


PS COMMITTEE #1  
October 15, 2018

## MEMORANDUM

October 11, 2018

TO: Public Safety Committee

FROM: Susan J. Farag, Legislative Analyst 

SUBJECT: FY19 Montgomery County Fire and Rescue Service (MCFRS) Savings Plan

PURPOSE: Review and Vote on Proposed FY19 MCFRS Savings Actions

On September 17, the County Executive transmitted proposed FY19 MCFRS Savings Actions to the Council for consideration (see attached memo on ©1-4). Today, the Committee will review the proposed reductions. The Council is tentatively scheduled to consider these reductions on October 23.

### OVERVIEW

The Executive has recommended cost savings measures totaling \$3,008,851 for the remainder of FY19 (assumes a November 1 start-date). It would reduce authorized staffing by 28.2 FTEs. The Executive has proposed these reductions because MCFRS's FY18 expenditures exceeded the approved budget (\$214.9 million) by \$12.8 million, or about 6%. This overrun was driven primarily by overtime costs (between \$8 and \$9 million), but also reflects unexpected fleet repair costs (about \$2.7 million).

The Office of Management and Budget (OMB) indicates that without savings, FY19 expenditure overruns are expected to be roughly the same as FY18, which will have a compounding impact of \$25.6 million in FY20. The Approved FY19 Operating Budget is \$218,000,207.

To provide context for today’s discussion about proposed cuts, the following chart shows approved operating budgets, actual expenditures, cost overruns, and approved Full Time Equivalent (FTE) positions for the past five years.

MCFRS Operating Budget History <sup>1</sup>				
	Approved	Actual	Cost Overrun	FTEs
FY15	\$225,219,536	\$231,244,558	(\$6,025,022)	1286.56
FY16	\$222,299,388	\$231,326,712	(\$9,027,324)	1299.26
FY17	\$215,939,550	\$226,653,689	(\$10,714,139)	1302.76
FY18	\$214,862,420	\$227,667,046	(\$12,804,626)	1286.76
FY19	\$218,000,207	-	-	1298.26

The proposed reductions come on the heels of similar reductions contained in the Recommended FY19 Operating Budget, which included:

- Eliminate Hyattstown 709 (-\$2,477,000 and -12 FTEs)
- Eliminate Germantown PE729 (-\$1,788,750 and -9 FTEs)
- Eliminate Hillandale Tower 724 (-\$1,542,500 and 8 FTEs)

The Council did not approve any of these cuts. It restored these response units and added four new FTEs for daytime staffing at Burtonsville (\$674,930). These restorations, along with two other small Reconciliation List items, added \$6,685,960 to the FY19 Approved Operating Budget.

The most recent proposed reductions include:

- Eliminate Overtime Backfill of Four-Person Staffing During Non-Peak Hours (-\$521,000 and -6 FTEs);
- Eliminate Night Staffing on Ambulance 711 (Glen Echo), 733 (Rockville Falls Road, and 721 (Kensington-Parkland) (-\$892,000 and -8.1 FTEs);
- Eliminate Weekday Staffing for Aerial Tower 703 (Rockville-Downtown) (-\$289,000 and -2.1 FTEs); and
- Eliminate Paramedic Engine 720 (Bethesda – Cedar Lane) (-\$1.3 million and -12 FTEs).

**Response times:** With the exception of the Kensington-Parkland Ambulance 721, all proposed reductions impact response times, although to varying degrees. Response time includes all of the 911 call processing/dispatch time, turnout time, and travel time. Response time goals vary depending on the type of response required (e.g. Advanced Life Support, or ALS, or full fire response) and population density (Density Zone Map attached at ©21). The areas with currently-proposed service impacts are primarily in Metropolitan density zones.

<sup>1</sup> Data obtained from various Approved Operating Budget publications.

