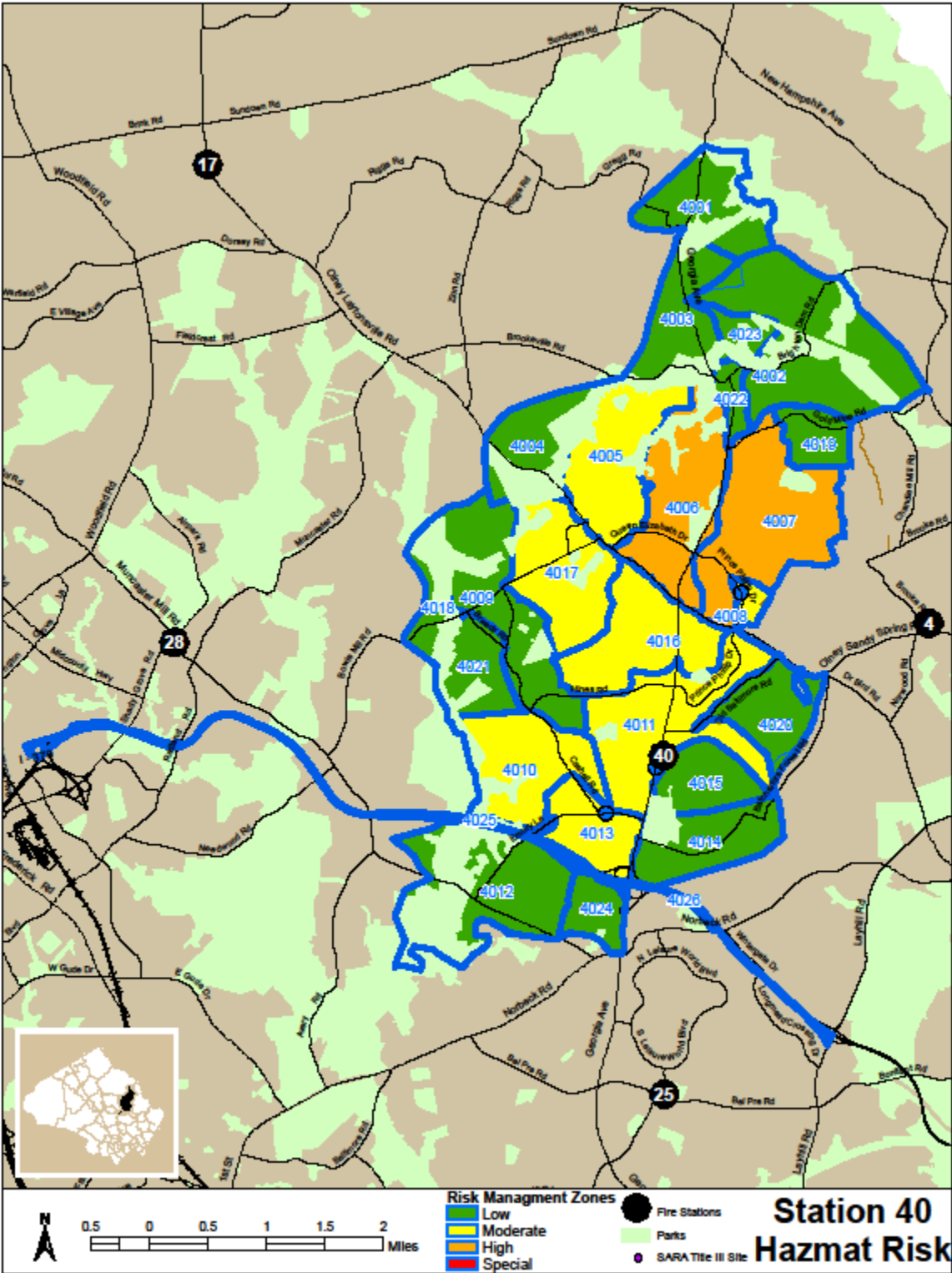
<b>Station 40 - # of Incidents by Call Type</b>				
<b>Fiscal Year</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013 (1st and 2nd Quarter Only)</b>
<b>Adaptive</b>	<b>324</b>	<b>335</b>	<b>338</b>	<b>187</b>
<b>ALS1</b>	<b>515</b>	<b>547</b>	<b>563</b>	<b>301</b>
<b>ALS2</b>	<b>91</b>	<b>86</b>	<b>97</b>	<b>52</b>
<b>BLS</b>	<b>821</b>	<b>923</b>	<b>895</b>	<b>406</b>
<b>Explosive</b>	<b>2</b>	<b>9</b>	<b>3</b>	<b>2</b>
<b>Firefull</b>	<b>15</b>	<b>16</b>	<b>11</b>	<b>13</b>
<b>Hazmat</b>	<b>26</b>	<b>63</b>	<b>29</b>	<b>16</b>
<b>Tech Rescue</b>	<b>N/A</b>	<b>5</b>	<b>9</b>	<b>3</b>
<b>Water/Ice</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>N/A</b>
<b>Total Calls</b>	<b>1999</b>	<b>2142</b>	<b>2076</b>	<b>1065</b>
<b>*Note: Total category includes unfiltered calls - # may exceed sum of call types</b>				

MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



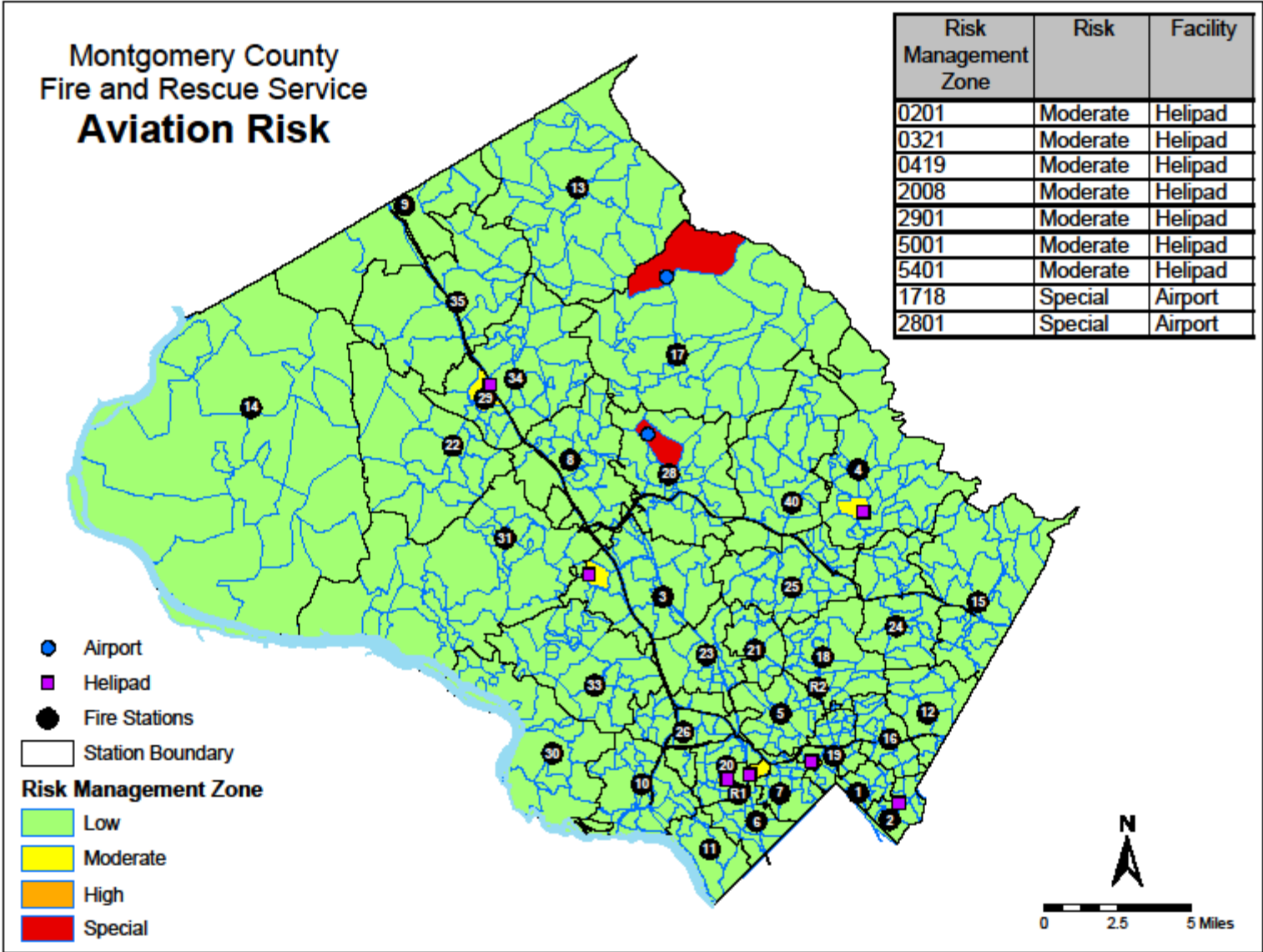
MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER





MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

Special Operations Risk Maps

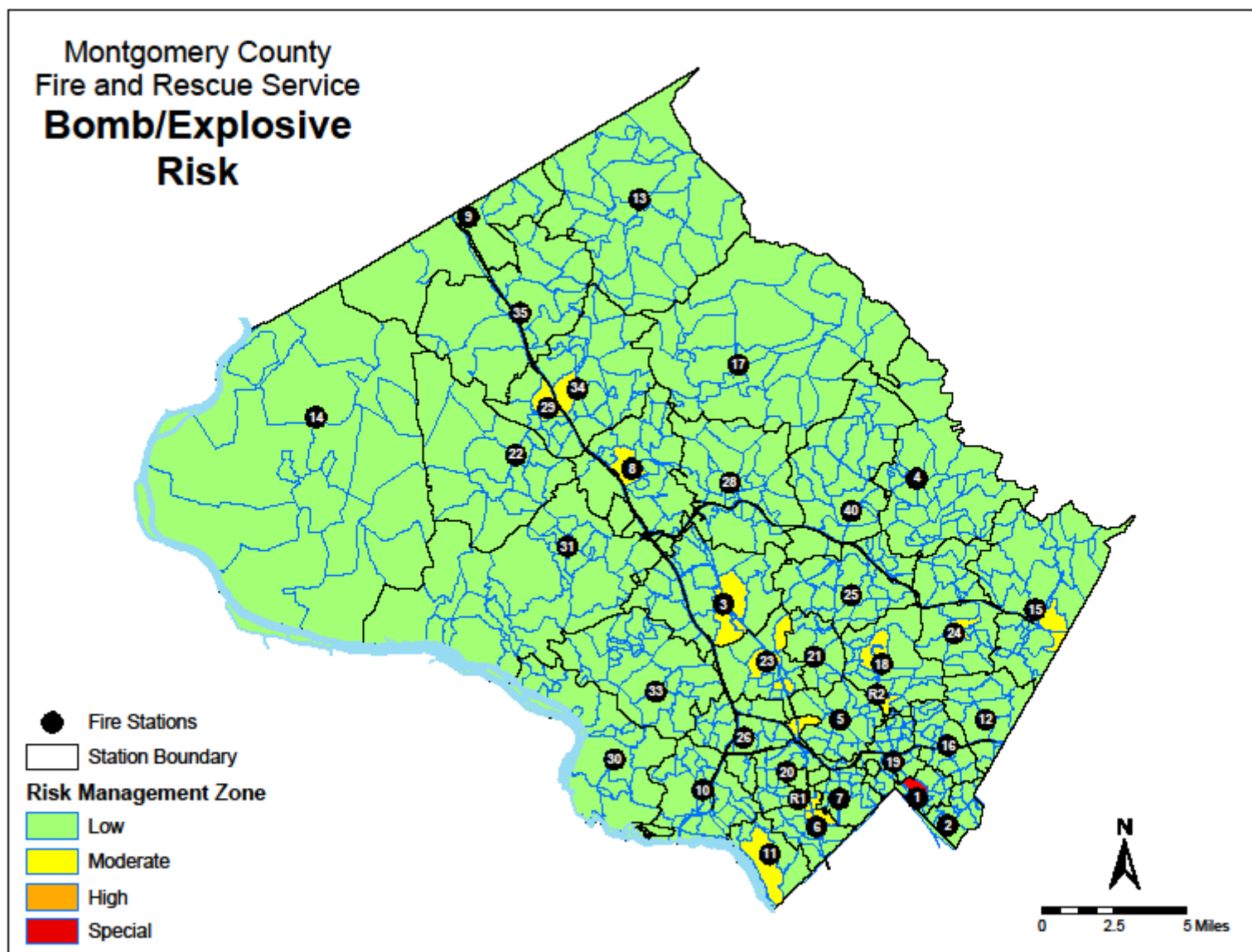


Path: P:\Planning\GIS\Accreditation\2013\Aviation\aviation\_risk.mxd Date: 4/22/2013



**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

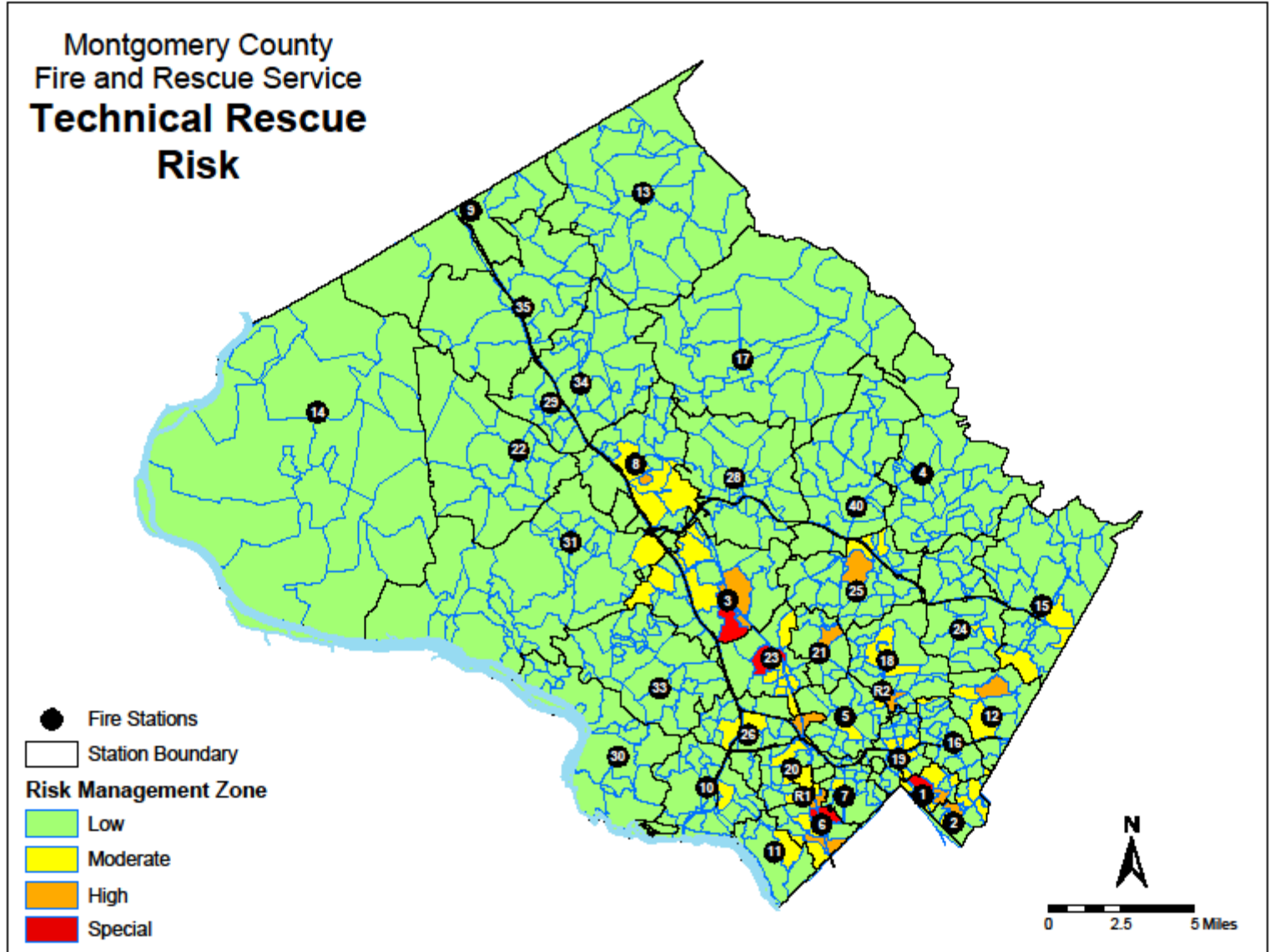
---



Path: P:\Planning\GIS\Accreditation\2013\Bomb\_explosive\Bomb\_explosive\_risk.mxd Date: 4/23/2013

**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

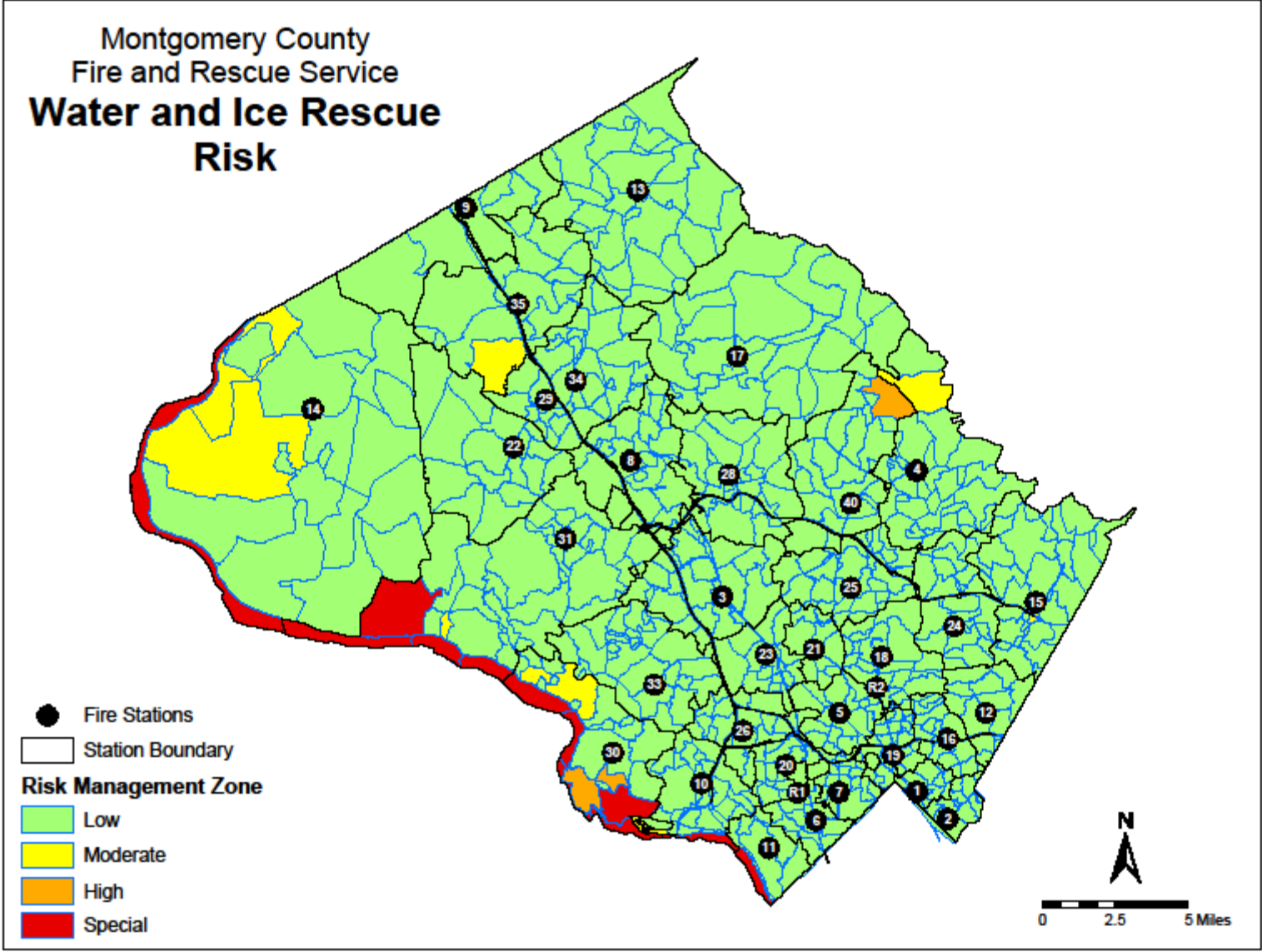
---



Path: P:\Planning\GIS\Accreditation\2013\Tech\_rescue\Tech\_recue\_risk.mxd Date: 4/23/2013



MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



Path: P:\Planning\GIS\Accreditation\2013\Water\_Ice\Water\_Ice\_risk.mxd Date: 4/23/2013

# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

RMZ	Fire Risk	EMS Risk	Hazmat Risk	Aviation Risk	Tech Rescue Risk	Water Risk	Bomb Risk
0101	Special	Special	High	Low	Moderate	Low	Low
0102	Special	Special	High	Low	Special	Low	Special
0103	Special	Special	High	Low	Moderate	Low	Low
0104	Moderate	High	Low	Low	Low	Low	Low
0105	Low	Moderate	Moderate	Low	Low	Low	Low
0106	Moderate	High	Moderate	Low	Moderate	Low	Low
0107	Moderate	Special	High	Low	High	Low	Low
0108	Low	Moderate	Low	Low	Low	Low	Low
0110	Moderate	Special	Low	Low	Moderate	Low	Low
0193	Low	Low	Low	Low	Low	Low	Low
0194	Low	Low	Low	Low	Low	Low	Low
0201	Low	Moderate	Low	Moderate	Low	Low	Low
0202	High	Special	High	Low	Moderate	Low	Low
0203	Moderate	Special	Low	Low	Moderate	Low	Low
0204	Moderate	High	Moderate	Low	Moderate	Low	Low
0205	Moderate	High	High	Low	Low	Low	Low
0206	Moderate	Special	Moderate	Low	Moderate	Low	Low
0207	Moderate	High	Moderate	Low	Low	Low	Low
0208	Moderate	High	Moderate	Low	Low	Low	Low
0209	Moderate	Special	High	Low	High	Low	Low
0210	Moderate	Moderate	Low	Low	Low	Low	Low
0213	Moderate	High	Low	Low	Low	Low	Low
0214	Moderate	High	Low	Low	Low	Low	Low
0301	High	Special	High	Low	Low	Low	Low
0302	Special	Special	Special	Low	Special	Low	Moderate
0303	Moderate	Moderate	Low	Low	Low	Low	Low
0304	Moderate	Moderate	Moderate	Low	Low	Low	Low
0305	High	High	Moderate	Low	Low	Low	Low
0306	High	Special	High	Low	Moderate	Low	Low
0307	Special	Special	Special	Low	High	Low	Moderate
0308	Moderate	Special	Moderate	Low	Low	Low	Low
0309	Moderate	High	Low	Low	Low	Low	Low
0310	Moderate	Moderate	Low	Low	Low	Low	Low
0311	Moderate	Special	Low	Low	Low	Low	Low
0312	Moderate	Special	Moderate	Low	Low	Low	Low
0314	Moderate	Special	Moderate	Low	Low	Low	Low
0316	Low	Low	Low	Low	Low	Low	Low
0317	Moderate	Low	Moderate	Low	Low	Low	Low
0318	Special	High	Low	Low	Low	Low	Low
0319	Moderate	High	High	Low	Low	Low	Low
0320	High	High	Moderate	Low	Moderate	Low	Low
0321	Special	Special	High	Moderate	Moderate	Low	Low
0322	Moderate	Moderate	Low	Low	Moderate	Low	Low
0323	High	Special	Moderate	Low	Moderate	Low	Low

# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

RMZ	Fire Risk	EMS Risk	Hazmat Risk	Aviation Risk	Tech Rescue Risk	Water Risk	Bomb Risk
0324	Moderate	Moderate	Low	Low	Low	Low	Low
0325	Low	Moderate	Low	Low	Low	Low	Low
0326	Low	Low	Low	Low	Low	Low	Low
0327	Moderate	Low	Low	Low	Low	Low	Low
0328	Low	Moderate	Low	Low	Low	Low	Low
0330	Low	Moderate	Low	Low	Low	Low	Low
0331	Low	Moderate	Low	Low	Low	Low	Low
0332	Low	Low	Low	Low	Low	Low	Low
0333	Special	Special	High	Low	Moderate	Low	Low
0334	Low	Low	Low	Low	Low	Low	Low
0355	Low	Low	Low	Low	Low	Low	Low
0356	Low	Low	Low	Low	Low	Low	Low
0357	Low	Low	Low	Low	Low	Low	Low
0362	Low	Low	Low	Low	Low	Low	Low
0363	Low	Low	Low	Low	Low	Low	Low
0364	Low	Low	Low	Low	Low	Low	Low
0365	Low	Low	Low	Low	Low	Low	Low
0366	Low	Low	Low	Low	Low	Low	Low
0367	Low	Low	Low	Low	Low	Low	Low
0368	Low	Low	Low	Low	Low	Low	Low
0369	Low	Low	Low	Low	Low	Low	Low
0370	Low	Low	Low	Low	Low	Low	Low
0371	Low	Low	Low	Low	Low	Low	Low
0372	Low	Low	Low	Low	Low	Low	Low
0380	Low	Low	Low	Low	Low	Low	Low
0381	Low	Low	Low	Low	Low	Low	Low
0382	Low	Low	Low	Low	Low	Low	Low
0383	Low	Low	Low	Low	Low	Low	Low
0384	Low	Low	Low	Low	Low	Low	Low
0385	Low	Low	Low	Low	Low	Low	Low
0386	Low	Low	Low	Low	Low	Low	Low
0401	Low	Low	Low	Low	Low	Low	Low
0403	Low	Low	Low	Low	Low	Low	Low
0404	Moderate	Low	Low	Low	Low	Moderate	Low
0405	Moderate	Moderate	Low	Low	Low	Low	Low
0406	Moderate	High	Low	Low	Low	Low	Low
0407	Low	Low	Low	Low	Low	Low	Low
0408	Low	Low	Moderate	Low	Low	Low	Low
0409	Low	Low	Low	Low	Low	Low	Low
0410	Moderate	Moderate	Low	Low	Low	Low	Low
0411	Low	Low	Low	Low	Low	Low	Low
0413	Low	Low	Low	Low	Low	Low	Low
0416	Low	Low	Low	Low	Low	Low	Low
0417	Low	Low	Low	Low	Low	Low	Low

# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

RMZ	Fire Risk	EMS Risk	Hazmat Risk	Aviation Risk	Tech Rescue Risk	Water Risk	Bomb Risk
0418	Low	Low	Low	Low	Low	Low	Low
0419	Low	Low	Low	Moderate	Low	Low	Low
0420	Low	Low	Low	Low	Low	Low	Low
0421	Low	Low	Low	Low	Low	Low	Low
0422	Low	Low	Low	Low	Low	Low	Low
0423	Low	Low	Low	Low	Low	Low	Low
0424	Low	Low	Low	Low	Low	Low	Low
0425	Low	Low	Low	Low	Low	Low	Low
0426	Low	Low	Low	Low	Low	Low	Low
0427	Low	Low	Low	Low	Low	Low	Low
0428	Low	Moderate	Low	Low	Low	Low	Low
0429	Low	Low	Low	Low	Low	Low	Low
0430	Moderate	Low	Low	Low	Low	Low	Low
0431	Low	Low	Low	Low	Low	Low	Low
0432	Low	Low	Low	Low	Low	Low	Low
0433	Low	Low	Low	Low	Low	Low	Low
0434	Low	Low	Low	Low	Low	Low	Low
0435	Low	Low	Low	Low	Low	Low	Low
0436	Low	Low	Low	Low	Low	Low	Low
0437	Low	Low	Low	Low	Low	Low	Low
0438	Low	Low	Low	Low	Low	Low	Low
0439	Low	Low	Low	Low	Low	Low	Low
0501	High	Special	High	Low	Low	Low	Low
0502	Moderate	Special	Moderate	Low	Low	Low	Low
0503	Moderate	High	Moderate	Low	Low	Low	Low
0504	Moderate	Special	Moderate	Low	Low	Low	Low
0505	Moderate	Special	Low	Low	Moderate	Low	Low
0506	High	Special	Moderate	Low	Moderate	Low	Low
0507	Moderate	Moderate	Low	Low	Low	Low	Low
0508	Moderate	Moderate	Low	Low	Low	Low	Low
0509	Low	Moderate	Low	Low	Low	Low	Low
0510	High	Special	Low	Low	Low	Low	Low
0511	Moderate	High	Moderate	Low	Low	Low	Low
0512	Moderate	Special	Low	Low	Low	Low	Low
0513	Moderate	High	Low	Low	Low	Low	Low
0514	Moderate	Moderate	Low	Low	Low	Low	Low
0515	Moderate	Special	Moderate	Low	Low	Low	Low
0516	Moderate	Low	Low	Low	Low	Low	Low
0517	Low	Moderate	Low	Low	Low	Low	Low
0518	Moderate	Moderate	Low	Low	Low	Low	Low
0519	Low	Moderate	Low	Low	Low	Low	Low
0601	Moderate	High	Low	Low	Moderate	Low	Low
0602	Special	Special	High	Low	High	Low	Low
0603	High	Special	Moderate	Low	Moderate	Low	Low

# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

RMZ	Fire Risk	EMS Risk	Hazmat Risk	Aviation Risk	Tech Rescue Risk	Water Risk	Bomb Risk
0604	Moderate	Moderate	Low	Low	Low	Low	Low
0605	High	High	Low	Low	Low	Low	Low
0606	Moderate	Low	Low	Low	Low	Low	Low
0607	Moderate	High	Moderate	Low	Moderate	Low	Low
0608	Special	Special	High	Low	High	Low	Moderate
0609	Special	Special	High	Low	Moderate	Low	Low
0610	Special	Special	High	Low	Special	Low	Moderate
0611	Moderate	Moderate	High	Low	Low	Low	Low
0691	Low	Low	Low	Low	Low	Low	Low
0692	Low	Low	Low	Low	Low	Low	Low
0693	Low	Low	Low	Low	Low	Low	Low
0694	Low	Low	Low	Low	Low	Low	Low
0701	Moderate	Moderate	Low	Low	Low	Low	Low
0702	High	Special	High	Low	Low	Low	Low
0703	Low	Moderate	Low	Low	Low	Low	Low
0704	Low	Special	Low	Low	Low	Low	Low
0705	Low	Low	Low	Low	Low	Low	Low
0706	Moderate	High	Low	Low	Moderate	Low	Low
0707	Moderate	High	Moderate	Low	Low	Low	Low
0708	Low	Moderate	Low	Low	Low	Low	Low
0709	Moderate	Moderate	Low	Low	Low	Low	Low
0710	Low	Low	Low	Low	Low	Low	Low
0711	Low	Moderate	Low	Low	Low	Low	Low
0712	Moderate	Moderate	Low	Low	Low	Low	Low
0713	Low	Low	Low	Low	Low	Low	Low
0714	Low	Moderate	Low	Low	Low	Low	Low
0715	Low	Low	Low	Low	Low	Low	Low
0716	Low	Low	Low	Low	Low	Low	Low
0717	Low	Moderate	Low	Low	Low	Low	Low
0718	Low	Moderate	Low	Low	Low	Low	Low
0801	High	Special	High	Low	Moderate	Low	Low
0802	Moderate	Special	Moderate	Low	Low	Low	Low
0803	Special	Special	Special	Low	Moderate	Low	Moderate
0804	High	Special	Moderate	Low	Low	Low	Low
0805	Low	High	Low	Low	Low	Low	Low
0806	Moderate	Moderate	Low	Low	Low	Low	Low
0807	High	Special	High	Low	Moderate	Low	Low
0808	Moderate	Special	Low	Low	Low	Low	Low
0811	Moderate	Moderate	Low	Low	Low	Low	Low
0812	Special	Special	Moderate	Low	Low	Low	Low
0813	Special	Special	Moderate	Low	High	Low	Low
0814	Special	Special	High	Low	Moderate	Low	Low
0815	Low	Moderate	Low	Low	Low	Low	Low
0816	Special	Special	Moderate	Low	Low	Low	Low

# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

RMZ	Fire Risk	EMS Risk	Hazmat Risk	Aviation Risk	Tech Rescue Risk	Water Risk	Bomb Risk
0821	Moderate	High	Low	Low	Low	Low	Low
0822	Low	High	Low	Low	Low	Low	Low
0823	Special	Special	Special	Low	Low	Low	Low
0825	Moderate	Low	Low	Low	Low	Low	Low
0826	Low	Moderate	Low	Low	Low	Low	Low
0827	Moderate	High	Low	Low	Low	Low	Low
0828	Moderate	High	Low	Low	Low	Low	Low
0829	Moderate	Special	Moderate	Low	Low	Low	Low
0830	Low	High	Low	Low	Low	Low	Low
0845	Low	Moderate	Low	Low	Low	Low	Low
0847	Moderate	Low	Low	Low	Low	Low	Low
0848	Moderate	Low	Low	Low	Low	Low	Low
0849	Low	Low	Low	Low	Low	Low	Low
0901	Low	Low	Low	Low	Low	Low	Low
0902	Low	Low	Low	Low	Low	Low	Low
0903	Low	Low	Low	Low	Low	Low	Low
0909	Low	Low	Low	Low	Low	Low	Low
0910	Low	Low	Low	Low	Low	Low	Low
0914	Low	Low	Low	Low	Low	Low	Low
0915	Moderate	Low	Low	Low	Low	Low	Low
0916	Low	Low	Low	Low	Low	Low	Low
0917	Low	Low	Low	Low	Low	Low	Low
1001	Low	Low	Low	Low	Low	Low	Low
1002	Low	Moderate	Moderate	Low	Low	Low	Low
1003	Low	Low	Low	Low	Low	Low	Low
1004	Moderate	Moderate	Low	Low	Low	Low	Low
1005	Moderate	Low	Low	Low	Low	Low	Low
1006	Low	Low	Low	Low	Low	Low	Low
1007	Moderate	Low	Low	Low	Low	Low	Low
1008	Low	Low	Low	Low	Low	Low	Low
1009	Moderate	High	Low	Low	Moderate	Low	Low
1010	Low	Moderate	Low	Low	Low	Low	Low
1011	Low	Moderate	Low	Low	Low	Low	Low
1012	Moderate	Low	Low	Low	Low	Low	Low
1013	Moderate	Moderate	High	Low	Low	Low	Low
1014	Moderate	Moderate	Low	Low	Low	Low	Low
1015	Low	Low	Low	Low	Low	Low	Low
1016	Low	Low	Low	Low	Low	Low	Low
1017	Low	Low	Low	Low	Low	Low	Low
1018	Low	Low	Low	Low	Low	Low	Low
1019	Low	Low	Low	Low	Low	Low	Low
1020	Low	Low	Low	Low	Low	Low	Low
1021	Low	Low	Low	Low	Low	Low	Low
1022	Low	Low	Low	Low	Low	Low	Low

# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

RMZ	Fire Risk	EMS Risk	Hazmat Risk	Aviation Risk	Tech Rescue Risk	Water Risk	Bomb Risk
1023	Moderate	Moderate	Low	Low	Low	Low	Low
1024	Low	Low	Low	Low	Low	Low	Low
1025	Low	Low	Low	Low	Low	Moderate	Low
1027	Low	Low	Low	Low	Low	Low	Low
1028	Moderate	Moderate	Low	Low	Low	Low	Low
1029	Low	Low	Low	Low	Low	Low	Low
1030	Low	Low	Low	Low	Low	Low	Low
1031	Low	Low	Low	Low	Low	Low	Low
1033	Low	Low	Low	Low	Low	Low	Low
1101	High	Special	High	Low	Low	Low	Low
1102	Special	Special	Special	Low	Low	Low	Moderate
1103	Moderate	Moderate	Low	Low	Low	Low	Low
1104	Low	Low	Low	Low	Low	Low	Low
1105	Moderate	Moderate	Low	Low	Low	Low	Low
1106	High	Special	Moderate	Low	Moderate	Low	Low
1107	Moderate	Moderate	Low	Low	Low	Low	Low
1201	Moderate	Special	Moderate	Low	Low	Low	Low
1202	High	High	Moderate	Low	Moderate	Low	Low
1203	Moderate	High	Low	Low	Low	Low	Low
1204	High	High	Moderate	Low	Low	Low	Low
1206	Moderate	Special	Low	Low	Low	Low	Low
1207	Special	Special	Moderate	Low	Moderate	Low	Low
1208	Moderate	High	Low	Low	Low	Low	Low
1209	High	Special	Moderate	Low	Low	Low	Low
1210	Special	Special	High	Low	High	Low	Low
1211	Moderate	Special	Moderate	Low	Low	Low	Low
1212	Low	Low	Low	Low	Low	Low	Low
1213	Low	Moderate	Low	Low	Low	Low	Low
1214	Low	Low	Low	Low	Low	Low	Low
1255	Low	Moderate	Low	Low	Low	Low	Low
1256	Low	Low	Low	Low	Low	Low	Low
1301	Moderate	Moderate	Moderate	Low	Low	Low	Low
1302	Low	Low	Low	Low	Low	Low	Low
1303	Low	Low	Low	Low	Low	Low	Low
1304	Moderate	Moderate	Moderate	Low	Low	Low	Low
1305	Low	Low	Low	Low	Low	Low	Low
1306	Low	Low	Low	Low	Low	Low	Low
1307	Low	Low	Low	Low	Low	Low	Low
1308	Low	Low	Low	Low	Low	Low	Low
1309	Low	Low	Low	Low	Low	Low	Low
1311	Low	Low	Low	Low	Low	Low	Low
1313	Low	Low	Low	Low	Low	Low	Low
1314	Moderate	High	Low	Low	Low	Low	Low
1315	Low	Low	Low	Low	Low	Low	Low

# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

RMZ	Fire Risk	EMS Risk	Hazmat Risk	Aviation Risk	Tech Rescue Risk	Water Risk	Bomb Risk
1316	Low	Low	Low	Low	Low	Low	Low
1317	Low	Low	Low	Low	Low	Low	Low
1318	Low	Moderate	Moderate	Low	Low	Low	Low
1319	Low	Low	Moderate	Low	Low	Low	Low
1320	Low	Low	Low	Low	Low	Low	Low
1321	Low	Low	Low	Low	Low	Low	Low
1322	Moderate	High	Low	Low	Low	Low	Low
1323	Low	Low	Low	Low	Low	Low	Low
1324	Moderate	Moderate	Low	Low	Low	Low	Low
1326	Low	Low	Low	Low	Low	Low	Low
1327	Low	Low	Low	Low	Low	Low	Low
1328	Low	Low	Low	Low	Low	Low	Low
1329	Low	Low	Low	Low	Low	Low	Low
1330	Low	Low	Low	Low	Low	Low	Low
1331	Low	Low	Low	Low	Low	Low	Low
1332	Low	Low	Low	Low	Low	Low	Low
1333	Low	Low	Low	Low	Low	Low	Low
1334	Low	Low	Low	Low	Low	Low	Low
1335	Low	Low	Low	Low	Low	Low	Low
1336	Low	Low	Low	Low	Low	Low	Low
1401	Moderate	High	High	Low	Low	Low	Low
1402	Moderate	Low	Low	Low	Low	Low	Low
1403	Low	Low	Low	Low	Low	Low	Low
1404	Low	Low	Low	Low	Low	Low	Low
1405	Low	Low	Low	Low	Low	Moderate	Low
1406	Low	Low	Low	Low	Low	Low	Low
1407	Low	Low	Low	Low	Low	Low	Low
1408	Low	Low	High	Low	Low	Moderate	Low
1409	Moderate	Low	Low	Low	Low	Low	Low
1410	Low	Low	Low	Low	Low	Low	Low
1412	Low	Low	Low	Low	Low	Low	Low
1413	Low	Low	Low	Low	Low	Low	Low
1414	Low	Low	Low	Low	Low	Low	Low
1415	Low	Low	Low	Low	Low	Low	Low
1416	Low	Low	Moderate	Low	Low	Low	Low
1417	Low	Low	Low	Low	Low	Low	Low
1418	Low	Low	Low	Low	Low	Low	Low
1421	Low	Low	Low	Low	Low	Special	Low
1422	Low	Low	Low	Low	Low	Special	Low
1501	Moderate	High	Low	Low	Low	Low	Low
1502	Moderate	Moderate	Low	Low	Low	Low	Low
1503	Moderate	Special	High	Low	Low	Low	Low
1504	Moderate	Moderate	Low	Low	Low	Low	Low
1505	Moderate	High	Low	Low	Low	Low	Low



# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

RMZ	Fire Risk	EMS Risk	Hazmat Risk	Aviation Risk	Tech Rescue Risk	Water Risk	Bomb Risk
1506	Moderate	High	Low	Low	Low	Low	Low
1507	Low	High	Moderate	Low	Low	Moderate	Low
1508	Low	Low	Low	Low	Low	Low	Low
1509	Low	Low	Low	Low	Low	Low	Low
1510	Low	Moderate	Low	Low	Low	Low	Low
1511	Low	Low	Low	Low	Low	Low	Low
1513	Low	Low	Low	Low	Low	Low	Low
1514	Moderate	Moderate	Low	Low	Low	Low	Low
1515	Moderate	High	Low	Low	Low	Low	Low
1516	Moderate	Special	Low	Low	Low	Low	Low
1517	Moderate	High	Low	Low	Low	Low	Low
1518	Moderate	Special	Moderate	Low	Low	Low	Low
1519	Special	High	High	Low	Moderate	Low	Low
1520	Low	Low	Low	Low	Low	Low	Low
1525	Low	Low	Low	Low	Low	Low	Low
1526	Moderate	Special	Low	Low	Low	Low	Low
1527	Special	Special	High	Low	Moderate	Low	Moderate
1528	Moderate	Special	Low	Low	Low	Low	Low
1529	Low	Special	Low	Low	Low	Low	Low
1530	Low	Low	Low	Low	Low	Low	Low
1531	Low	Low	Low	Low	Low	Low	Low
1532	Low	Low	Low	Low	Low	Low	Low
1533	Low	Low	Low	Low	Low	Low	Low
1534	Low	Low	Low	Low	Low	Low	Low
1535	Low	Low	Low	Low	Low	Low	Low
1601	Moderate	High	Moderate	Low	Low	Low	Low
1602	Moderate	Special	Moderate	Low	Low	Low	Low
1603	Low	High	Low	Low	Low	Low	Low
1604	Low	Moderate	Low	Low	Low	Low	Low
1605	Moderate	High	Moderate	Low	Low	Low	Low
1606	Moderate	Moderate	Low	Low	Low	Low	Low
1607	Moderate	Special	Low	Low	Low	Low	Low
1608	Moderate	Special	Moderate	Low	Low	Low	Low
1609	Moderate	High	High	Low	Low	Low	Low
1610	Moderate	Special	Low	Low	Low	Low	Low
1611	Moderate	High	Low	Low	Low	Low	Low
1612	Moderate	High	Low	Low	Low	Low	Low
1613	Moderate	Special	Moderate	Low	Low	Low	Low
1614	Moderate	Special	Moderate	Low	Moderate	Low	Low
1615	Low	Low	Low	Low	Low	Low	Low
1616	Low	Moderate	Low	Low	Low	Low	Low
1617	Low	Low	Low	Low	Low	Low	Low
1618	Low	Moderate	Low	Low	Low	Low	Low
1620	Low	Moderate	Low	Low	Moderate	Low	Low

# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

RMZ	Fire Risk	EMS Risk	Hazmat Risk	Aviation Risk	Tech Rescue Risk	Water Risk	Bomb Risk
1701	Low	Low	Low	Low	Low	Low	Low
1702	Moderate	Low	Moderate	Low	Low	Low	Low
1703	Low	Low	Low	Low	Low	Low	Low
1704	Moderate	Moderate	Low	Low	Low	Low	Low
1705	Low	Low	Low	Low	Low	Low	Low
1706	Low	Low	Moderate	Low	Low	Low	Low
1707	Low	Low	Low	Low	Low	Low	Low
1708	Low	Low	Low	Low	Low	Low	Low
1709	Moderate	Moderate	Low	Low	Low	Low	Low
1711	Low	Low	Low	Low	Low	Low	Low
1712	Moderate	Moderate	Low	Low	Low	Low	Low
1714	Low	Low	Low	Low	Low	Low	Low
1715	Low	Low	Low	Low	Low	Low	Low
1716	Low	Low	Low	Low	Low	Low	Low
1717	Low	Low	Low	Low	Low	Low	Low
1718	Low	Low	Low	Special	Low	Low	Low
1719	Low	Low	Low	Low	Low	Low	Low
1720	Low	Low	Low	Low	Low	Low	Low
1721	High	High	Low	Low	Low	Low	Low
1722	Low	Low	Low	Low	Low	Low	Low
1723	Low	Low	Low	Low	Low	Low	Low
1724	Low	Low	Low	Low	Low	Low	Low
1725	Low	Low	Low	Low	Low	Low	Low
1726	Low	Low	Low	Low	Low	Low	Low
1727	Low	Low	Low	Low	Low	Low	Low
1728	Low	Low	Low	Low	Low	Low	Low
1801	High	High	Moderate	Low	Moderate	Low	Low
1802	Moderate	Low	Low	Low	Low	Low	Low
1803	Moderate	Special	Moderate	Low	Low	Low	Low
1804	High	Special	High	Low	Low	Low	Low
1805	Low	Low	Low	Low	Low	Low	Low
1806	Special	Special	High	Low	Moderate	Low	Moderate
1808	Moderate	Special	Moderate	Low	Low	Low	Low
1809	Moderate	Moderate	Moderate	Low	Low	Low	Low
1810	Moderate	High	Low	Low	Low	Low	Low
1811	Moderate	Moderate	Low	Low	Low	Low	Low
1812	High	Special	Moderate	Low	Low	Low	Low
1813	Moderate	High	Low	Low	Low	Low	Low
1814	Moderate	High	Low	Low	Low	Low	Low
1815	Low	Moderate	Low	Low	Low	Low	Low
1816	High	Special	Moderate	Low	High	Low	Moderate
1817	Low	Moderate	Low	Low	Low	Low	Low
1818	Moderate	High	Low	Low	Low	Low	Low
1821	Moderate	Moderate	Low	Low	Low	Low	Low

# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

RMZ	Fire Risk	EMS Risk	Hazmat Risk	Aviation Risk	Tech Rescue Risk	Water Risk	Bomb Risk
1824	Moderate	High	Low	Low	Low	Low	Low
1890	Low	Low	Low	Low	Low	Low	Low
1891	Low	Low	Low	Low	Low	Low	Low
1892	Low	Low	Low	Low	Low	Low	Low
1893	Low	Low	Low	Low	Low	Low	Low
1894	Low	Low	Low	Low	Low	Low	Low
1895	Low	Low	Low	Low	Low	Low	Low
1896	Low	Low	Low	Low	Low	Low	Low
1897	Low	Low	Low	Low	Low	Low	Low
1898	Low	Low	Low	Low	Low	Low	Low
1901	High	Special	High	Low	Low	Low	Low
1902	Moderate	High	Low	Low	Moderate	Low	Low
1903	Moderate	High	Low	Low	Low	Low	Low
1904	Low	Moderate	Low	Low	Low	Low	Low
1905	Moderate	High	Low	Low	Moderate	Low	Low
1906	Moderate	Special	Low	Low	Low	Low	Low
1907	Low	Low	Low	Low	Low	Low	Low
1908	Low	Moderate	Low	Low	Low	Low	Low
1909	Moderate	High	Low	Low	Low	Low	Low
1910	Low	Moderate	Low	Low	Low	Low	Low
1911	Low	Moderate	Low	Low	Low	Low	Low
1912	Low	Low	Low	Low	Low	Low	Low
1913	Low	Low	Moderate	Low	Low	Low	Low
1914	Moderate	Moderate	Low	Low	Low	Low	Low
1915	Moderate	High	Low	Low	Low	Low	Low
1916	Moderate	Special	Low	Low	Low	Low	Low
1917	Moderate	Moderate	Moderate	Low	Moderate	Low	Low
1918	High	High	Moderate	Low	Moderate	Low	Low
1922	Low	Moderate	Low	Low	Low	Low	Low
1923	Low	Low	Low	Low	Low	Low	Low
1924	Low	Low	Low	Low	Low	Low	Low
1925	Low	Moderate	Low	Low	Low	Low	Low
1990	Low	Low	Low	Low	Low	Low	Low
1991	Low	Low	Low	Low	Low	Low	Low
1992	Low	Low	Low	Low	Low	Low	Low
2001	Moderate	High	Low	Low	Low	Low	Low
2002	Moderate	Moderate	Low	Low	Low	Low	Low
2003	Moderate	Moderate	Low	Low	Moderate	Low	Low
2004	Moderate	Special	Low	Low	Low	Low	Low
2005	Low	Moderate	Low	Low	Low	Low	Low
2006	Moderate	Moderate	Low	Low	Low	Low	Low
2007	High	Special	High	Low	Moderate	Low	Low
2008	Moderate	Moderate	Low	Moderate	Moderate	Low	Low
2009	High	Special	High	Low	High	Low	Moderate

# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

RMZ	Fire Risk	EMS Risk	Hazmat Risk	Aviation Risk	Tech Rescue Risk	Water Risk	Bomb Risk
2010	Low	Moderate	Low	Low	Low	Low	Low
2011	Low	Low	Low	Low	Low	Low	Low
2012	Low	Moderate	Low	Low	Low	Low	Low
2013	Moderate	Low	Low	Low	Low	Low	Low
2014	Low	Moderate	Low	Low	Low	Low	Low
2015	Low	Moderate	Low	Low	Low	Low	Low
2016	Moderate	Moderate	Moderate	Low	Low	Low	Low
2018	Low	Moderate	Low	Low	Low	Low	Low
2019	Special	Special	High	Low	Moderate	Low	Low
2020	Low	Moderate	Low	Low	Low	Low	Low
2022	Low	Moderate	Low	Low	Low	Low	Low
2023	Moderate	Special	Moderate	Low	Low	Low	Low
2090	Low	Low	Low	Low	Low	Low	Low
2091	Low	Low	Low	Low	Low	Low	Low
2092	Low	Low	Low	Low	Low	Low	Low
2093	Low	Low	Low	Low	Low	Low	Low
2094	Low	Low	Low	Low	Low	Low	Low
2095	Low	Low	Low	Low	Low	Low	Low
2096	Low	Low	Low	Low	Low	Low	Low
2097	Low	Low	Low	Low	Low	Low	Low
2101	Moderate	High	Low	Low	Low	Low	Low
2102	Low	Special	Low	Low	Low	Low	Low
2103	High	Special	Moderate	Low	Low	Low	Low
2104	Moderate	Special	Moderate	Low	Low	Low	Low
2105	Low	Low	Low	Low	Low	Low	Low
2106	Moderate	Moderate	Low	Low	Low	Low	Low
2107	Low	Moderate	Low	Low	Low	Low	Low
2108	Moderate	Special	Moderate	Low	High	Low	Low
2112	Moderate	High	Moderate	Low	Low	Low	Low
2113	Moderate	High	Moderate	Low	Low	Low	Low
2114	Moderate	Moderate	Low	Low	Low	Low	Low
2201	Moderate	High	Moderate	Low	Low	Low	Low
2202	Moderate	Special	Low	Low	Low	Low	Low
2203	Moderate	High	Low	Low	Low	Low	Low
2204	Moderate	Special	Low	Low	Low	Low	Low
2206	Low	Low	Low	Low	Low	Low	Low
2207	Moderate	Special	Low	Low	Low	Low	Low
2208	Moderate	High	Low	Low	Low	Low	Low
2209	Low	Low	Low	Low	Low	Low	Low
2210	Low	Low	Moderate	Low	Low	Low	Low
2211	Low	Low	Low	Low	Low	Low	Low
2212	Low	Low	Low	Low	Low	Low	Low
2213	Low	Low	Low	Low	Low	Low	Low
2214	Moderate	Special	Moderate	Low	Low	Low	Low

# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

RMZ	Fire Risk	EMS Risk	Hazmat Risk	Aviation Risk	Tech Rescue Risk	Water Risk	Bomb Risk
2215	Low	Low	Low	Low	Low	Low	Low
2216	Low	Low	Low	Low	Low	Low	Low
2217	Low	Low	Low	Low	Low	Low	Low
2301	Special	Special	High	Low	Special	Low	Moderate
2302	High	Special	Moderate	Low	Low	Low	Low
2303	High	High	High	Low	Moderate	Low	Low
2304	Moderate	Moderate	Low	Low	Low	Low	Low
2305	Moderate	Special	High	Low	Moderate	Low	Moderate
2306	High	Special	High	Low	Low	Low	Low
2307	High	Special	Moderate	Low	Low	Low	Low
2308	Moderate	Moderate	Low	Low	Low	Low	Low
2309	High	Special	High	Low	Low	Low	Low
2310	Moderate	Moderate	Low	Low	Moderate	Low	Low
2311	Moderate	Special	Low	Low	Moderate	Low	Low
2312	Special	Special	Moderate	Low	Moderate	Low	Low
2313	Special	Special	High	Low	Moderate	Low	Moderate
2314	Low	Low	Low	Low	Low	Low	Low
2315	Low	Low	Low	Low	Low	Low	Low
2317	Moderate	Low	Low	Low	Low	Low	Low
2380	Moderate	Low	Low	Low	Low	Low	Low
2381	High	Low	Low	Low	Low	Low	Low
2382	Moderate	Low	Low	Low	Low	Low	Low
2383	Low	Low	Low	Low	Low	Low	Low
2401	Moderate	Special	Low	Low	Low	Low	Low
2402	Moderate	High	Low	Low	Low	Low	Low
2403	Moderate	High	Low	Low	Moderate	Low	Low
2404	Moderate	High	Low	Low	Low	Low	Low
2407	Moderate	Low	Low	Low	Low	Low	Low
2408	Moderate	High	Low	Low	Low	Low	Low
2409	Low	Moderate	Low	Low	Low	Low	Low
2410	Low	Moderate	Low	Low	Low	Low	Low
2412	Moderate	High	Low	Low	Low	Low	Low
2413	Low	Low	Low	Low	Low	Low	Low
2414	Low	Low	Moderate	Low	Low	Low	Low
2415	Moderate	Special	Low	Low	Low	Low	Low
2416	Low	Low	Low	Low	Low	Low	Low
2418	Moderate	Moderate	Low	Low	Low	Low	Low
2419	Moderate	Moderate	Low	Low	Low	Low	Low
2420	Moderate	High	Low	Low	Low	Low	Low
2421	Low	Low	Low	Low	Low	Low	Low
2422	Low	Moderate	Low	Low	Low	Low	Low
2423	Low	Low	Low	Low	Low	Low	Low
2424	Moderate	High	Moderate	Low	Low	Low	Moderate
2425	Low	Low	Low	Low	Low	Low	Low

# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

RMZ	Fire Risk	EMS Risk	Hazmat Risk	Aviation Risk	Tech Rescue Risk	Water Risk	Bomb Risk
2426	Low	Low	Low	Low	Low	Low	Low
2501	Moderate	Special	Low	Low	Low	Low	Low
2502	Moderate	Special	Low	Low	Low	Low	Low
2503	Moderate	Special	High	Low	Low	Low	Low
2504	Moderate	High	Low	Low	Low	Low	Low
2505	Low	Low	Low	Low	Low	Low	Low
2506	Low	Moderate	Low	Low	Low	Low	Low
2507	Moderate	Special	Low	Low	Low	Low	Low
2508	Special	Special	High	Low	Low	Low	Low
2509	Special	Special	High	Low	High	Low	Low
2510	Moderate	Special	Low	Low	Low	Low	Low
2511	Low	Low	Low	Low	Low	Low	Low
2512	Low	Low	Low	Low	Low	Low	Low
2513	Moderate	High	Low	Low	Low	Low	Low
2514	Moderate	High	Moderate	Low	Low	Low	Low
2515	Moderate	Special	Moderate	Low	Low	Low	Low
2516	Moderate	Special	Moderate	Low	Low	Low	Low
2517	Low	Moderate	Low	Low	Low	Low	Low
2518	Moderate	Moderate	Low	Low	Low	Low	Low
2519	Moderate	Moderate	Low	Low	Moderate	Low	Low
2520	Moderate	Special	Low	Low	Low	Low	Low
2521	Low	Low	Low	Low	Low	Low	Low
2522	Low	Low	Low	Low	Low	Low	Low
2523	Low	Low	Low	Low	Low	Low	Low
2524	Low	Moderate	Low	Low	Low	Low	Low
2525	Moderate	High	Low	Low	Low	Low	Low
2526	Low	Low	Low	Low	Low	Low	Low
2527	Low	Moderate	Low	Low	Low	Low	Low
2528	Low	Low	Low	Low	Low	Low	Low
2529	Low	Low	Low	Low	Low	Low	Low
2601	Moderate	Special	Moderate	Low	Low	Low	Low
2602	Moderate	High	Low	Low	Low	Low	Low
2603	Moderate	High	Low	Low	Low	Low	Low
2604	Moderate	High	Low	Low	Low	Low	Low
2605	Special	High	High	Low	Moderate	Low	Low
2606	High	Special	Moderate	Low	Low	Low	Low
2607	Low	Low	Low	Low	Low	Low	Low
2608	Low	Moderate	Moderate	Low	Low	Low	Low
2609	Special	Special	Low	Low	Moderate	Low	Low
2610	Low	Moderate	Low	Low	Low	Low	Low
2611	Moderate	Moderate	Low	Low	Low	Low	Low
2612	Low	Moderate	Low	Low	Low	Low	Low
2613	Low	Low	Low	Low	Low	Low	Low
2614	Moderate	Moderate	Low	Low	Low	Low	Low

# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

RMZ	Fire Risk	EMS Risk	Hazmat Risk	Aviation Risk	Tech Rescue Risk	Water Risk	Bomb Risk
2615	Low	Low	Low	Low	Low	Low	Low
2616	Low	Moderate	Low	Low	Low	Low	Low
2617	Low	Low	Low	Low	Low	Low	Low
2619	Low	Low	Low	Low	Low	Low	Low
2621	Low	Low	Low	Low	Low	Low	Low
2622	Low	Low	Low	Low	Low	Low	Low
2623	Low	Low	Low	Low	Low	Low	Low
2625	Low	High	Low	Low	Low	Low	Low
2626	Moderate	Moderate	Moderate	Low	Low	Low	Low
2701	Moderate	Low	Low	Low	Low	Low	Low
2801	Moderate	Low	High	Special	Low	Low	Low
2802	Low	Low	Low	Low	Low	Low	Low
2803	Low	Low	Low	Low	Low	Low	Low
2804	Low	Low	Low	Low	Low	Low	Low
2805	Low	Low	Low	Low	Low	Low	Low
2806	Low	Low	Low	Low	Low	Low	Low
2807	Moderate	High	Low	Low	Low	Low	Low
2808	Low	Low	Moderate	Low	Low	Low	Low
2809	Low	Low	Low	Low	Low	Low	Low
2810	Moderate	Moderate	Low	Low	Low	Low	Low
2811	High	Special	High	Low	Low	Low	Low
2812	Moderate	Moderate	High	Low	Low	Low	Low
2813	Low	Low	Low	Low	Low	Low	Low
2814	Moderate	Low	Low	Low	Low	Low	Low
2815	Moderate	Special	Moderate	Low	Low	Low	Low
2816	Low	Low	Moderate	Low	Low	Low	Low
2817	Low	Low	Low	Low	Low	Low	Low
2818	High	High	High	Low	Low	Low	Low
2819	High	Moderate	Low	Low	Low	Low	Low
2820	Moderate	Moderate	Low	Low	Low	Low	Low
2821	Moderate	Special	Low	Low	Low	Low	Low
2822	Moderate	Moderate	Low	Low	Low	Low	Low
2823	Low	Moderate	Low	Low	Low	Low	Low
2824	High	Low	Low	Low	Low	Low	Low
2825	Low	Moderate	Low	Low	Low	Low	Low
2826	Moderate	Moderate	Low	Low	Low	Low	Low
2827	Low	Low	Low	Low	Low	Low	Low
2828	Low	Moderate	Low	Low	Low	Low	Low
2829	Low	Low	Low	Low	Low	Low	Low
2830	Low	Low	Low	Low	Low	Low	Low
2831	Low	Low	Low	Low	Low	Low	Low
2832	Low	Low	Low	Low	Low	Low	Low
2833	Low	Low	Low	Low	Low	Low	Low
2834	Low	Moderate	Low	Low	Low	Low	Low

# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

RMZ	Fire Risk	EMS Risk	Hazmat Risk	Aviation Risk	Tech Rescue Risk	Water Risk	Bomb Risk
2835	Low	Moderate	Low	Low	Low	Low	Low
2901	Special	Special	High	Moderate	Low	Low	Moderate
2902	Moderate	Special	Low	Low	Low	Low	Low
2906	Moderate	Moderate	Low	Low	Low	Low	Low
2909	Moderate	Special	Moderate	Low	Low	Low	Low
2910	Moderate	Special	Low	Low	Low	Low	Low
2911	Moderate	High	Low	Low	Low	Low	Low
2913	High	High	Moderate	Low	Low	Low	Low
2915	Special	Special	Moderate	Low	Low	Low	Low
2924	Moderate	Special	Moderate	Low	Low	Low	Low
2942	Moderate	Moderate	Low	Low	Low	Low	Low
2944	Low	Low	Low	Low	Low	Low	Low
3001	Moderate	Low	Low	Low	Low	Special	Low
3002	High	High	Moderate	Low	Low	Low	Low
3003	High	Moderate	Moderate	Low	Low	Low	Low
3004	Moderate	Low	Low	Low	Low	High	Low
3006	Moderate	Low	Low	Low	Low	Low	Low
3007	Moderate	Low	Moderate	Low	Low	Moderate	Low
3009	Low	Low	Low	Low	Low	Low	Low
3011	Moderate	Low	Moderate	Low	Low	Low	Low
3013	Low	Low	Low	Low	Low	Low	Low
3014	Low	Low	Low	Low	Low	Low	Low
3015	Low	Low	Low	Low	Low	Low	Low
3016	Low	Low	Low	Low	Low	Low	Low
3017	Low	Low	Low	Low	Low	Low	Low
3018	Low	Low	Low	Low	Low	Low	Low
3019	Low	Low	Low	Low	Low	Low	Low
3020	Low	Low	Low	Low	Low	Low	Low
3021	Low	Low	Low	Low	Low	High	Low
3022	Low	Low	Low	Low	Low	Low	Low
3101	Low	Low	Low	Low	Low	Special	Low
3102	Low	Low	Low	Low	Low	Special	Low
3104	Low	Low	Low	Low	Low	Low	Low
3105	Special	Special	High	Low	Moderate	Low	Low
3106	High	High	Moderate	Low	Low	Low	Low
3108	Low	Low	Low	Low	Low	Low	Low
3111	Low	Low	Low	Low	Low	Low	Low
3112	High	Low	Low	Low	Low	Low	Low
3113	High	Special	Moderate	Low	Low	Low	Low
3114	Moderate	Special	High	Low	Low	Low	Low
3115	Moderate	High	Low	Low	Low	Low	Low
3116	Moderate	High	Low	Low	Low	Low	Low
3117	Moderate	Low	Low	Low	Low	Low	Low
3118	Moderate	High	Moderate	Low	Low	Low	Low



# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

RMZ	Fire Risk	EMS Risk	Hazmat Risk	Aviation Risk	Tech Rescue Risk	Water Risk	Bomb Risk
3119	Low	Low	Low	Low	Low	Low	Low
3120	Moderate	Moderate	Moderate	Low	Low	Low	Low
3121	Low	Low	Low	Low	Low	Low	Low
3122	Low	Low	Low	Low	Low	Low	Low
3123	Low	Low	Low	Low	Low	Low	Low
3124	Low	Low	Low	Low	Low	Low	Low
3125	Low	Moderate	Low	Low	Low	Low	Low
3126	Moderate	High	Low	Low	Low	Low	Low
3127	Low	Low	Low	Low	Low	Low	Low
3128	Low	Low	Low	Low	Low	Moderate	Low
3129	Low	Low	Low	Low	Low	Low	Low
3130	Low	Low	Low	Low	Low	Low	Low
3131	Low	Low	Low	Low	Low	Low	Low
3132	Moderate	High	Moderate	Low	Low	Low	Low
3133	High	Special	High	Low	Low	Low	Low
3135	High	High	Moderate	Low	Low	Low	Low
3137	Low	Low	Low	Low	Low	Special	Low
3138	Low	Low	Low	Low	Low	Low	Low
3139	Low	Low	Low	Low	Low	Low	Low
3301	High	Special	Moderate	Low	Low	Low	Low
3302	Low	Moderate	Low	Low	Low	Low	Low
3303	Moderate	Special	Moderate	Low	Low	Low	Low
3304	Moderate	High	Low	Low	Low	Low	Low
3305	Moderate	High	Moderate	Low	Low	Low	Low
3306	Moderate	Special	Moderate	Low	Low	Low	Low
3307	Moderate	High	Moderate	Low	Low	Low	Low
3308	Moderate	Low	Low	Low	Low	Low	Low
3309	Low	Low	Low	Low	Low	Low	Low
3310	Moderate	Low	Low	Low	Low	Low	Low
3311	Moderate	Moderate	Low	Low	Low	Low	Low
3312	Low	Moderate	Low	Low	Low	Low	Low
3313	Low	Moderate	Low	Low	Low	Low	Low
3314	Moderate	Low	Low	Low	Low	Low	Low
3315	Moderate	Low	Low	Low	Low	Low	Low
3316	Low	Low	Low	Low	Low	Low	Low
3317	Low	Low	Low	Low	Low	Low	Low
3318	Low	Low	Low	Low	Low	Low	Low
3319	Low	High	Low	Low	Low	Low	Low
3320	Low	Low	Low	Low	Low	Low	Low
3321	Low	Low	Low	Low	Low	Low	Low
3322	Low	Low	Low	Low	Low	Low	Low
3323	Low	Low	Low	Low	Low	Low	Low
3324	Moderate	Low	Low	Low	Low	Low	Low
3325	Low	Low	Low	Low	Low	Low	Low

# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

RMZ	Fire Risk	EMS Risk	Hazmat Risk	Aviation Risk	Tech Rescue Risk	Water Risk	Bomb Risk
3326	Low	Low	Low	Low	Low	Low	Low
3327	Low	Low	Low	Low	Low	Low	Low
3328	Low	Low	Low	Low	Low	Low	Low
3401	Special	High	High	Low	Low	Low	Moderate
3402	Moderate	Special	High	Low	Low	Low	Low
3403	Low	Low	Low	Low	Low	Low	Low
3404	Low	Low	Low	Low	Low	Low	Low
3405	Low	Low	Low	Low	Low	Low	Low
3406	Low	Low	Low	Low	Low	Low	Low
3407	Low	Low	Low	Low	Low	Low	Low
3408	Low	Low	Low	Low	Low	Low	Low
3409	Low	Low	Low	Low	Low	Low	Low
3410	Low	Low	Low	Low	Low	Low	Low
3411	Low	Low	Low	Low	Low	Low	Low
3412	Low	Low	Low	Low	Low	Low	Low
3413	Low	Low	Low	Low	Low	Low	Low
3414	Moderate	Low	Low	Low	Low	Low	Low
3415	Moderate	High	Low	Low	Low	Low	Low
3416	Low	Low	Low	Low	Low	Low	Low
3417	Low	Moderate	Low	Low	Low	Low	Low
3418	Low	Low	Low	Low	Low	Low	Low
3419	Low	Moderate	Low	Low	Low	Low	Low
3420	Moderate	Special	High	Low	Low	Low	Low
3421	Moderate	High	Low	Low	Low	Low	Low
3422	Moderate	Special	Low	Low	Low	Low	Low
3423	Moderate	High	Moderate	Low	Low	Low	Low
3424	Low	Low	Low	Low	Low	Low	Low
3425	High	Low	Low	Low	Low	Low	Low
3426	Moderate	Low	Low	Low	Low	Low	Low
3501	Low	Low	Low	Low	Low	Low	Low
3502	Low	Low	Low	Low	Low	Low	Low
3503	Low	Low	Low	Low	Low	Low	Low
3504	Low	Low	Low	Low	Low	Low	Low
3505	Low	Low	Low	Low	Low	Low	Low
3506	Low	Low	Low	Low	Low	Low	Low
3507	Low	Low	Low	Low	Low	Low	Low
3508	High	High	High	Low	Low	Low	Low
3509	Moderate	Moderate	Moderate	Low	Low	Low	Low
3510	Low	Low	Low	Low	Low	Low	Low
3511	Low	Low	Low	Low	Low	Low	Low
3512	Low	Low	Low	Low	Low	Low	Low
3513	Low	Low	Moderate	Low	Low	Moderate	Low
3514	Moderate	Low	Low	Low	Low	Low	Low
3515	Low	Low	Low	Low	Low	Low	Low

# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

RMZ	Fire Risk	EMS Risk	Hazmat Risk	Aviation Risk	Tech Rescue Risk	Water Risk	Bomb Risk
3517	Low	Low	Low	Low	Low	Low	Low
3518	Low	Low	Low	Low	Low	Low	Low
3525	Moderate	Low	Low	Low	Low	Low	Low
3526	Low	Low	Low	Low	Low	Low	Low
4001	Low	Low	Low	Low	Low	Low	Low
4002	Low	Low	Low	Low	Low	High	Low
4003	Low	Low	Low	Low	Low	Low	Low
4004	Low	Low	Low	Low	Low	Low	Low
4005	Moderate	High	Moderate	Low	Low	Low	Low
4006	Moderate	Special	High	Low	Low	Low	Low
4007	Moderate	Special	High	Low	Low	Low	Low
4008	Moderate	Moderate	Moderate	Low	Low	Low	Low
4009	Moderate	High	Low	Low	Low	Low	Low
4010	Low	Low	Moderate	Low	Low	Low	Low
4011	Moderate	Special	Moderate	Low	Low	Low	Low
4012	Moderate	Moderate	Low	Low	Low	Low	Low
4013	Low	Moderate	Moderate	Low	Low	Low	Low
4014	Low	Low	Low	Low	Low	Low	Low
4015	Low	Low	Low	Low	Low	Low	Low
4016	Moderate	Special	Moderate	Low	Low	Low	Low
4017	Moderate	High	Moderate	Low	Low	Low	Low
4018	Low	Low	Low	Low	Low	Low	Low
4019	Low	Low	Low	Low	Low	Low	Low
4020	Low	Low	Low	Low	Low	Low	Low
4021	Low	Low	Low	Low	Low	Low	Low
4022	Low	Low	Low	Low	Low	Low	Low
4023	Low	Low	Low	Low	Low	Low	Low
4024	Low	Low	Low	Low	Low	Low	Low
4025	Low	Low	Low	Low	Low	Low	Low
4026	Low	Moderate	Low	Low	Low	Low	Low
5001	Moderate	High	Low	Moderate	Low	Low	Low
5101	Low	High	Moderate	Low	Moderate	Low	Low
5201	Low	Low	Low	Low	Low	Low	Low
5301	Low	Low	Moderate	Low	Low	Low	Low
5401	Low	Low	Low	Moderate	Low	Low	Low
DC00	Low	Moderate	Low	Low	Low	Low	Low
FR00	Low	Low	Low	Low	Low	Low	Low
PG00	Low	Moderate	Low	Low	Low	Low	Low
PG34	Low	Moderate	Low	Low	Low	Low	Low
PG41	Low	Moderate	Low	Low	Low	Low	Low
0180	Low	Low	Low	Low	Low	Low	Low
0181	Low	Low	Low	Low	Low	Low	Low
0182	Low	Low	Low	Low	Low	Low	Low
0185	Low	Low	Low	Low	Low	Low	Low

# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

RMZ	Fire Risk	EMS Risk	Hazmat Risk	Aviation Risk	Tech Rescue Risk	Water Risk	Bomb Risk
0186	Low	Low	Low	Low	Low	Low	Low
0187	Low	Low	Low	Low	Low	Low	Low
0188	Low	Low	Low	Low	Low	Low	Low
0189	Low	Low	Low	Low	Low	Low	Low
0190	Low	Low	Low	Low	Low	Low	Low
0191	Low	Low	Low	Low	Low	Low	Low
0192	Low	Low	Low	Low	Low	Low	Low
0290	Low	Low	Low	Low	Low	Low	Low
0291	Low	Low	Low	Low	Low	Low	Low
0292	Low	Low	Low	Low	Low	Low	Low
0294	Low	Low	Low	Low	Low	Low	Low
0329	Moderate	Moderate	Low	Low	Low	Low	Low
0349	Low	Low	Low	Low	Low	Low	Low
0350	Low	Low	Low	Low	Low	Low	Low
0351	Low	Low	Low	Low	Low	Low	Low
0352	Low	Low	Low	Low	Low	Low	Low
0353	Low	Low	Low	Low	Low	Low	Low
0354	Low	Low	Low	Low	Low	Low	Low
0358	Low	Low	Low	Low	Low	Low	Low
0359	Low	Low	Low	Low	Low	Low	Low
0360	Low	Low	Low	Low	Low	Low	Low
0361	Low	Moderate	Low	Low	Low	Low	Low
0373	Low	Low	Low	Low	Low	Low	Low
0374	Low	Low	Low	Low	Low	Low	Low
0375	Low	Low	Low	Low	Low	Low	Low
0376	Low	Low	Low	Low	Low	Low	Low
0377	Low	Low	Low	Low	Low	Low	Low
0378	Low	Low	Low	Low	Low	Low	Low
0379	Low	Low	Low	Low	Low	Low	Low
0387	Low	Low	Low	Low	Low	Low	Low
0388	Low	Low	Low	Low	Low	Low	Low
0389	Low	Low	Low	Low	Low	Low	Low
0390	Low	Low	Low	Low	Low	Low	Low
0393	Low	Low	Low	Low	Low	Low	Low
0690	Low	Low	Low	Low	Low	Low	Low
0843	Low	Moderate	Low	Low	Low	Low	Low
0844	Low	Moderate	Low	Low	Low	Low	Low
0846	Low	Moderate	Low	Low	Low	Low	Low
1026	Low	Low	Low	Low	Low	Low	Low
1032	Low	Low	Low	Low	Low	Special	Low
1108	Low	Low	Low	Low	Low	Special	Low
1423	Low	Low	Low	Low	Low	Special	Low
1424	Low	Low	Low	Low	Low	Special	Low
2384	Low	Low	Low	Low	Low	Low	Low

# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

RMZ	Fire Risk	EMS Risk	Hazmat Risk	Aviation Risk	Tech Rescue Risk	Water Risk	Bomb Risk
2385	Low	Low	Low	Low	Low	Low	Low
2386	Low	Low	Low	Low	Low	Low	Low
2387	Low	Low	Low	Low	Low	Low	Low
2388	Low	Low	Low	Low	Low	Low	Low
2389	Low	Low	Low	Low	Low	Low	Low
2390	Low	Low	Low	Low	Low	Low	Low
2391	Low	Low	Low	Low	Low	Low	Low
2392	Low	Low	Low	Low	Low	Low	Low
2393	Low	Low	Low	Low	Low	Low	Low
2394	Low	Low	Low	Low	Low	Low	Low
2395	Low	Low	Low	Low	Low	Low	Low
3005	Low	Low	Low	Low	Low	Special	Low
3008	Low	Low	Low	Low	Low	Special	Low
3010	Low	Low	Low	Low	Low	Special	Low
3012	Low	Low	Low	Low	Low	Special	Low
3136	Low	Low	Low	Low	Low	Special	Low

## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

### **E. Historical Perspective and Summary of System Performance**

#### **Distribution Factors**

The concept of distribution requires first due resources throughout the jurisdiction for all initial intervention. Fire stations are located to ensure rapid deployment of first due resources for the purpose of minimizing and terminating average and routine emergencies.

Distribution strives for an equitable level of outcome; that is, everyone has a fire station approximately within the same reach in a community. Distribution is primarily based upon equal probabilities that all areas experience emergencies, not totally on the risk or consequence of those incidents. For example, a department could decide that an area of low risk could have fire companies travel far greater than that of a high risk, high consequence area, but would the citizens in the low risk areas accept a different service? Additionally, aggressive EMS response times based upon successful intervention in cardiac related cases may drive distribution to be the same community-wide, which negates different distribution based on risk.

Distribution is measured by the percentage of the jurisdiction covered by the first due units within the designated response areas. Policies may include benchmarks for intervention, such as pre arrival prior to flash over or to EMS incidents prior to brain death in cardiac arrest. From risk assessment and benchmark comparisons, the jurisdiction may use critical analysis to identify needed resource distribution and staffing patterns.

A statement of distribution is essentially the record of the location of resources to ensure that all initial intervention is with the specific time frame identified in a community's performance goal statement for each risk type. Distribution implies that there are certain risks that will require resources beyond that available on initial attack. Distribution factors may include some or all of the following:

- Population per first due area\*\*\*
- Area served by first due company (square miles)\*\*\*
- Number of total road miles\*\*\*
- Dwelling units per first due area
- Maximum travel time in each first due area\*\*\*
- Catchment areas to determine area gaps and overlaps of first due resources (a catchment area is the area and population from which a community or individual service attracts visitors or customers)

# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

- Areas outside of draft performance areas
- First due unit arrival times\*\*\*

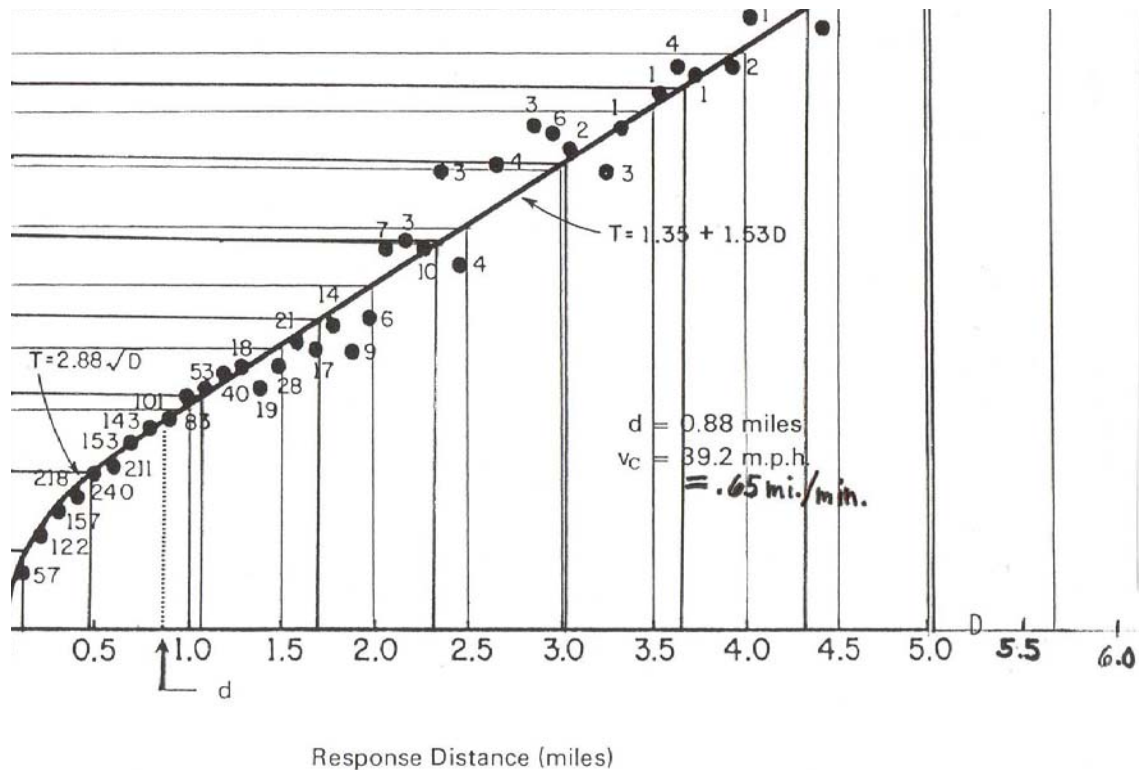
(\*\*\*indicates criteria utilized to compile distribution study)

Station Response Area	Population 2010	Area (sq mi)	Station Response Area Road Miles	Population Density (people/sq mi)	Furthest Distance within Response Area (mi)	Maximum Travel Time (min) $T=.65+1.7D$	Density Zone
1	26583	2.1	42.89	12780.3	1.65	3.46	Metropolitan
2	24113	2.5	52.46	9493.3	2.22	4.43	Metropolitan
3	50887	14.3	192.57	3553.6	4.96	9.09	Metropolitan
4	10714	20.0	87.24	535.7	5.38	9.79	Rural
5	30231	6.0	109.12	5030.1	2.31	4.58	Metropolitan
6	28589	4.0	75.63	7237.7	2.20	4.39	Metropolitan
7	13621	3.6	61.58	3804.8	3.30	6.26	Metropolitan
8	75671	12.7	168.31	5944.3	5.79	10.49	Metropolitan
9	1351	15.4	30.70	87.6	5.46	9.93	Rural
10	14054	9.5	98.60	1479.4	3.87	7.24	Suburban
11	19091	5.2	76.30	3692.7	3.68	6.9	Metropolitan
12	30286	6.4	79.25	4739.6	2.54	4.97	Metropolitan
13	19946	33.3	120.78	598.8	5.04	9.22	Rural
14	7547	86.7	147.09	87.1	7.92	14.13	Rural
15	48235	18.8	160.08	2565.7	4.94	9.06	Urban
16	29966	4.3	83.20	7034.3	1.97	4.01	Metropolitan
17	17376	41.4	124.94	419.4	6.55	11.79	Rural
18	46584	8.7	125.90	5336.1	2.84	5.48	Metropolitan
19	22874	3.8	74.70	6035.4	2.67	5.19	Metropolitan
20	26994	4.1	81.42	6665.2	2.92	5.61	Metropolitan
21	25287	4.1	69.57	6243.7	2.36	4.67	Metropolitan
22	33695	20.5	101.43	1641.3	5.13	9.38	Suburban
23	32693	6.6	87.02	4968.5	4.91	9.01	Metropolitan
24	24016	10.4	110.90	2315.9	3.73	7	Urban
25	50641	10.8	133.71	4684.6	4.83	8.86	Metropolitan
26	21987	6.5	89.35	3377.4	5.00	9.15	Metropolitan
28	31120	16.4	133.66	1903.4	5.18	9.46	Suburban
29	28925	4.7	60.67	6180.6	3.69	6.93	Metropolitan
30	12308	17.2	87.91	715.2	5.87	10.64	Rural
31	56314	38.5	240.61	1463.1	8.39	14.91	Suburban
33	32080	15.1	148.75	2125.9	4.90	8.99	Urban
34	30603	13.3	106.77	2307.9	4.23	7.84	Urban
35	13732	21.5	99.15	639.6	4.75	8.73	Rural
40	32855	16.8	146.95	1956.8	6.48	11.67	Suburban

\*\*\*population is based upon 2010 census block

## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

In the 1970's, the Rand Institute conducted a response time study involving New York City Fire Department (FDNY) apparatus. The study's findings show that FDNY apparatus traveled at an average speed of 39.2 mph enroute to calls 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.