According to the current CountyStat Performance Plan review of MCFRS, 90% of first engine arrivals in Metropolitan density zones are within 9.10 minutes. Ninety percent of first ALS arrivals in Metropolitan density zones are within 10.47 minutes.<sup>2</sup>

This packet is divided into three main sections. The first provides discussion on proposed reductions. The second provides an overview of alternate savings. The third looks at the two primary drivers of cost overruns – overtime and unanticipated vehicle repairs – and what may be done to address these systemic issues to help mitigate future impacts.

## **1. PROPOSED REDUCTIONS**

### **Eliminate Overtime Backfill of Four-Person Staffing During Non-Peak Hours**

This proposed reduction would save \$521,000 in FY19 (\$781,000 annualized). This reduction maintains four-person staffing during peak hours (7am to 10pm) and maintains four-person staffing for most calls during non-peak hours. However, if overtime backfill is required to fill the fourth position, engines will operate with three personnel instead.

**Service Impact:** This reduction assumes four-person staffing is maintained for most calls (87%) during non-peak hours. Executive staff advises that if this reduction is approved, five engines will be identified to run with three-person staffing during non-peak hours. MCFRS will select engines that minimize service disruption. Once this decision is made, the paramedic position on engines with three staff would be maintained. This reduction will increase response times for full fire response between 10pm and 7am, when some engines will have three personnel.

**Executive staff has not identified which stations could be impacted by these staffing reductions.** During discussions with Council staff, Executive staff advised that Takoma Park 702, Kensington-Parkland 721, Germantown 729, and Bethesda 720 are possible engines that could have reduced staffing. ***The Committee should understand exactly how the Chief will determine these reductions, whether specific engines have now been determined, and if not, are the four listed still the most likely?***

### **Night Staffing on Ambulance 711 (Glen Echo), Ambulance 733 (Rockville Falls Road), and Ambulance 721 (Kensington-Parkland)**

This proposed reduction would save \$892,000 in FY19 (\$1.3 million annualized). This reduction fully eliminates night staffing (5pm to 7am) on three ambulances.

**Service Impact:** While ambulances are eliminated at night, the reduction does not impact response times for paramedics. The elimination of ambulance service would instead impact any necessary transports to hospitals. Executive staff advises that in FY18, the average number of calls dispatched per unit were:

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<sup>2</sup> View the CountyStat Performance Plan at this link: <https://stat.montgomerycountymd.gov/stories/s/Montgomery-County-Fire-Rescue-Service-MCFRS-/rgm5-yy5h>

- A711 (Glen Echo) – 1.93 calls per night;
- A733 (Rockville Falls Road) – 2.24 calls per night; and
- A721 (Kensington-Parkland) – 3.89 calls per night.

Currently, response times for most of Rockville-Falls Road and Glen Echo coverage areas is within eight minutes. Portions of these areas would see response times increase to 12 minutes (see response time charts at ©10-13). Night transport times would remain within twelve minutes, and in some portions of the service areas, they would remain within eight minutes. The Kensington-Parkland service area remains fully covered by eight-minute transport response (response time charts on ©14-15).

Council staff asked whether Executive staff had discussed these proposed reductions with Montgomery County Volunteer Fire and Rescue Association (MCVFRA). The Executive staff indicated that Kensington and Rockville volunteers cannot replace the services proposed for reduction. They have not yet discussed these proposed reductions with Glen Echo volunteers and their capacity to backfill service.

### **Eliminate Weekday Staffing – Aerial Tower 703 (Rockville Downtown)**

This proposed reduction would save \$289,000 in FY19 (\$434,000 annualized). This reduction would take the aerial tower out of service during weekdays. Integrated career and volunteer staffing will remain in place during nights and weekends. Weekday aerial tower unit calls will be covered by surrounding stations with aerial units, as well as the Rockville Rescue Squad at Station 3.

**Service Impact:** Currently, much of the coverage area experiences eight-minute response times. Some of the area will see response time increases to 12 minutes. (See response time charts at ©16-17).

### **Eliminate Paramedic Engine 720 (Bethesda-Cedar Lane)**

This proposed reduction could save \$1.3 million in FY19 (\$2 million annualized). This reduction takes PE720 out of service.

**Service Impact:** Much of the service area currently has response times within six minutes. If the engine is removed, units at other stations can provide coverage to the entire area within eight minutes. It can also be served by Bethesda Chevy Chase Rescue Squad and first responders from National Institutes of Health (NIH) (see response time charts on © 18-20).

## **2. ALTERNATE SAVINGS**

The Executive provided additional possibilities for alternate cuts related to four-person staffing (see ©3-4), ranging in savings from \$362,167 to \$6,156,842.

### **Four-Person Staffing, Tiered Reduction**

This alternate service reduction would save \$362,167 annually, and reduce staff by 4.6 FTEs. It eliminates four-person staffing starting in areas without high-rise density, tankers, mobile ambulance buses, or special operations. The first candidates for reduction are:

- Kensington Station 5 (daytime reduction only; volunteer staffed at night);
- Kensington-Parkland Station 21;
- Milestone Station 34; and
- Colesville Station 24.

### **Four-Person Staffing, Daytime Only, Seven Days Per Week**

This alternate service reduction would save \$6,156,842 annually, and reduce staff by 81 FTEs. It eliminates four-person staffing during nighttime hours.

### **Emergency Medical Services Transport (EMST) Fees**

Council staff asked if increasing the Emergency Medical Services Transport (EMST) fee would help defray costs. Executive staff advises that about 55% of EMST revenue comes from Medicare. Medicare and most insurers set maximum allowable charges for each covered service and the County's EMST fees are already greater than most insurers' allowable charges. Increasing the fee would not result in any significant revenue increase.

## **3. COST DRIVERS AND MITIGATION EFFORTS**

### **Overtime**

Overtime has been a primary driver of MCFRS cost overruns for several years. While overtime will always be a necessary component of cost-effective staffing, MCFRS has consistently overrun budgeted overtime. For FY18, the approved budgeted amount for overtime was \$16.2 million, and the Department overspent this by about \$9 million. Overtime continues to be concentrated in field operations (about 80%) and training (about 10%). The FY19 Approved Budget also includes \$16.2 million for overtime.

Overtime has been historically under-budgeted. For example, the FY18 Approved Operating Budget included \$16.2 million for overtime, although the mid-year report indicated the Department had already spent \$12.8 million. In FY17, the Approved Operating Budget included \$15.9 million for overtime, and the mid-year report indicated the Department had already spent \$11.28 million.

**Staffing Plan:** During Council staff discussions with OMB and MCFRS, Executive staff mentioned that CountyStat had recently completed a Net Annual Work Hour Staffing Plan for MCFRS. The report apparently noted that 180 additional positions are needed to effectively meet staffing needs.

Council staff requested a copy of this staffing report; however, OMB advised that it is currently under Executive review and is not ready for public distribution.

While the staffing plan is not available, the FY19 Strategic Plan indicates that one performance goal is to work toward achieving a coefficient of 5.0 FTEs per 24-hour position.<sup>3</sup> The Strategic Plan states that most master Firefighter positions are staffed at 3.0 FTEs and most Firefighter positions are staffed at 4.5 FTEs per position. When a firefighter is on leave, a replacement must be used on overtime, and may require a forced holdover. Newly implemented services, such as the paramedic position added to Takoma Park, are budgeted and staffed at 5FTEs.

Determining the appropriate mix of career staffing and overtime will result in a more accurate budget and potentially minimize unanticipated overtime overruns. While there is no expected savings from this measure in FY19, the Committee should monitor ongoing progress toward this goal.

***Disability Retirement:*** One of the causes of increased overtime was a significant increase in the length of time it took the Department to approve disability retirement applications. Ordinarily, it took four to five months. This timespan increased to approximately 15 months, which required overtime backfill until the determination was made. The time to process disability retirements has been greatly reduced, and is now back down to about four months. OMB advises this change could reduce overtime costs by approximately **\$750,000** if this trend continues.