E 6.3. Travel time vs. distance: all responses, all companies, New York

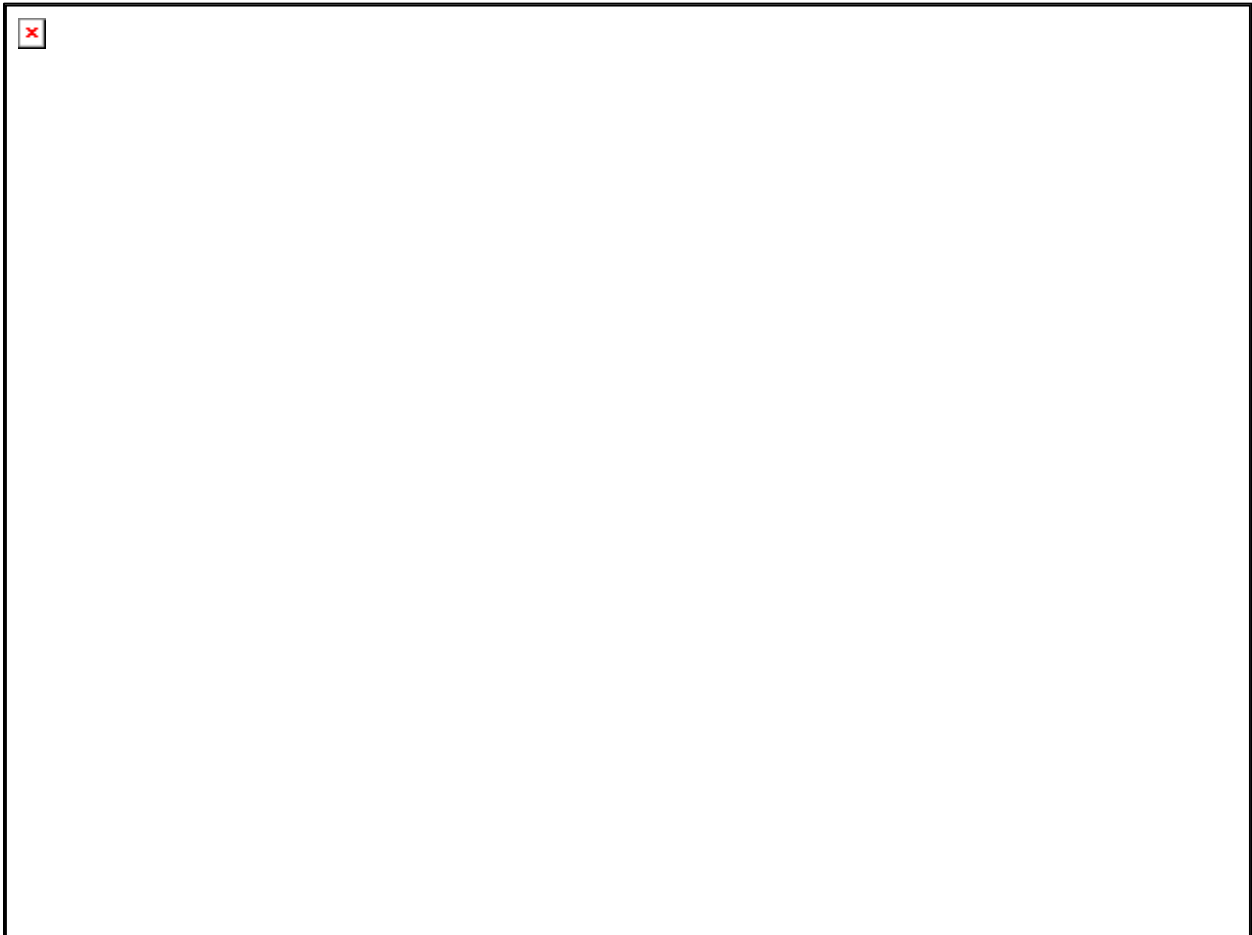
Source: "Fire Department Deployment Analysis," The Rand Fire Project



## **MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

Montgomery County has adopted the Rand Study tool to evaluate travel time versus distance when analyzing response time data compared to road miles within each individual station response area. ISO recently completed a distribution study in Montgomery County based upon Rand calculations using hydrant protected road mileage of 1.5 miles for engine companies and 2.5 miles for ladder companies. An initial “Standard Response District” was determined and averaged from all engine & ladder company locations, and then 50% of that SRD figure was the amount of road mileage used to identify additional needed engine & ladder company locations.



## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---



### **Concentration Factors**

The concept of concentration calls for the spacing of multiple resources close enough in proximity to form an effective response force (ERF) that can be assembled on the scene within an adopted public policy time frame based upon varying levels of risk. The ERF, based upon critical task analysis previously completed, should be able to stop the escalation or progress of an emergency but may call for additional assistance to complete additional task and support crew rotations. While distribution was about first unit arrival, concentration is about having the appropriate equipment and staffing in a specific timeframe that permits the effective servicing of the event. Where distribution is about time and distance, concentration is about calls for service and risk levels being protected. Factors contributing to a concentration study may include some or all of the following:

- Number of calls per response area
- Call density within given geographic zone

**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

- Percentage of equally sized analysis areas in each first-due by risk zone
- Arrival sequence of units
- Area served by specialty units
- Areas outside of draft performance objectives for the ERF

## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

### **Availability/Reliability Factors**

CFAI defines unit availability as the amount of time a unit is available to respond to an emergency within its own service area. A unit unavailable for response provides an inadequate service to the community. Montgomery County Fire and Rescue Services analyzed its data by taking the total number of calls for service to which the first arriving unit responds within its service area and divided it by the total number of serviced calls within that response area. This produced a percentage which represents “First Due Unit Availability” within each response area.

Reliability is defined as the number of calls for service, in relation to the total number incidents responded to within the agencies established performance measures. Reliability can be measured in three distinct methods:

- **First Due Reliability** measures the performance of fire units responding within a service area meeting its performance objectives.
- **First Due Unit Reliability** measures the performance of a first due unit only, within its response area meeting its established performance objectives.
- **Other Than First Due Unit Reliability** measures the performance of units other than first due (second, third, or fourth arriving) meeting its established performance objectives.

MCFRS analyzed the performance of first arriving unit types in all program categories [with the exception of Bomb/Explosive Investigations] for FY2013. MCFRS has eight distinct programs that deliver service to the community: Fire, EMS, Adaptives (non-fire calls), HazMat, Technical Rescue, Water/Ice Rescue, Aviation Rescue Firefighting, and Bomb/Explosive Investigations. Some of the filters utilized to exclude inaccurate data for the purpose of this report were “catch-up” calls for service or those incidents where the CAD was out of service and units were dispatched manually. For these incidents, response data is imprecise. Also filtered out were incidents with units that had no phone to dispatch or on-scene times.

# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

FIRE FULL ASSIGNMENT		Availability			Reliability				
		Counts			Counts				
<u>Year</u>	<u>Station</u>	<u>Incidents</u>	<u>By First Due</u>	<u>Percent</u>	<u>Incidents</u>	<u>By First Due</u>	<u>Percent</u>	<u>City Zone</u>	<u>Baseline Goal</u>
2013	01	58	58	100	53	49	92	Metropolitan	0:09:00
2013	02	44	43	97	41	38	92	Metropolitan	0:09:00
2013	03	65	65	100	65	61	93	Metropolitan	0:09:00
2013	04	9	9	100	7	7	100	Rural	0:15:00
2013	05	15	15	100	14	14	100	Metropolitan	0:09:00
2013	06	26	26	100	24	24	100	Metropolitan	0:09:00
2013	07	18	18	100	16	16	100	Metropolitan	0:09:00
2013	08	97	96	98	91	83	91	Metropolitan	0:09:00
2013	09	1	1	100	1	1	100	Rural	0:15:00
2013	10	16	16	100	14	14	100	Suburban	0:10:30
2013	11	9	9	100	9	8	88	Metropolitan	0:09:00
2013	12	46	44	95	42	39	92	Metropolitan	0:09:00
2013	13	15	15	100	15	13	86	Rural	0:15:00
2013	14	6	6	100	6	3	50	Rural	0:15:00
2013	15	41	41	100	41	38	92	Urban	0:09:00
2013	16	40	40	100	37	37	100	Metropolitan	0:09:00
2013	17	17	17	100	16	16	100	Rural	0:15:00
2013	18	27	26	96	26	23	88	Metropolitan	0:09:00
2013	19	26	26	100	24	24	100	Metropolitan	0:09:00
2013	20	15	14	93	14	14	100	Metropolitan	0:09:00
2013	21	33	33	100	30	28	93	Metropolitan	0:09:00
2013	22	24	24	100	23	21	91	Suburban	0:10:30
2013	23	45	44	97	42	41	97	Metropolitan	0:09:00
2013	24	25	25	100	25	23	92	Urban	0:09:00
2013	25	51	50	98	47	46	97	Metropolitan	0:09:00
2013	26	22	22	100	20	19	95	Metropolitan	0:09:00
2013	28	32	32	100	30	27	90	Suburban	0:10:30
2013	29	23	23	100	23	21	91	Metropolitan	0:09:00
2013	30	20	20	100	19	19	100	Rural	0:15:00
2013	31	43	43	100	37	33	89	Suburban	0:10:30
2013	33	15	15	100	14	11	78	Urban	0:09:00
2013	34	32	32	100	28	27	96	Urban	0:09:00
2013	35	7	7	100	6	6	100	Rural	0:15:00
2013	40	28	26	92	26	24	92	Suburban	0:10:30
2013	R1	22	21	95	20	20	100	Metropolitan	0:09:00
2013	R2	30	29	96	27	25	92	Metropolitan	0:09:00

# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

ALS 1		Availability			Reliability				
Counts					Counts				
<u>Year</u>	<u>Station</u>	<u>Incidents</u>	<u>By First Due</u>	<u>Percent</u>	<u>Incidents</u>	<u>By First Due</u>	<u>Percent</u>	<u>City Zone</u>	<u>Baseline Goal</u>
2013	01	1134	999	88	899	886	98	Metropolitan	0:11:00
2013	02	602	463	76	348	320	91	Metropolitan	0:11:00
2013	03	2414	1958	81	1758	1558	88	Metropolitan	0:11:00
2013	04	374	309	82	288	284	98	Rural	0:16:00
2013	05	777	468	60	418	306	73	Metropolitan	0:11:00
2013	06	676	504	74	452	436	96	Metropolitan	0:11:00
2013	07	396	309	78	285	269	94	Metropolitan	0:11:00
2013	08	2757	2537	92	2309	2193	94	Metropolitan	0:11:00
2013	09	42	37	88	37	33	89	Rural	0:16:00
2013	10	264	107	40	74	52	70	Suburban	0:12:30
2013	11	283	140	49	106	71	66	Metropolitan	0:11:00
2013	12	980	856	87	796	773	97	Metropolitan	0:11:00
2013	13	479	389	81	367	358	97	Rural	0:16:00
2013	14	226	219	96	206	197	95	Rural	0:16:00
2013	15	1362	1244	91	1154	1074	93	Urban	0:11:00
2013	16	742	580	78	516	502	97	Metropolitan	0:11:00
2013	17	321	273	85	252	248	98	Rural	0:16:00
2013	18	758	574	75	520	497	95	Metropolitan	0:11:00
2013	19	595	470	78	433	420	96	Metropolitan	0:11:00
2013	20	514	275	53	251	226	90	Metropolitan	0:11:00
2013	21	648	519	80	479	449	93	Metropolitan	0:11:00
2013	22	557	453	81	416	398	95	Suburban	0:12:30
2013	23	1532	1305	85	1216	1144	94	Metropolitan	0:11:00
2013	24	728	612	84	565	552	97	Urban	0:11:00
2013	25	2279	1868	81	1752	1688	96	Metropolitan	0:11:00
2013	26	885	342	38	285	198	69	Metropolitan	0:11:00
2013	28	747	560	74	511	484	94	Suburban	0:12:30
2013	29	787	700	88	651	624	95	Metropolitan	0:11:00
2013	30	224	210	93	199	196	98	Rural	0:16:00
2013	31	995	898	90	834	767	91	Suburban	0:12:30
2013	33	715	537	75	495	396	80	Urban	0:11:00
2013	34	701	562	80	530	511	96	Urban	0:11:00
2013	35	273	261	95	246	243	98	Rural	0:16:00
2013	40	647	451	69	356	295	82	Suburban	0:12:30
2013	R1	418	302	72	264	254	96	Metropolitan	0:11:00
2013	R2	1097	738	67	667	612	91	Metropolitan	0:11:00

# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

ALS 2		Availability			Reliability				
Counts					Counts				
<i>Year</i>	<i>Station</i>	<i>Incidents</i>	<i>By First Due</i>	<i>Percent</i>	<i>Incidents</i>	<i>By First Due</i>	<i>Percent</i>	<i>City Zone</i>	<i>Baseline Goal</i>
2013	01	134	127	94	118	115	97	Metropolitan	0:11:00
2013	02	73	60	82	47	42	89	Metropolitan	0:11:00
2013	03	262	228	87	204	187	91	Metropolitan	0:11:00
2013	04	50	45	90	44	42	95	Rural	0:16:00
2013	05	86	68	79	58	40	68	Metropolitan	0:11:00
2013	06	96	83	86	76	74	97	Metropolitan	0:11:00
2013	07	52	43	82	39	37	94	Metropolitan	0:11:00
2013	08	294	291	98	276	258	93	Metropolitan	0:11:00
2013	09	4	4	100	4	4	100	Rural	0:16:00
2013	10	38	25	65	19	15	78	Suburban	0:12:30
2013	11	49	38	77	30	25	83	Metropolitan	0:11:00
2013	12	141	129	91	122	119	97	Metropolitan	0:11:00
2013	13	66	48	72	44	40	90	Rural	0:16:00
2013	14	25	23	92	23	23	100	Rural	0:16:00
2013	15	182	168	92	152	148	97	Urban	0:11:00
2013	16	90	81	90	76	72	94	Metropolitan	0:11:00
2013	17	46	41	89	40	40	100	Rural	0:16:00
2013	18	121	100	82	93	93	100	Metropolitan	0:11:00
2013	19	82	70	85	65	63	96	Metropolitan	0:11:00
2013	20	32	18	56	16	13	81	Metropolitan	0:11:00
2013	21	77	63	81	58	55	94	Metropolitan	0:11:00
2013	22	78	72	92	63	63	100	Suburban	0:12:30
2013	23	177	168	94	158	148	93	Metropolitan	0:11:00
2013	24	107	94	87	91	91	100	Urban	0:11:00
2013	25	255	223	87	206	205	99	Metropolitan	0:11:00
2013	26	98	59	60	45	38	84	Metropolitan	0:11:00
2013	28	80	71	88	63	61	96	Suburban	0:12:30
2013	29	131	126	96	123	120	97	Metropolitan	0:11:00
2013	30	27	25	92	25	24	96	Rural	0:16:00
2013	31	160	148	92	141	134	95	Suburban	0:12:30
2013	33	95	74	77	70	55	78	Urban	0:11:00
2013	34	91	79	86	75	75	100	Urban	0:11:00
2013	35	26	25	96	24	23	95	Rural	0:16:00
2013	40	89	69	77	57	52	91	Suburban	0:12:30
2013	R1	73	53	72	51	51	100	Metropolitan	0:11:00
2013	R2	133	101	75	91	84	92	Metropolitan	0:11:00

# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

BLS		Availability			Reliability				
Counts					Counts				
<i>Year</i>	<i>Station</i>	<i>Incidents</i>	<i>By First Due</i>	<i>Percent</i>	<i>Incidents</i>	<i>By First Due</i>	<i>Percent</i>	<i>City Zone</i>	<i>Baseline Goal</i>
2013	01	2112	1809	85	1501	1463	97	Metropolitan	0:14:00
2013	02	928	706	76	643	625	97	Metropolitan	0:14:00
2013	03	4019	3009	74	2572	2441	94	Metropolitan	0:14:00
2013	04	605	449	74	405	399	98	Rural	0:20:00
2013	05	1181	816	69	751	723	96	Metropolitan	0:14:00
2013	06	1185	996	84	872	832	95	Metropolitan	0:14:00
2013	07	806	481	59	396	373	94	Metropolitan	0:14:00
2013	08	4386	3780	86	3164	3024	95	Metropolitan	0:14:00
2013	09	78	58	74	45	44	97	Rural	0:20:00
2013	10	615	464	75	389	377	96	Suburban	0:16:00
2013	11	548	384	70	347	334	96	Metropolitan	0:14:00
2013	12	1787	1509	84	1298	1249	96	Metropolitan	0:14:00
2013	13	643	478	74	413	405	98	Rural	0:20:00
2013	14	277	242	87	212	199	93	Rural	0:20:00
2013	15	2040	1063	52	893	843	94	Urban	0:14:00
2013	16	1537	1138	74	934	908	97	Metropolitan	0:14:00
2013	17	445	357	80	299	292	97	Rural	0:20:00
2013	18	1342	1057	78	866	822	94	Metropolitan	0:14:00
2013	19	1094	794	72	641	607	94	Metropolitan	0:14:00
2013	20	958	472	49	375	362	96	Metropolitan	0:14:00
2013	21	1013	660	65	573	552	96	Metropolitan	0:14:00
2013	22	890	664	74	586	574	97	Suburban	0:16:00
2013	23	2670	2078	77	1866	1799	96	Metropolitan	0:14:00
2013	24	1034	734	70	637	623	97	Urban	0:14:00
2013	25	3993	2912	72	2634	2552	96	Metropolitan	0:14:00
2013	26	1568	536	34	465	454	97	Metropolitan	0:14:00
2013	28	1264	836	66	687	669	97	Suburban	0:16:00
2013	29	1197	875	73	733	703	95	Metropolitan	0:14:00
2013	30	332	253	76	220	216	98	Rural	0:20:00
2013	31	1538	979	63	844	815	96	Suburban	0:16:00
2013	33	958	640	66	575	537	93	Urban	0:14:00
2013	34	1063	729	68	597	575	96	Urban	0:14:00
2013	35	418	328	78	284	278	97	Rural	0:20:00
2013	40	841	571	67	491	481	97	Suburban	0:16:00
2013	R1	759	681	89	589	576	97	Metropolitan	0:14:00
2013	R2	2078	1610	77	1317	1270	96	Metropolitan	0:14:00



# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

ADAPTIVE		Availability			Reliability					
Counts					Counts					
<i>Year</i>	<i>Station</i>	<i>Incidents</i>	<i>By First Due</i>	<i>Percent</i>	<i>Incidents</i>	<i>By First Due</i>	<i>Percent</i>	<i>City Zone</i>	<i>Baseline Goal</i>	
2013	01	782	742	94	641	590	92	Metropolitan	0:09:00	
2013	02	378	343	90	315	274	86	Metropolitan	0:09:00	
2013	03	1137	1034	90	859	624	72	Metropolitan	0:09:00	
2013	04	227	199	87	172	163	94	Rural	0:15:00	
2013	05	376	338	89	290	237	81	Metropolitan	0:09:00	
2013	06	627	586	93	499	435	87	Metropolitan	0:09:00	
2013	07	324	270	83	210	175	83	Metropolitan	0:09:00	
2013	08	994	901	90	761	637	83	Metropolitan	0:09:00	
2013	09	33	30	90	23	21	91	Rural	0:15:00	
2013	10	278	240	86	178	148	83	Suburban	0:10:30	
2013	11	401	370	92	292	235	80	Metropolitan	0:09:00	
2013	12	427	391	91	340	273	80	Metropolitan	0:09:00	
2013	13	158	153	96	137	122	89	Rural	0:15:00	
2013	14	118	112	94	100	73	73	Rural	0:15:00	
2013	15	543	512	94	433	356	82	Urban	0:09:00	
2013	16	422	384	90	314	256	81	Metropolitan	0:09:00	
2013	17	214	196	91	132	123	93	Rural	0:15:00	
2013	18	380	354	93	300	260	86	Metropolitan	0:09:00	
2013	19	342	314	91	279	245	87	Metropolitan	0:09:00	
2013	20	369	331	89	292	230	78	Metropolitan	0:09:00	
2013	21	211	184	87	157	124	78	Metropolitan	0:09:00	
2013	22	226	204	90	176	158	89	Suburban	0:10:30	
2013	23	912	837	91	718	588	81	Metropolitan	0:09:00	
2013	24	312	275	88	241	195	80	Urban	0:09:00	
2013	25	616	540	87	456	378	82	Metropolitan	0:09:00	
2013	26	589	509	86	413	335	81	Metropolitan	0:09:00	
2013	28	380	346	91	276	238	86	Suburban	0:10:30	
2013	29	385	350	90	314	282	89	Metropolitan	0:09:00	
2013	30	311	268	86	198	194	97	Rural	0:15:00	
2013	31	643	570	88	456	343	75	Suburban	0:10:30	
2013	33	393	329	83	242	142	58	Urban	0:09:00	
2013	34	303	274	90	232	194	83	Urban	0:09:00	
2013	35	148	141	95	124	115	92	Rural	0:15:00	
2013	40	298	263	88	212	171	80	Suburban	0:10:30	
2013	R1	409	381	93	341	306	89	Metropolitan	0:09:00	
2013	R2	476	441	92	382	322	84	Metropolitan	0:09:00	

# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

HAZMAT		Availability			Reliability				
Counts					Counts				
<i>Year</i>	<i>Station</i>	<i>Incidents</i>	<i>By First Due</i>	<i>Percent</i>	<i>Incidents</i>	<i>By First Due</i>	<i>Percent</i>	<i>City Zone</i>	<i>Baseline Goal</i>
2013	01	55	46	83	45	43	95	Metropolitan	0:10:00
2013	02	41	37	90	37	30	81	Metropolitan	0:10:00
2013	03	83	77	92	73	58	79	Metropolitan	0:10:00
2013	04	6	6	100	5	5	100	Rural	0:15:30
2013	05	28	22	78	20	16	80	Metropolitan	0:10:00
2013	06	42	38	90	36	35	97	Metropolitan	0:10:00
2013	07	29	24	82	22	21	95	Metropolitan	0:10:00
2013	08	92	83	90	74	61	82	Metropolitan	0:10:00
2013	09	2	2	100	2	1	50	Rural	0:15:30
2013	10	20	18	90	18	18	100	Suburban	0:11:30
2013	11	24	22	91	20	19	95	Metropolitan	0:10:00
2013	12	48	45	93	44	40	90	Metropolitan	0:10:00
2013	13	11	11	100	10	10	100	Rural	0:15:30
2013	14	12	11	91	11	8	72	Rural	0:15:30
2013	15	50	48	96	47	39	82	Urban	0:10:00
2013	16	30	28	93	27	25	92	Metropolitan	0:10:00
2013	17	7	7	100	6	6	100	Rural	0:15:30
2013	18	39	33	84	31	27	87	Metropolitan	0:10:00
2013	19	27	25	92	24	23	95	Metropolitan	0:10:00
2013	20	30	23	76	20	14	70	Metropolitan	0:10:00
2013	21	23	16	69	16	15	93	Metropolitan	0:10:00
2013	22	22	19	86	19	19	100	Suburban	0:11:30
2013	23	40	37	92	32	29	90	Metropolitan	0:10:00
2013	24	17	13	76	13	11	84	Urban	0:10:00
2013	25	64	59	92	54	47	87	Metropolitan	0:10:00
2013	26	30	26	86	26	22	84	Metropolitan	0:10:00
2013	28	28	23	82	22	18	81	Suburban	0:11:30
2013	29	28	26	92	25	25	100	Metropolitan	0:10:00
2013	30	14	10	71	10	9	90	Rural	0:15:30
2013	31	55	50	90	45	41	91	Suburban	0:11:30
2013	33	36	30	83	28	18	64	Urban	0:10:00
2013	34	33	32	96	31	30	96	Urban	0:10:00
2013	35	27	24	88	23	23	100	Rural	0:15:30
2013	40	31	28	90	28	23	82	Suburban	0:11:30
2013	R1	28	13	46	11	10	90	Metropolitan	0:10:00
2013	R2	39	24	61	21	18	85	Metropolitan	0:10:00

# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

TECHNICAL RESCUE		Availability			Reliability				
Counts					Counts				
<u>Year</u>	<u>Station</u>	<u>Incidents</u>	<u>By First Due</u>	<u>Percent</u>	<u>Incidents</u>	<u>By First Due</u>	<u>Percent</u>	<u>City Zone</u>	<u>Baseline Goal</u>
2013	06	1	1	100	1	1	100	Metropolitan	0:10:00
2013	15	1	1	100	1	1	100	Urban	0:10:00
2013	25	1	1	100	1	1	100	Metropolitan	0:10:00
2013	26	1	NULL	NULL	NULL	NULL	NULL	Metropolitan	0:10:00
2013	28	2	2	100	2	2	100	Suburban	0:11:30
2013	31	1	1	100	NULL	NULL	NULL	Suburban	0:11:30

WATER RESCUE		Availability			Reliability				
Counts					Counts				
<u>Year</u>	<u>Station</u>	<u>Incidents</u>	<u>By First Due</u>	<u>Percent</u>	<u>Incidents</u>	<u>By First Due</u>	<u>Percent</u>	<u>City Zone</u>	<u>Baseline Goal</u>
2013	03	1	1	100	1	1	100	Metropolitan	0:10:00
2013	04	3	3	100	3	2	66	Rural	0:15:30
2013	05	1	1	100	1	NULL	NULL	Metropolitan	0:10:00
2013	08	2	2	100	1	1	100	Metropolitan	0:10:00
2013	10	2	1	50	1	NULL	NULL	Suburban	0:11:30
2013	12	2	2	100	2	2	100	Metropolitan	0:10:00
2013	14	1	1	100	1	1	100	Rural	0:15:30
2013	16	1	1	100	NULL	NULL	NULL	Metropolitan	0:10:00
2013	17	1	1	100	1	NULL	NULL	Rural	0:15:30
2013	22	1	1	100	1	NULL	NULL	Suburban	0:11:30
2013	23	1	1	100	1	NULL	NULL	Metropolitan	0:10:00
2013	28	1	1	100	1	1	100	Suburban	0:11:30
2013	30	31	31	100	29	25	86	Rural	0:15:30
2013	31	11	11	100	11	2	18	Suburban	0:11:30
2013	33	1	1	100	1	NULL	NULL	Urban	0:10:00
2013	34	2	2	100	2	NULL	NULL	Urban	0:10:00
2013	35	5	5	100	5	5	100	Rural	0:15:30

AVIATION		Availability			Reliability				
Counts			Counts						
<i>Year</i>	<i>Station</i>	<i>Incidents</i>	<i>By First Due</i>	<i>Percent</i>	<i>Incidents</i>	<i>By First Due</i>	<i>Percent</i>	<i>City Zone</i>	<i>Baseline Goal</i>
2013	17	2	2	100	2	2	100	Rural	0:15:30

## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

### F. Performance Objectives and Measurement

#### **Performance Objectives – Benchmarks**

MCFRS has travel time goals and objectives for all operational program areas that generally conform to the industry best practices prescribed in CFAI's 8<sup>th</sup> edition FESSAM. MCFRS previously had a single set of response time objectives, including a travel time component that did not include both baseline and benchmark objectives as shown in the FESSAM. The MCFRS benchmark objectives are published in the "Fire, Rescue, Emergency Medical Services, and Community Risk Reduction Master Plan" adopted by the Montgomery County Council.

The MCFRS objectives are based on prevention of flashover and are similar to NFPA 1710 criteria as applied to our urban density zone. Unlike the travel time objectives in the FESSAM that change with population density but are all set at the 90% performance level, *the MCFRS travel time objectives were based on the same time (e.g., 4-minute travel time for first arriving engine) regardless of density zone but the performance level varies with the density zone, from 90% (urban), to 75% (suburban), to 50% (rural).*

It is important to note that MCFRS travel time objectives, as well as total response time objectives, were in place before the department sought its initial accreditation in 2007. Since 2007 and subsequent years thereafter, MCFRS has established baseline goals separate from benchmark objectives that are used to evaluate the timely distribution of resources to emergency incidents based upon, not only industry best practices but MCFRS current performance.

## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

### **Performance Objectives - Baselines**

During FY2012, MCFRS established baseline response time goals to bring the department in line with the two-tiered model used by the Commission on Fire Accreditation International (CFAI) whereby fire departments have both “baseline” and “benchmark” response time goals. Baseline response time goals are minimum goals to be met consistently by the department to provide an acceptable and readily achievable level of service to Montgomery County. Benchmark response time goals are more stringent goals the department should strive to meet to achieve the highest desirable level of service to the community. The Fire Chief approved the baseline goals in the fourth quarter of FY2012 and determined that the department’s existing set of response time goals, as appearing in the County Council-approved *Fire, Rescue, Emergency Medical Services, and Community Risk Reduction Master Plan*, would serve as MCFRS benchmark goals.

MCFRS baseline response time goals were developed collaboratively by the MCFRS Planning Section and Operations Division. Following guidance of the CFAI Program Manager as well as CFAI guidance documents (i.e., 8<sup>th</sup> edition FESSAM and 5<sup>th</sup> edition SOC), the first and most important step was to mine and analyze response time data for the most recent fiscal year (i.e., FY2011 at that time). Total response time as well as its component parts (i.e., call processing/dispatch, turnout, and travel time) were examined in the context of first-arriving unit and arrival of the effective response force (ERF) with respect to density zones (i.e., urban, suburban, and rural<sup>1</sup>) where fire-rescue incidents had occurred. Response time data was mined and analyzed for all major emergency program areas, including fire, EMS, hazmat, water/ice rescue, technical rescue, bomb, and aviation fire-rescue. The fire category was originally limited to fire-full assignment but has since been expanded to include fire-full assignment (e.g., structure fire, Metro box, train fire) and fire adaptive (e.g., dumpster, vehicle, brush, alarm bells, automatic fire alarm, odor of smoke), each analyzed separately. The EMS category was divided into ALS (i.e., ALS1 and ALS2) and BLS. The 90<sup>th</sup> percentile performance was determined for each of these program areas/categories for both first-arriving unit and ERF.

---

<sup>1</sup> A fourth density zone – “Metropolitan” – was subsequently added in FY2013 to bring MCFRS’ model in line with that used by CFAI; although similar to CFAI, the baseline goals for the Metropolitan and Urban density zones are identical. A fifth density zone used by CFAI – “Wilderness” – is not applicable in Montgomery County.

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

With the FY2011 90<sup>th</sup> percentile times in hand, the department's baseline goals development group [note: the group had no designated name] performed a comparison with other response time criteria in use by the Operations Division to determine how they might influence the determination of MCFRS baseline goals. These Operations Division "benchmarks" (not to be confused with MCFRS' official benchmark goals appearing in the Master Plan) for fire-full assignment are: 7 minutes 30 seconds for first-arriving engine "(regardless of density zone where the incident occurred), and 11 minutes 30 seconds for the remaining units of the "plan requirement" (regardless of density zone), including 2 additional engines, 1 special service (aerial unit or rescue squad), and 1 chief unit. The 7:30 and 11:30 total response times include a 2 minute 30 second goal for call processing/dispatch and 1 minute 30 second goal for turnout.

The FY2011 90<sup>th</sup> percentile times were then compared to the CFAI-recommended baseline criteria appearing on pages 70 and 71 of the 8<sup>th</sup> edition FESSAM.

Upon completing these comparative steps and following discussion with managers of the various emergency program areas and careful deliberation, the baseline goals development group settled upon the specific baseline goals that they believed the department should be able to achieve based on FY2011 performance, while ensuring the goals were reasonably close to the CFAI baseline criteria and the Operations Division's "benchmarks." These proposed baseline goals were then presented to the Fire Chief who approved them.

**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

**PERFORMANCE STATEMENTS FOR EMERGENCY PROGRAMS**  
**BENCHMARKS AND BASELINES**

The Montgomery County Fire and Rescue Service response and deployment standards are based upon the metropolitan, urban, suburban, and rural population density zones and levels of risk. Thirty-six stations provide county-wide coverage; department staffing is based upon station location and incident type and frequency. The targeted service level objectives in the benchmark and baseline statements are based on industry standards, best practices, and actual MCFRS response time performance between FY10 and FY13 Quarter 2.

**PERFORMANCE STATEMENTS STRUCTURE FIRE**  
**BENCHMARK**

For high and special risk structure fires (i.e., fire-full assignment) in metropolitan and urban areas, the benchmark total response time at the 90<sup>th</sup> percentile for arrival of the first unit, staffed with a minimum of three firefighters, shall be 9 minutes. For structure fires in suburban areas, the benchmark total response time at the 90<sup>th</sup> percentile for arrival of the first unit, staffed with a minimum of three fire fighters, shall be 10 mins 30 secs. For structure fires in rural areas, the benchmark total response time at the 90<sup>th</sup> percentile for arrival of the first unit shall be 15 mins.

The first-arriving unit for all fire-related risk levels shall be capable of providing an uninterrupted water supply of a minimum of 400 gallons of water for 30 minutes with supply lines maintained by the operator at a 1,500 gallons per minute (gpm) pumping capacity; initiating command; requesting additional resources; establishing and advancing an attack line flowing a minimum of 150 gpm; establishing an uninterrupted water supply; containing the fire; rescuing at-risk victims; and performing salvage operations. These operations shall be done in accordance

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

with departmental standard operating procedures while providing for the safety of responders and the general public.

For high risk and special structure fires in metropolitan and urban areas, the benchmark total response time at the 90<sup>th</sup> percentile for the arrival of the effective response force (ERF), staffed with 24-31 firefighters and officers, shall be 14 mins 30 secs. For structure fires in suburban areas, the benchmark total response time at the 90<sup>th</sup> percentile for the arrival of the ERF shall be 15 mins. For structure fires in rural areas, the benchmark total response time at the 90<sup>th</sup> percentile for the arrival of the ERF shall be 16 mins.

The ERF for all high and special risk incidents shall be responsible for: establishing command; providing an uninterrupted water supply; advancing an attack line and a backup line for fire control; complying with the Occupational Safety and Health Administration (OSHA) requirements of two in-two out; completing forcible entry; searching and rescuing at-risk victims; ventilating the structure; controlling utilities; and performing salvage and overhaul. The ERF for high and special risk structure fires will also be responsible for placing elevated streams into service from aerial ladders. These operations shall be done in accordance with departmental standard operating procedures while providing for the safety of responders and the general public.

#### **PERFORMANCE STATEMENT STRUCTURE FIRE**

##### **BASELINE (current performance)**

The department's baseline statements reflect actual performance from FY2010 to FY2013, Quarter 2. The department does rely on the use of mutual aid from neighboring fire departments to provide its effective response force complement of personnel. The department's actual baseline service level performance for structure fire (i.e., fire-full assignment) is as follows:



## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

For high and special risk structure fires (i.e., fire-full assignment) in metropolitan and urban areas, the baseline total response time at the 90<sup>th</sup> percentile for arrival of the first unit, staffed with a minimum of three fire fighters, shall be 9 mins. For structure fires in suburban areas, the baseline total response time at the 90<sup>th</sup> percentile for arrival of the first unit shall be 9 mins 40 secs. For structure fires in rural areas, the baseline total response time at the 90<sup>th</sup> percentile for arrival of the first unit shall be 12 mins.

For high risk and special structure fires in metropolitan and urban areas, the baseline total response time at the 90<sup>th</sup> percentile for the arrival of the effective response force (ERF), staffed with 24-31 firefighters and officers, shall be 13 mins 50 secs. For structure fires in suburban areas, the baseline total response time at the 90<sup>th</sup> percentile for the arrival of the ERF shall be 15 mins 10 secs. For structure fires in rural areas, the baseline total response time at the 90<sup>th</sup> percentile for the arrival of the ERF shall be 18 mins 50 secs.

# **MCFRS**

## **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

### **PERFORMANCE STATEMENTS FIRE-ADAPTIVE**

#### **BENCHMARK**

Fire-adaptive incidents are low to moderate risk incidents typically requiring the response of a single 3-person or 4-person engine. For certain incidents, a 2<sup>nd</sup> engine and/or special service (i.e., aerial unit or rescue squad) is included in the response assignment. Examples of fire-adaptive incidents include dumpster, debris, brush, vehicle, electrical short, odor of smoke, alarm bells, activate smoke detector, etc.

For fire-adaptive incidents in metropolitan and urban areas, the benchmark total response time at the 90<sup>th</sup> percentile for arrival of the first unit, staffed with a minimum of three fire fighters, shall be 9 minutes. For fire-adaptive incidents in suburban areas, the benchmark total response time at the 90<sup>th</sup> percentile for arrival of the first unit shall be 10 mins 30 secs. For fire-adaptive incidents in rural areas, the benchmark total response time at the 90<sup>th</sup> percentile for arrival of the first unit shall be 15 mins.

The first-arriving unit for all fire-related risk levels shall be capable of providing an uninterrupted water supply of a minimum of 400 gallons of water for 30 minutes with supply lines maintained by the operator at a 1,500 gallons per minute (gpm) pumping capacity; initiating command; requesting additional resources; establishing and advancing an attack line flowing a minimum of 150 gpm; establishing an uninterrupted water supply; containing the fire; rescuing at-risk victims; and performing salvage operations

Note: ERF benchmarks have not been established for fire-adaptive incidents because a single 3-person or 4-person unit (i.e., first arriving engine) is usually sufficient to handle this type of low-moderate risk incident.

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

#### PERFORMANCE STATEMENT FIRE-ADAPTIVE

##### BASELINE (current performance)

The department's baseline statements reflect actual performance from FY2010 to FY2013, Quarter 2. The department does rely on the use of mutual aid from neighboring fire departments to provide its effective response force complement of personnel. The department's actual baseline service level performance for fire-adaptive is as follows:

For fire-adaptive incidents in metropolitan and urban areas, the baseline total response time at the 90<sup>th</sup> percentile for arrival of the first unit, staffed with a minimum of three fire fighters, shall be 12 mins 10 secs. For fire-adaptive incidents in suburban areas, the baseline total response time at the 90<sup>th</sup> percentile for arrival of the first unit shall be 14 mins 10 secs. For fire-adaptive incidents in rural areas, the baseline total response time at the 90<sup>th</sup> percentile for arrival of the first unit shall be 15 mins 40 secs.

Note: ERF baselines have not been established for fire-adaptive incidents because a single 3-person or 4-person unit (i.e., first arriving engine) is usually sufficient to handle this type of low-moderate risk incident.

# **MCFRS**

## **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

### **PERFORMANCE STATEMENTS EMS**

#### **BENCHMARK**

Emergency Medical Services (EMS) incidents consist of advanced life support (ALS) and basic life support (BLS) incidents. ALS incidents consist of ALS1 (requiring 1 ALS provider) or ALS2 (requiring 2 ALS providers) depending upon the severity of the incident as defined in MCFRS/EMD protocols. ALS patients are considered moderate to high risk, while BLS patients are considered low risk.

For ALS incidents – both ALS1 and ALS2 – occurring in metropolitan and urban areas, the benchmark total response time at the 90<sup>th</sup> percentile for arrival of the first-ALS unit, staffed by at least 1 EMT-P and 1 EMT-B, shall be 11 minutes. For ALS incidents in suburban areas, the benchmark total response time at the 90<sup>th</sup> percentile for arrival of the first-ALS unit shall be 12 mins 30 secs. For ALS incidents in rural areas, the benchmark total response time at the 90<sup>th</sup> percentile for arrival of the first-ALS unit shall be 16 minutes. The first-arriving ALS unit shall be capable of: assessing scene safety and establishing command; sizing-up the situation; conducting initial patient assessment; obtaining vitals and patient's medical history; initiating mitigation efforts within one minute of arrival; providing first-responder medical aid including automatic external defibrillation; initiating cardio-pulmonary resuscitation (CPR); and providing intravenous (IV) access-medication administration if required and assisting transport personnel with packaging the patient.

For BLS incidents in metropolitan and urban areas, the benchmark total response time at the 90<sup>th</sup> percentile for arrival of the EMS unit (ambulance staffed by 2 EMT-Bs or medic unit staffed by 1 EMT-P and 1 EMT-B) shall be 14 minutes. For BLS incidents in suburban areas, the benchmark total response time at the 90<sup>th</sup> percentile for arrival of the EMS unit shall be 16 mins. For BLS incidents in rural areas, the benchmark total response time at the 90<sup>th</sup> percentile for arrival of the EMS unit shall be 20 minutes. The EMS unit shall be capable of: assessing scene safety and establishing command; sizing-up the situation; conducting initial patient assessment;

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

obtaining vitals and patient's medical history; initiating mitigation efforts within one minute of arrival; providing first-responder medical aid including automatic external defibrillation; initiating cardio-pulmonary resuscitation (CPR); and providing intravenous (IV) access-medication administration if required and assisting transport personnel with packaging the patient.

For ALS1 incidents within metropolitan and urban areas, the benchmark total response time for the arrival of the effective response force (ERF), staffed by at least 1 EMT-P and at least 4 EMT-Bs responding in two units, shall be 12 mins. For ALS1 incidents within suburban areas, the benchmark total response time for the arrival of the ERF shall be 13 mins. For ALS1 incidents within rural areas, the benchmark total response time for the arrival of the ERF shall be 14 mins 30 secs.

For ALS2 incidents within metropolitan and urban areas, the benchmark total response time for the arrival of the effective response force (ERF), staffed by at least 2 EMT-Ps and at least 3 EMT-Bs responding in two or three units, shall be 11 mins 30 secs. For ALS2 incidents within suburban areas, the benchmark total response time for the arrival of the ERF shall be 12 mins 30 secs. For ALS2 incidents within rural areas, the benchmark total response time for the arrival of the ERF shall be 13 mins 30 secs.

Note: ERF benchmarks have not been established for BLS incidents because a single two-person unit (i.e., first arriving EMS unit) is sufficient to handle the patient except in rare cases when a manpower unit is also dispatched, usually at the request of the on-scene EMS unit to assist with a heavy patient.

The ERF is capable of: providing incident command and producing related documentation; completing patient assessment; providing appropriate treatment; performing AED; initiating CPR; and providing IV access-medication administration.

**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

PERFORMANCE STATEMENTS EMS

BASELINE (current performance)

The department's baseline statements reflect actual performance from FY2010 to FY2013, Quarter 2. The department does rely on the use of mutual aid from neighboring fire departments to provide its effective response force complement of personnel. The department's actual baseline service level performance for EMS incidents is as follows:

For ALS incidents – both ALS1 and ALS2 – occurring in metropolitan and urban areas, the baseline total response time at the 90<sup>th</sup> percentile for arrival of the first-arriving ALS unit, staffed by at least 1 EMT-P and 1 EMT-B, shall be 11 mins 30 secs. For ALS incidents in suburban areas, the baseline total response time at the 90<sup>th</sup> percentile for arrival of the first-arriving ALS unit shall be 13 mins. For ALS incidents in rural areas, the baseline total response time at the 90<sup>th</sup> percentile for arrival of the first-arriving ALS unit shall be 13 mins 10 secs.