***Civilianizing Uniformed Positions:*** MCFRS has indicated that it intends to examine various functional assignments within the Department, that are current performed using uniformed firefighters on overtime. Some of these functions include assisting with procurement and distribution of EMS equipment and supplies; managing the Department radio and mobile data computer systems, fire apparatus portable equipment supply and repair; and mapping and GIS interface programming at the Emergency Communications Center (ECC). If some of these functions were converted to civilian positions, overtime reductions could total **\$300,000**. This savings would be offset by additional personnel costs.

## **Vehicle Repairs**

MCFRS has an aging fleet, and in FY18 more units were out-of-warranty. Increasingly complex electrical systems and emissions mandates has led to rising vehicle maintenance costs. The FY18 Operating Budget included \$1,709,000 for maintenance and repairs; however actual FY18 costs totaled \$4,363,000, resulting in a net overrun of \$2,654,000.

In FY19 and FY20, MCFRS expects to receive two tankers, four brush engines, 24 engines, and 15 EMS units. These units will go into service in the fourth quarter of FY19 and early FY20. At that time, the Department anticipates vehicle maintenance savings as the apparatus will be under warranty and the average front-line fleet age decreases. Executive staff advises that actual savings are difficult to quantify. Routine maintenance, parts, and equipment will still be needed to service the new equipment.

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<sup>3</sup> See FY19 Strategic Plan at this link: [https://www.montgomerycountymd.gov/frs-ql/Resources/Files/ofc/STRATEGIC\\_PLAN.pdf](https://www.montgomerycountymd.gov/frs-ql/Resources/Files/ofc/STRATEGIC_PLAN.pdf)

## COUNCIL STAFF RECOMMENDATIONS

Council staff is concerned with all the proposed service impacts. Council staff recommends that the Committee take current Departmental mitigation efforts into account when reviewing the proposed service cuts, such as the potential \$750,000 savings from expedited disability retirement determinations, \$300,000 savings from converting certain job functions to civilian positions, and significant vehicle repair savings that should be realized once new units are in service, under warranty, and have far fewer repairs. The Department has made several policy changes and response unit purchases that should help significantly decrease related cost overruns; however, these changes will take a year or two to be truly effective.

Council staff does not recommend taking any of the proposed savings at this time. Instead, the Committee could monitor spending and mitigation efforts, and review these items again in February, before the FY20 Operating Budget is considered. If the Committee determines that some savings are necessary at this time, Council staff recommends accepting the proposed off-peak ambulance service cuts for \$892,000 savings in FY19.

## POTENTIAL DISCUSSION ISSUES

- 1) What is the impact on response times and next due areas when engines are down to three, or even two-person staffing?
- 2) The ambulance at Kensington-Parkland Station 21 is targeted for reduction during non-peak hours. This station may also have staff reductions taken on an engine during non-peak hours. How will that impact station operations and response if both cuts are taken?
- 3) Is the call volume for the Rockville aerial tower busier during the day or night?
- 4) Increased sick leave use is a contributor to increased overtime costs. Can sick leave be saved and used toward retirement calculations?
- 5) What is involved in vehicle repair costs? Parts or labor, or both? If labor costs are included, does that include overtime as well?
- 6) You expect to hire 70 recruits and graduate about 60 of them in FY19. Do these all address attrition? How much would it cost to add an additional recruit class in FY19? And is this operationally possible to do?

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OFFICE OF THE COUNTY EXECUTIVE  
ROCKVILLE, MARYLAND 20850

MEMORANDUM

September 17, 2018

Isiah Leggett  
County Executive

TO: Hans Riemer, Council President

FROM: Isiah Leggett, County Executive 

SUBJECT: FY19 MCFRS Savings Actions

This memorandum is to inform you that I am recommending several immediate cost saving measures to better align FY19 Fire and Rescue Service spending to budget. Fire and Rescue's FY18 expenditures exceeded the approved budget by \$12.8 million, driven primarily by overtime costs. Given the fiscal climate, it is critical that swift corrective action is taken to contain these costs.