For BLS incidents occurring in metropolitan and urban areas, the baseline total response time at the 90<sup>th</sup> percentile for arrival of the EMS unit (ambulance staffed by 2 EMT-Bs or medic unit staffed by 1 EMT-P and 1 EMT-B) shall be 13 mins 40 secs. For BLS incidents in suburban areas, the baseline total response time at the 90<sup>th</sup> percentile for arrival of the EMS unit shall be 14 mins 50 secs. For BLS incidents in rural areas, the baseline total response time at the 90<sup>th</sup> percentile for arrival of the EMS unit shall be 15 mins 20 secs.

For ALS1 incidents within metropolitan and urban areas, the baseline total response time for the arrival of the effective response force (ERF), staffed by at least 1 EMT-P and at least 4 EMTs responding in two units, shall be 14 mins. For ALS1 incidents within suburban areas, the baseline total response time for the arrival of the ERF shall be 15 mins 10 secs. For ALS1 incidents within rural areas, the baseline total response time for the arrival of the ERF shall be 15 mins 40 secs.

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

For ALS2 incidents within metropolitan and urban areas, the baseline total response time for the arrival of the effective response force (ERF), staffed by at least 2 EMT-Ps and at least 3 EMTs responding in two or three units, shall be 13 mins 50 secs. For ALS2 incidents within suburban areas, the baseline total response time for the arrival of the ERF shall be 14 mins 50 secs. For ALS2 incidents within rural areas, the baseline total response time for the arrival of the ERF shall be 16 mins 20 secs.

Note: ERF baselines have not been established for BLS incidents because a single two-person unit (i.e., first arriving EMS unit) is sufficient to handle the patient except in rare cases when a manpower unit is also dispatched, usually at the request of the on-scene EMS unit to assist with a heavy patient.

# **MCFRS**

## **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

### **PERFORMANCE STATEMENTS TECHNICAL RESCUE**

#### **BENCHMARK**

For technical rescue incidents in metropolitan and urban areas, the benchmark total response time at the 90<sup>th</sup> percentile for arrival of the first unit, staffed with a minimum of three fire fighters, shall be 10 minutes. For technical rescue incidents in suburban areas, the benchmark total response time at the 90<sup>th</sup> percentile for arrival of the first unit, staffed with a minimum of three fire fighters, shall be 11 mins 30 secs. For technical rescue incidents in rural areas, the benchmark total response time at the 90<sup>th</sup> percentile for arrival of the first unit, staffed with a minimum of three fire fighters, shall be 15 mins 30 secs. The first unit is capable of: establishing command; sizing up to determine if a technical rescue response is required; requesting additional resources; and providing basic life support to any victim without endangering response personnel.

For technical rescue incidents in any/all of the density zones, the benchmark total response time at the 90<sup>th</sup> percentile for the arrival of the effective response force (ERF), staffed with 36 firefighters and officers including the technical rescue response team, shall be 30 mins.

### **PERFORMANCE STATEMENT TECHNICAL RESCUE**

#### **BASELINE (current performance)**

The department's baseline statements reflect actual performance from FY2010 to FY2013, Quarter 2. The department does rely on the use of mutual aid from neighboring fire departments to provide its effective response force complement of personnel. The department's actual baseline service level performance for technical rescue is as follows:

For technical rescue incidents in metropolitan and urban areas, the baseline total response time at the 90<sup>th</sup> percentile for arrival of the first unit, staffed with a minimum of three fire fighters, shall be 12 mins 50 secs. For technical rescue incidents in suburban areas, the baseline total response



## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

time at the 90<sup>th</sup> percentile for arrival of the first unit, staffed with a minimum of three fire fighters, shall be 14 mins 30 secs. For technical rescue incidents in rural areas, the baseline total response time at the 90<sup>th</sup> percentile for arrival of the first unit, staffed with a minimum of three fire fighters, shall be 16 mins 40 secs. The first-arriving unit is capable of: establishing command; sizing up to determine if a technical rescue response is required; requesting additional resources; and providing basic life support to any victim without endangering response personnel.

For technical rescue incidents in any/all of the density zones, the baseline total response time at the 90<sup>th</sup> percentile for the arrival of the effective response force (ERF), staffed with 36 firefighters and officers including the technical rescue response team, shall be 30 mins. The ERF is capable of: establishing patient contact; staging and apparatus set up; providing technical expertise, knowledge, skills and abilities during technical rescue incidents; and providing first responder medical support.

# **MCFRS**

## **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

### **PERFORMANCE STATEMENTS HAZARDOUS MATERIALS**

#### **BENCHMARK**

For hazardous materials (“hazmat”) incidents in metropolitan and urban areas, the benchmark total response time at the 90<sup>th</sup> percentile for arrival of the first unit, staffed with a minimum of three firefighters, shall be 10 minutes. For hazmat incidents in suburban areas, the benchmark total response time at the 90<sup>th</sup> percentile for arrival of the first unit shall be 11 mins 30 secs. For hazmat incidents in rural areas, the benchmark total response time at the 90<sup>th</sup> percentile for arrival of the first unit shall be 15 mins 30 secs. The first-arriving unit is capable of: establishing command; sizing up and assessing the situation to determine the presence of a potential hazardous material or explosive device; determining the need for additional resources; estimating the potential harm without intervention; and begin establishing the hot, warm and cold zones.

For hazmat incidents in any/all of the density zones, the benchmark total response time at the 90<sup>th</sup> percentile for the arrival of the effective response force (ERF), staffed with 20 firefighters and officers including the hazardous materials response team, shall be 30 mins.

### **PERFORMANCE STATEMENT HAZARDOUS MATERIALS**

#### **BASELINE (current performance)**

The department’s baseline statements reflect actual performance from FY2010 to FY2013, Quarter 2. The department does rely on the use of mutual aid from neighboring fire departments to provide its effective response force complement of personnel. The department’s actual baseline service level performance for hazmat is as follows:

For hazmat incidents in metropolitan and urban areas, the baseline total response time at the 90<sup>th</sup> percentile for arrival of the first unit, staffed with a minimum of three fire fighters, shall be 11

**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

mins 10 secs. For hazmat incidents in suburban areas, the baseline total response time at the 90<sup>th</sup> percentile for arrival of the first unit shall be 12 mins. For hazmat incidents in rural areas, the baseline total response time at the 90<sup>th</sup> percentile for arrival of the first unit shall be 13 mins 20 secs. The first-arriving unit is capable of: establishing command; sizing up to determine if a technical rescue response is required; requesting additional resources; and providing basic life support to any victim without endangering response personnel.

For hazmat incidents in any/all of the density zones, the baseline total response time at the 90<sup>th</sup> percentile for the arrival of the effective response force (ERF), staffed with 20 firefighters and officers including the hazardous materials response team, shall be 30 mins.

# **MCFRS**

## **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

### **PERFORMANCE STATEMENT WATER/ICE RESCUE**

#### **BENCHMARK**

For water/ice rescue incidents in metropolitan and urban areas, the benchmark total response time at the 90<sup>th</sup> percentile for arrival of the first unit, staffed with a minimum of three fire fighters, shall be 10 minutes. For hazmat incidents in suburban areas, the benchmark total response time at the 90<sup>th</sup> percentile for arrival of the first unit, shall be 11 mins 30 secs. For hazmat incidents in rural areas, the benchmark total response time at the 90<sup>th</sup> percentile for arrival of the first unit shall be 15 mins 30 secs.

The first arriving unit will:

- Establish command
- Indicate command mode
- Ensure that accountability is established
- Complete victim ID & victim location sheets with any and all information available (ECC, calling party, witnesses).
- Begin formulation of an Incident Action Plan for resolution of the incident.

For water/ice rescue incidents in any/all of the density zones, the benchmark total response time at the 90<sup>th</sup> percentile for the arrival of the effective response force (ERF) shall be 30 mins. For water rescue incidents that do not involve swift water, minimum effective staffing shall be 14 personnel. For water rescue incidents that do involve swift water, minimum effective staffing will be 19 personnel.

The minimum staffing for a RRATS Strike Team is 2 boat operators and 2 crew members. Each of Stations 10 and 30 can staff an independent strike team deployment. The initial on-scene boat will not depart the launch site until a second boat has arrived on scene. An exception to this may be made if a known life hazard exists, i.e.; priority one patient, multiple persons in the water. This is similar to the Safe Structural Fire Fighting Policy of immediate entry for a known rescue.

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

#### PERFORMANCE STATEMENT WATER/ICE RESCUE

##### BASELINE (current performance)

The department's baseline statements reflect actual performance from FY2010 to FY2013, Quarter 2. The department does rely on the use of mutual aid from neighboring fire departments to provide its effective response force complement of personnel. The department's actual baseline service level performance for water/ice rescue is as follows:

For water/ice rescue incidents in metropolitan and urban areas, the baseline total response time at the 90<sup>th</sup> percentile for arrival of the first unit, staffed with a minimum of three fire fighters, shall be 10 mins 20 secs. For water/ice rescue incidents in suburban areas, the baseline total response time at the 90<sup>th</sup> percentile for arrival of the first unit shall be 13 mins. For water/ice incidents in rural areas, the baseline total response time at the 90<sup>th</sup> percentile for arrival of the first unit shall be 18 mins.

For water/ice rescue incidents in any/all of the density zones, the baseline total response time at the 90<sup>th</sup> percentile for the arrival of the effective response force (ERF) shall be 30 mins. For water rescue incidents that do not involve swift water, minimum effective staffing shall be 14 personnel. For water rescue incidents that do involve swift water, minimum effective staffing will be 19 personnel. The ERF will be responsible for: Establishing command, Indicating the command mode, Ensuring that accountability is established, Completing victim ID & victim location sheets with any and all information available (ECC, calling party, witnesses), and Begin formulation of an Incident Action Plan for resolution of the incident.

**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

PERFORMANCE STATEMENT AVIATION RESCUE-FIREFIGHTING

BENCHMARK

For aviation incidents in metropolitan and urban areas, the benchmark total response time at the 90<sup>th</sup> percentile for arrival of the first unit, staffed with a minimum of three fire fighters, shall be 10 minutes. For aviation incidents in suburban areas, the benchmark total response time at the 90<sup>th</sup> percentile for arrival of the first unit shall be 11 mins 30 secs. For aviation incidents in rural areas, the benchmark total response time at the 90<sup>th</sup> percentile for arrival of the first unit shall be 15 mins 30 secs.

The first-arriving unit will have the capability to: establish command, size-up the situation, place one line in service at either 150 gallons per minute or 250 gallons per minute, comply with the requirements of Two In/Two Out (OSHA 1910.134), initiate mitigation efforts within one minute of arrival, provide first-responder medical aid including cardiac defibrillation.

For aviation incidents in any/all of the density zones, the benchmark total response time at the 90<sup>th</sup> percentile for the arrival of the effective response force (ERF), staffed with 33 firefighters, shall be 30 mins. The ERF will have the capability to: establish command, size-up the situation, provide an uninterrupted water supply; advance an attack line and a backup line for fire control; comply with the requirements of Two In/Two Out (OSHA 1910.134), rescuing at-risk victims, and provide first-responder medical aid including cardiac defibrillation.

**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

PERFORMANCE STATEMENT AVIATION RESCUE-FIREFIGHTING

BASELINE (current performance)

The department's baseline statements reflect actual performance from FY2012 to FY2013, Quarter 2 (after the establishment of Aviation baseline goals). The department does rely on the use of mutual aid from neighboring fire departments to provide its effective response force complement of personnel. The department's actual baseline service level performance for aviation rescue-firefighting is as follows:

For aviation incidents in metropolitan and urban areas, the baseline total response time at the 90<sup>th</sup> percentile for arrival of the first unit, staffed with a minimum of three fire fighters, shall be 9 mins. For aviation incidents in suburban areas, the baseline total response time at the 90<sup>th</sup> percentile for arrival of the first unit shall be 9 mins 40 secs. For aviation incidents in rural areas, the baseline total response time at the 90<sup>th</sup> percentile for arrival of the first unit shall be 12 mins 10 secs.

For aviation incidents in any/all of the density zones, the baseline total response time at the 90<sup>th</sup> percentile for the arrival of the effective response force (ERF), staffed by 33 firefighters and officers, shall be 30 mins.

# **MCFRS**

## **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

### **PERFORMANCE STATEMENT EXPLOSIVE DEVICE INCIDENTS**

#### **BENCHMARK**

For explosive device incidents in metropolitan and urban areas, the benchmark total response time at the 90<sup>th</sup> percentile for arrival of the first bomb squad unit (i.e., Bomb Squad vehicle itself or bomb technician responding in a FM's vehicle) shall be 30 minutes. For explosive device incidents in suburban areas, the benchmark total response time at the 90<sup>th</sup> percentile for arrival of the first bomb squad unit shall be 35 mins. For explosive device incidents in rural areas, the benchmark total response time at the 90<sup>th</sup> percentile for arrival of the first bomb squad unit shall be 40 mins. The first-arriving bomb squad unit is capable of: scene assessment, determining the presence of an explosive device, determining the need for additional resources, estimating potential harm without intervention, and establishing hot, warm, and cold zones.

For explosive device incidents occurring in metropolitan and urban areas, the benchmark total response time at the 90<sup>th</sup> percentile for the arrival of the effective response force (ERF), comprised of 36 personnel including the Bomb Squad, shall be 40 mins. For explosive device incidents occurring in suburban areas, the benchmark total response time at the 90<sup>th</sup> percentile for the arrival of the ERF shall be 45 mins. For explosive device incidents occurring in rural areas, the benchmark total response time at the 90<sup>th</sup> percentile for the arrival of the ERF shall be 50 mins.

### **PERFORMANCE STATEMENT EXPLOSIVE DEVICE INCIDENTS**

#### **BASELINE (current performance)**

The department's baseline statements reflect actual performance from FY2010 to FY2013, Quarter 2. The department does rely on the use of mutual aid from neighboring fire departments to provide its effective response force complement of personnel. The department's actual baseline service level performance for explosive device is as follows:



## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

For explosive device incidents in metropolitan and urban areas, the baseline total response time at the 90<sup>th</sup> percentile for arrival of the first bomb squad unit (i.e., Bomb Squad vehicle itself or bomb technician responding in a FM's vehicle) shall be 32 mins 40 secs. For explosive device incidents in suburban areas, the baseline total response time at the 90<sup>th</sup> percentile for arrival of the first bomb squad unit shall be 35 mins. For explosive device incidents in rural areas, the baseline total response time at the 90<sup>th</sup> percentile for arrival of the first bomb squad unit shall be 37 mins 30 secs.

For explosive device incidents occurring in metropolitan and urban areas, the baseline total response time at the 90<sup>th</sup> percentile for the arrival of the effective response force (ERF), comprised of 36 personnel including the Bomb Squad, shall be 40 mins. For explosive device incidents occurring in suburban areas, the baseline total response time at the 90<sup>th</sup> percentile for the arrival of the ERF shall be 45 mins. For explosive device incidents occurring in rural areas, the baseline total response time at the 90<sup>th</sup> percentile for the arrival of the ERF shall be 50 mins.

# MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

## MCFRS FIRST-ARRIVING UNIT BASELINE RESPONSE TIME GOALS AT 90<sup>th</sup> PERCENTILE PERFORMANCE LEVEL

Service	METROPOLITAN AND URBAN DENSITY AREAS				SUBURBAN DENSITY AREA				RURAL DENSITY AREA			
	PtoD	Turnout	Travel	TRT	PtoD	Turnout	Travel	TRT	PtoD	Turnout	Travel	TRT
ALS	2:30	1:30	7:00	11:00	2:30	1:30	8:30	12:30	2:30	1:30	12:00	16:00
Fire-Full Assignment	2:30	1:30	5:00	9:00	2:30	1:30	6:30	10:30	2:30	1:30	11:00	15:00
Fire-Adaptive	2:30	1:30	5:00	9:00	2:30	1:30	6:30	10:30	2:30	1:30	11:00	15:00
BLS	2:30	1:30	10:00	14:00	2:30	1:30	12:00	16:00	2:30	1:30	16:00	20:00
Heavy Rescue/Extrc.	2:30	1:30	9:30	13:30	2:30	1:30	11:00	15:00	2:30	1:30	14:00	18:00
Tanker*	N/A	N/A	N/A	N/A	2:30	1:30	10:00	14:00	2:30	1:30	14:00	18:00
Hazmat	2:30	1:30	6:00	10:00	2:30	1:30	7:30	11:30	2:30	1:30	11:30	15:30
Water/Ice Rescue	2:30	1:30	6:00	10:00	2:30	1:30	7:30	11:30	2:30	1:30	11:30	15:30
Technical Rescue	2:30	1:30	6:00	10:00	2:30	1:30	7:30	11:30	2:30	1:30	11:30	15:30
Aviation Fire/Rescue	2:30	1:30	6:00	10:00	2:30	1:30	7:30	11:30	2:30	1:30	11:30	15:30
Explosive Device	2:30	1:30	26:00	30:00	2:30	1:30	31:00	35:00	2:30	1:30	36:00	40:00

### First-Arriving Unit Criteria:

- ALS incident: Medic Unit or ALS first-responder apparatus
- Fire-Full Assignment: Engine, engine-tanker, quint, aerial unit, or rescue squad
- Fire-Adaptive (Non-full assignment): Engine, engine-tanker, quint, aerial unit, or rescue squad
- BLS incident: Ambulance or Medic Unit
- Vehicle Extrication: Rescue squad or extrication-capable truck\*\*
- Hazmat, Water/Ice Rescue, Technical Rescue, Aviation Fire/Rescue:
- Any unit\*\*\*
- Aviation Fire/Rescue: Engine, engine-tanker, quint, aerial unit, or rescue squad
- Explosive Device: Bomb Unit (BU700) or a Bomb Technician (FM Unit)\*\*\*\*

\* Tanker dispatched to fire-full assignment incident in non-hydranted area. \*\* Extrication-capable trucks include Trucks 706, 710, 716, 725, and 731.

\*\*\* Any unit, based upon all IECS-certified personnel minimally trained at Awareness Level for water/ice rescue and technical rescue and Operations Level for hazmat; therefore any unit can initiate scene assessment before arrival of specialty team personnel.

\*\*\*\* Bomb Squad typically responds emergency to bomb/suspicious package incidents (Incident Type BOMB-P), depending upon the level of risk. Suppression, rescue, and EMS units are not initially dispatched on BOMB-P incidents, unless an explosion/detonation has been reported or the Bomb Squad Leader requests the units.

# MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

## MCFRS EFFECTIVE RESPONSE FORCE BASELINE RESPONSE TIME GOALS AT 90<sup>th</sup> PERCENTILE PERFORMANCE LEVEL

Incident Category	METROPOLITAN AND URBAN DENSITY AREAS				SUBURBAN DENSITY AREA				RURAL DENSITY AREA			
	PtoD	Turnout	Travel	TRT	PtoD	Turnout	Travel	TRT	PtoD	Turnout	Travel	TRT
ALS-1	2:30	1:30	8:00	12:00	2:30	1:30	9:00	13:00	2:30	1:30	10:30	14:30
ALS-2	2:30	1:30	7:30	11:30	2:30	1:30	8:30	12:30	2:30	1:30	9:30	13:30
Fire-Full Assignment	2:30	1:30	10:30	14:30	2:30	1:30	11:00	15:00	2:30	1:30	12:00	16:00
Hazmat	2:30	1:30	26:00	30:00	2:30	1:30	26:00	30:00	2:30	1:30	26:00	30:00
Water/Ice Rescue	2:30	1:30	26:00	30:00	2:30	1:30	26:00	30:00	2:30	1:30	26:00	30:00
Technical Rescue	2:30	1:30	26:00	30:00	2:30	1:30	26:00	30:00	2:30	1:30	26:00	30:00
Aviation Fire/Rescue	2:30	1:30	26:00	30:00	2:30	1:30	26:00	30:00	2:30	1:30	26:00	30:00
Explosive Device	2:30	1:30	36:00	40:00	2:30	1:30	41:00	45:00	2:30	1:30	46:00	50:00

### Effective Response Force (ERF) Criteria:

- ALS-1: Medic Unit + manpower unit , or AFRA + Ambulance
  - ALS-2: Medic Unit + AFRA, or 2 AFRAs + Ambulance, or 2 Medic Units
  - Fire- Full Assignment: 3 engines, 1 special service (aerial unit or rescue squad), 1 command officer
  - Hazmat: Depends on level of incident. Typically involves response of a hazmat unit and hazmat support units; possibly other units.
  - Water/Ice: Depends on incident type. Typically involves response of two swift water strike teams; possibly other units.
  - Technical Rescue: Depends on level of incident. Will involve response of US&R units, rescue squads, EMS and suppression units.
  - Aviation Fire/Rescue:
    - Small Plane: 3 engines, rescue squad, aerial unit, 2 medic units, ambulance, hazmat unit, hazmat support unit, command officer
    - Large Plane: 5 engines, 2 aerial units, rescue squad, 2 medic units, 2 ambulances, 2 hazmat units, 2 hazmat support units, 2 command officers
  - Explosive: Depends on level of risk\*. Will involve response of BU700 and at least two bomb technicians; possibly other units.
- \* The MCFRS Bomb Squad has primary responsibility for bomb/suspicious package incidents (Incident Type: BOMB-P). When requested by the Bomb Squad Leader, an engine, medic unit, and battalion chief are dispatched to assist. Montgomery County Police (MCP) has primary responsibility for bomb threats (Incident Type BOMB-T), with MCFRS Bomb Squad personnel providing technical support services when requested by MCP. Baseline goals do not apply to BOMB-T incidents which typically involve a routine response or no response (i.e., phone consultation with MCP) by Bomb Squad personnel.

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

#### **Fire Suppression**

The MCFRS will provide adequate fire suppression resources in a timely manner in order to prevent loss of life, property and environmental damage from structural fires.

#### **Goal:**

This Fire Suppression Operational Program Goal is based on NFPA 1710 *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments*. The MCFRS fire suppression operations shall be organized to ensure adequate deployment of personnel, equipment, and resources for the first arriving company and initial full alarm assignment.

#### **Strategies:**

The MCFRS will work in strategic partnerships with the community, the county government, bargain units, and local fire/rescue departments to obtain, deploy and utilize adequate fire suppression resources to mitigate structural fires in Montgomery County.

#### **Objectives:**

Personnel assigned to the initial arriving engine company will have the capability to implement an initial Rapid Intervention Crew.

Fire suppression resources will be deployed so that the initial full alarm assignment will be capable of providing the following:

- Establishment of incident command outside of the structure of the hazard area
- Establishment of an uninterrupted water supply of a minimum of 400 gpm for 30 minutes with supply lines maintained by an operator
- Establishment of an effective water flow application rate of 300 gpm from two hand-lines by a minimum of two individuals to effectively and safely maintain the line
- Provision of one support person for each attack and backup line deployed to provide hydrant hook-up and to assist in laying of hose-lines, utility control, and forcible entry
- Provision of at least one victim search and rescue team consisting of a minimum of two individuals

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

- Provision of at least one team, consisting of a minimum of two individuals, to raise ground ladders and perform ventilation
- One person to function as an aerial operator and maintain primary control of the aerial device at all times
- Establishment of a Rapid Intervention Group consisting of at least two properly equipped and trained individuals

#### **Distribution**

For 90% of Fire responses within Metropolitan densities for low, moderate, high and special hazards, the first arriving unit will arrive within 9 minutes total response time.

For 90% of Fire responses within Urban densities for low, moderate, high and special hazards, the first arriving unit will arrive within 9 minutes total response time.

For 90% of Fire responses within Suburban densities for low, moderate, high and special hazards, the first arriving unit shall arrive within 10.5 minutes total response time.

For 90% of Fire responses within Rural densities for low, moderate, high, and special hazards, the first arriving unit shall arrive within 15 minutes total response time.

#### **Concentration**

For 90% of Fire responses within Metropolitan densities for low, moderate, high and special hazards, the effective response force will arrive within 12 minutes total response time.

For 90% of Fire responses within Urban densities for low, moderate, high and special hazards, the effective response force will arrive within 12 minutes total response time.

For 90% of Fire responses within Suburban densities for low, moderate, high and special hazards, the effective response force shall arrive within 14.5 minutes total response time.

For 90% of Fire responses within Rural densities for low, moderate, high, and special hazards, the

## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

effective response force shall arrive within 15 minutes total response time.

### **LEVELS OF RISK**

#### **Low Risk:**

Low hazard events are identified as small scale incidents where a single primary unit can mitigate the incident without any additional resources involved. The minimum response force for these events is three 3-4 personnel.

Task Performed	Personnel Needed	Apparatus Supporting Task
Incident Commander	1	Unit Officer
Pump operator	1	Driver operator
Attack line	1/2	Firefighter

**Minimum of 3 personnel**

Examples of this category reflected in call types include:

Call Type	Definition
SC/CO	Service call for an activated CO detector with no one sick
SC/LKOT	Service call to assist with a lock out

#### **Moderate Risk:**

Moderate hazard events can be classified as fire and/or non-fire events but have the potential for escalation and typically require the establishment of a water source and/or special service to mitigate the incident. The minimum response force for these events is 8-12 personnel.

Task Performed	Personnel Needed	Apparatus Supporting Task
Incident Commander	1	First arriving unit officer
Attack line	2	First arriving engine
Pump operator	1	1 <sup>st</sup> arriving Driver/operator
Back up line	2/3	2 <sup>nd</sup> arriving engine
Initial water supply	1	2 <sup>nd</sup> arriving engine
Ventilation/truck ops	3	Special service

**Minimum of 8 personnel**

## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

Examples of this category reflected in call types include:

Call Type	Definition
FIR/ODOR	Odor of smoke
FIR/OUT	Fire reported out
ELEC/SHT	Electrical short
GAS/IN	Gas leak inside

### **High Risk (Structure Fires):**

High risk events are classified as those where a fire or immediately dangerous life hazard (IDLH) is present thus requiring the response of all necessary resources for mitigation including: five (5) engines, two (2) aerial units, one (1) Rescue Squad, two (2) command officers, and one (1) ALS or BLS unit.

It should be noted that in addition to the listed responses to a structure fire, if there is confirmation of a working incident a Rapid Intervention Dispatch (RID) will be sent including one aerial unit, one rescue squad, and one EMS unit (ALS, if one is not already on the scene). To ensure that adequate resources remain available for other incidents, no more than two rescue squads should be dispatched to one structure fire, unless specifically requested by the incident commander.

To meet the demands required at a structure fire, the following capabilities must be met by the minimum staff on scene. The minimum staffing at a confirmed structure fire in Montgomery County, MD is 31 suppression personnel and 2 EMS personnel (a Fire Investigator may be requested by the Incident Commander). At any time during the incident, the Incident Commander can request additional resources as needed to fulfill the strategic mission of the incident.

Tasks can be performed simultaneously or be completed individually allowing crews to be reassigned other functions such as salvage/overhaul, secondary search, etc.

## MCFRS

### COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

The Effective Response Force for a structure fire includes all types of structure fires, i.e. commercial, residential, and industrial. The Incident Commander has the ability to request a 2<sup>nd</sup> alarm or greater or a Task Force Assignment (two engines and a special service) at any time during the incident or on the initial dispatch based on dispatch information, building construction, fire protection features, life hazard, etc.

The Effective Response Force, as defined by NFPA 1710 Staffing Standards, will be deployed to an initial alarm assignment and capable of providing the following task:

- Establishment of incident command outside of the structure or hazard area
- Establishment of an uninterrupted water supply of a minimum of 400 gpm for thirty minutes with supply lines maintained by an operator
- Establishment of an effective water flow application of 300 gpm from two hand lines by a minimum of two individuals to effectively and safely maintain the line
- Provision of one support person for each attack and back up line deployed to provide hydrant connections and assist in laying hose lines, utility control, and forcible entry
- Provision of at least one victim search and rescue team consisting of a minimum of two individuals
- Provision of at least one team, consisting of a minimum of two individuals, to raise ground ladders and perform ventilation

#### **Effective Response Force for Structure Fires**

Task Performed	Personnel Needed	Apparatus Supporting Task
Incident Commander	2	Command Officer
Fire Attack	2 to 3	1st Arriving Apparatus
Pump Operator	1	1st Arriving Driver Operator
Primary Water Supply	1	2nd Arriving Driver Operator
Back-up Line	2 to 3	2nd Arriving Apparatus
Primary Search	2	1st Arriving Rescue Squad
Utilities	1	1st Arriving Rescue Squad Driver Operator



## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

Ventilation/Truck Ops	6	1 <sup>st</sup> and 2nd Arriving Trucks
RIC	3 to 4	3rd Arriving Engine Company
Exposure line	3 to 4	4 <sup>th</sup> arriving Engine
unassigned	3 to 4	5 <sup>th</sup> Engine Company

**Total of 24 to 31 Personnel**

Examples of this category are dispatched to the following call types

Call Type	Definition
FIR/STR	Structure fire

### **Special Risk:**

This category is for unique responses where resources may need to be increased based upon the geographic location of the incident (*i.e.: rural area*) and the level of risk (*i.e.: high rise structure*). For areas without municipal water supply, the aforementioned response will include three (3) tankers and one (1) additional command officer for a total of three. For high rise structures (buildings in excess of seventy-five feet (75) in height from the lowest fire department access), one (1) additional aerial unit will be dispatched for a total of three (3).

### **High Rise Special Risk Category**

Task Performed	Personnel Needed	Apparatus Supporting Task
Incident Commander	2	Command Officer
Fire Attack	2 to 3	1st Arriving Apparatus
Pump Operator	1	1st Arriving Driver Operator
Primary Water Supply	1	2nd Arriving Driver Operator
Back-up Line	2 to 3	2nd Arriving Apparatus
Primary Search	2	1st Arriving Rescue Squad
Utilities	1	1st Arriving Rescue Squad Driver Operator
Ventilation/Truck Ops	9	1 <sup>st</sup> , 2 <sup>nd</sup> , and 3rd Arriving Trucks

## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

RIC	3 to 4	3rd Arriving Engine Company
Exposure line	2 to 3	4 <sup>th</sup> arriving engine
Lobby control	3 to 4	5 <sup>th</sup> arriving engine

**Total of 28 to 33 Personnel**

### Rural Water Assignment Special Risk Category

Task Performed	Personnel Needed	Apparatus Supporting Task
Incident Commander	2	Command Officer
Fire Attack	2 to 3	1st Arriving Apparatus
Pump Operator	1	1st Arriving Driver Operator
Primary Water Supply	1	2nd Arriving Driver Operator
Back-up Line	2 to 3	2nd Arriving Apparatus
Primary Search	2	1st Arriving Rescue Squad
Utilities	1	1st Arriving Rescue Squad Driver Operator
Ventilation/Truck Ops	4-6	1 <sup>st</sup> and 2 <sup>nd</sup> Arriving Trucks
RIC	3 to 4	3rd Arriving Engine Company
Dump Site Ops	2 to 3	4 <sup>th</sup> arriving engine
Fill site Ops	3 to 4	5 <sup>th</sup> arriving engine
Tanker ops	3-6	1 <sup>st</sup> , 2 <sup>nd</sup> , and 3rd arriving tanker

**Total of 28 to 33 Personnel**

Examples of this category are dispatched to the following call types:

Call Type	Definition
MET/FIRE	Fire within the Metro Transit System
*FIR/STR	High rise fire

\*There is no separate call type for a high rise fire in CAD; the system is programmed to add an additional aerial to the call type once identified.

**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

<b>Fire Full Assignment - 90th Percentile Times - Baseline Performance</b>			<b>2013 1<sup>st</sup> and 2<sup>nd</sup> quarters</b>	<b>2012</b>	<b>2011</b>	<b>2010</b>	<b>2010- 2013 1<sup>st</sup> and 2<sup>nd</sup> quarters</b>
<b>Alarm Handling</b>	Pick-up to Dispatch	Metro	2:50	3:00	3:10	4:00	3:20
		Urban	3:20	3:00	2:50	4:00	3:10
		Suburban	2:40	3:10	2:50	3:40	3:10
		Rural	3:00	2:50	3:10	3:50	3:20
<b>Turnout Time</b>	Turnout Time 1st Unit	Metro	2:20	2:30	2:30	2:30	2:20
		Urban	2:10	2:50	3:10	2:30	2:40
		Suburban	2:30	2:30	2:20	2:40	2:30
		Rural	2:30	3:00	2:50	3:00	2:50
<b>Travel Time</b>	Travel Time 1st Unit <b>Distribution</b>	Metro	5:20	5:10	5:40	5:20	5:20
		Urban	4:40	6:00	7:30	5:20	5:20
		Suburban	6:20	7:10	5:50	5:50	6:00
		Rural	7:30	8:10	5:20	9:00	8:10
	Travel Time ERF <b>Concentration</b>	Metro	13:00	13:00	13:30	15:30	
		Urban	13:30	17:10	13:30	26:50	
		Suburban	13:00	15:00	16:20	15:50	
		Rural	17:30	19:50	19:00	18:50	
<b>Total Response Time</b>	Total Response Time 1st Unit On Scene <b>Distribution</b>	Metro	8:20	8:40	9:00	9:30	9:00
		Urban	9:50	9:30	8:40	9:40	9:40
		Suburban	8:40	9:30	9:30	9:50	9:40
		Rural	11:00	11:40	11:50	13:40	12:00
	Total Response Time ERF <b>Concentration</b>	Metro	13:00	13:00	13:30	15:30	
		Urban	13:30	17:10	13:30	26:50	
		Suburban	13:00	15:00	16:20	15:50	
		Rural	17:30	19:50	19:00	18:50	

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

#### **Emergency Medical Services**

The Montgomery County Fire Rescue Service (MCFRS) goal for its EMS program is to make available adequate and effective emergency medical resources which provide a continuum of care that assures any 911 call for medical assistance is given the appropriate emergency medical attention necessary.

#### **Objectives**

- To utilize a dispatch system which appropriately determines the risk of the incident and send the specific units necessary to mitigate the problem
- To provide adequately trained personnel to the scene of every medical emergency
- To provide treatment of patients as dictated by the State of Maryland EMS Protocols
- To provide rapid transport to an appropriate medical facility
- To promote public awareness of safety and injury control measures to help prevent the 911 call
- To anticipate community needs in the area of emergency medical services and work to meet those needs
- To accurately document all patient encounters
- To have the resources, training, and equipment necessary to respond to mass casualty incidents and integrate into the state disaster plan when needed
- To ensure our EMS providers are adequately trained and certified
- To improve outcomes for illness and injury

Montgomery County Fire Rescue Service (MCFRS) uses an Emergency Medical Dispatch program to categorize all EMS responses into 3 categories, ALS2, ALS1, and BLS. Categories are determined based upon strict questioning protocols that allow us to predict the severity of the patient's condition as well as any scene factors which would require non-EMS units such as fire engines, fire trucks, rescue squads, hazardous material units, etc. Dispatch decisions concerning the number and types of units are based upon which category the incident has been assigned.

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

MCFRS can utilize both EMS and Fire apparatus on EMS incidents and all operational personnel are minimally certified at the EMT-B level.

Minimum MCFRS apparatus staffing levels are as follows:

**\*\*For purposes of this document, an ALS provider may be certified as either an EMT-I or EMT-P and a BLS provider is a certified EMT-B.**

- BLS transport units - 2 BLS providers.
- ALS transport units - 2 personnel, 1 ALS provider & 1 BLS provider.
- Engines, Trucks and Rescue Squads – 3 BLS providers.
- Paramedic Engines – 3 BLS personnel and 1 ALS provider.

Minimum MCFRS capabilities on EMS incident based on category:

**\*\* Dispatches are determined on unit/personnel capabilities rather than specific unit types**

- **Low Risk** BLS – 2 BLS providers and a transport unit. (Most times a BLS unit but depending on unit availability an ALS transport unit may be dispatched.)
- **Moderate Risk** ALS1 – 1 ALS provider, 4 BLS providers, and a transport unit.
- **High Risk** ALS2 – 2 ALS providers, 4 BLS providers and a transport unit.

Personnel have the ability to request additional resources to the scene based on the size-up or information received from dispatch.

#### **Distribution of ALS Services**

For 90% of ALS responses within Metropolitan densities for low, moderate, and high hazards, the first arriving unit will arrive within 11 minutes total response time.

For 90% of ALS responses within Urban densities for low, moderate, and high hazards, the first arriving unit will arrive within 11 minutes total response time.

For 90% of ALS responses within Suburban densities for low, moderate, and high hazards, the first arriving unit shall arrive within 12.5 minutes total response time.

For 90% of ALS responses within Rural densities for low, moderate, and high hazards, the first arriving unit shall arrive within 16 minutes total response time.

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

#### **Distribution of BLS Services**

For 90% of BLS responses within Metropolitan densities for low, moderate, and high hazards, the first arriving unit will arrive within 14 minutes total response time.

For 90% of BLS responses within Urban densities for low, moderate, and high hazards, the first arriving unit will arrive within 14 minutes total response time.

For 90% of BLS responses within Suburban densities for low, moderate, and high hazards, the first arriving unit shall arrive within 16 minutes total response time.

For 90% of BLS responses within Rural densities for low, moderate, and high hazards, the first arriving unit shall arrive within 20 minutes total response time.

#### **Concentration of ALS Services**

For 90% of ALS1 responses within Metropolitan densities for low, moderate, and high hazards, the effective response force will arrive within 12 minutes total response time.

For 90% of ALS1 responses within Urban densities for low, moderate, and high hazards, the effective response force will arrive within 12 minutes total response time.

For 90% of ALS1 responses within Suburban densities for low, moderate, and high hazards, the effective response force shall arrive within 13 minutes total response time.

For 90% of ALS1 responses within Rural densities for low, moderate, and high hazards, the effective response force shall arrive within 14.5 minutes total response time.

#### **Concentration of BLS Services**

For 90% of ALS2 responses within Metropolitan densities for low, moderate, and high hazards, the effective response force will arrive within 11.5 minutes total response time.

## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

For 90% of ALS2 responses within Urban densities for low, moderate, and high hazards, the effective response force will arrive within 11.5 minutes total response time.

For 90% of ALS2 responses within Suburban densities for low, moderate, and high hazards, the effective response force shall arrive within 12.5 minutes total response time.

For 90% of ALS2 responses within Rural densities for low, moderate, and high hazards, the effective response force shall arrive within 13.5 minutes total response time.

### **MCFRS Effective Response Force for EMS Incidents**

#### **Low Risk or BLS Response:**

Examples of calls that fall into this category include but are not limited to: general weakness, fever, fall, abdominal pain, extremity pain, and headache.

Task Performed	Personnel Needed	Apparatus Supporting Task
Information Gathering/Scene Safety	1	1st Arriving BLS Provider
BLS Patient Assessment/Treatment	1	1st Arriving BLS Provider
Patient Packaging	2	1 <sup>st</sup> (2) Arriving BLS Providers
Transport	2	1 <sup>st</sup> (2) Arriving BLS Providers

#### **Moderate Risk or ALS1 Response:**

This category includes but is not limited to calls for difficulty breathing, seizure, altered mental status, overdose, and stable chest pain.

Task Performed	Personnel Needed	Apparatus Supporting Task
Information Gathering/Scene Safety/IC	1	1 <sup>st</sup> Arriving Provider
ALS Patient Assessment	1	1st Arriving ALS Provider
ALS Interventions/Treatment	1	1st Arriving ALS Provider
Patient Packaging and Movement	3	4 BLS Providers
Transport	2	1 ALS and 1 BLS Provider

## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

### **High Risk or ALS2 Response:**

This category includes but is not limited to calls for unconscious/unknown breathing, unconscious/not breathing, chest pain with associated cardiac symptoms, stroke symptoms, fall from height, gunshot wound, stabbing.

Task Performed	Personnel Needed	Apparatus Supporting Task
Information Gathering/Scene Safety	1	1 <sup>st</sup> Arriving Provider
ALS Patient Assessment	1	1st Arriving ALS Provider
CPR	2	2 BLS Providers
ALS Interventions/Treatment	2	1st (2) Arriving ALS Providers
Patient Packaging and Movement	3	4 BLS Providers
Transport	3	2 ALS and 1 BLS Provider

### **Emergency Medical Services- Motor Vehicle Accidents:**

This category, Emergency Medical Services- Motor Vehicle Accidents includes but is not limited to calls for motor vehicle accidents with unknown entrapment, confirmed entrapment, and auto-pedestrian incidents. The minimum response force for these incidents includes 1 medic (2 personnel), one (1) engine/truck (3 personnel), one (1) Battalion Chief, and 1 Summit County Ambulance (2 personnel); for a total of 8 personnel.