As I have previously noted, the continued uncertainty in County revenues requires that we adhere to prudent fiscal practices and align expenditures with available resources. Other significant pressures that are likely to impact County finances in FY19 and beyond include continued student enrollment increases, possible cutbacks in Federal and State funding, and collective bargaining negotiations. With this in mind, I hope that you will support this approach as critical to the County's fiscal health.

Reductions were selected to minimize service impacts to the greatest extent possible. Where service impacts are anticipated, Fire and Rescue Service has identified actions to mitigate anticipated impacts. The recommended reductions are summarized below, with additional detail provided by attachment.

- **Eliminate Overtime Backfill of Four-person Staffing During Non-Peak Hours (FY19 \$521K; Annualized \$781K)** – This action fully maintains four-person staffing during peak hours (7:00 AM to 10:00 PM) and maintains four-person staffing for most calls during non-peak hours. When overtime backfill would be required to fill the fourth position, engines will operate with three personnel. This policy would minimize service impacts while retaining four-person staffing during critical hours. Other options considered but not approved are attached for your review.
- **Night Staffing on Ambulance 711 (Glen Echo), 733 (Rockville Falls Road), 721 (Kensington-Parkland) (FY19 \$892K; Annualized \$1.3M)** – These reductions preserve paramedic response time, limiting impacts to transport unit response. These units were selected due to their low call volume and high volunteer participation. When units are not

running at night, calls (averaging between two and four per unit) will be transferred to surrounding units. Night transport response times remain within twelve minutes, and in some portions of the service areas within eight minutes. The Kensington-Parkland service area remains fully covered by eight-minute transport response.

- **Weekday Staffing - Aerial Tower 703 (Rockville - downtown) (FY19 \$289K; Annualized \$434K)** - Integrated career and volunteer staffing will remain in place nights and weekends. Aerial unit calls that would otherwise be assigned to this unit will be covered by surrounding stations which have aerial units, as well as the Rockville Rescue Squad at Station 3. Without the unit, response for a portion of the weekday service area remains eight-minutes and the entire service area is served within twelve-minutes.
- **Paramedic Engine 720 (Bethesda - Cedar Lane) (FY19 \$1.3M; Annualized \$2.0M)** - This reduction is recommended because the entire area served by Engine 720 can be covered by units at other stations within eight-minutes. In addition, Federal mutual aid from first responders stationed at the National Institute of Health is available within the service area, as is coverage from the Bethesda Chevy-Chase Rescue Squad.

In addition, I have authorized Fire and Rescue Service to make personnel decisions to minimize overtime usage and contractual overspending in non-front line and support functions.

I appreciate the difficulty of this circumstance, but given our constrained fiscal environment, this action is necessary to maintain the County's fiscal health. Taking no action will significantly impact reserves and further reduce operating budget flexibility in FY20. I hope we can work cooperatively to achieve the required level of FY19 savings, as we've done in prior years. Thank you for your continued partnership as we work toward the best outcomes for our residents.

IL:rs

- c: County Councilmembers  
Marlene Michaelson, Executive Director, County Council  
Timothy L. Firestine, Chief Administrative Officer  
Jennifer A. Hughes, Director, Office of Management and Budget  
Scott E. Goldstein, Chief, Fire and Rescue Service