Task Performed	Personnel Needed	Apparatus Supporting Task
Information Gathering/Scene Safety/IC	1	Battalion Chief (Batt 6)
Patient Care (ALS/BLS)	2	First Arriving Medic
Fire Protection Line (if extrication) or Hazard Assessment	1	1st Arriving Engine/Truck
Patient Extrication (if required)	2	1st Arriving Engine/Truck
Treatment/Transport	2	Summit County Ambulance



**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

<b>ALS 1 - 90th Percentile Times - Baseline Performance</b>			<b>2013 1<sup>st</sup> and 2<sup>nd</sup> quarters</b>	<b>2012</b>	<b>2011</b>	<b>2010</b>	<b>2010- 2013 1<sup>st</sup> and 2<sup>nd</sup> quarters</b>
<b>Alarm Handling</b>	Pick-up to Dispatch	Metro	3:10	3:20	3:30	4:00	3:40
		Urban	3:20	3:20	3:50	4:10	3:40
		Suburban	3:10	3:20	3:40	4:40	3:40
		Rural	3:00	3:10	3:30	4:00	3:30
<b>Turnout Time</b>	Turnout Time 1st Unit	Metro	2:10	2:10	2:10	2:10	2:10
		Urban	2:10	2:10	2:10	2:10	2:10
		Suburban	2:10	2:10	2:20	2:20	2:20
		Rural	2:10	2:10	2:10	2:20	2:20
<b>Travel Time</b>	Travel Time 1st Unit <b>Distribution</b>	Metro	7:00	6:50	7:20	7:50	7:20
		Urban	7:50	8:00	8:30	8:40	8:20
		Suburban	8:30	8:10	8:40	9:30	8:40
		Rural	8:50	8:30	9:30	10:10	9:10
	Travel Time ERF <b>Concentration</b>	Metro	8:30	8:40	8:50	9:20	
		Urban	8:40	9:00	9:10	9:40	
		Suburban	9:50	9:30	10:00	11:00	
		Rural	11:10	11:00	11:20	11:30	
<b>Total Response Time</b>	Total Response Time 1st Unit On Scene <b>Distribution</b>	Metro	6:60	11:00	11:30	12:40	11:30
		Urban	7:10	12:10	12:50	13:30	12:50
		Suburban	7:30	12:00	12:50	14:20	13:00
		Rural	7:40	12:20	13:20	14:40	13:10
	Total Response Time ERF <b>Concentration</b>	Metro	13:00	12:50	13:30	14:30	
		Urban	13:20	13:20	14:20	14:50	
		Suburban	14:20	13:50	15:10	17:10	
		Rural	15:10	15:00	15:40	16:30	

**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

<b>ALS 2 - 90th Percentile Times - Baseline Performance</b>			<b>2013 1<sup>st</sup> and 2<sup>nd</sup> quarters</b>	<b>2012</b>	<b>2011</b>	<b>2010</b>	<b>2010- 2013 1<sup>st</sup> and 2<sup>nd</sup> quarters</b>
<b>Alarm Handling</b>	Pick-up to Dispatch	Metro	2:50	2:50	3:00	3:40	3:10
		Urban	2:50	2:50	3:00	3:50	3:10
		Suburban	2:40	2:40	2:50	3:30	3:00
		Rural	2:30	2:50	3:10	3:30	3:00
<b>Turnout Time</b>	Turnout Time 1st Unit	Metro	2:10	2:10	2:10	2:10	2:10
		Urban	2:10	2:00	2:20	2:20	2:10
		Suburban	2:10	2:10	2:20	2:20	2:20
		Rural	2:20	2:20	2:20	2:20	2:20
<b>Travel Time</b>	Travel Time 1st Unit <b>Distribution</b>	Metro	6:30	6:30	7:10	7:30	7:00
		Urban	8:40	7:10	8:20	9:30	7:50
		Suburban	8:10	7:20	7:40	8:50	8:00
		Rural	8:30	8:30	8:40	9:30	8:40
	Travel Time ERF <b>Concentration</b>	Metro	9:30	9:30	9:20	10:10	
		Urban	8:20	9:00	10:10	11:20	
		Suburban	10:40	10:30	9:20	11:40	
		Rural	12:20	12:40	13:30	12:30	
<b>Total Response Time</b>	Total Response Time 1st Unit On Scene <b>Distribution</b>	Metro	10:00	10:10	11:10	11:50	10:50
		Urban	9:50	11:00	11:30	13:40	11:50
		Suburban	11:10	11:30	10:50	13:10	11:40
		Rural	12:00	12:10	12:30	14:00	12:50
	Total Response Time ERF <b>Concentration</b>	Metro	13:00	13:30	13:10	14:40	
		Urban	13:20	12:20	14:00	16:10	
		Suburban	14:40	14:40	13:30	16:30	
		Rural	16:00	16:00	17:00	16:20	

# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

<b>BLS - 90th Percentile Times - Baseline Performance</b>			<b>2013 1<sup>st</sup> and 2<sup>nd</sup> quarters</b>	<b>2012</b>	<b>2011</b>	<b>2010</b>	<b>2010- 2013 1<sup>st</sup> and 2<sup>nd</sup> quarters</b>
<b>Alarm Handling</b>	Pick-up to Dispatch	Metro	3:30	3:40	4:00	4:30	4:00
		Urban	3:40	3:50	4:20	5:00	4:20
		Suburban	3:40	3:40	4:10	4:30	4:10
		Rural	3:40	3:40	4:00	4:30	4:00
<b>Turnout Time</b>	Turnout Time 1st Unit	Metro	2:00	2:10	2:10	2:20	2:10
		Urban	2:10	2:10	2:10	2:20	2:10
		Suburban	2:10	2:10	2:20	2:30	2:20
		Rural	2:10	2:10	2:10	2:20	2:10
<b>Travel Time</b>	Travel Time 1st Unit <b>Distribution</b>	Metro	8:20	8:20	8:40	9:00	8:40
		Urban	8:00	8:10	8:10	N/A	8:40
		Suburban	9:20	9:20	10:10	N/A	10:00
		Rural	10:20	10:30	10:50	11:00	10:50
	Travel Time ERF <b>Concentration</b>	Metro					
		Urban					
		Suburban					
		Rural					
<b>Total Response Time</b>	Total Response Time 1st Unit On Scene <b>Distribution</b>	Metro	12:40	12:40	13:20	14:20	13:20
		Urban	12:40	12:50	15:30	15:30	13:40
		Suburban	13:20	13:50	15:10	15:50	14:50
		Rural	14:40	14:40	15:20	16:30	15:20
	Total Response Time ERF <b>Concentration</b>	Metro					
		Urban					
		Suburban					
		Rural					

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

#### **Hazardous Materials**

Due to its transportation links and proximity to our nation's capitol, Montgomery County has attracted many businesses which use, store, and dispose of hazardous materials.

Therefore, responding to hazardous material emergencies has been a priority mission of the Montgomery County Fire and Rescue Services even prior to the implementation of SARA Title III..

The department maintains a well staffed and highly trained Hazardous Team consisting of over 120 members assigned to four primary (consolidated) response stations and non-consolidated stations throughout the county sharing multi-discipline response missions including Fire, Rescue, EMS, WMD, and Hazardous Materials Response. The amount of personnel and apparatus responding to a hazardous materials event is determined by a tiered response level plan throughout the county and to mutual-aid events in surrounding jurisdictions. The Hazmat Team also offers assistance to other neighboring departments throughout the national capital region and is an active member of the Council of Governments (COG) mutual-aid response plan.

The Department of Fire and Rescue Services has been training first responders to the hazardous materials operations level or higher for hazardous materials events since the implementation of 29 CFR 1910.120 (Final Rule) thru the Public Safety Training

Academy and continues this training using NFPA 472 approved programs delivered by certified instructors. This has enabled the department to accomplish and maintain 100% compliance with federal regulatory requirements (29 CFR 1910.120(q)) and national consensus standards (NFPA 472) when responding to hazardous materials events.

Currently, the Hazmat team consolidated stations operate out of geographical areas providing acceptable response times to 90% of Montgomery County's citizens. Fire Station 7, Chevy Chase, and 28, Derwood, operate FEMA Type I hazmat units and are supported by additional technicians at station 20, Bethesda, and 25, Aspen Hill.

On a daily basis, the Hazmat team maintains a minimum of 13 staff members assigned to four consolidated stations.. This complement of staffing allows the Hazmat team to have an Operations Officer, a Decontamination Officer supervising two Decontamination personnel, a two-member entry

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

team, a two-member backup team, a Logistics Officer, and a Research Officer to operate at an event. Safety is normally handled by the MCFRS Safety Officer who is also trained to the hazardous materials technician level. Since the inception of Hazmat team in 1983, the department has experienced fluctuations in membership (due to personnel transfers, promotions, and retirements) requiring concurrent retention and recruitment programs.

#### **Goals**

For a Hazmat event, personnel and apparatus are dispatched in a tiered manner according to information obtained by PSCC call takers. For calls not fitting into the standard criteria ECC may consult with an on-duty hazardous materials officer assigned to one of our hazardous materials response stations (Fire Stations 7 & 28). The majority of responses require a standard response of one Hazmat unit and one Hazmat support company. The Hazmat units can be augmented by additional fire and EMS units based on the ECC Hazmat flow chart. Major events require a full structure fire box assignment which includes two Battalion Chiefs, five Engines, two Trucks, Rescue Squad, four EMS units and a Hazmat response. (See Hazmat team Critical Task Response Specification).

MCFRS first responder personnel arrive on the scene of all reported hazardous materials events trained to the Hazardous Materials Operations level of training as defined by 29 CFR 1910.120 (q)(6)(ii). All primary engine, aerials, and rescue squads are equipped with four gas air monitoring instrumentation, small capacity (1%-3%) foam delivery systems and reference materials (DOT Guidebook and NIOSH Pocket Guide).

#### **Distribution**

For 90% of Hazmat responses within Metropolitan densities for low, moderate, high and special hazards, the first arriving unit will arrive within 10 minutes total response time.

For 90% of Hazmat responses within Urban densities for low, moderate, high and special hazards, the first arriving unit will arrive within 10 minutes total response time.

For 90% of Hazmat responses within Suburban densities for low, moderate, high and special hazards, the first arriving unit shall arrive within 11.5 minutes total response time.

For 90% of Hazmat responses within Rural densities for low, moderate, high, and special hazards,

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

the first arriving unit shall arrive within 15.5 minutes total response time.

Regardless of incident type, the Department expects the first-responding 4-person company to have the capability to:

- Establish Command.
- Size-up the situation.
- Isolate the hazard area, deny entry, and to evacuate as needed.

#### **Concentration**

For 90% of Hazmat responses within Urban densities for low, moderate, high and special hazards, the effective response force will arrive within 30 minutes total response time.

For 90% of Hazmat responses within Metropolitan densities for low, moderate, high and special hazards, the effective response force will arrive within 30 minutes total response time.

For 90% of Hazmat responses within Suburban densities for low, moderate, high and special hazards, the effective response shall arrive within 30 minutes total response time.

For 90% of Hazmat responses within Rural densities for low, moderate, high, and special hazards, the effective response shall arrive within 30 minutes total response time.

#### **Levels of Risk**

##### **Low Risk:**

This category, Hazmat Investigation, is used for small scale spills and incidents where a unit on-scene requests the hazardous material officer consultation. The minimum response force for these events is four (4) personnel.

## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

Task Performed	Personnel Needed	Apparatus Supporting Task
Incident Commander	1	Hazmat Unit Officer
Hazard Control	3	Hazmat Unit Crew

**Total of 4 personnel**

This category is dispatched to the following call types:

Call Type	Definition
HM/WATER	A spill into or reported substance in a creek or other body of water with no vapor, fumes, flames or injured people
SC/FIRE	An event to assist a unit already on-scene

### **Moderate Risk:**

This category, Hazmat Local Alarm, is for responses to hazardous material incident that do not involve fire, five or more sick people, a transportation of dangerous goods vehicle or a natural gas or propane leak. The minimum response force for these events is 19 personnel.

Task Performed	Personnel Needed	Apparatus Supporting Task
Incident Commander	1	Certified Chief Officer
Scene Assessment & Decon	3	Engine
Scene Control	3	Special Service
Patient Care	2	BLS Unit
Hazmat Branch Supervisor	1	Hazmat Unit Officer
Research / Logistics	3	Hazmat Unit
Entry	2	Hazmat Support Unit
Backup	2	Hazmat Support Unit or Special Service
Hazmat Crew Assessment/Care	2	ALS Unit

**Total of 19 personnel**

This category is dispatched to the following call types:

Call Type	Definition
HM/SPILL	An emergency involving the spilling or leaking of a hydrocarbon or other fuel product when there are no vapor,

## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

	fumes, or flames visible and four or less sick persons involved
HM/PWDR	An emergency involving an powder spill or leak when there are no vapor, fumes, or flames visible and four or less sick persons involved regardless of the container the package is or is not in
HM/MERC	An emergency involving a spill of mercury with no active fire conditions.

### **High Risk:**

The category, Hazmat Street Alarm, is for responses to hazardous material incidents that do not involve fire, a natural gas or propane leak but do involve five or more sick people. The minimum response force for these events is 28 personnel.

Task Performed	Personnel Needed	Apparatus Supporting Task
Incident Commander	1	Certified Chief Officer
Scene Assessment	3	1 <sup>st</sup> Engine
Water Supply	3	2 <sup>nd</sup> Engine
Rapid Intervention	3	3 <sup>rd</sup> Engine
Ventilation and Support	6	Aerial and Rescue Squad
Patient Care	4	BLS unit and 1 ALS unit
Hazmat Branch Supervisor	1	Hazmat Unit Officer
Research / Logistics	3	Hazmat Unit
Entry	2	Hazmat Support Unit
Backup	2	Hazmat Support Unit or Special Service
Hazmat Crew Assessment/Care	2	ALS Unit

**Total of 20 personnel**

This category is dispatched to the following call types:

Call Type	Definition
HM/CHEM	An emergency involving an chemical spill or leak when there are no vapor, fumes, or flames visible and four or less sick persons involved
HM/UNK	An emergency involving the spill, leak or escape of a suspected hazardous material when there are no vapor, fumes, or flames visible and four or less sick persons involved and the caller cannot provide more detailed information



## MCFRS

### COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

EMD CO Call Types	An emergency involving signs and symptoms of multiple sick people with possible indications of carbon monoxide exposure.
-------------------	--

#### **Special Risk:**

The category, Gas Box Alarm, is for responses to hazardous material incidents that involve fire. The minimum response force for these events is 48 personnel.

Task Performed	Personnel Needed	Apparatus Supporting Task
Incident Commander	1	Certified Chief Officer
Safety Officer	1	Safety Officers or CCO
Scene Assessment	3	1 <sup>st</sup> Engine
Water Supply	3	2 <sup>nd</sup> Engine
Rapid Intervention	3	3 <sup>rd</sup> Engine
Ventilation and Support	9	Aerial (2) & Rescue Squad
Suppression Duties as Assigned	6	4 <sup>th</sup> & 5 <sup>th</sup> Engines
Patient Care	6	Two (2) BLS units & 1 ALS unit
Hazmat Branch Supervisor	1	Hazmat Unit Officer
Research / Logistics	3	Hazmat Unit
Entry	4	Hazmat Support Unit
Backup	4	Hazmat Support Unit
Technical Decon	2	Hazmat Support Unit
Hazmat Crew Assessment/Care	2	ALS Unit

**Total of 48 personnel**

This category is dispatched to the following call types:

Call Type	Definition
Gas/BOX	An emergency that is primarily a hazardous materials incident but involves fire or smoke inside a structure.

# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

<b>Hazmat - 90th Percentile Times - Baseline Performance</b>			<b>2013 1<sup>st</sup> and 2<sup>nd</sup> quarters</b>	<b>2012</b>	<b>2011</b>	<b>2010</b>	<b>2010- 2013 1<sup>st</sup> and 2<sup>nd</sup> quarters</b>
<b>Alarm Handling</b>	Pick-up to Dispatch	Metro	3:40	3:20	4:00	5:00	4:00
		Urban	4:00	3:20	5:20	5:40	4:20
		Suburban	2:50	4:30	5:10	4:50	4:30
		Rural	3:20	3:40	4:20	6:00	4:102:20
<b>Turnout Time</b>	Turnout Time 1st Unit	Metro	2:30	2:30	2:40	3:10	2:20
		Urban	2:00	2:40	3:10	2:50	2:20
		Suburban	2:10	2:40	3:10	3:30	2:20
		Rural	2:30	2:40	2:50	3:20	2:20
<b>Travel Time</b>	Travel Time 1st Unit <b>Distribution</b>	Metro	6:20	6:40	6:30	7:00	6:40
		Urban	5:10	7:00	9:50	5:30	6:00
		Suburban	7:10	5:50	6:50	9:00	7:10
		Rural	9:00	8:40	9:30	10:00	9:00
	Travel Time ERF <b>Concentration</b>	Metro					
		Urban					
		Suburban					
		Rural					
<b>Total Response Time</b>	Total Response Time 1st Unit On Scene <b>Distribution</b>	Metro	10:30	10:50	11:00	12:20	11:10
		Urban	10:00	10:20	14:40	11:30	11:40
		Suburban	10:40	11:30	12:10	19:30	12:00
		Rural	12:20	12:20	13:30	16:10	13:20
	Total Response Time ERF <b>Concentration</b>	Metro					
		Urban					
		Suburban					
		Rural					

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

#### **Technical Rescue**

Locally, in Montgomery County and the surrounding jurisdictions, the Team responds to emergencies involving trench collapse, structure and building failures, confined space incidents, urban victim search, rope rescue, and any incident in which their specialized equipment or expertise may be needed. Each member of the Team trains at least once a month in their specialty but often cross-trains in another discipline. The Team's equipment cache is located at Fire Station 31 in Darnestown. The team has the ability to draw upon the FEMA team equipment cache located at the Dover Road warehouse if needed..

The FEMA team and technical rescue team maintains the Rescue Mall at the Montgomery County Public Service Training Academy. The Rescue Mall is a specialized urban search and rescue training facility that includes: specialized props to simulate building collapses and confined spaces; vertical and horizontal concrete breaching stations; and "Da Spider", a series of masonry tubes arranged in a maze to simulate different confined space training evolutions. Additionally, the Rescue Mall is used for training search canines to locate victims in collapsed structures.

In addition to specialized rescue responses, the Team has been involved in a number of major incidents that did not involve direct search and rescue intervention. The Team's Logistics Section was an integral asset in the Travilah Road Dump Fire, a long duration fire fighting operation. Members of the Team built shelters and provided other infra-structure support as well as provided supplies and equipment in order to support the fire fighting operations. In the winter of 1996, the Team provided strategic planning and logistical support during the Silver Spring Train Collision. In January 2000, the team responded and provided search and rescue operations to a major train accident in Alleghany, MD.

#### **Goal**

MCFRS will try to increase the specialty team certifications of personnel throughout the County to increase the number of on-duty qualified specialists and minimize the need for off-duty members for long term incidents.

MCFRS will continue to strive to provide additional staffing on rescue apparatus. The rescue truck concept provides a stop gap solution but significantly reduces Extrication response time.

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

MCFRS will continue to support and assign staffing for the Technical Rescue Team.

#### **Distribution:**

For 90% of Technical Rescue responses within Metropolitan densities for special hazards, the first arriving unit will arrive within 10 minutes total response time.

For 90% of Technical Rescue responses within Urban densities for special hazards, the first arriving unit will arrive within 10 minutes total response time.

For 90% of Technical Rescue responses within Suburban densities for special hazards, the first arriving unit shall arrive within 11.5 minutes total response time.

For 90% of Technical Rescue responses within Rural densities for special hazards, the first arriving unit shall arrive within 15.5 minutes total response time.

#### **Concentration:**

For 90% of Technical Rescue responses within Metropolitan densities for special hazards, the effective response force will arrive within 10 minutes total response time.

For 90% of Technical Rescue responses within Urban densities for special hazards, the effective response force will arrive within 10 minutes total response time.

For 90% of Technical Rescue responses within Suburban densities for special hazards, the effective response force shall arrive within 11.5 minutes total response time.

For 90% of Technical Rescue responses within Rural densities for special hazards, the effective response force shall arrive within 15.5 minutes total response time.

## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

### **Levels of Risk**

Should the Technical Rescue Team be dispatched, essentially there will be no “Low,” “Moderate” or, “High” risk categories due to the nature of incidents and the level of training and special equipment required to mitigate the event. All technical rescue incidents are categorized in the Special hazard classification.

### **Special Risk:**

This category is used for initial response and the accuracy of information received for technical rescue events, types of events outlined below. All initial responses will have personnel dispatched from consolidated stations. The technical rescue team is based in three consolidated stations (Stations 25, 29, and 31) with non-consolidated personnel available, if need be, throughout the County. If fire rescue personnel arrive on scene and determines that the event may be extended, they may initiate and deploy non-consolidated personnel to supplement staffing already on the scene. This will bring roughly 15 to 18 more technical rescue personnel to the scene.

The minimum effective response force for these events is 36 personnel (based off of 4 person-staffing on engine apparatus and an additional medic unit). Additional equipment needed and/or taken to the scene of an event is at the discretion of the personnel at the Fire Station 31 Officer and/or the Special Operations Chief depending on the call as dispatched and any additional information given. The additional specialty units are transported by personnel at Station 31 with their front line apparatus left in quarters. For all call types listed below the dispatch compliment is as follows: Engine, Truck/Tower, two Medic units, Rescue Squad, Ambulance, Battalion Chief, LFRD Officer, Recon 731, Support Unit 29 and Special Operations 25 as well as the Technical Rescue Team.

<b>Task Performed</b>	<b>Personnel Needed</b>	<b>Apparatus Supporting Task</b>
Incident Commander	1	Certified Chief Officer
Scene Assessment & Control	7	Engine & Aerial
Initial Scene Stabilization	3	Rescue Squad
Patient Care	6	BLS & 2 ALS Units
Tech Rescue Branch Supervisor	1	Tech Rescue Duty Officer
Tech Rescue Safety	1	Co 25 / 29 / 31 Unit

## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

Logistics	2	Co 31 Units
Entry / Team 1	3 to 5	Co 25 / 29 / 31 Units
Backup / Team 2	3 to 5	Co 25 / 29 / 31 Units
Team 3	3 to 5	Co 25 / 29 / 31 Units

**Minimum number of personnel is 36**

This category is dispatched to the following call type:

Call Type	Definition
RES/CONF	Person(s) trapped in a confined space
RES/HIGH	Person(s) trapped at heights greater than 25'
RES/LOW	Person(s) trapped below grade
RES/CLPS	Person(s) trapped in a collapsed structure
RES/OTH	Person(s) trapped in other
RES/TRNC	Person(s) trapped in a collapsed trench/excavation

In addition to the initial dispatch compliment, the following apparatus also goes to the event at the discretion of the personnel at Station 31\*\*:

Trench Pod for all trench events

Confined Space / Building Collapse Pod for all Confined Space and Building Collapse events

Wood Trailer

Compressor

\*\* The only call type that would not get any of these units is RES/HIGH

# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

<b>Technical Rescue - 90th Percentile Times - Baseline Performance</b>			<b>2013 1<sup>st</sup> and 2<sup>nd</sup> quarters</b>	<b>2012</b>	<b>2011</b>	<b>2010</b>	<b>2010- 2013 1<sup>st</sup> and 2<sup>nd</sup> quarters</b>
<b>Alarm Handling</b>	Pick-up to Dispatch	Metro	3:10	3:20	3:30	4:20	3:30
		Urban	2:00	3:10	3:10	3:10	3:10
		Suburban	7:00	3:00	3:30	7:00	5:40
		Rural	4:30	5:20	16:00	4:10	5:20
<b>Turnout Time</b>	Turnout Time 1st Unit	Metro	2:10	2:10	2:10	2:20	2:10
		Urban	2:00	4:00	2:10	2:00	4:20
		Suburban	4:20	3:40	4:20	4:00	4:00
		Rural	4:20	4:00	5:00	4:10	2:10
<b>Travel Time</b>	Travel Time 1st Unit <b>Distribution</b>	Metro	7:40	7:30	8:20	9:10	8:20
		Urban	7:20	8:40	7:30	7:00	8:30
		Suburban	10:30	10:50	11:50	6:20	10:30
		Rural	10:00	9:40	8:30	10:40	9:40
	Travel Time ERF <b>Concentration</b>	Metro					
		Urban					
		Suburban					
		Rural					
<b>Total Response Time</b>	Total Response Time 1st Unit On Scene <b>Distribution</b>	Metro	11:40	11:40	13:20	14:10	12:50
		Urban	11:20	13:30	12:30	12:50	12:50
		Suburban	12:50	14:30	15:10	12:10	14:30
		Rural	13:50	17:10	41:20	15:20	16:40
	Total Response Time ERF <b>Concentration</b>	Metro					
		Urban					
		Suburban					
		Rural					

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

#### **Water/Ice Rescue**

The River Rescue and Tactical Services (RRATS) team is a 100 person team providing emergency service for swift water, ice, and water related rescues requiring their expertise. The team has developed its own rigorous training program consisting of both classroom knowledge and field skill. The detailed qualification packages are pending accreditation from the University of Maryland. Specific packages have been developed for each level of certification. These include:

- Water Rescue Specialist
- Swift water Operator
- Airboat Operator

With the potential need to deploy the team to multiple areas of Montgomery County and the State of Maryland, the RRATS team maintains a constant state of readiness and training. To date, RRATS operates the following:

- Three (3) Airboats
- Four (4) 17 foot inflatable rescue boats with jet drive outboards
- Three (3) 14 foot inflatable "sleds" with jet drive outboards
- Four (4) 14 foot aluminum "V" hull Jon boats
- Boat support units
- Brush trucks
- Pick ups

The RRATS team will be the team dispatched for water rescue events. In the case of localized flooding due to weather, there are five boats assigned throughout the county at stations 14, 25, 29 and 31 which will be dispatched without the river strike teams to mitigate incidents in low lying areas.

#### **Distribution**

For 90% of Water or Ice related Rescue responses within Metropolitan densities for low, moderate, high and special hazards, the first arriving unit will arrive within 10 minutes total response time.

For 90% of Water or Ice related Rescue responses within Urban densities for low, moderate, high and special hazards, the first arriving unit will arrive within 10 minutes total response time.



## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

For 90% of Water or Ice related Rescue responses within Suburban densities for low, moderate, high and special hazards, the first arriving unit shall arrive within 11.5 minutes total response time.

For 90% of Water or Ice related Rescue responses within Rural densities for low, moderate, high, and special hazards, the first arriving unit shall arrive within 15.5 minutes total response time.

The minimum staffing for a RRATS Strike Team is 2 boat operators and 2 crew members. Each station 10 and 30 can staff an independent strike team deployment..

#### **Concentration**

For 90% of Water or Ice related Rescue responses within Metropolitan densities for low, moderate, high and special hazards, the effective response force will arrive within 30 minutes total response time.

For 90% of Water or Ice related Rescue responses within Urban densities for low, moderate, high and special hazards, the effective response force will arrive within 30 minutes total response time.

For 90% of Water or Ice related Rescue responses within Suburban densities for low, moderate, high and special hazards, the effective response force shall arrive within 30 minutes total response time.

For 90% of Water or Ice related Rescue responses within Rural densities for low, moderate, high, and special hazards, the effective response force shall arrive within 30 minutes total response time.

The first arriving unit will

- Establish command
- Indicate command mode
- Ensure that accountability is established
- Complete victim ID & victim location sheets with any and all information available (ECC, calling party, witnesses).
- Begin formulation of an Incident Action Plan for resolution of the incident.

The initial on scene boat will not depart the launch sites until a second boat is arriving on scene.

## MCFRS

### COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

An exception to this may be made if a known life hazard exists, i.e.; priority one patient, multiple persons in the water. This is similar to the Safe Structural Fire Fighting policy of immediate entry for a known rescue.

For 90% of all large scale water rescue incidents that do not include swift water, the minimum effective staffing shall be 14 personnel.

For 90% of large scale water rescue incidents that do include swift water effective staffing will be a minimum of 19 personnel.

#### **Levels of Risk**

##### **Low Risk:**

This category will be used for an incident requiring consultation with a RRATS team duty officer. This can be for both water and ice rescue. This response will be only one duty officer

##### **Moderate Risk:**

This category is used for fixed bodies of water, lake or pond, which does not involve ice. The minimum response force for these events is 15 personnel.

Task Performed	Personnel Needed	Apparatus Supporting Task
Incident Commander	1	Certified Chief Officer
Scene Assessment & Control	6	Engine/Special Service
Patient Care	4	BLS & ALS Unit
Primary Boat	2	1 <sup>st</sup> Boat
Safety Boat	2	2 <sup>nd</sup> Boat

**Total Personnel is 15**

## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

This category is dispatched to the following call type:

Call Type	Definition
LAKE	A person fallen into or stranded on a lake when the caller specifically refers to the location as a lake and the call does not involve a person fallen thru or stranded on ice.

### **High Risk:**

This category involves any water rescue event on still or moving water to include the operations of people on, through, or under ice. The minimum response force for these events is 19 personnel.

Task Performed	Personnel Needed	Apparatus Supporting Task
Incident Commander	1	Certified Chief Officer
Scene Assessment & Control	6	Engine/Special Service
Patient Care	4	BLS & ALS Unit
Primary Boat	2	1 <sup>st</sup> Boat
Safety Boat	2	2 <sup>nd</sup> Boat
Swift Water Operations	4	Strike Team

**Total Personnel is 19**

This category is dispatched to the following call types:

Call Type	Definition
FERRY	An incident involving White's Ferry where the Ferry is reported to be stuck.
RIV/STIL	An emergency involving a person(s) that are injured on or have fallen into the river or person(s) who are injured where the primary access point or rescue access will be via the river ABOVE RILEY'S LOCK
WATER	An emergency that involves a person(s) trapped in water that is not the Potomac River and is either still or moving, that is outside of a structure, not in a swimming pool, regardless of depth, or water speed. This includes persons(s) trapped on or under ice.

## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

### **Special Risk:**

This category involves any water rescue on swift water. MCFRS defines swift water as any water which presents surface features such as: standing waves, surface holes, eddies or hydraulics will be determined to be swift water. Swift water will create these noticeable features around any fixed object in the path of the flow (sign posts, person, tree, vehicle, etc). Also, water should be classified as swift when a person cannot stand or move in the flow without assistance from any device or other person.

The minimum response force for these events is 19 personnel.

Task Performed	Personnel Needed	Apparatus Supporting Task
Incident Commander	1	Certified Chief Officer
Scene Assessment & Support	3	Engine/Special Service
Patient Care	4	BLS & ALS Unit
Swift Water Operations	8	Two (2) Strike Team

**Total Personnel is 19**

This category is dispatched to the following call types:

Call Type	Definition
RIV/SWFT	An emergency involving a person(s) that are injured on or have fallen into the river or person(s) who are injured where the primary access point or rescue access will be via the river. –BELOW RILEY’S LOCK

# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

<b>Water/Ice Rescue - 90th Percentile Times - Baseline Performance</b>			<b>2013 1<sup>st</sup> and 2<sup>nd</sup> quarters</b>	<b>2012</b>	<b>2011</b>	<b>2010</b>	<b>2010- 2013 1<sup>st</sup> and 2<sup>nd</sup> quarters</b>
<b>Alarm Handling</b>	Pick-up to Dispatch	Metro	8:20	9:40	3:00	5:10	8:20
		Urban	3:00	N/A	N/A	N/A	3:00
		Suburban	2:00	5:30	N/A	N/A	5:30
		Rural	3:30	5:40	5:00	12:10	10:10
<b>Turnout Time</b>	Turnout Time 1st Unit	Metro	4:20	4:00	4:20	4:40	4:20
		Urban	3:30	N/A	N/A	N/A	3:30
		Suburban	3:50	6:40	4:20	5:10	5:50
		Rural	5:30	5:50	4:40	5:00	5:10
<b>Travel Time</b>	Travel Time 1st Unit <b>Distribution</b>	Metro	4:00	3:50	5:00	6:10	6:00
		Urban	9:00	N/A	N/A	N/A	3:40
		Suburban	3:40	2:50	00:10	9:40	9:40
		Rural	10:20	7:30	9:30	10:40	10:20
	Travel Time ERF <b>Concentration</b>	Metro					
		Urban					
		Suburban					
		Rural					
<b>Total Response Time</b>	Total Response Time 1st Unit On Scene <b>Distribution</b>	Metro	10:20	27:50	9:50	16:00	16:00
		Urban	10:20	N/A	N/A	N/A	10:20
		Suburban	13:00	8:20	N/A	N/A	13:00
		Rural	16:10	12:20	14:40	25:30	18:00
	Total Response Time ERF <b>Concentration</b>	Metro					
		Urban					
		Suburban					
		Rural					

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

#### **Aviation**

The Montgomery County Fire and Rescue Services (MCFRS) provides the primary fire protection to the Montgomery County Airpark (GAI) and Davis Airfield.

Dispatch to reported aircraft emergencies and/or incidents is guided by the Public Safety Communications Center (PSCC). There are two call types: small plane or big plane. Depending on how the reports of the downed plane come in, PSCC will dispatch a full box assignment and Hazmat resources. MCI resources and/or a tanker assignments can be dispatched at the discretion of the first due engine on the scene and/or first arriving command officer.

A policy outlining critical elements of responding to an aircraft incident is currently in the finalization process. This policy will provide critical safety information to support the personnel's action while respond, arriving, or on-scene of an aircraft event.

#### **Distribution**

For 90% of Aircraft related responses within Metropolitan densities for high and special hazards, the first arriving unit will arrive within 10 minutes total response time.

For 90% of Aircraft related responses within Urban densities for high and special hazards, the first arriving unit will arrive within 10 minutes total response time.

For 90% of Aircraft related responses within Suburban densities for high and special hazards, the first arriving unit shall arrive within 11.5 minutes total response time.

For 90% of Aircraft related responses within Rural densities high, and special hazards, the first arriving unit shall arrive within 15.5 minutes total response time.

#### **Concentration**

For 90% of Aircraft related responses within Metropolitan densities for high and special hazards, the effective response force will arrive within 30 minutes total response time.

For 90% of Aircraft related responses within Urban densities for high and special hazards, the

## MCFRS

### COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

effective response force will arrive within 30 minutes total response time.

For 90% of Aircraft related responses within Suburban densities for high and special hazards, the effective response force shall arrive within 30 minutes total response time.

For 90% of Aircraft related responses within Rural densities for high, and special hazards, the effective response force shall arrive within 30 minutes total response time.

Regardless of incident type, the Department expects the first-responding 4-person company to have the capability to:

- Establish Command.
- Size-up the situation.
- Place one line in service at either 150 gallons per minute or 250 gallons per minute.
- Comply with the requirements of Two In/Two Out (OSHA 1910.134).
- Initiate mitigation efforts within one minute of arrival.
- Provide first responder medical aid including cardiac defibrillation.
- Request additional resources, including specialized support elements.

### **Levels of Risk**

#### **High Risk:**

The category, Small Plane, is for responses to small plane events that have four people or less on the plane. The minimum response force is indicated below (based on four person-staffing for all engine apparatus) for these events is 33 personnel.

Task Performed	Personnel Needed	Apparatus Supporting Task
Incident Commander	1	Certified Chief Officer
Scene Assessment	4	1 <sup>st</sup> Engine
Water Supply	4	2 <sup>nd</sup> Engine
Rapid Intervention	4	3 <sup>rd</sup> Engine
Ventilation and Support	6	Aerial and Rescue Squad
Patient Care	4	BLS unit and ALS unit

## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

Hazmat Branch Supervisor	1	Hazmat Unit Officer
Research / Logistics	3	Hazmat Unit
Entry	2	Hazmat Support Unit
Backup	2	Hazmat Support Unit or Special Service
Hazmat Crew Assessment/Care	2	ALS Unit

**Total Personnel 33**

### **Special Risk:**

The category, Large Plane, is for responses to large plane events that have five or more passengers. The minimum response is indicated below (based on four person-staffing for all engine apparatus) for these events is 57 personnel.

<b>Task Performed</b>	<b>Personnel Needed</b>	<b>Apparatus Supporting Task</b>
Incident Commander	3	Certified Chief Officer
Scene Assessment	4	1 <sup>st</sup> Engine
Water Supply	4	2 <sup>nd</sup> Engine
Rapid Intervention	4	3 <sup>rd</sup> Engine
Ventilation and Support	9	Aerial (2) & Rescue Squad
Suppression Duties as Assigned	8	4 <sup>th</sup> & 5 <sup>th</sup> Engines
Patient Care	6	Two (2) BLS units & 1 ALS unit
Hazmat Branch Supervisor	1	Hazmat Unit Officer
Research / Logistics	6	Hazmat Unit (2)
Entry	4	Hazmat Support Unit
Backup	4	Hazmat Support Unit
Technical Decon	2	Hazmat Support Unit
Hazmat Crew Assessment/Care	2	ALS Unit

**Total Personnel 57**



**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

<b>Aviation Firefighting/Rescue - 90th Percentile Times - Baseline Performance</b>			<b>2013 1<sup>st</sup> and 2<sup>nd</sup> quarters</b>	<b>2012</b>	<b>2011</b>	<b>2010</b>	<b>2010- 2013 1<sup>st</sup> and 2<sup>nd</sup> quarters</b>
<b>Alarm Handling</b>	Pick-up to Dispatch	Metro	N/A	N/A	N/A	N/A	N/A
		Urban	N/A	N/A	N/A	N/A	N/A
		Suburban	N/A	N/A	N/A	N/A	N/A
		Rural	N/A	N/A	3:20	3:00	3:20
<b>Turnout Time</b>	Turnout Time 1st Unit	Metro	N/A	N/A	N/A	N/A	N/A
		Urban	N/A	N/A	N/A	N/A	N/A
		Suburban	N/A	N/A	N/A	N/A	N/A
		Rural	2:40	2:20	2:20	2:50	2:40
<b>Travel Time</b>	Travel Time 1st Unit <b>Distribution</b>	Metro	N/A	N/A	N/A	N/A	N/A
		Urban	N/A	N/A	N/A	N/A	N/A
		Suburban	N/A	N/A	N/A	N/A	N/A
		Rural	3:50	5:40	7:20	2:20	4:40
	Travel Time ERF <b>Concentration</b>	Metro					
		Urban					
		Suburban					
		Rural					
<b>Total Response Time</b>	Total Response Time 1st Unit On Scene <b>Distribution</b>	Metro	N/A	N/A	N/A	N/A	N/A
		Urban	N/A	N/A	N/A	N/A	N/A
		Suburban	N/A	N/A	N/A	N/A	N/A
		Rural	6:50	N/A	12:10	6:00	12:10
	Total Response Time ERF <b>Concentration</b>	Metro					
		Urban					
		Suburban					
		Rural					

## MCFRS

### COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

#### **Bomb Squad**

The Montgomery County, Division of Fire/Explosive Investigations, Bomb Squad is committed to providing the highest level of service to our community. Preservation of life and property will be achieved through the use of sound judgment, rapid intervention, and timely mitigation of a potentially deadly situation involving explosives and bombs.

The Bomb Squad's mission extends beyond the scope of bomb mitigation, with emphasis in providing education to increase the public awareness of this heinous crime of destruction.

The Bomb Squad will maintain the highest standard of customer service traditionally upheld by the Montgomery County, Department of Fire and Rescue Services. Through this effort, a creation of a safe environment for both public safety officers and the community will be achieved.

#### **Goals:**

Render safe suspected improvised explosive devices, incendiary devices, explosives, explosive chemicals, pyrotechnics, ammunition, and/or hazardous devices; as well as to provide legal, proper and safe transportation, disposal and/or storage of explosives and other items as described above.

Conduct post blast crime scene investigations in a systematic manner and collect and preserve crime scene evidence and to prepare and provide appropriate court room testimony.

Properly maintain and inventory of bomb squad equipment assigned so that we may be able to provide and assist with dignitary protection when requested.

Prepare and participate in explosive related training programs and stay familiar with a technical library of FBI Bomb Data Center publications and other explosive related journals, periodicals, and materials.

Maintain a professional liaison with other state and local bomb squads, military, "Explosive Ordnance Disposal (EOD) units, Federal agencies and professional associations. We will report or properly dispose of recovered military ordnance to military EOD units as appropriate.

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

Properly compile and report to the FBI Bomb Data Center technical data on all explosive devices and incidents.

Continuously develop emergency response plans for a bomb threat, actual improvised explosive devices, and bomb crime scenes. Educate, develop and promulgate bomb threat awareness and safety programs for public and private organizations.

Provide technical support services to other law enforcement agencies and Montgomery County Police specialty units (SWAT, SID, SOD).

#### **Distribution**

For 90% of Explosive Device responses within Metropolitan densities for low, moderate, high and special hazards, the first arriving unit will arrive within 50 minutes total response time.

For 90% of Explosive Device responses within Urban densities for low, moderate, high and special hazards, the first arriving unit will arrive within 50 minutes total response time.

For 90% of Explosive Device responses within Suburban densities for low, moderate, high and special hazards, the first arriving unit shall arrive within 60 minutes total response time.

For 90% of Explosive Device responses within Rural densities for low, moderate, high, and special hazards, the first arriving unit shall arrive within 70 minutes total response time.

#### **Concentration**

For 90% of Explosive Device responses within Metropolitan densities for low, moderate, high and special hazards, the first arriving unit will arrive within 60 minutes total response time.

For 90% of Explosive Device responses within Urban densities for low, moderate, high and special hazards, the first arriving unit will arrive within 60 minutes total response time.

For 90% of Explosive Device responses within Suburban densities for low, moderate, high and special hazards, the first arriving unit shall arrive within 70 minutes total response time.

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

For 90% of Explosive Device responses within Rural densities for low, moderate, high, and special hazards, the first arriving unit shall arrive within 80 minutes total response time.

The first arriving bomb technician's responsibility is to:

- Report to Operation Sector Commander.
- Obtain detail description of the suspected package (Polaroid photograph as applicable).
- Obtain as much intelligence and background information from the on-scene personnel witnesses.
- In “non-life threatening” situation, no attempt shall be made to disturb or “render safe” any suspicious device or packages during the initial size-up. Whenever possible, confirmation of the location of the suspected device will be accomplished without an approach. The “initial approach” will be performed with a bomb technician in the bomb suit or robot (availability/applicability) in “life-threatening” situation, the primary objective will be to create a “non-life threatening” situation. Once this has been accomplished, “non-life threatening” procedure shall be implemented.
- Review addendum defining Life-Threatening and Non-Life Threatening situations.
- Prior to any entry operations, the bomb technician assuming the sector will be evaluated for his/her medical condition by the on scene medic unit. The medic unit will provide the Operation Sector Commander with pre and post operation vitals, consisted of EKG, pulse rate, respiration, and BIP. The paramedic in charge has the authority to ground the bomb technician for failure to meet the required vital assessment criteria.
- During hot weather operation, temperature exceeding 85 degree F (humidity 90 degree F), donning of a cool vest under the bomb suit will be instituted. Hydration will be required during pre and post operations.
- Maximum of two approaches will be conducted by the bomb technician assuming the sector, due to fatigue and prolong exposure to extreme heat.
- No operation will commence until all necessary resources/equipment is in place and prepare for intervention (FJR units and crew on standby).

## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

### **Levels of Risk:**

#### **Low Risk:**

This category, *Threat*, is used for incidents deemed to be of low level of suspension and/or accidental. These incidents are police matters and are monitored by two bomb technicians who will respond if requested. The bomb technicians are available for consult and typically do not respond to the scene.

#### **Medium Risk:**

This category, *Plant*, is used for incidents deemed to be suspicious enough to require technical investigation. The minimum response for these events is two bomb technicians.

Task Performed	Personnel Needed	Apparatus Supporting Task
Device Investigation	2	Bomb Unit

This category is dispatched to the following call types:

Call Type	Definition
SUSP/PKG	Suspicious/Abandoned Package

#### **High Risk:**

This category is for a known explosive device. The minimum response for these events is thirty-six personnel.

Ventilation and Support	6	Aerial and Rescue Squad
Patient Care	4	BLS unit and 1 ALS unit
Hazmat Branch Supervisor	1	Hazmat Unit Officer
Research / Logistics	3	Hazmat Unit
Entry	2	Hazmat Support Unit

## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

Backup	2	Hazmat Support Unit or Special Service
Hazmat Crew Assessment/Care	2	ALS Unit
Bomb Group Supervisor	1	FEI Vehicle
Bomb Safety Person	1	FEI Vehicle
Bomb Entry	2	Bomb Truck
Bomb Intel	1	FEI Vehicle
Bomb Support	1	Bomb Support Vehicle

This category is dispatched to the following call types:

Call Type	Definition
Device	Known explosive device.

### **Special Risk:**

This category is for responses to incidents with known explosive devices and potential for substantial loss of life. The minimum response force these events is forty-one personnel not to include a mutual aid bomb team.

Task Performed	Personnel Needed	Apparatus Supporting Task
Incident Commander	1	Certified Chief Officer
Safety Officer	1	Safety Officers or CCO
Scene Assessment	3	1 <sup>st</sup> Engine
Water Supply	3	2 <sup>nd</sup> Engine
Rapid Intervention	3	3 <sup>rd</sup> Engine
Ventilation and Support	9	Aerial (2) & Rescue Squad
Suppression Duties as Assigned	6	4 <sup>th</sup> & 5 <sup>th</sup> Engines
Patient Care	6	Two (2) BLS units & 1 ALS unit
Hazmat Branch Supervisor	1	Hazmat Unit Officer
Research / Logistics	3	Hazmat Unit
Entry	4	Hazmat Support Unit
Backup	4	Hazmat Support Unit

**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

Technical Decon	2	Hazmat Support Unit
Hazmat Crew Assessment/Care	2	ALS Unit
Bomb Group Supervisor	1	FEI Vehicle
Bomb Safety	1	FEI Vehicle
Bomb Entry	2	Bomb Truck
Bomb Intel	1	FEI Vehicle
Bomb Support	13	Bomb Support Vehicle

This category is dispatched to the following call types:

Call Type	Definition
Hazmat Box Alarm w/Bomb Squad Activation	Known explosive device with potential for substantial loss of life

**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

<b>Bomb/Explosive - 90th Percentile Times - Baseline Performance</b>			<b>2013 1<sup>st</sup> and 2<sup>nd</sup> quarters</b>	<b>2012</b>	<b>2011</b>	<b>2010</b>	<b>2010- 2013 1<sup>st</sup> and 2<sup>nd</sup> quarters</b>
<b>Alarm Handling</b>	Pick-up to Dispatch	Metro	5:50	7:10	6:40	6:10	6:40
		Urban	7:10	6:00	8:20	5:10	7:10
		Suburban	7:40	5:50	6:10	3:00	6:10
		Rural	3:40	6:10	5:30	3:40	5:30
<b>Turnout Time</b>	Turnout Time 1st Unit	Metro	4:10	1:50	16:50	00:40	16:00
		Urban	N/A	N/A	N/A	N/A	N/A
		Suburban	N/A	1:20	3:20	N/A	2:20
		Rural	N/A	4:30	N/A	N/A	4:30
<b>Travel Time</b>	Travel Time 1st Unit <b>Distribution</b>	Metro	19:00	21:40	24:00	28:40	24:50
		Urban	N/A	12:50	8:10	N/A	12:50
		Suburban	N/A	11:40	15:50	11:50	11:50
		Rural	11:50	31:10	17:30	26:00	26:00
	Travel Time ERF <b>Concentration</b>	Metro					
		Urban					
		Suburban					
		Rural					
<b>Total Response Time</b>	Total Response Time 1st Unit On Scene <b>Distribution</b>	Metro	50:40	2:13:30	1:21:50	40:10	1:06:20
		Urban	N/A	N/A	32:40	N/A	32:40
		Suburban	N/A	1:23:30	1:18:40	19:40	1:23:30
		Rural	13:20	27:00	N/A	37:30	37:30
	Total Response Time ERF <b>Concentration</b>	Metro					
		Urban					
		Suburban					
		Rural					



## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

### G. Compliance Methodology

#### **Performance Evaluation and Compliance Strategy**

##### **Expectation:**

Upon assessment of MCFRS's ability to achieve performance goals, steps should be taken to improve upon current response capabilities.

##### **Response:**

Continue efforts to maintain and expand current staffing levels as well as proceeding with Capital Improvements outlined in the Fire/Rescue Master Plan. A difficult economic environment has created the need to re-align some resources to allow for the expansion of service to meet the needs of the community while operating under financial restraints. To move toward meeting the MCFRS' response time goals for ALS incidents and structure fires, MCFRS has taken and plans to pursue further actions, programs, and initiatives between FY10 and FY12.

#### **New fire stations in Germantown**

Two new fire stations have opened in Germantown, one on the west side and one on the east side of town<sup>6</sup>; thus increasing the number of engines in this high-growth area by two. This will increase the depth of resources in the up-county and allow faster response; thus increasing the percentage of residential fires confined to the room of origin.<sup>liv</sup>

#### **Phase 2 of four-person staffing**

Implementation of Phase 2B of the MCFRS' four-person staffing plan occurred in FY09, adding a fourth person on a designated group of four down-county engines (i.e., E706, E712, E718, E719). Four-person staffing allows the first-arriving engine to begin interior fire attack immediately without having to wait for another unit to meet State "2 in – 2 out" requirements. Quick interior attack leads to achievement of a higher percentage of fires confined to the room of origin and reduces the number of resources required for mitigation, thus preserving capacity for additional incidents.<sup>lv</sup>

#### **Establish an interim station in the Travilah area**

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

Until the proposed permanent Travilah Fire Station is built and opened in FY13 (anticipated), MCFRS is recommending the establishment of an interim station on the PSTA property housing an engine and EMS unit staffed 24/7. These units would address a significant call load within the Travilah/Traville/Fallsgrove area and increase the depth of fire suppression and EMS resources in the up-county. The additional units would allow faster first-due engine and EMS response to the Travilah/Traville/Fallsgrove area and allow faster assembly of suppression forces (i.e., box alarm assignment) within the up-county area as a whole; thus increasing the percentage of fires confined to the room of origin.<sup>lvi</sup>

#### Reduce response time

Response time to residential fires can be reduced county-wide by taking steps to reduce ECC call-processing and dispatch time and by improving turnout time. Fire Chief's General Order 09-19 was recently issued concerning modification of the pre-alert for full-assignment fires that is expected to reduce call processing time by 30 seconds and provide critical information to the field more rapidly. Upgrades to the County's communications system, including the computer aided dispatch (CAD) system and station alerting system, is being planned (ref. - Public Safety Systems Modernization Plan, July 2009) and will lead to faster ECC call-processing and dispatch which will improve overall response time.<sup>lvii</sup>

#### Continue implementation of 4-person staffing

Partial implementation of Phase 3 (i.e., Phase 3A) of MCFRS' four-person staffing plan is planned for FY10 utilizing federal SAFER grant moneys. Phase 3A will add a fourth person to a designated group of three engines. Phase 3B - to be implemented in a future fiscal year (potentially FY12), will add a fourth person to five additional engines to complete Phase 3. Four-person staffing of engines allows the first-arriving engine to begin interior fire attack immediately without having to wait for another unit to meet "2 in – 2 out" requirements of the Maryland Occupational Safety & Health Administration. The fourth person provides improved occupant and firefighter safety and the ability to deploy hose lines and achieve rapid rescue of persons trapped by fire.<sup>lviii</sup>

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

#### Improve water availability

Through recently initiated efforts to improve Insurance Services Office (ISO)-issued fire protection ratings for Montgomery County (i.e., ISO Class 4 in hydranted areas and ISO Class 9 in non-hydranted areas), MCFRS will be taking steps to increase the number of ISO-certified static water supply sources throughout areas lacking hydrants. This will involve the installation of strategically located underground cisterns as well as the installation of dry hydrants and suitable access to drafting sites (e.g., lakes, ponds, streams).<sup>lix</sup>

#### Compressed-air foam

Upon completion of the deployment of the new fleet of compressed-air foam system (CAFS) pumpers countywide, MCFRS will realize faster control and extinguishment of fires. CAFS results in a 40% reduction in the weight of any attack line which allows faster advancing of the attack line plus faster knockdown of the fire due to CAFS dual action of cooling and smothering the fire.<sup>lx</sup>

#### Retrofit un-sprinklered residential high-rises

To address the county's 84 high-rise and mid-rise apartment buildings lacking sprinkler systems, MCFRS will continue advocating for legislation requiring sprinkler retrofitting. The MCFRS Code Enforcement Section will also continue working with the Apartment and Office Building Association to encourage building owners to voluntarily install sprinklers to increase occupants' safety and to realize savings on insurance premiums.<sup>lxi</sup>

#### Modification of ALS Call Processing and Dispatch

Fire Chief's General Order 09-07 was implemented in 2009 to modify the procedure for ALS call processing and dispatch. ALS calls were designated as ALS-1 (requiring one ALS provider) or ALS-2 (requiring two ALS providers). ALS-2 calls are the most critical life-threatening emergencies – Echo and certain Delta calls – where two paramedics are required. With ALS-2 calls, ECC personnel do not have to wait until the conclusion of the time-consuming EMD protocol to dispatch ALS units; thus improving call processing/dispatch time as well as overall response time. With ALS-1 calls, ECC personnel must wait until the conclusion of the EMD protocol to dispatch ALS units.<sup>lxii</sup>

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

#### Reduction in time taken to process 9-1-1 calls and dispatch units

- Resources and procedural changes that are needed to accomplish this reduction include:
- Additional ECC personnel
- Modification of time-consuming State and County protocols and procedures that unnecessarily delay call-processing and dispatch
- Upgrades to the County's communications system, including the computer aided dispatch (CAD) system and station alerting system, are being planned (ref. Public Safety Systems Modernization Plan, July 2009) and will lead to faster ECC call-processing and dispatch as well as faster turnout time.<sup>lxiii</sup>

#### Reduction in turnout time

Resources and procedural changes that are needed to accomplish this reduction include:

- Development of turnout time goals that balance speed and safety
- Strict supervision by MCFRS battalion chiefs, station commanders, and unit officers to ensure personnel are meeting turnout time goals
- Strategic use of pre-alerts that may result in faster turnout times
- Replacement of the station alerting system<sup>lxiv</sup>

#### Reduction in travel time

Resources and procedural changes that are needed to accomplish this reduction include:

- Strategically placed stations – to be accomplished by adding new stations and, where appropriate, relocating existing stations
- Full implementation of the four-person staffing plan and 1 and 1 ALS model
- Deploying additional apparatus/staff and deploying them strategically
- Continued community outreach campaign (i.e., “Hear Us, See Us, Clear for Us” campaign initiated in FY06) that encourages motorists and pedestrians to yield right-of-way to responding MCFRS vehicles
- To the greatest extent possible, use of response routes that lack traffic calming devices<sup>lxv</sup>

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

#### Community Outreach

Continue fire prevention and risk reduction educational programs focused on targeted populations (e.g., elderly and immigrant populations) as well as long-standing programs having a more general application. All members of the fire-rescue service have responsibility to reduce community risk. Improvements are being planned for logistics and coordination of the door-to-door outreach program to increase efficiency.<sup>lxvi</sup>

#### Implementation of recommendations concerning senior citizen fire safety

Emphasis will be placed on implementing recommendations of the Senior Citizen Fire Safety Task Force. A number of projects have begun to raise awareness among people who provide direct service and support in senior's homes to identify people who may be at a greater risk and may need assistance installing smoke alarms or reducing risk in other ways.<sup>lxvii</sup>

#### Achieve survey results where residents rate the department's education efforts as effective.

MCFRS will increase the fire safety knowledge and awareness of County residents to a defined, acceptable level appropriate to risks for the targeted residents by:

- Using the existing Safety in Our Neighborhood program of door-to-door visits
- Increasing marketing for the door-to-door visits to include news stories, social networking, and more scheduled and focused neighborhood visits
- Using the MCFRS web sites and public service announcements to make information available
- Training and working directly with social care-givers who regularly interface with people of high risk and supporting them with materials and technical support
- Using volunteers (e.g., MCFRS Mobile Volunteer Corps, Community Emergency Response Teams) to deliver educational and outreach programs
- Focusing efforts at educating family and community care-givers for those at risk
- Employing benchmark efforts proven successful in Europe and Pacific Rim nations to increase knowledge and awareness of community, home, and personal risk<sup>lxviii</sup>

#### **EMS Data Collection**

The MCFRS EMS Section will continue gathering data to demonstrate utilization of critical cardiac skills and the impact to the community. Patient outcome data will be gathered to demonstrate the effectiveness of these cardiac skills and will be analyzed to make adjustments in

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

the Emergency Medical Dispatch (EMD) process to further focus on deployment of best suited resources.

#### **Constant Improvement Strategy**

##### **Expectation:**

MCFRS is to develop Performance Plans, which begins with the Headline Department Performance Measures, which will gauge how well customer results are being achieved, as well as the department's operational efficiency. The Performance Plan then provides a succinct analysis and an action plan, including a budget, for improving performance - as measured by the trend lines of the Headline Department Performance Measures.<sup>lxix</sup>

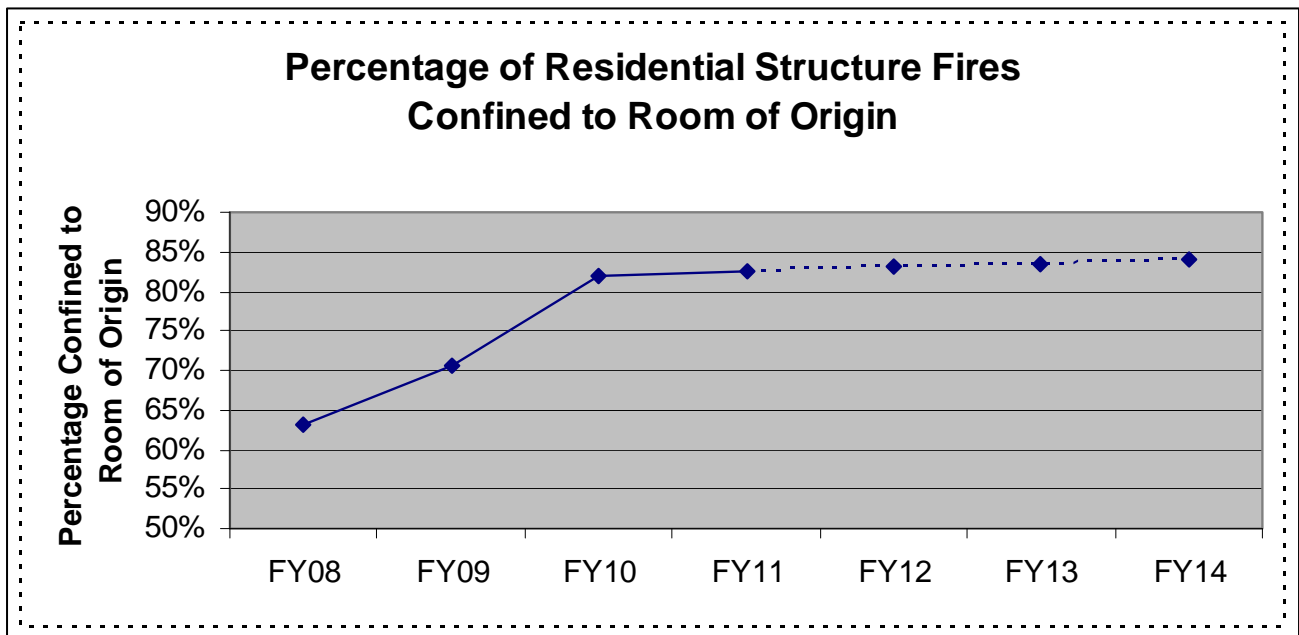
##### **Response:**

MCFRS has implemented six Headline Performance measures to evaluate the effectiveness of service which include: 1) Confining Residential Fire to the Room of Origin 2) Response Time Goals to ALS Incidents and Structure Fires 3) Residential Fire Deaths and Injuries per 100,000 Residents 4) Percentage of Strategic Recommendations Addressed Concerning Accreditation Follow-up Requirements 5) Percent of Montgomery County Residents Surveyed who rate MCFRS' Injury and Fire Prevention Education Services Effective 6) Pre-Hospital Cardiac Care.<sup>lxx</sup>

## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

### Confining Residential Fire to Room of Origin

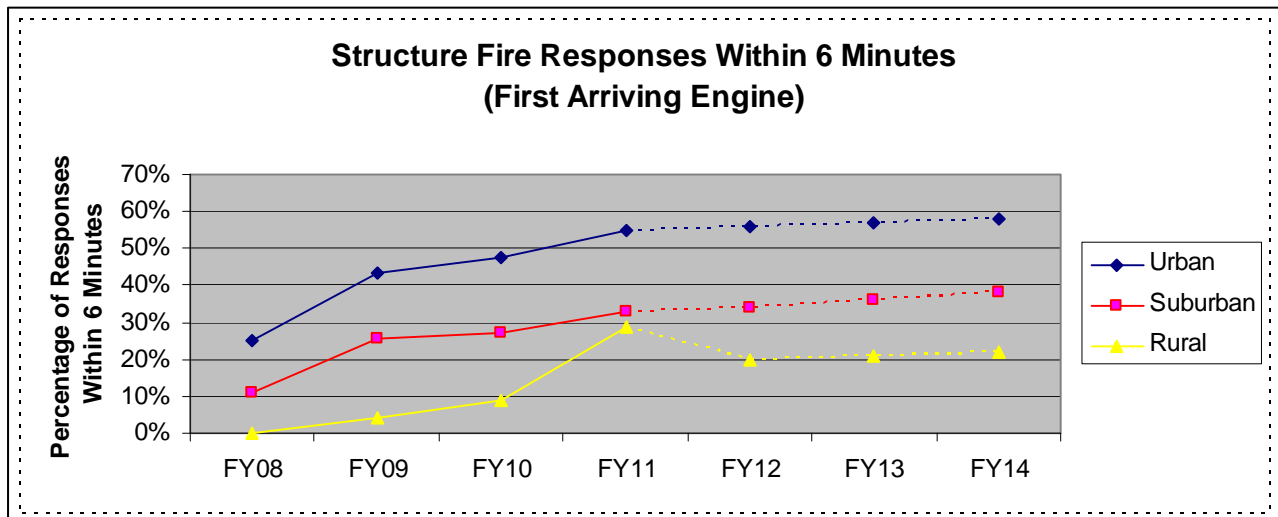
MCFRS has implemented the short term goal of confining residential fires to the room of origin in 80% of all instances.<sup>lxxi</sup> The solid line in the below graph presents actual historical data for FY08-11. The dashed line indicates projected performance based on the trend as well as derived benefits of programmatic actions, initiatives, and limited resource enhancements to be implemented.<sup>lxxii</sup>



## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

### Response Time to ALS Incidents and Structure Fires

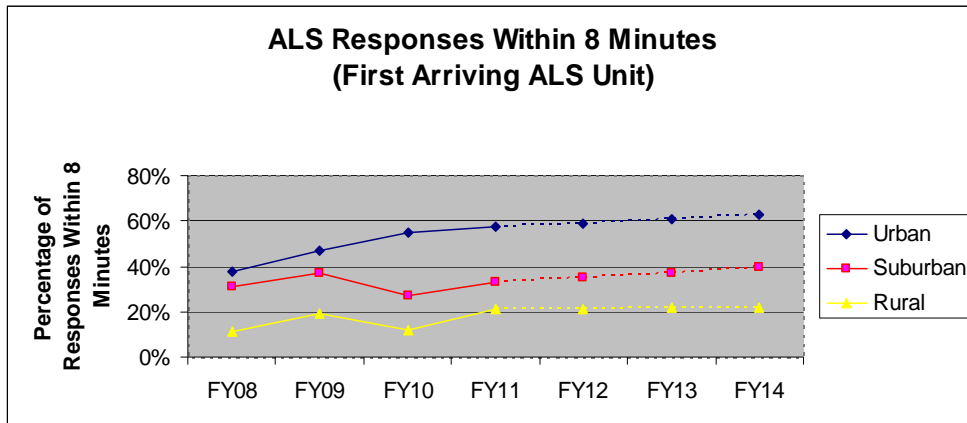
The response time goal for first-arriving engine to structure fires is 6 minutes to 90% of fires in the Urban Zone, 75% of fires in the Suburban Zone, and 50% of fires in the Rural Zone and to contain the fire to the room of origin in 80% of residential fires<sup>lxxiii</sup>. The response time goal for a BLS first-responder unit to an ALS incident is 6 minutes and the goal is 8 minutes for arrival of an ALS unit. BLS first responders are trained, certified, and equipped to perform basic life support services, including life saving actions such as rescue breathing, cardiopulmonary resuscitation (CPR), and use of automated external defibrillators (AEDs)<sup>lxxiv</sup>. An ALS unit, in the context of this performance measure, is a Medic Unit or an ALS first-responder apparatus (AFRA) such as an engine with a firefighter-paramedic and ALS kit on board. ALS units provide the highest level of pre-hospital patient care based on advanced training of personnel and specialized equipment carried.<sup>lxxv</sup>



The graph above indicates response time performance relating to structure fires. Solid lines indicate actual historical data for FY08-11, and dashed lines indicate projected performance based on trends as well as derived benefits of programs, initiatives, and limited resource enhancements to be implemented.<sup>lxxvi</sup>



## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



The graph above indicates response time performance relating to advanced life support (ALS) incidents. Solid lines indicate actual historical data for FY08-11, and dashed lines indicate projected performance based on trends as well as derived benefits of programs, initiatives, and limited resource enhancements to be implemented. It is important to note that this graph does not reflect response time of basic life support (BLS) first-responders (i.e., EMT-Bs aboard an ambulance, engine, aerial unit, rescue squad, or other unit), often arriving before ALS units.<sup>lxxvii</sup>

### **Residential Fire Deaths and Injuries per 100,000 Residents**

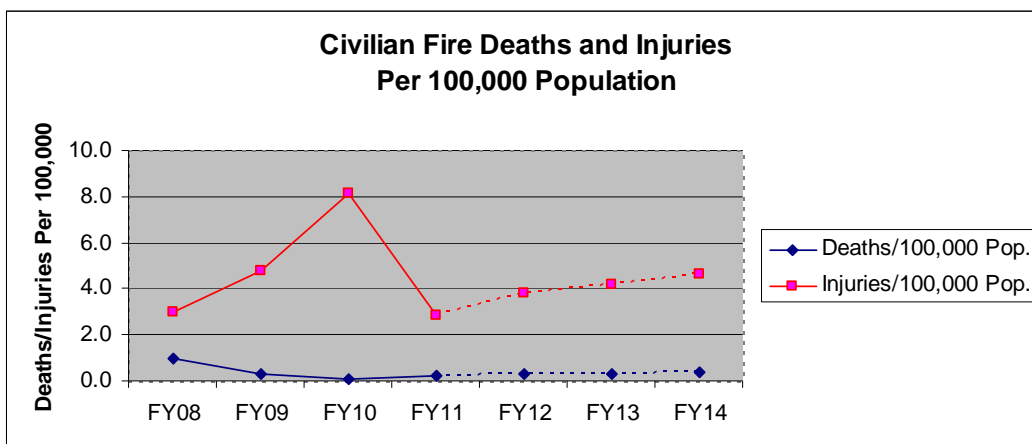
The goal of this performance measure is to minimize the number of civilian fire related injuries and deaths in residences.

The graph below indicates the annual number of past and projected civilian fire deaths per 100,000 residents (blue line) and past and projected number of civilian fire-related injuries per 100,000 residents (red line).<sup>lxxviii</sup> The civilian fire death rate between FY08 and FY11 has dropped since a high of 1.0 per 100,000 residents in FY08 and remained low ( $\leq 0.2$  per 100,000) over the FY09-11 time frame. The civilian fire injury rate has been volatile between FY08 and FY11, rising during FY09 and FY10 and then plummeting in FY11. It is anticipated that both fire death rate and fire injury rate will increase gradually during the FY12-14 time frame due to the County's increasing senior population which has historically experienced a high rate of fire casualties in proportion to their numbers.

## MCFRS

### COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---



#### **Implement Strategic Recommendations acquired from previous Accreditation site visit**

To maintain its accreditation, MCFRS must address the “strategic recommendations” provided by the Center for Fire Accreditation International (CFAI) Peer Assessment Team that performed an on-site evaluation of the department in 2012. The list below summarizes and consolidates these recommendations. MCFRS must show progress in its annual compliance report to the CFAI Board of Directors to achieve its accreditation status.

1. It is recommended that the department takes the necessary internal actions to make its accreditation process be a process and not a project.
2. It is recommended that the department regularly utilize the standards of cover and incorporate its language into the master planning process.
3. It is recommended that the department enhance its utilization of population density analysis to include all necessary categories as defined by CFAI to develop total response time standards.
4. It is recommended that the agency create and analyze smaller geographic areas (fire demand zones) to properly assess similar risks.
5. It is recommended that the department develop five year benchmark performance objectives and actual baseline performance statements, in the 90 percent fractal, for each emergency response discipline i.e., fire suppression, emergency medical services (EMS), hazardous materials, technical rescue, aviation rescue and fire fighting and the bomb squad program, in their associated fire and non-fire risk categories, and report the statements in a format recognized by CFAI.

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

6. It is recommended that the department fully assesses contributing factors to fire and non-fire risks to develop effective standards of cover strategy.
7. It is recommended that the department establish and publish a formal and uniform process to track program goals.
8. It is recommended that the department seek ways to increase staffing to meet the program goals and objectives for the inspection of buildings as outlined in the Montgomery County Fire Safety Code, Section 22-23.
9. It is recommended that the department examine a staffing model for the EMS Section to enhance supervisory and managerial functions of field personnel.
10. It is recommended that the department update, document and make current standard operating guidelines for its technical rescue, aviation rescue and fire fighting and human resources practices.
11. It is recommended that the department conduct and document a formal appraisal process, at least annually, for its fire suppression, fire prevention and life safety, technical rescue, hazardous

#### **Pre Hospital Cardiac Care**

The goal of this MCFRS performance measure is to have 90% of EMS-identified ST-segment elevation myocardial infarction (STEMI) patients receiving balloon angioplasty in a cardiac catheterization lab within 90 minutes of arrival at the hospital.

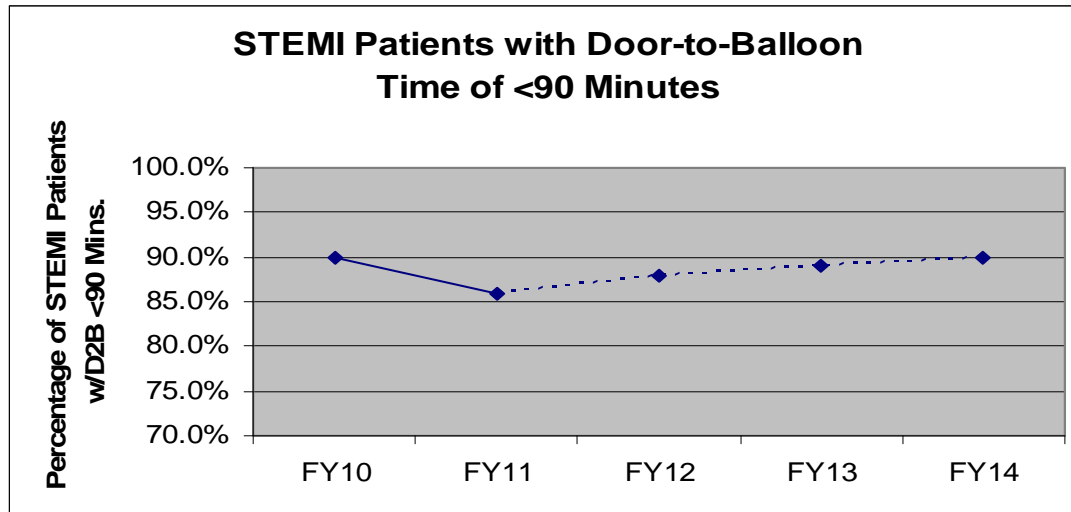
Door-to-balloon (“D2B”) time is a measurement in emergency cardiac care, specifically in the treatment of ST-segment elevation myocardial infarction (STEMI). The interval starts with the patient's arrival in the emergency department and ends when percutaneous coronary intervention (see description below) has been performed in the cardiac catheterization lab. Because of the adage that “time is muscle” (i.e., delays in treating a myocardial infarction increase the likelihood and amount of cardiac muscle damage), American College of Cardiology/American Heart Association guidelines recommend a D2B interval of no more than 90 minutes.

Percutaneous coronary intervention (PCI) is performed by threading a slender balloon-tipped tube – a catheter – from an artery in the groin to a trouble spot in an artery of the heart (i.e., percutaneous Trans luminal coronary angioplasty – PTCA, or “balloon angioplasty”). The balloon is then inflated,

## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

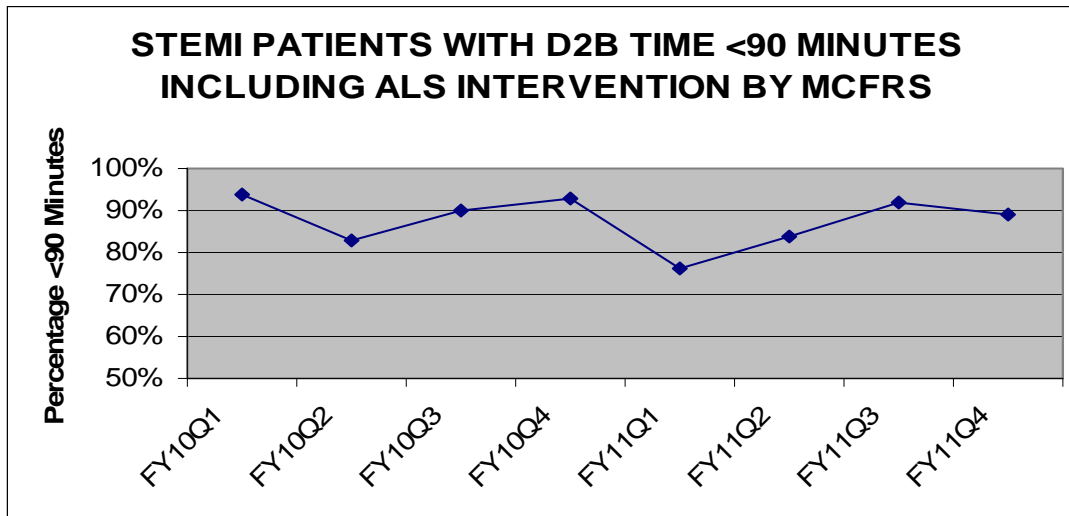
compressing the plaque and dilating the narrowed coronary artery so that blood can flow more easily. This is often accompanied by inserting an expandable metal stent to prop open arteries following PTCA.

The MCFRS has in place the components to provide state-of-the-art pre-hospital cardiac care at the local level. Additionally, the Maryland Institute of Emergency Medical Services Systems (MIEMSS) is providing State direction in the designation of cardiac treatment centers, including four in Montgomery County. This combination of EMS direction, experience, and knowledge, partnered with a local network of cardiac care specialty centers, places the MCFRS in a solid position to provide fast and effective cardiac care to the residents of Montgomery County.



The solid line in the above graph represents actual historical data for FY10 and FY11, the initial years for which this performance measure has been tracked and reported to the County’s Chief Administrative Officer through the “CountyStat” reporting mechanism. The dashed line indicates projected performance based on the average of previous quarters (see 2<sup>nd</sup> graph below) as well as derived benefits of technology enhancements that are being implemented (see “Lifenet” below).

## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



MCFRS EMS personnel activated the ST-segment elevation myocardial infarction (STEMI) response system 167 times during FY11. For patients who were transported by MCFRS and received primary PCI in a Montgomery County hospital, 91% - on average - had a D2B time less than 90 minutes. This percentage achieved is well above the required 75 percent necessary for hospitals to maintain their waiver to perform PCI in Maryland.

It should be noted that FY11 data combines “traditional” D2B times as well as data from the newly-implemented “Lifenet®” program which began in May 2011. The Lifenet technology allows EMS personnel on scene of a STEMI incident to transmit the first diagnostic EKG directly to the receiving hospital where it is read immediately by members of the STEMI response team. This allows for a more efficient response by the hospital staff and will decrease D2B time for the patient. With the use of the Lifenet technology, measuring the success of medical intervention for STEMI patients could now include an EMS-to-Balloon (“E2B”) time. This measurement begins at the time of the first qualifying EKG performed by EMS personnel and ends under the same criteria as D2B times.

# MCFRS

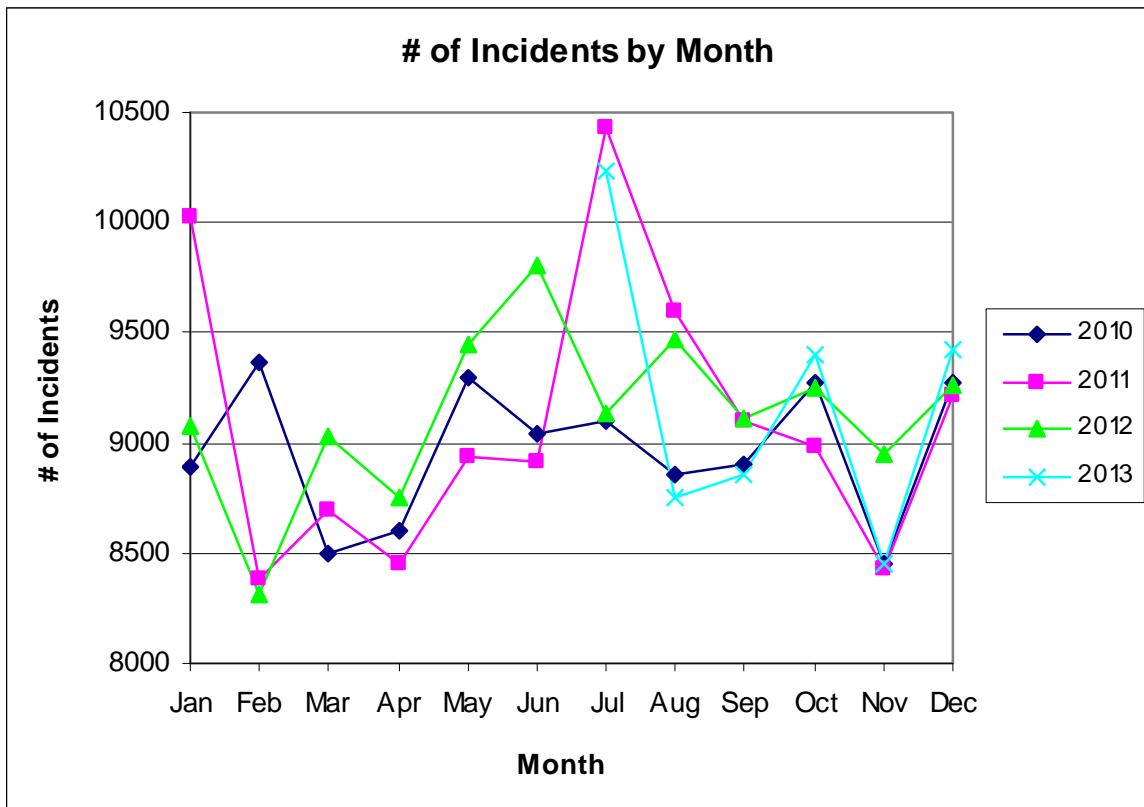
## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

### H. Overall Evaluation and Conclusion Recommendations

#### Number of Incidents by Month

There is a significant variation in incidents per month for each fiscal year. For instance the number of incidents dramatically peaks in July for the 2011 and 2013 fiscal years, but is relatively average for the 2010 and 2012 fiscal years. This variation through the years is apparent throughout the graph, as no two curves are alike. While there is significant variation in this data, general trends are still apparent.

For example, the number of incidents are generally lower for the months of February, March and April and yet higher for the summer months of May, June, July and August. Also, it can be seen that November is consistently a month with low incident numbers. Overall, this data provides a good overview of how incidents vary by month and illustrates a very large range between months (approximately plus/minus 1000 incidents). However, the data set is inconsistent over the 2010 - 2013 fiscal years, and therefore is generally inconclusive.



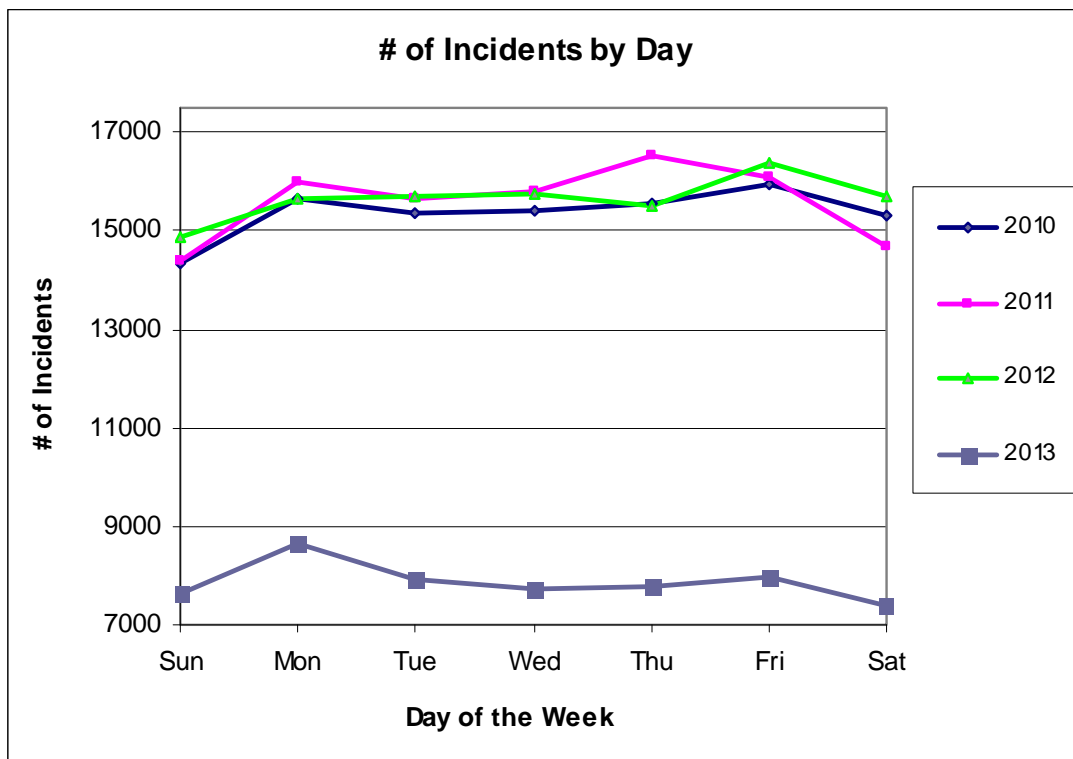
## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

### Number of Incidents by Day of the Week

First, it is important to note that for this graph the 2013 data is only for the first two quarters of the fiscal year. This means that the total incident numbers collected for each day of the week are approximately half of the value of those collected for the other full fiscal years. This difference is apparent on the graph as the 2013 curve sits lower on the y-axis. Because of this difference, the magnitude of 2013 incidents obviously cannot be compared to the other full years. However, the shape of the 2013 curve can still be analyzed for trends and compared to the full years.

It can be seen that the first half of the 2013 fiscal year generally follows the same trend as the other years. All of the curves (2010, 2011, 2012, and 2013) show lower incident numbers on the weekends and then rise on Monday. All generally remain consistent through the weekdays. There is some variation in the curves by year. For example, in 2011 the number of incidents peaks on Thursdays, and in 2012 the number of incidents peaks on Fridays. While this variation does exist, it is not a significant variance. Overall this data shows that incident numbers generally remain steady throughout the entire week with little dependence on the day.



## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

#### Number of Incidents by Hour

Once again, the magnitude of the 2013 curve is affected by the missing data, as the 2013 fiscal year is not yet complete. The incident numbers for each hour of the day in 2013 are once again approximately half of those for the full fiscal years because only the first and second quarters are taken into account. All four curves (2010, 2011, 2012, and 2013) follow the same general pattern. The peak hours for number of incidents are between 10A.M. and 7P.M., where there are roughly 6000 incidents per hour. The lowest numbers of incidents generally occur during the hours between 2A.M. and 4A.M., with the lowest being 3A.M. at roughly 2000 incidents per hour. In approximately linear fashion, the number of incidents rapidly rises between 4A.M. and 10A.M. and rapidly falls between 7P.M. and 2A.M. Upon looking at the graph it is notable that the number of incidents for each hour of the day is very similar over each of the last four years. This shows a long term trend, and overall it can be concluded that the trend shown is likely to continue into the future.