MCFRS FY19 Budget Options

Four-Person Staffing

Do Not Backfill Four Person Staffing on Overtime at Non-Peak (Peak defined as 7:00 AM to 10:00 PM)	
Assumed Annual Savings	\$ 781,344 9 FTEs
<b>Pros:</b> -Fully maintain four-person staffing during peak hours. -Maintain four-person staffing during non-peak hours for most calls.	
<b>Cons:</b> -Increase in response times for full fire response 10:00 PM - 7:00 AM when <u>some</u> engines will have 3 personnel. -Reduced paramedic availability and increased response times at non-peak when call volume is lowest.	
Four Person Staffing Daytime Only, 7 Days/Week	
Assumed Annual Savings	\$6,156,842 81 FTEs
<b>Pros:</b> -Fully maintain four-person staffing during daytime hours.	
<b>Cons:</b> -Increase in response times for full fire response 5:00 PM - 7:00 AM when <u>all</u> engines will have 3 personnel. -Reduced evening paramedic availability and increased response times during evening hours when call volume is lower.	
Four Person Staffing, Tiered Reduction	
Assumed Annual Savings/Unit	\$ 362,167 4.6 FTEs
-Eliminate four-person staffing starting in areas without high-rise density, tankers and mobile ambulance buses, or special operations. -Tier 1 (first candidates for reduction) -Kensington Station 5 (daytime reduction, volunteer staffed at night) -Parkland Station 21 -Milestone Station 34 -Colesville Station 24	
<b>Pros:</b> -Fully maintain four-person staffing in highest risk areas.	
<b>Cons:</b> -Increase in response times for full fire response in lower risk areas (those without high rise density). -Impact on paramedic availability 24/7.	

**FY19 Reduction Items  
MCFRS**

	Function	Current Resources		Proposed Reduction		Proposed Reduction			
				FY19		FY20			
		FTE (equivalent)	\$	FTE (equivalent)	\$	FTE (equivalent)	\$		
								Service Impacts and Mitigation	Rationale
1	Ambulance 711 (Glen Echo) - Night Staffing	9 FTE	\$ 954,000	2.7 (equiv)	\$ 297,199	4 (equiv)	\$ 445,798	No impact to paramedic response times. High volunteer participation; low call volume (CY17: 1,612); 2-3 calls per night could be pushed to surrounding units. Night transport response times remain within 12-minutes, with some portion of the service area within eight minutes.	This reduction would have a lower impact on service than other reductions.
2	Ambulance 733 (Rockville - Falls Road) - Night Staffing	9 FTE	\$ 954,000	2.7 (equiv)	\$ 297,199	4 (equiv)	\$ 445,798	No impact to paramedic response times. High volunteer participation (part of Rockville LFRD); low call volume (CY17: 1,787); 2-3 calls per night could be pushed to surrounding units. Night transport response times remain within 12-minutes, with some portion of the service area within eight minutes.	This reduction would have a lower impact on service than other reductions.
3	Ambulance 721 (Kensington - Parkland) - Night Staffing	9 FTE	\$ 954,000	2.7 (equiv)	\$ 297,199	4 (equiv)	\$ 445,798	No impact to paramedic response times. High volunteer participation (part of Kensington LFRD); call volume (CY17: 2,956); 3-4 calls per night could be pushed to surrounding units. Night transport response times remain within 8-minutes.	This reduction would have a lower impact on service than other reductions.
4	Aerial Tower 703 (Rockville - downtown) - Weekday Staffing	13.5 FTE	\$ 1,755,000	2.1 (equiv)	\$ 289,484	3.2 (equiv)	\$ 434,226	This unit has integrated career/volunteer staffing nights and weekends. Calls otherwise assigned to the unit covered by surrounding stations which have aerial units, and the Station 3 Rescue Squad. Response time for a portion of the weekday service area remains 8-minutes and the entire service area is served within 12-minutes.	This reduction would have a lower impact on response times than reductions for similar services elsewhere.
5	Paramedic Engine 720 (Bethesda - Cedar Lane) - 24/7 Staffing	18 FTE	\$ 1,960,312	12 (equiv)	\$ 1,306,875	18 (equiv)	\$ 1,960,312	The entire service area can be covered by units at other stations within 8-minutes. In addition, Federal mutual aid from first responders stationed at NIH is available within the service area, as is coverage from Bethesda Chevy Chase Rescue Squad.	This reduction would have a lower impact on response times than reductions for similar services elsewhere.
6	Do Not Backfill 4 Person Staffing on Overtime at Non-Peak	72.7 (equiv)	\$ 6,152,312	6 (equiv)	\$ 520,896	9.0 (equiv)	\$ 781,344	Increased response times for full fire response 10:00 PM to 7:00 AM when some engines will have 3 personnel.	Fully maintains 4 person staffing during peak hours. Maintains 4 person staffing during non-peak hours for most calls (assumed 13% deployed at non-peak with 3 personnel).
Total		131.2 FTE or Equiv	\$ 12,729,624	28.2 FTE or Equiv	\$ 3,008,851	42.2 FTE or Equiv	\$ 4,513,276		

I have a few questions to clarify what we discussed last week. But I did want to address MCVFRA first. Have you discussed these proposed reductions with them, and have they expressed any questions or concerns?

The Kensington and Rockville volunteers indicate that they cannot replace the services proposed for reduction. The Department has not yet engaged the Glen Echo volunteers on their capacity to backfill service.

**1. Ambulance reductions (711, 733, and 721). Are these BLS units?**

A711, A733 and A721 are all Basic Life Support EMS transport units staffed by two.

**Is each station only getting 2-3 transport calls per night? How many for EMS service?**

In FY18, the average number of calls dispatched per unit between 5pm and 7am were as follows:

- A711 - 1.93 calls per night
- A733 - 2.24 calls per night
- A721 - 3.89 calls per night

Roughly 95% of EMS unit dispatches are for EMS service.

**2. Do not backfill four person staffing on OT at Non-Peak: This assumes 13% of non-peak responses will have only three person staffing. These staffing decisions will be made on a daily (?) basis, and are not geographically determined. (Impacts any part of the County at a given time).**

This reduction is equivalent to reducing five four-person engine companies to three-person engines during non-peak hours (10 pm to 7 am). If approved, five engines will be identified to run with three-person staffing during non-peak hours. Engines will be selected to minimize service disruption and maximize the continuity of MCFRS operations. The paramedic position on engines with three staff at non-peak would be maintained.

**What is the total call volume for non-peak hours?**

In FY18, 56,808 FRS events were dispatched between 10 pm and 7 am Countywide.

**3. Rockville Aerial Tower 703: What is the call volume for this unit during the weekdays?**

In FY18, AT703 was dispatched to 935 incidents during weekdays, 7am to 5pm.

**Stations 23, 40, and 31 are the surrounding stations that provide aerial tower coverage when needed? What are their call volumes?**

Stations adjacent to Rockville Station 3 include Gaithersburg Station 8, Twinbrook Station 23, Aspen Hill Station 25, and Quince Orchard Station 31. FY18 weekday call volume (7 am to 5 pm) for each unit (all response types) is outlined below:

- AT703 - 935
- PAT708 – 1,375
- AT723 -931
- T725 – 1,053
- T731 - 608

Olney Station 40 is not directly adjacent to Rockville Station 3. In FY18, the Olney aerial tower (AT740) responded to 444 weekday incidents between 7 am and 5 pm.

4. **Eliminate Paramedic Engine 720: Surrounding units can maintain 8 minute response times. That is under the goal for both ALS and fire response times, correct?**

The benchmark goal for the first arriving paramedic to an ALS event is 9 minutes and 30 seconds, and 7 minutes and 15 seconds for the first arriving engine to a full fire assignment for metropolitan areas.

We anticipate that ALS response time reliability for the 9 minute and 30 second benchmark goal in the FS20 response area will return to the FY18 levels experienced prior to adding a fourth position paramedic to Engine 720 in March 2018. ALS reliability increased from 81.5 percent to 87.8 percent due to adding that paramedic resource. The same analysis is not possible for engine coverage to full fire assignments. This data does not consider mutual aid resources available in the response area.

5. **Has the new CountyStat report been published? If so, can you forward a copy?**

The FY20 Department Performance Plans are currently under development and will be published in March with the CE Recommended Budget.