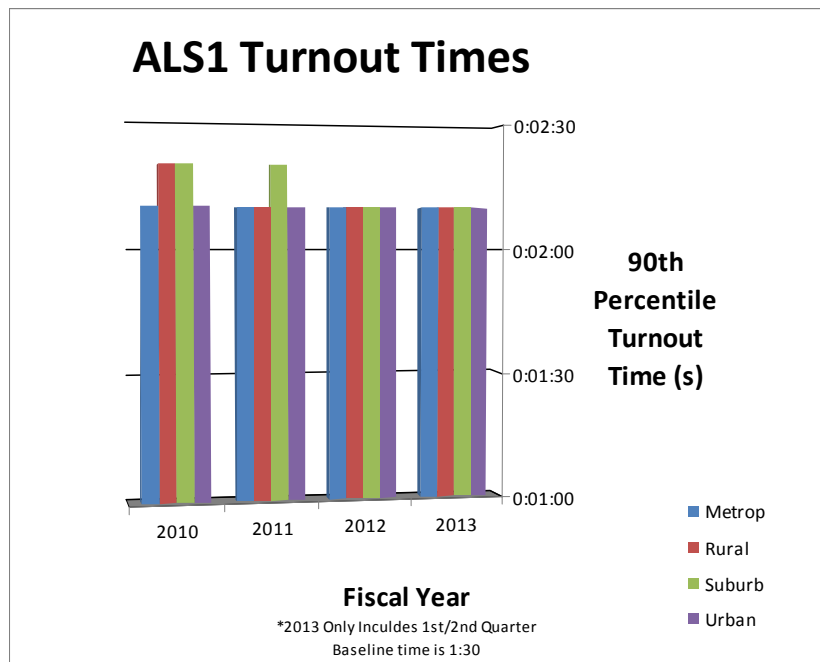


# MCFRS

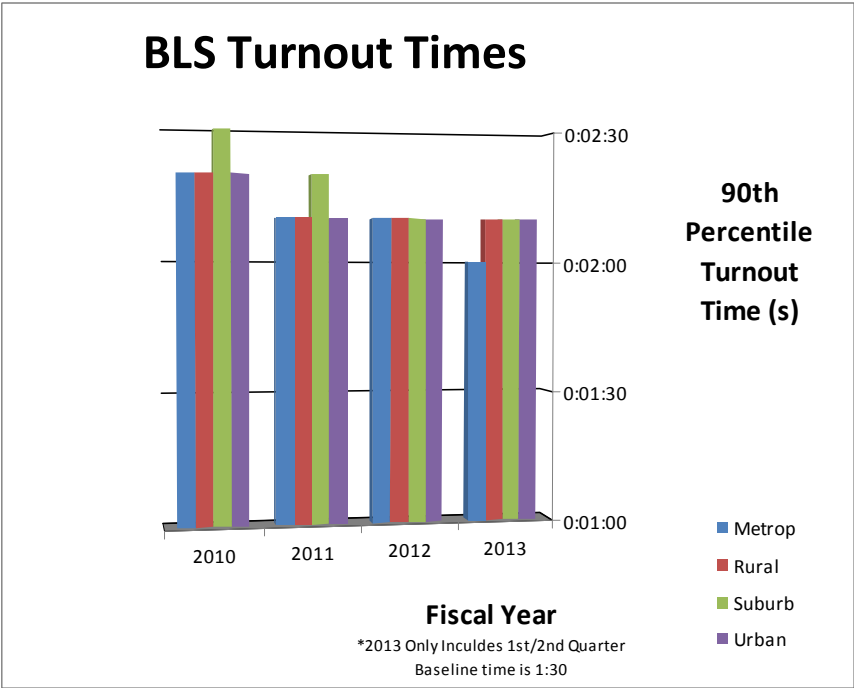
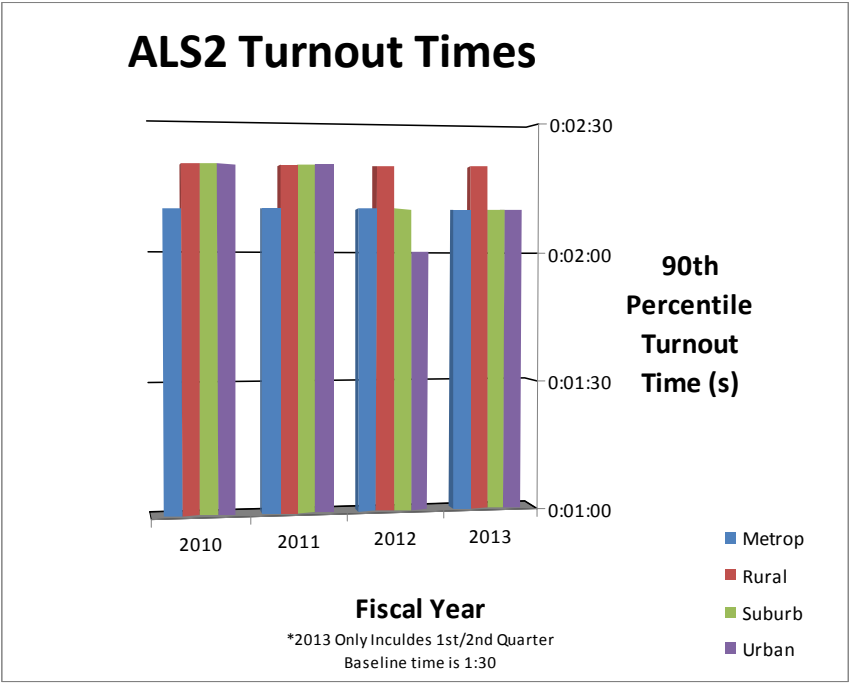
## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

### Turnout Times

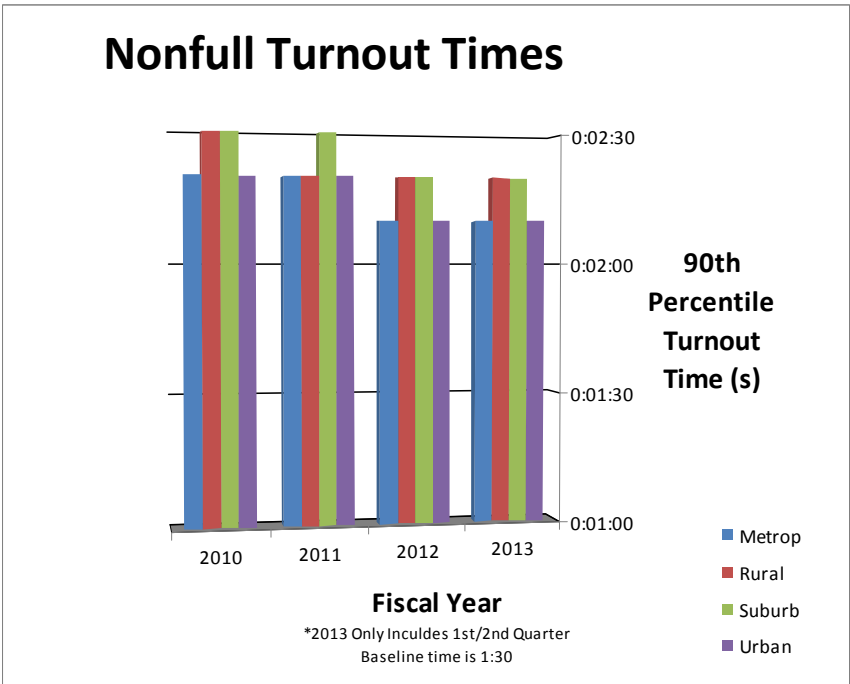
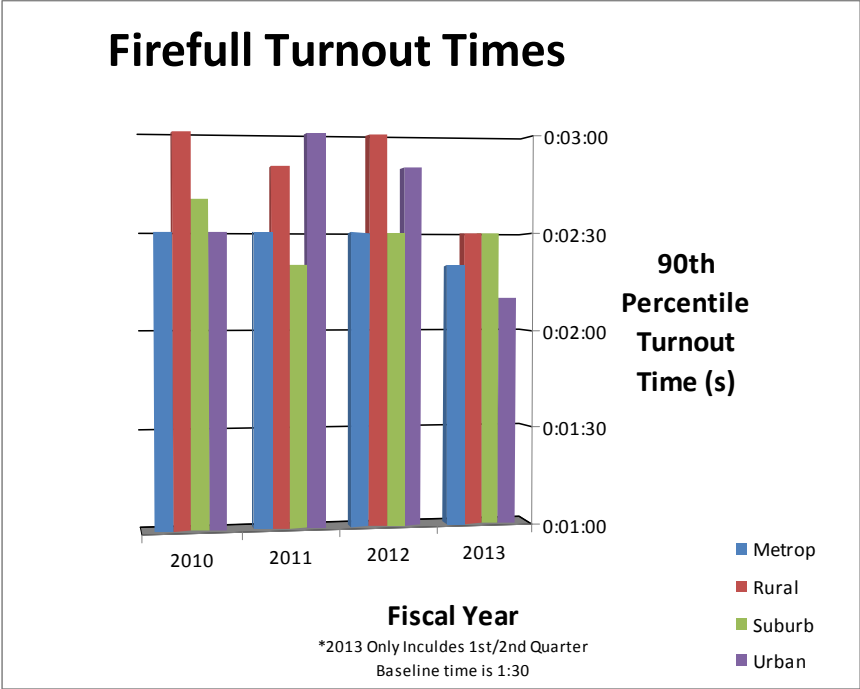
The baseline set for turnout times across all service branches is 1 minute and 30 seconds. This 90<sup>th</sup> percentile baseline time was not met by any of the service areas in any of the population densities, with the exception of two explosives calls which took 40 seconds and 80 seconds for turnout. Other than in these two incidents, a majority of the turnout times are between 2 and 3 minutes. However, there are apparent outliers. For instance, one explosives call took 17 minutes for turnout.



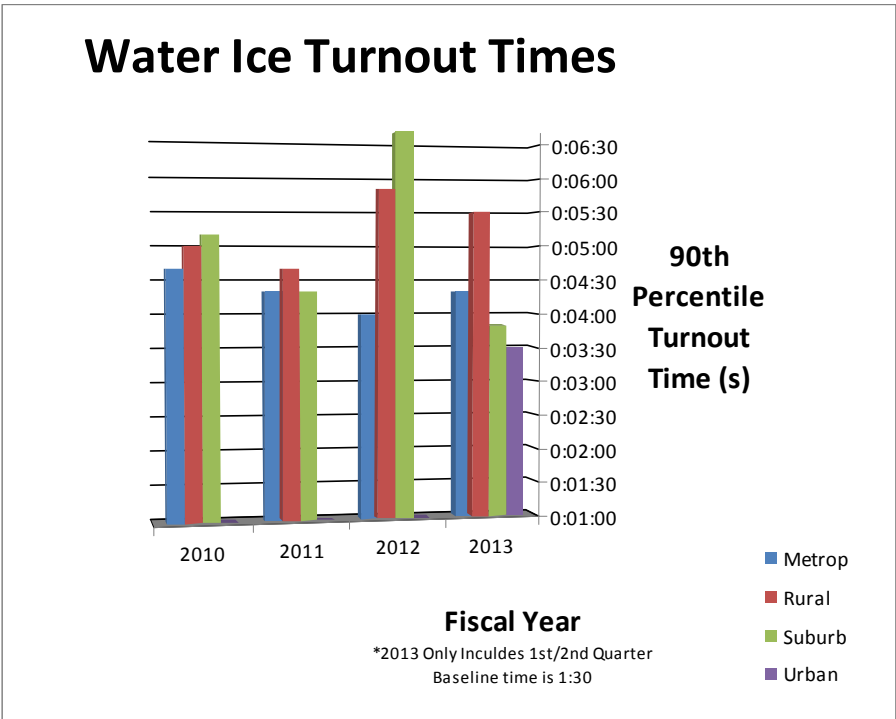
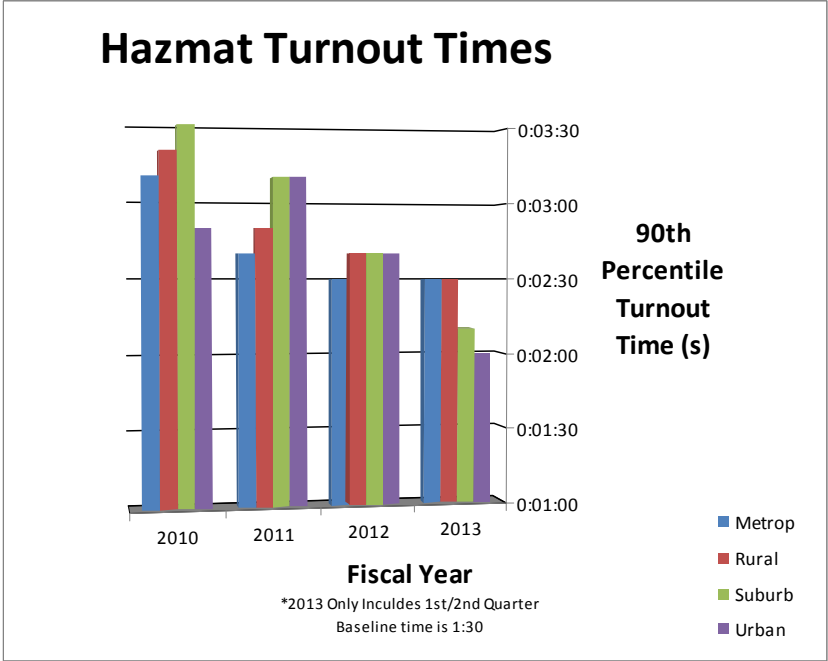
**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**



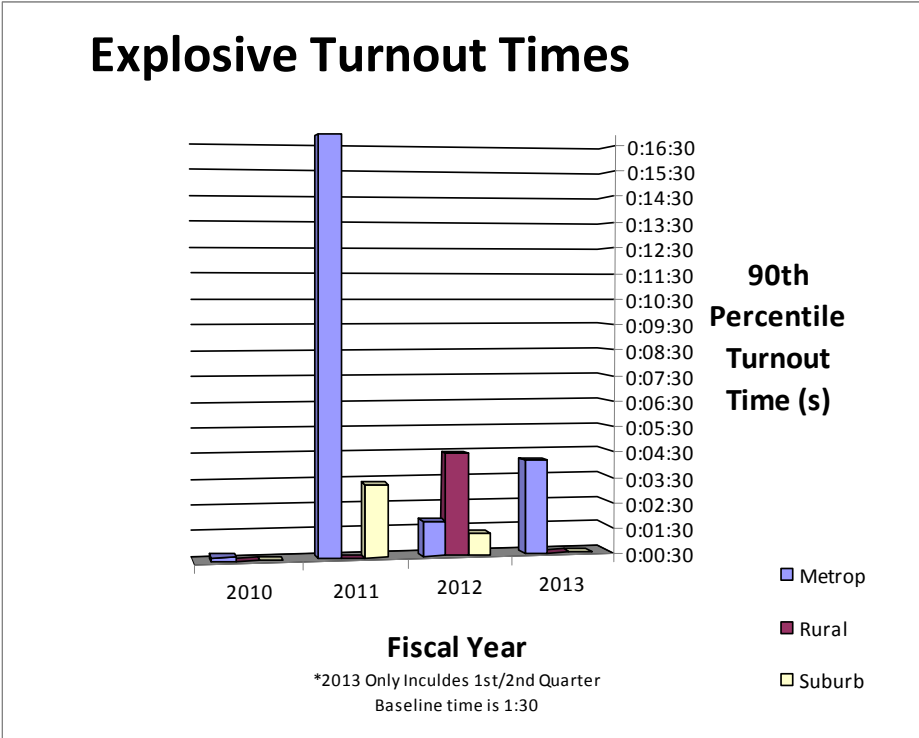
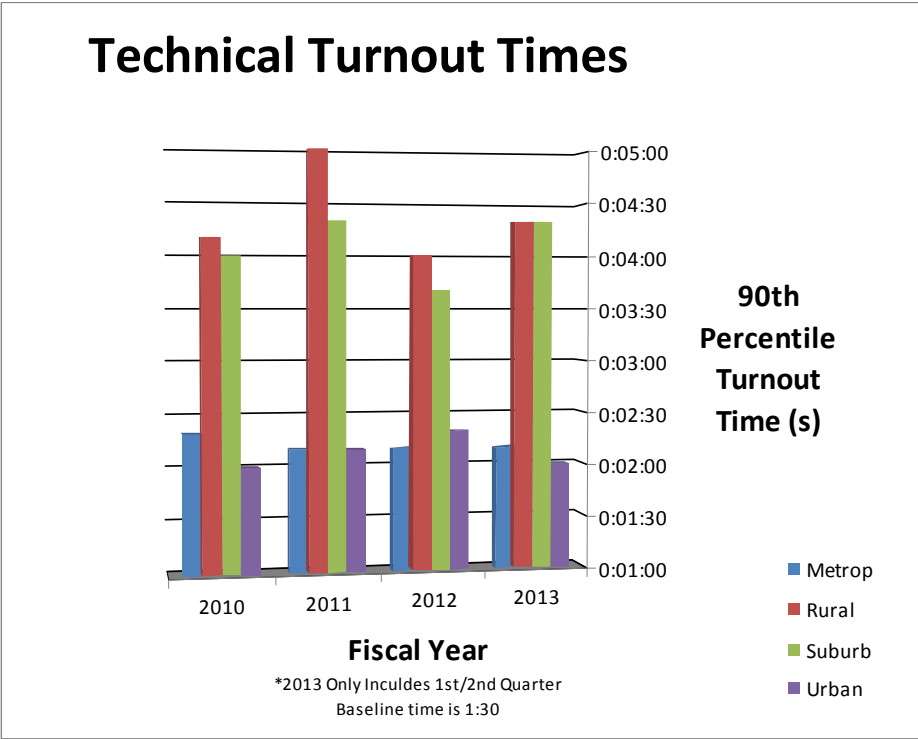
**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**



**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

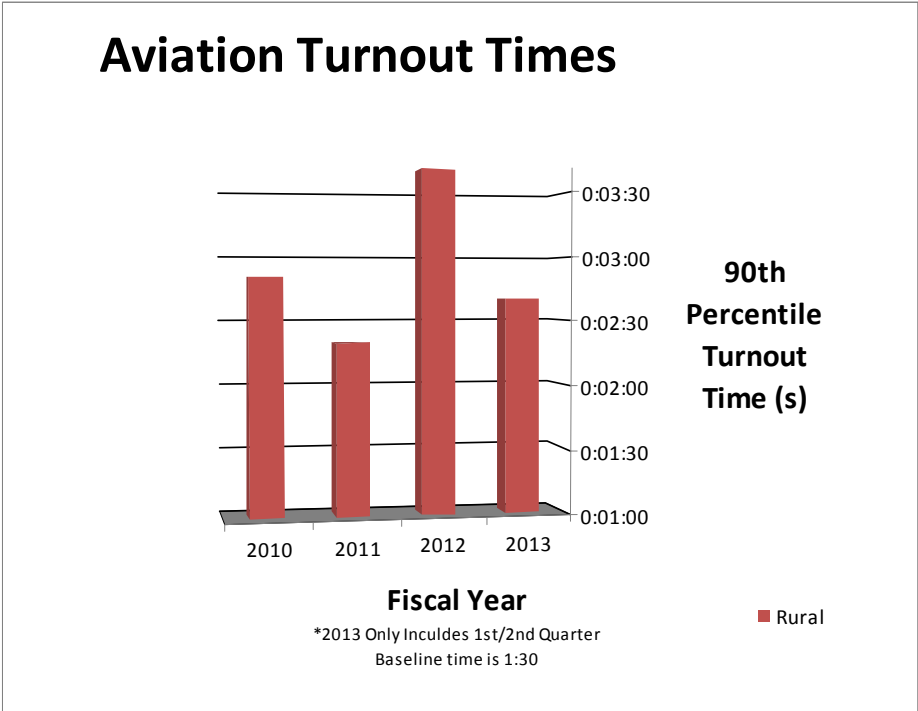


**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**



**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

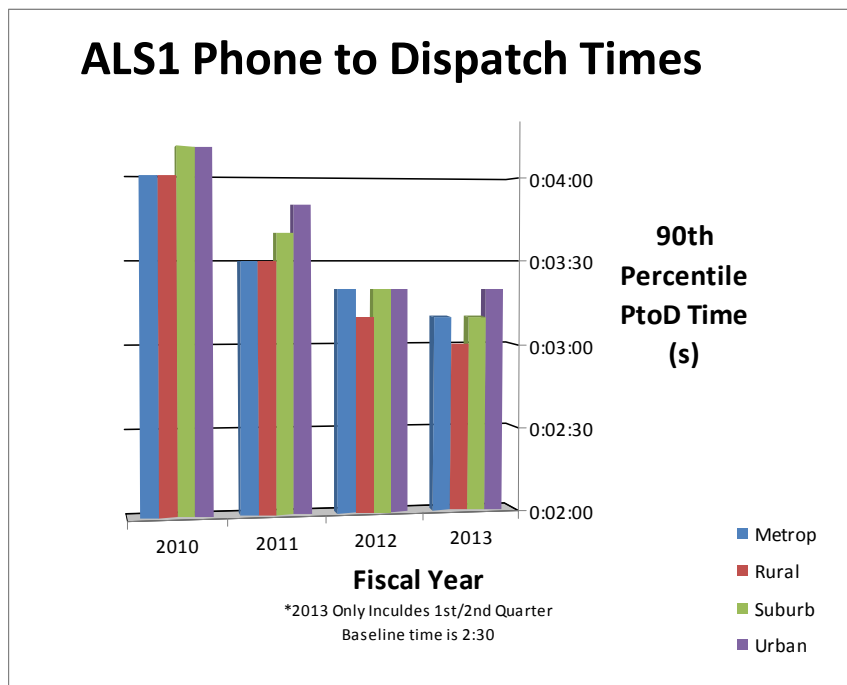


## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

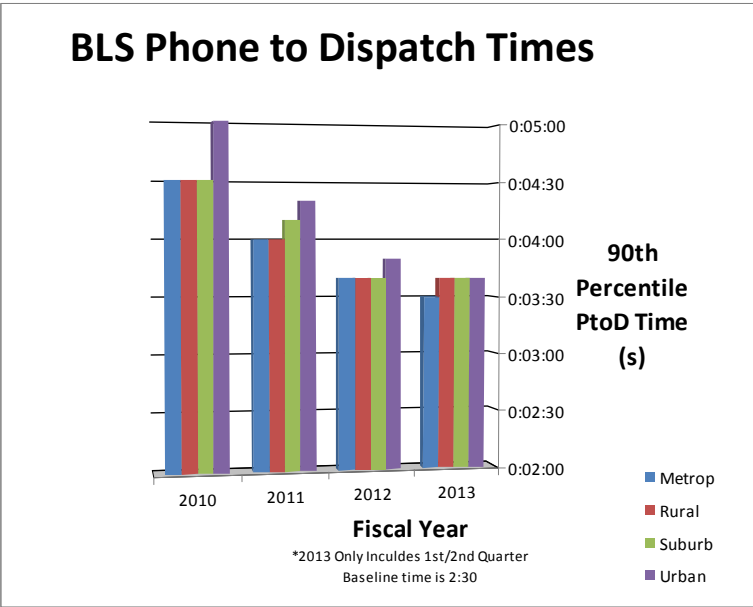
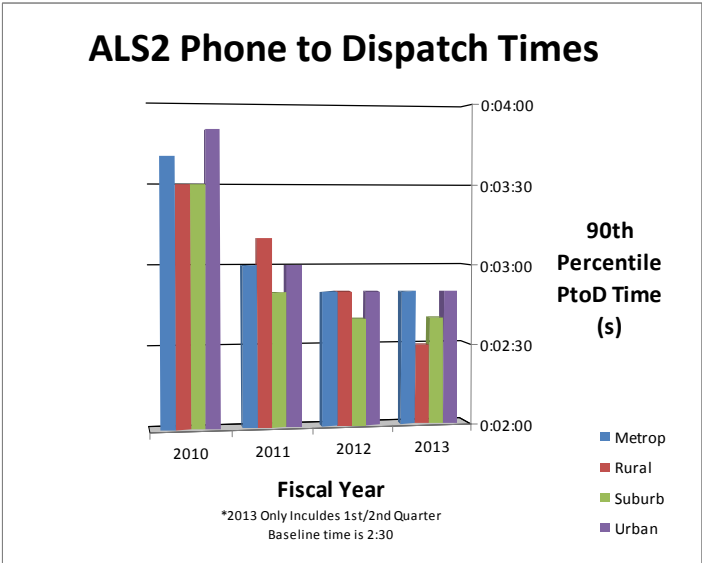
---

### Phone to Dispatch Times

The baseline set for phone to dispatch times across all service branches is 2 minutes and 30 seconds. This 90<sup>th</sup> percentile baseline time was not met by any of the service areas in any of the population densities, with the exception of rural ALS2 incidents and one rural aviation incident. A majority of the phone to dispatch times are between 3 and 6 minutes. Many of these times which greatly exceed the baseline goal of 2 minutes are for the 2010 and 2011 fiscal years.

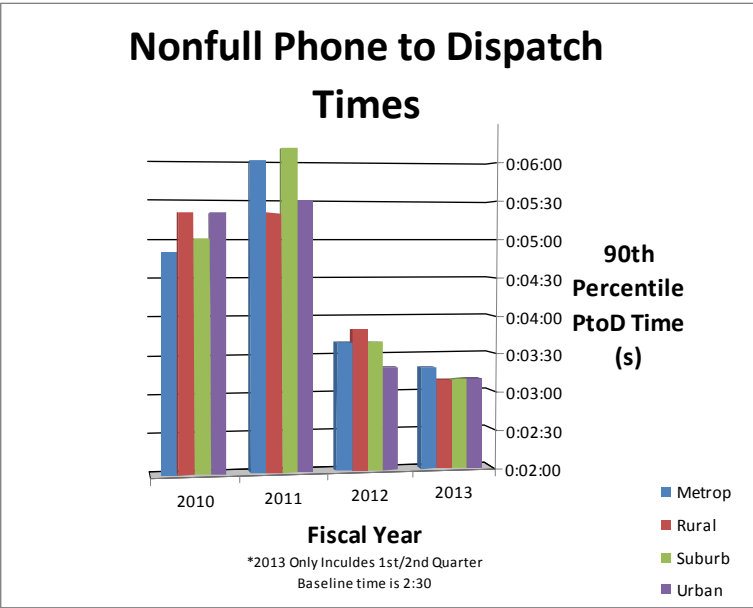
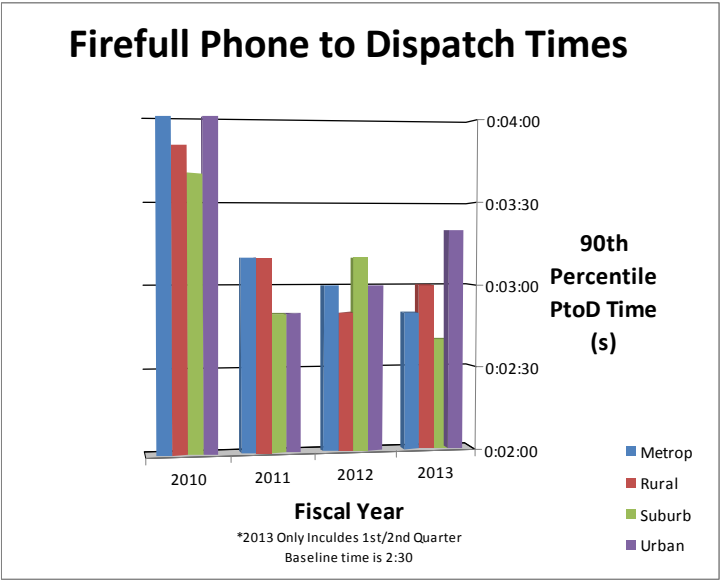


**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**



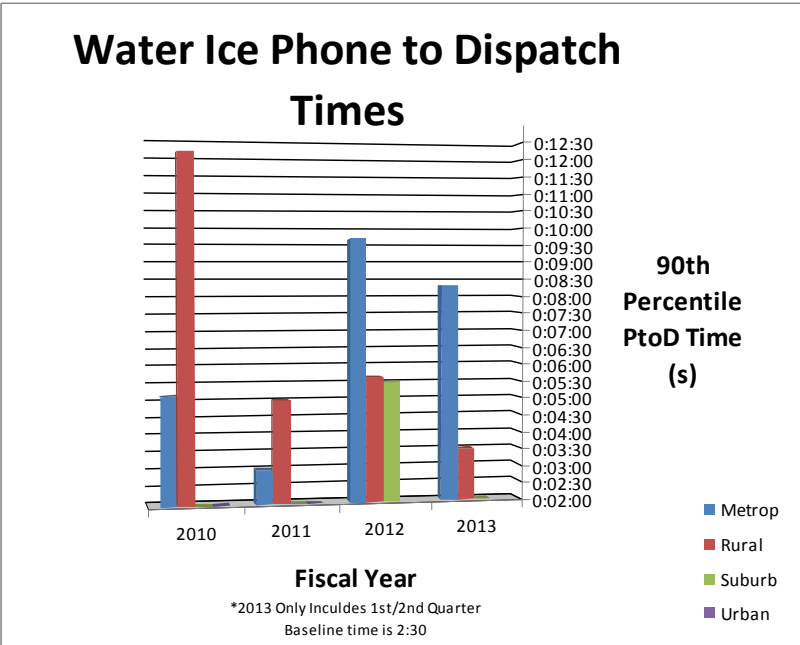
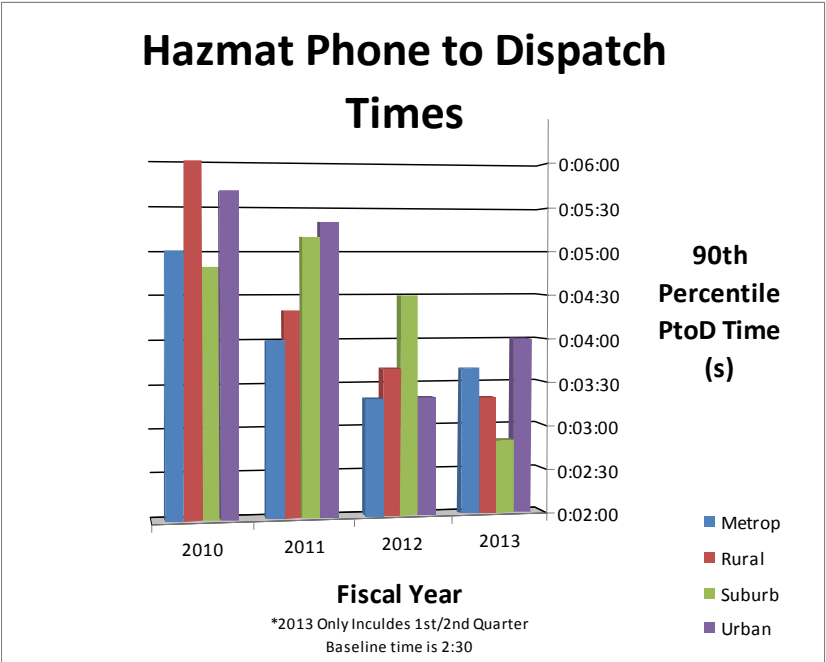


**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

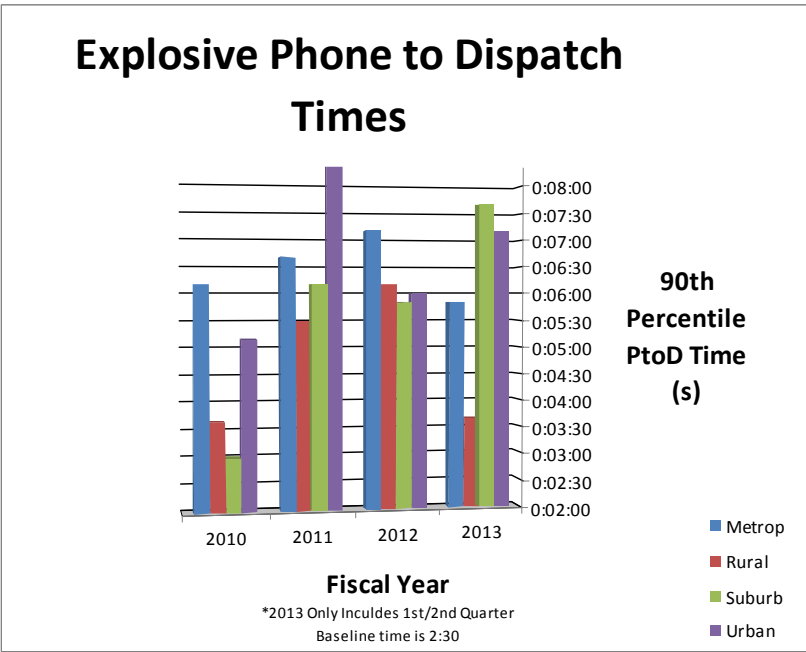
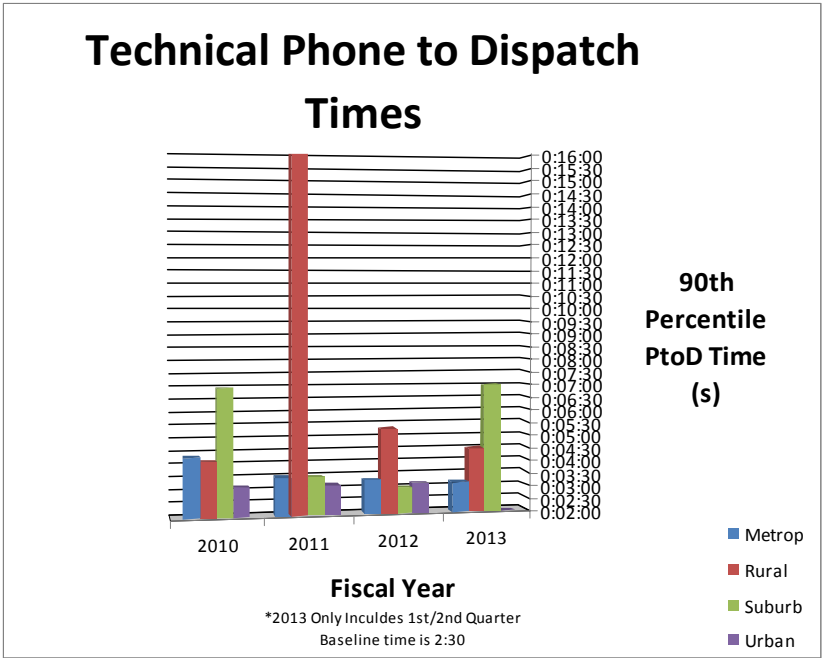


**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

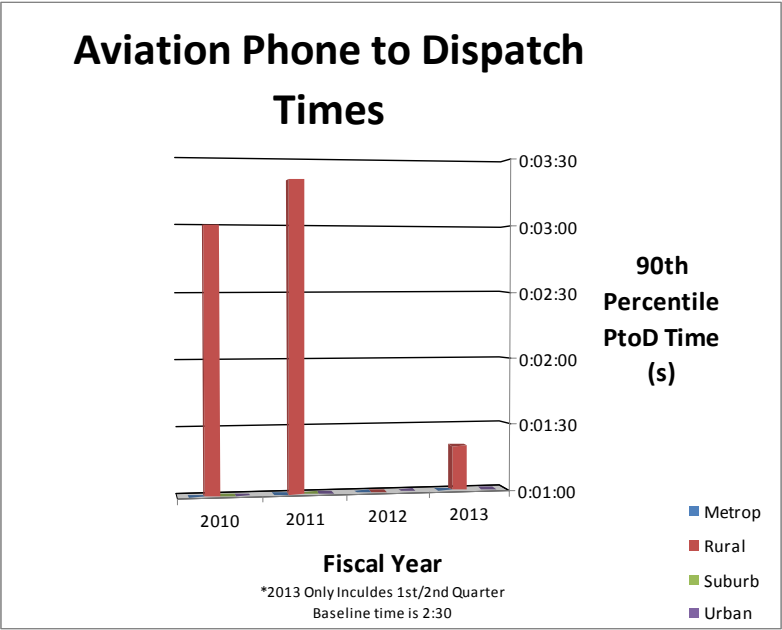


MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER



**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

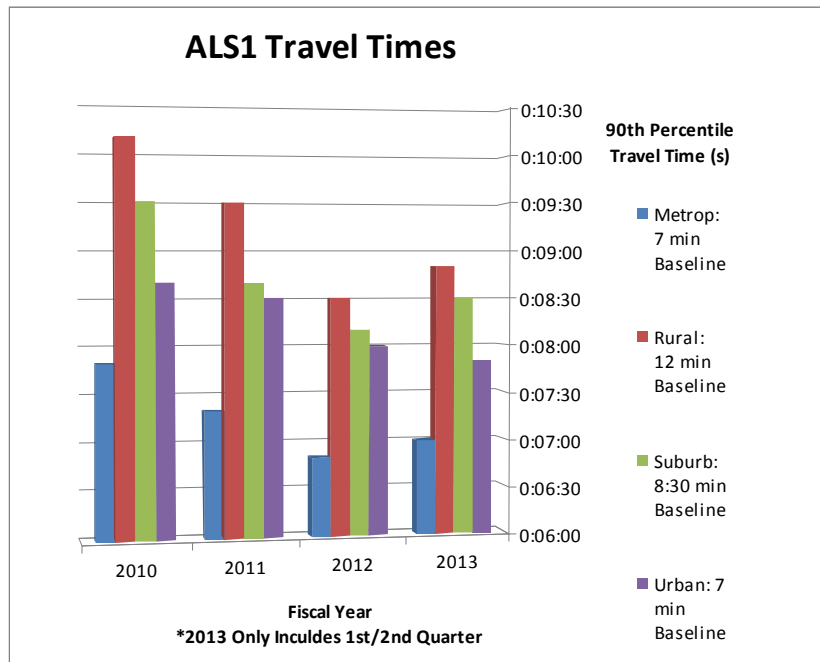


## MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

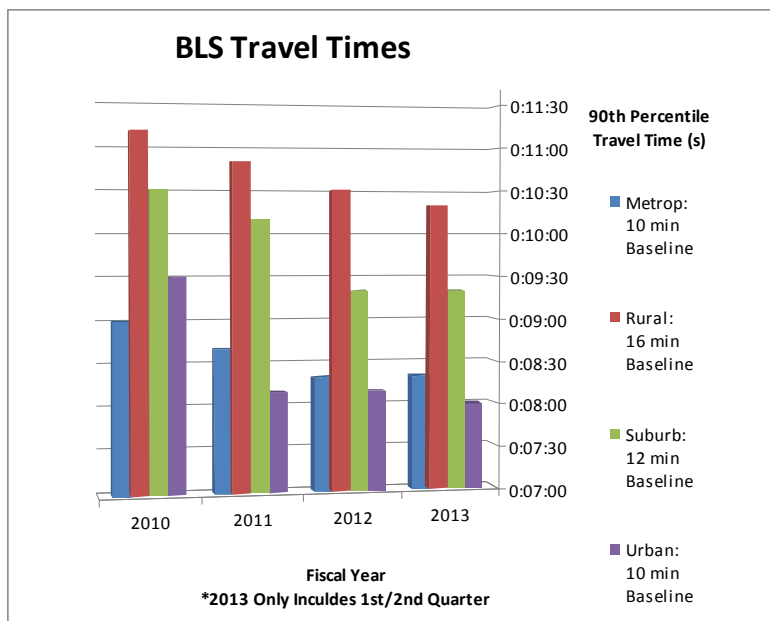
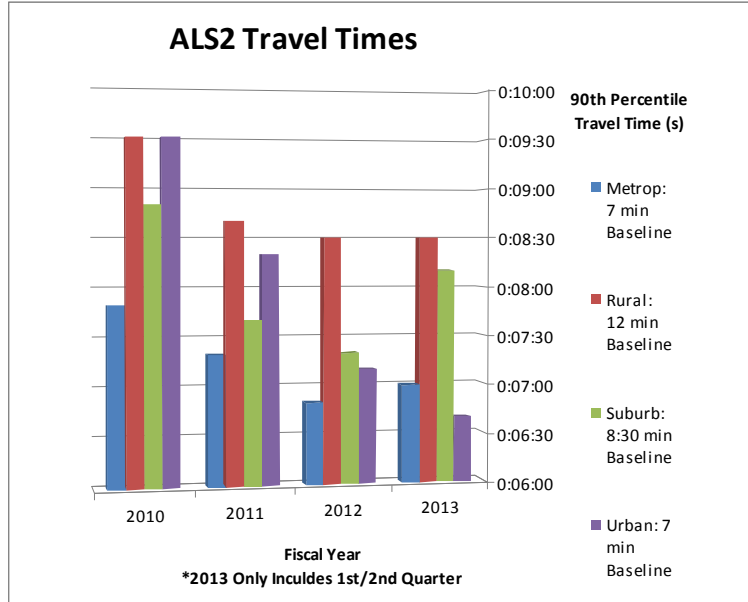
### Travel Times

The baselines set for travel times vary for each individual service branch and each population density within that service branch. The baseline times for each service branch are set the lowest for metropolitan and urban, followed by suburban and the highest for rural population densities. For each service branch, about half of the 90<sup>th</sup> percentile times meet their respective baseline time, with the exceptions of BLS and Aviation where all baseline times are met for each year/population density. While only about half of the baseline times are met, there is not as much range in travel times as there has been in the previous cases (turnout and PtoD). There are hardly any significant outliers, as the times which exceed the baselines generally exceed them by just a minute or two.

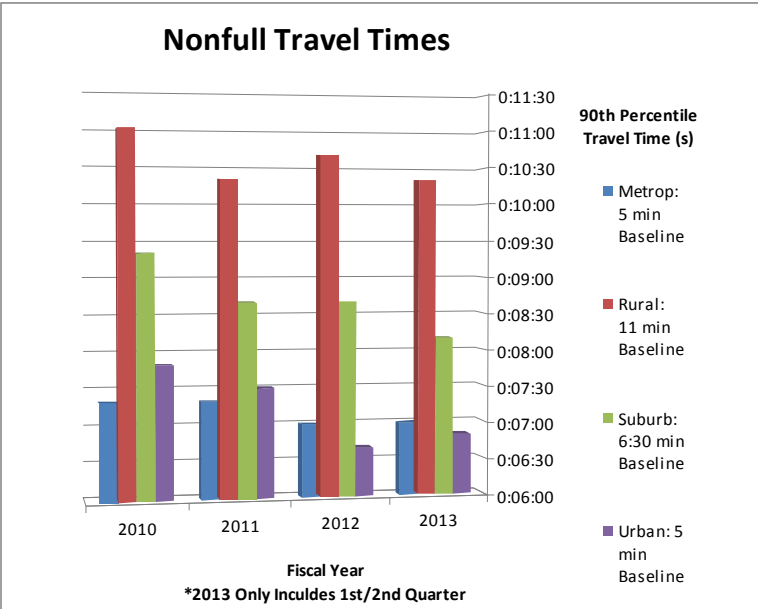
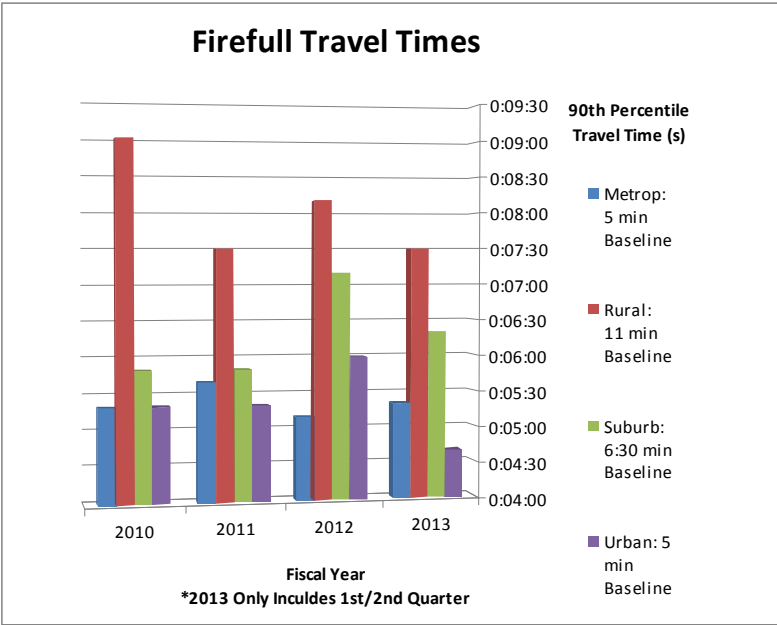


# MCFRS COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

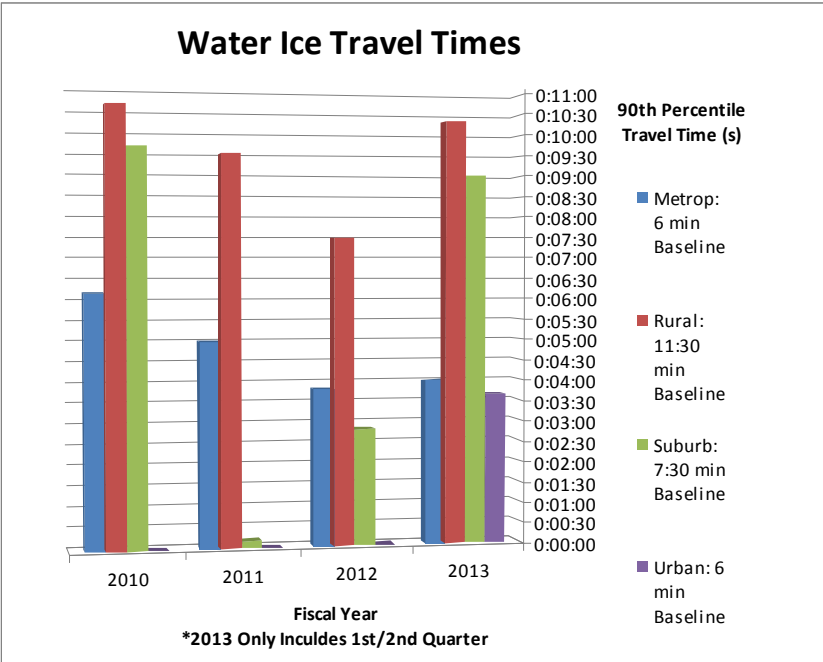
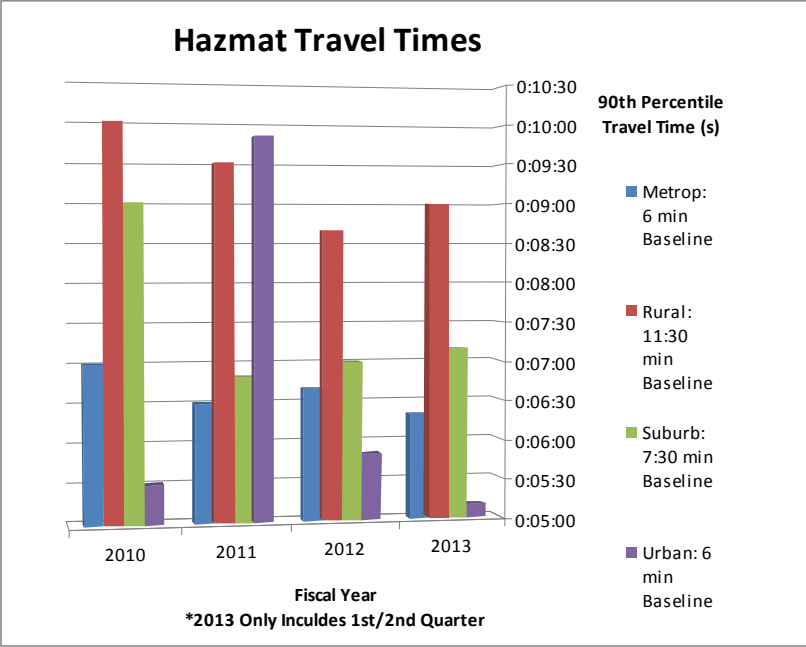
---



**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**



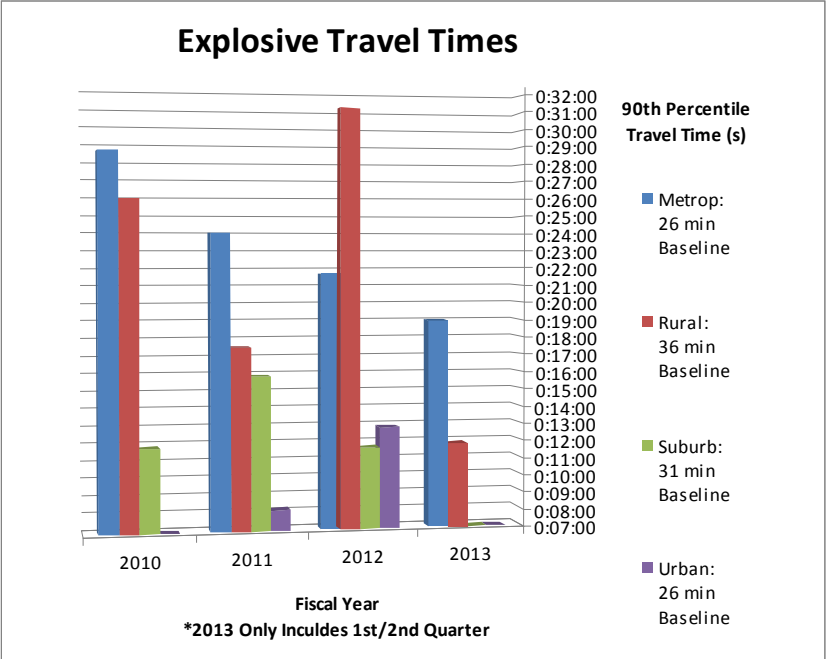
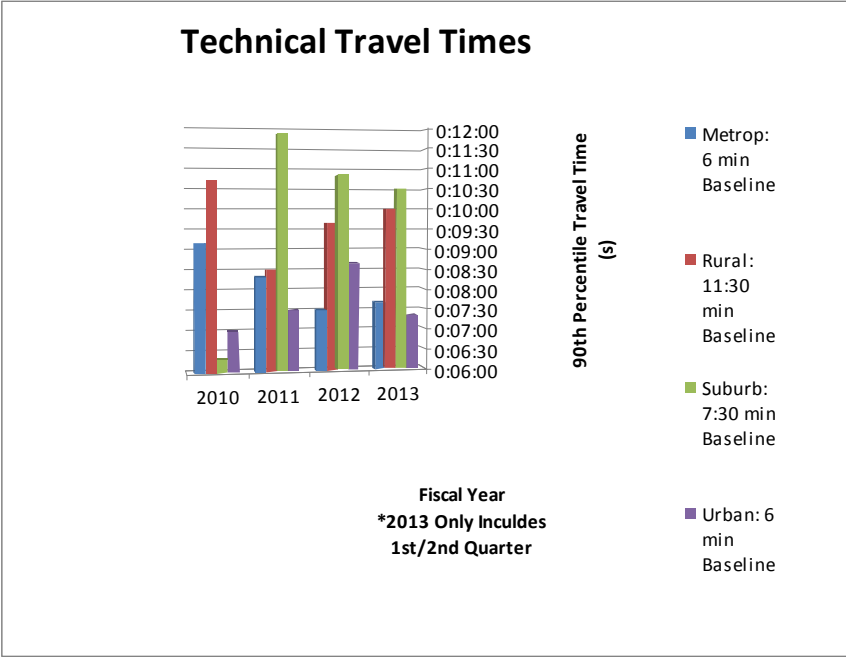
MCFRS  
COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER





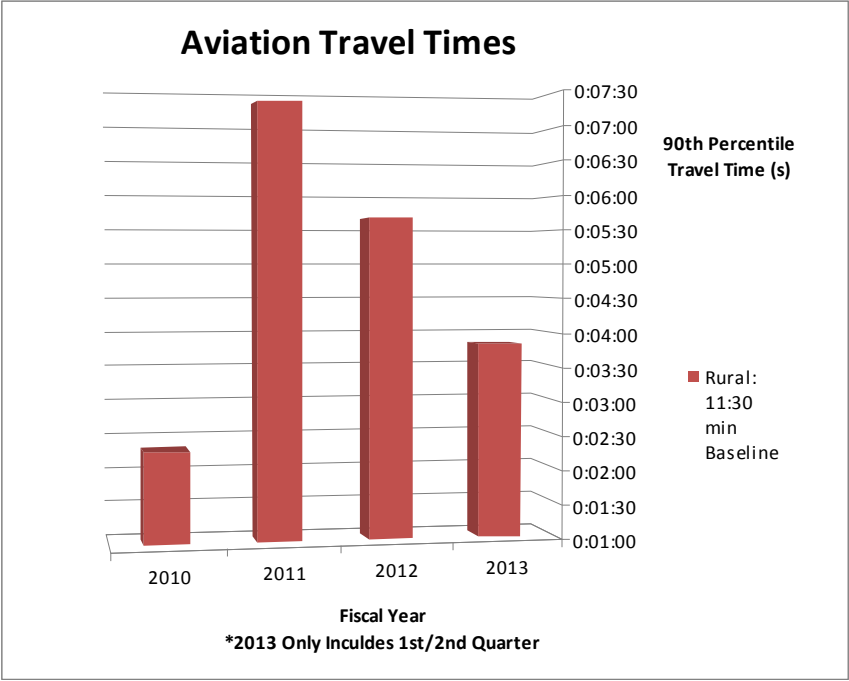
**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---



**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---



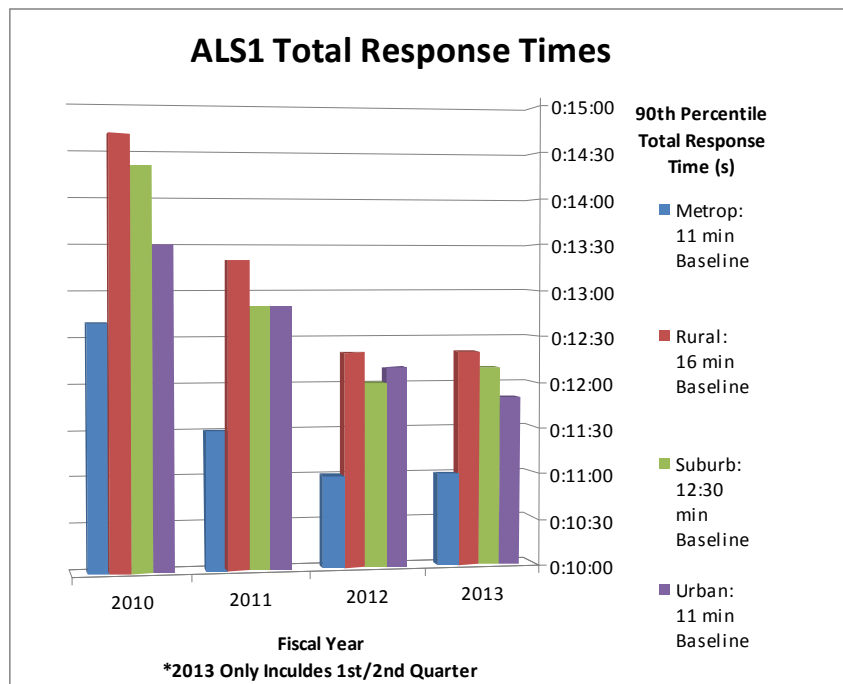
# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

### Total Response Times

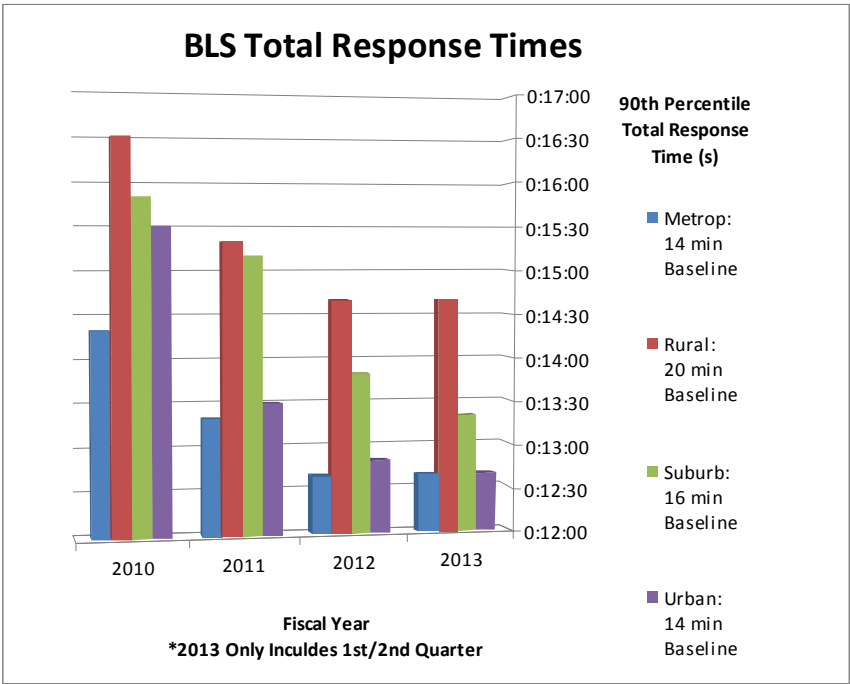
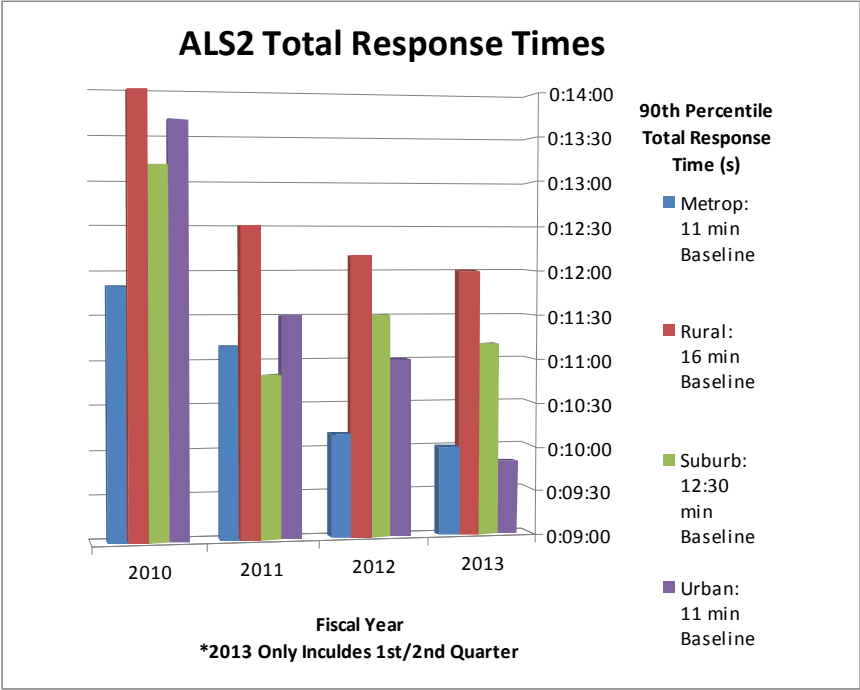
The baselines set for travel times vary for each individual service branch and each population density within that service branch. The baseline times for each service branch are set the lowest for metropolitan and urban, followed by suburban and the highest for rural population densities. For each service branch, a majority of the 90<sup>th</sup> percentile times meet their respective baseline time for each year/population density.

Most of the times which exceed the baseline times are for the 2010 and 2011 fiscal years. The range is rather high for total response times because it is a sum of all three previously mentioned components, including the Phone to Dispatch times which had a large range. Therefore, some of the times that exceed their baseline time exceed it by a great deal. For instance, the 90<sup>th</sup> percentile value for metropolitan water/ice response time is 28 minutes which is a full 18 minutes greater than its specified baseline time.

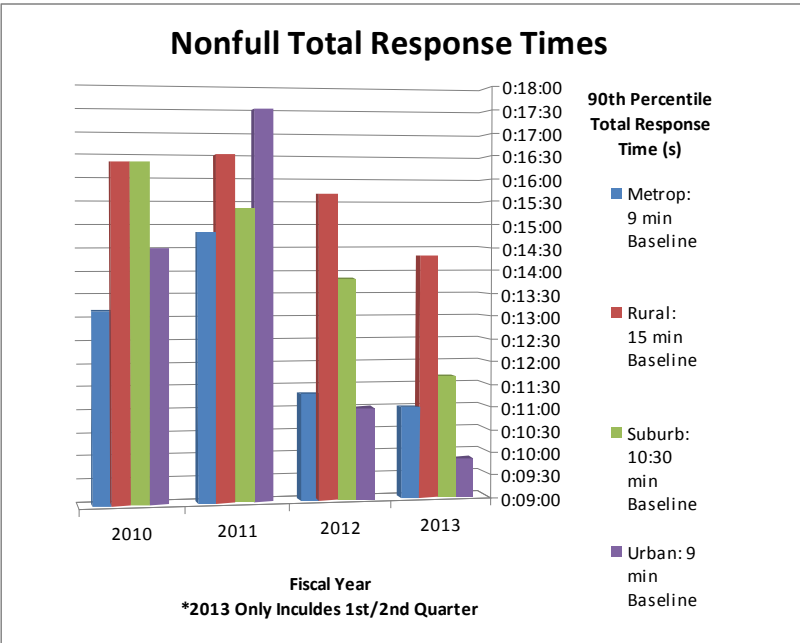
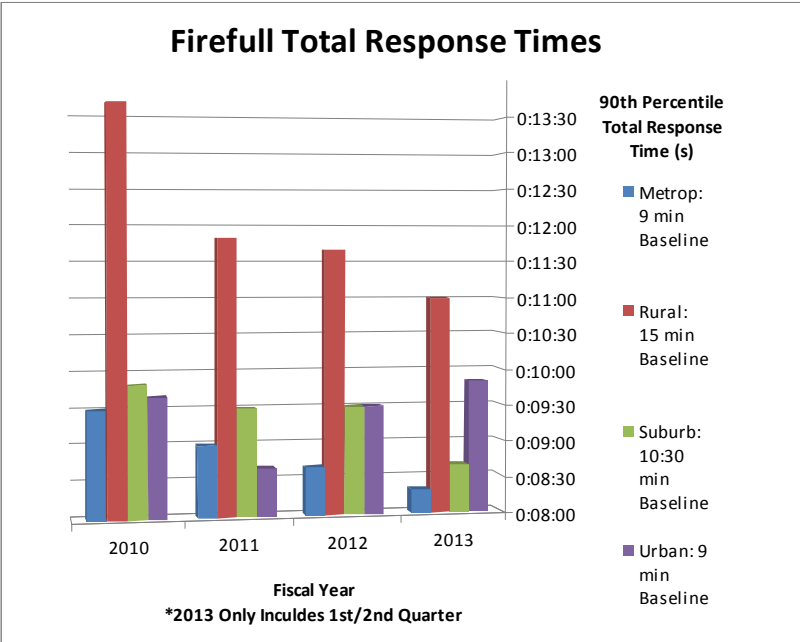


**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

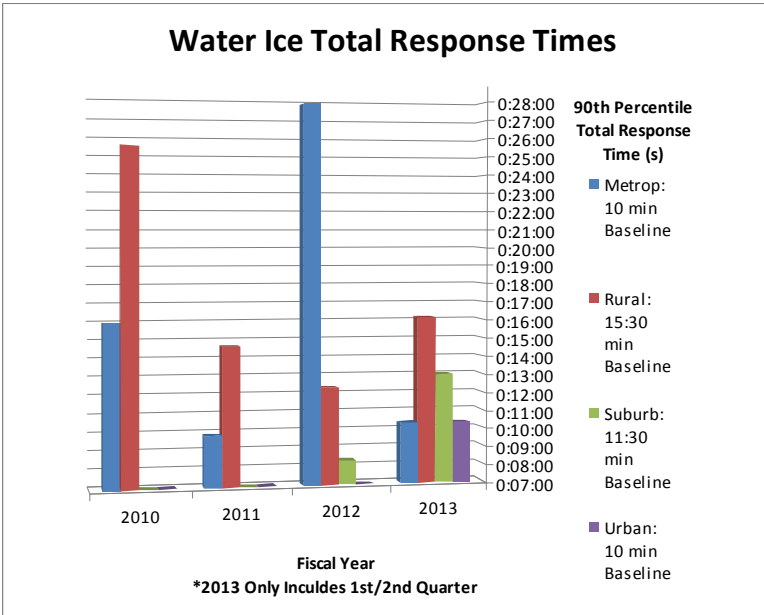
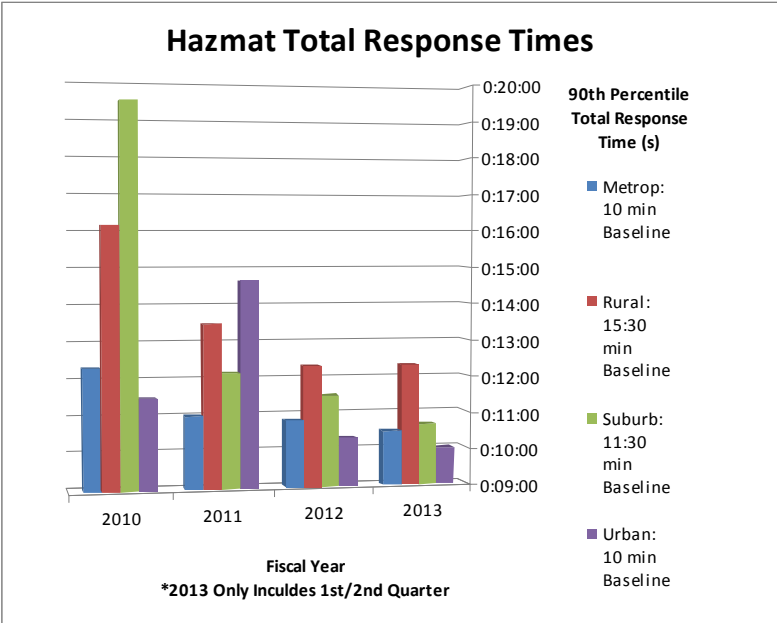


**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**



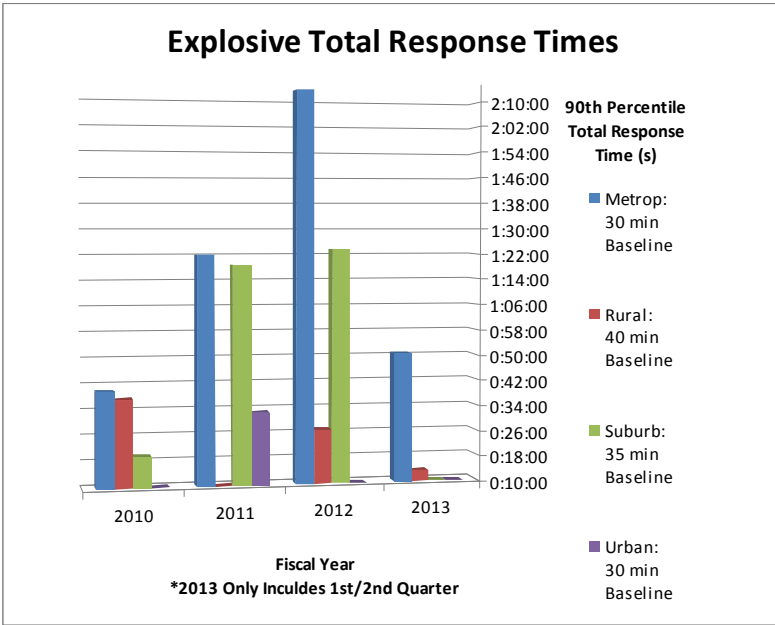
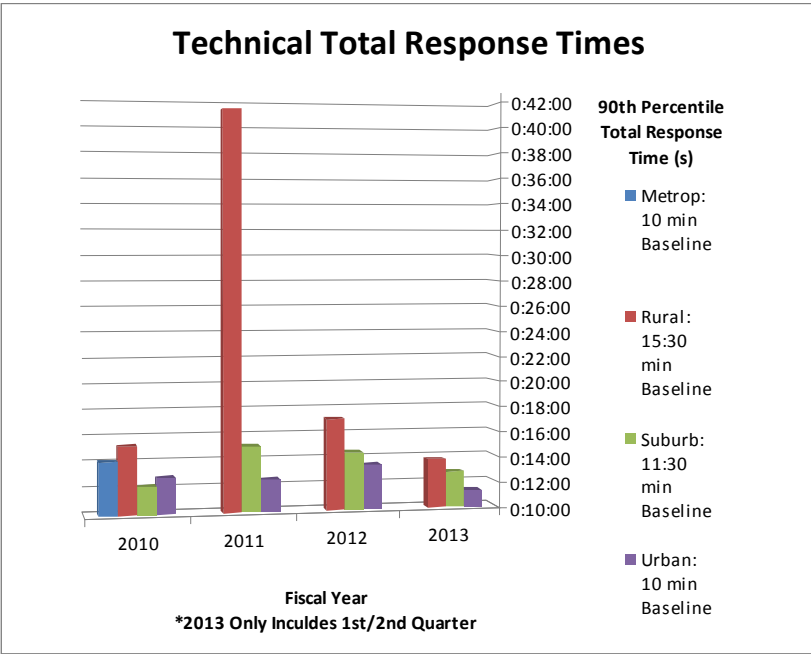
**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---



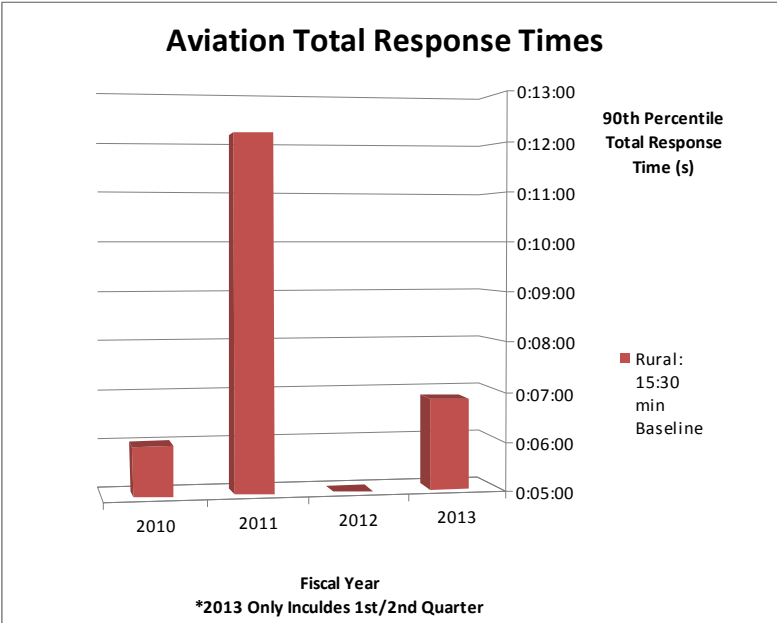
**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---



**MCFRS**  
**COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---





## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

#### By Service Branch

The service branches which generally have the highest response times are the Bomb/Explosives and Water/Ice Rescue programs. The explosives service branch particularly has very high response times in the metropolitan population densities, upwards of an hour. The Fire and Explosive Investigations section response data does not accurately reflect enroute, on-scene, and in-service status. FEI responds to incidents on both police and fire channels. Due to this fact along with a current CAD system that cannot integrate both fire and police reporting data, response times are generally inaccurate. Fire Investigators have to choose the most appropriate channel to utilize for response.

Explosive incidents are a dual dispatch event on the police radio channels. FEI will always respond to these events utilizing their police call sign on a police channel. Unfortunately response time data will not be captured this on the fire dispatch data systems. This problem will continue to skew data for bomb and arson investigation incidents.

ALS1, ALS2, and Fire-Full Assignments generally have the lowest response times; typically 15 minutes or less. While there is obviously a great deal of discrepancy in the response times between these different services branches, the baseline times were developed to take this into account and reflect these variations.

#### By Population Density

Throughout the data, it can be seen that the response times are influenced by the population densities and follow a basic trend. There is a decrease in response time within a greater population density. The four population densities can be ranked in order from highest response time to lowest as follows: Urban, Metropolitan, Suburban and Rural. This general trend can be found throughout the response time data as a whole. However, it is a trend that is subject to random variation. Not all the data is in accordance with this trend. The individually set baseline times were developed with these population density characteristics in mind and follow the same order listed above.

## MCFRS

### COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

#### Comparison of Response Times over Fiscal Years

Throughout the data, it is very evident that response times decrease every fiscal year. In almost all service areas and population densities, the average response times decrease from 2010 to 2013. Therefore, every fiscal year a greater number of the response times meet their respective baselines. This shows improvement in response efficiency over the past four years. Factors that will continue to impact improvement can be attributed to the following:

- **Modification of ALS Call Processing and Dispatch**  
Fire Chief's General Order 09-07 was implemented in 2009 to modify the procedure for ALS call processing and dispatch. ALS calls were designated as ALS-1 (requiring one ALS provider) or ALS-2 (requiring two ALS providers). ALS-2 calls are the most critical life-threatening emergencies – Echo and certain Delta calls – where two paramedics are required. With ALS-2 calls, ECC personnel do not have to wait until the conclusion of the time-consuming EMD protocol to dispatch ALS units; thus improving call processing/dispatch time as well as overall response time. With ALS-1 calls, ECC personnel must wait until the conclusion of the EMD protocol to dispatch ALS units.<sup>lxxix</sup>
- **Resources and procedural changes that are needed to accomplish this reduction include:**
  1. Additional ECC personnel
  2. Modification of time-consuming State and County protocols and procedures that unnecessarily delay call-processing and dispatch
  3. Upgrades to the County's communications system, including the computer aided dispatch (CAD) system and station alerting system, are being planned (ref. Public Safety Systems Modernization Plan, July 2009) and will lead to faster ECC call-processing and dispatch as well as faster turnout time.<sup>lxxx</sup>
- Development of turnout time goals that balance speed and safety
- Strict supervision by MCFRS battalion chiefs, station commanders, and unit officers to ensure personnel are meeting turnout time goals
- Strategic use of pre-alerts that may result in faster turnout times
- Replacement of the station alerting system<sup>lxxxi</sup>

## **MCFRS**

### **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

- Strategically placed stations – to be accomplished by adding new stations and, where appropriate, relocating existing stations
- Full implementation of the four-person staffing plan and 1 and 1 ALS model
- Deploying additional apparatus/staff and deploying them strategically
- Continued community outreach campaign (i.e., “Hear Us, See Us, Clear for Us” campaign initiated in FY06) that encourages motorists and pedestrians to yield right-of-way to responding MCFRS vehicles
- To the greatest extent possible, use of response routes that lack traffic calming devices<sup>lxxxii</sup>

# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

### I. Appendices, Exhibits, and Attachments

<sup>1</sup> [http://www.amlegal.com/montgomery\\_county\\_md/](http://www.amlegal.com/montgomery_county_md/)

<sup>2</sup> [www.montgomerycountymd.gov/content/firerescue/firecode/docs/Chapter22FireSafetyCode.pdf](http://www.montgomerycountymd.gov/content/firerescue/firecode/docs/Chapter22FireSafetyCode.pdf)

<sup>3</sup> <http://www.nfpa.org>

<sup>4</sup> <http://www.montgomerycountymd.gov/Content/culture/images/history.pdf>

<sup>5</sup> <http://www.bccrs.org/>, <http://www.silverspringvfd.org/>, <http://www.ssvfd.com/home.php>, <http://www.rvfd.org/>, <http://www.kvfd.org/>, <http://www.mcvfra.org/>, <http://www.montgomerycountymd.gov/Content/FireRescue/dcQuicklinks/>

<sup>6</sup> <http://www.montgomerycountymd.gov/Content/FireRescue/sws/operations/appstatus/appstatus.cfm>

<sup>7</sup> <http://www.montgomerycountymd.gov/ombtml.asp?url=/content/omb/fy11/psprec/index.asp>

<sup>8</sup> [http://www.amlegal.com/montgomery\\_county\\_md/](http://www.amlegal.com/montgomery_county_md/)

<sup>9</sup> <http://iafflocal1664.org>

<sup>10</sup> <http://www.mcvfra.org>

<sup>11</sup> <http://law.justia.com/codes/maryland/2010/public-safety/title-8/subtitle-1/8-102/>

<sup>12</sup> [www.montgomerycountymd.gov/content/firerescue/dovs/ql/docs/volunteer\\_benefits.pdf](http://www.montgomerycountymd.gov/content/firerescue/dovs/ql/docs/volunteer_benefits.pdf)

<sup>13</sup> [www.amlegal.com/nxt/gateway.dll?f=templates&fn=default.htm&vid=amlegal:montgomeryco\\_md\\_mc](http://www.amlegal.com/nxt/gateway.dll?f=templates&fn=default.htm&vid=amlegal:montgomeryco_md_mc)

<sup>14</sup> [www.montgomerycountymd.gov/content/firerescue/docs/masterplan/2008-9\\_Updates\\_MasterPlan.pdf](http://www.montgomerycountymd.gov/content/firerescue/docs/masterplan/2008-9_Updates_MasterPlan.pdf)

<sup>15</sup> [www.montgomerycountymd.gov/content/firerescue/swsj/reports/wssiwg/index.html](http://www.montgomerycountymd.gov/content/firerescue/swsj/reports/wssiwg/index.html)

<sup>16</sup> [www.montgomerycountymd.gov/content/firerescue/swsj/reports/truckstudy/index.html](http://www.montgomerycountymd.gov/content/firerescue/swsj/reports/truckstudy/index.html)

<sup>17</sup> [www.montgomerycountymd.gov/content/firerescue/swsj/reports/wssiwg/index.html](http://www.montgomerycountymd.gov/content/firerescue/swsj/reports/wssiwg/index.html)

<sup>18</sup> MCFRS Worksite studies parts 1-8

<sup>19</sup> <http://www.msa.md.gov/msa/mdmanual/36loc/mo/html/mo.html>

<sup>20</sup> [www.NOAA.com](http://www.NOAA.com)

<sup>21</sup> [www.montgomeryplanning.org/research/data\\_library/data\\_library\\_portal/data\\_library\\_main.shtm](http://www.montgomeryplanning.org/research/data_library/data_library_portal/data_library_main.shtm)

<sup>22</sup> [www.montgomeryplanning.org/research/data\\_library/data\\_library\\_portal/data\\_library\\_main](http://www.montgomeryplanning.org/research/data_library/data_library_portal/data_library_main)

<sup>23</sup> SOURCE: U.S. Census: 2000 and 2010 Decennial Census, P.L. 94-171 Redistricting Data/Center for Research and Information Systems, Montgomery County Planning Department, M-NCPPC.

<sup>24</sup> [www.montgomeryplanning.org/research/data\\_library/data\\_library\\_portal/data\\_library\\_main](http://www.montgomeryplanning.org/research/data_library/data_library_portal/data_library_main)

<sup>25</sup> [www.montgomeryplanning.org/research/data\\_library/data\\_library\\_portal/data\\_library\\_main.shtm](http://www.montgomeryplanning.org/research/data_library/data_library_portal/data_library_main.shtm)

<sup>26</sup> [http://www.montgomerycountymd.gov/apps/News/press/PR\\_details.asp?PrID=6562](http://www.montgomerycountymd.gov/apps/News/press/PR_details.asp?PrID=6562)

# MCFRS

## COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER

---

<sup>27</sup> <http://www.dllr.state.md.us/lmi/emplists/maryland.shtml>

<sup>28</sup> Hospital Data.com, <http://www.bethesda.med.navy.mil>

<sup>29</sup> <http://www.rockvilleredi.org/rtc/rtc.html>

<sup>30</sup> <http://www.silverspringdowntown.com/>

<sup>31</sup> <http://www.bethesda.org/>

<sup>32</sup> <http://www.visitmontgomery.com/discover-moco/montgomery-county-map/>

<sup>33</sup>

<http://www.montgomerycountymd.gov/mcgtmpl.asp?url=/content/DGS/DBDC/RegionalProjectPages/SilverSpringProjects/fillmore.asp>

<sup>34</sup> <http://www.mdsoccerplex.org/>

<sup>35</sup> <http://www.medicare.gov/NHCompare>

<sup>36</sup> <http://mhcc.maryland.gov/consumerinfo/nhguide>

<sup>37</sup> <http://www.retirement-living.com/housing>

<sup>38</sup> [http://www.city-data.com/county/Montgomery\\_County-MD.html](http://www.city-data.com/county/Montgomery_County-MD.html)

<sup>xxxix</sup> [www.montgomerycountymd.gov/firerescue/crrs/index.asp](http://www.montgomerycountymd.gov/firerescue/crrs/index.asp)

<sup>xl</sup> [www.montgomerycountymd.gov/omb/fy12/psprec/frs.pdf](http://www.montgomerycountymd.gov/omb/fy12/psprec/frs.pdf)

<sup>xli</sup> [www.montgomerycountymd.gov/frs-safe/cert/index.asp](http://www.montgomerycountymd.gov/frs-safe/cert/index.asp)

<sup>xlii</sup> Fire, Rescue, Emergency Medical Services and Community Risk Reduction Master Plan October 2005, pages 2-4 and 2-5

<sup>xliii</sup> [www.montgomerycountymd.gov/omb/fy12/psprec/frs.pdf](http://www.montgomerycountymd.gov/omb/fy12/psprec/frs.pdf)

<sup>xliv</sup> [www.montgomerycountymd.gov/firerescue/psta/index.asp](http://www.montgomerycountymd.gov/firerescue/psta/index.asp)

<sup>xlv</sup> [www.montgomerycountymd.gov/omb/fy12/psprec/frs.pdf](http://www.montgomerycountymd.gov/omb/fy12/psprec/frs.pdf)

<sup>xlvi</sup> [www.montgomerycountymd.gov/omb/fy12/psprec/frs.pdf](http://www.montgomerycountymd.gov/omb/fy12/psprec/frs.pdf)

<sup>xlvii</sup> [www.montgomerycountymd.gov/omb/fy12/psprec/frs.pdf](http://www.montgomerycountymd.gov/omb/fy12/psprec/frs.pdf)

<sup>xlviii</sup> [www.montgomerycountymd.gov/operations/index.asp](http://www.montgomerycountymd.gov/operations/index.asp)

<sup>xliv</sup> [www.montgomerycountymd.gov/omb/fy12/psprec/frs.pdf](http://www.montgomerycountymd.gov/omb/fy12/psprec/frs.pdf)

<sup>l</sup> Montgomery County Executive Regulation 36-08AM

<sup>li</sup> Fire, Rescue, Emergency Medical Services and Community Risk Reduction Master Plan October 2005, pages 4-8 and 4-9

<sup>lii</sup> Fire, Rescue, Emergency Medical Services and Community Risk Reduction Master Plan, October 2005, page 4-17

<sup>liii</sup> [www.montgomerycountymd.gov/omb/fy12/psprec/frs.pdf](http://www.montgomerycountymd.gov/omb/fy12/psprec/frs.pdf)

<sup>liv</sup> MCFRS Performance Plan FY10, page 6

<sup>lv</sup> MCFRS Performance Plan FY10, page 7

<sup>lvi</sup> MCFRS Performance Plan FY10, page 7

<sup>lvii</sup> MCFRS Performance Plan FY10, page 7

<sup>lviii</sup> MCFRS Performance Plan FY10, page 8

<sup>lix</sup> MCFRS Performance Plan FY10, page 8

<sup>lx</sup> MCFRS Performance Plan FY10, page 8

<sup>lxi</sup> MCFRS Performance Plan FY10, page 8

<sup>lxii</sup> MCFRS Performance Plan FY10, page 12

<sup>lxiii</sup> MCFRS Performance Plan FY10, page 13

<sup>lxiv</sup> MCFRS Performance Plan FY10, page 13

<sup>lxv</sup> MCFRS Performance Plan FY10, page 13

<sup>lxvi</sup> MCFRS Performance Plan FY10, page 17

<sup>lxvii</sup> MCFRS Performance Plan FY10, page 17

<sup>lxviii</sup> MCFRS Performance Plan FY10, page 23

# **MCFRS**

## **COMMUNITY RISK ANALYSIS AND STANDARDS OF COVER**

---

<sup>lxi</sup> [www.montgomerycountymd.gov/exec/stat/performance.asp](http://www.montgomerycountymd.gov/exec/stat/performance.asp)

<sup>lxx</sup> MCFRS Performance Plan FY10

<sup>lxxi</sup> MCFRS Performance Plan FY10, page 7

<sup>lxxii</sup> MCFRS Performance Plan FY10, page 4

<sup>lxxiii</sup> MCFRS Performance Plan FY10, page 5

<sup>lxxiv</sup> MCFRS Performance Plan FY10, page 10

<sup>lxxv</sup> MCFRS Performance Plan FY10, page 9

<sup>lxxvi</sup> MCFRS Performance Plan FY10, page 10

<sup>lxxvii</sup> MCFRS Performance Plan FY10, page 9

<sup>lxxviii</sup> MCFRS Performance Plan FY10, page 14

<sup>lxxix</sup> MCFRS Performance Plan FY10, page 12

<sup>lxxx</sup> MCFRS Performance Plan FY10, page 13

<sup>lxxxi</sup> MCFRS Performance Plan FY10, page 13

<sup>lxxxii</sup> MCFRS Performance Plan FY10, page 13