6. **Alternate Savings: No four-person staffing during nonpeak. This increases response times for full fire response and paramedic availability and response. What is the projected increase in response times if all engines have only three personnel?**

The response time impact of reducing four-person engines to three-person at non-peak is dependent on call type and volume. A three-person engine that drops to two-people due to a paramedic upgrade would need to retrieve a third firefighter before moving to the next call. This would reduce engine availability for the next call in that response area. More units would be needed to respond to complex events at non-peak when all engines would be staffed by three, reducing availability for other calls.

7. **Alternate Savings: Four Person Staffing, Tiered Reduction. Why didn't you propose this one? Because savings are less than the proposed limitation of backfill four person staffing?**

The tiered reduction alternative reduces four-person staffing to three-person staffing for the entire day. Limiting the reduction to non-peak times has less impact on the community and is deemed to be a better balance between the effect on service and cost savings.

8. What were the main drivers of apparatus repair costs in FY18? What was the total cost FY18 for this budget item, and what was the total budget overrun?

The aging fleet has resulted in more units out of warranty, while increasingly complex electrical systems and emissions mandates for apparatus has led to rising vehicle maintenance costs. The original FY18 budget for account codes supporting apparatus maintenance totals \$1,709,000, while the FY18 actual totaled \$4,363,000 with a net overrun of \$2,654,000.

9. What new equipment are you purchasing in FY19 to help reduce repair costs? These savings will not be realized until FY20, correct? How much potential savings?

In FY19 and early FY20 we expect to take delivery of 2 tankers, 4 brush engines, 24 engines, and 15 EMS units. These units will go into service in the fourth quarter of FY19 and early FY20. In FY20, we anticipate vehicle maintenance savings as the apparatus will be under warranty and the average front-line fleet age decreases, though the savings are difficult to quantify. Routine maintenance, parts, and equipment will still be needed to service new equipment.

10. The main driver of increased overtime in FY18 was not vacancies, but rather increased sick leave use, comp time use, and length of time it took to make disability determinations.

- a. You have made changes to the way disability determinations are processed, and reduced determination times from approximately 15 months to about four months, correct? Can you quantify overtime savings that derive from this expedited process?

The time to determine and process disability retirements has been greatly reduced compared to last year. This change could reduce overtime costs by approximately \$750,000 in FY19 if trends continue.

- b. Is there any way to address increased sick leave and comp time use?

Sick leave and compensatory time are managed according to the requirements set out in the labor agreement. FRS management strictly enforces those requirements. There does appear to be an increased desire for more recently hired uniform personnel to maximize leave usage; but employees are using the leave that has been granted to them under the agreement.

- c. You are also looking at shifting certain duties from uniformed firefighters to civilians. Do you have a list of specified duties/positions? Can you quantify potential overtime savings from this action?

The department relies on uniform overtime to assist with the procurement and distribution of EMS equipment and supplies; and manage Department radio and mobile data computer systems, fire apparatus portable equipment supply and repair, and mapping and GIS interface programming at ECC. MCFRS is assessing the impact of hiring civilians in these areas to reduce overtime. Overtime reductions could total \$300,000. However, the cost of the additional employees would likely offset most savings. A precise estimate will depend on OHR position classification, which is not complete.

**11. What is your current vacancy rate? How many recruits do you expect to hire in FY19?**

FRS is currently 23 positions above its budgeted complement of uniform positions. This overage is reduced as personnel retire or separate. FRS expects to hire just over 70 recruits in FY19 to graduate about 60.

**12. Increasing ambulance fees would not result in significant revenue increases, because your primary payer is Medicare, correct? It accounts for about 65%-70% of all billed transports?**

About 55 percent of EMST revenue comes from Medicare, but virtually all insurers, like Medicare, stipulate a maximum allowable charge for each covered service. Insurers do not reimburse for charges above the allowable charge for the service provided. Since our charge for ambulance transport generally exceeds the insurers' allowable charge, increasing the charge would yield little additional revenue.

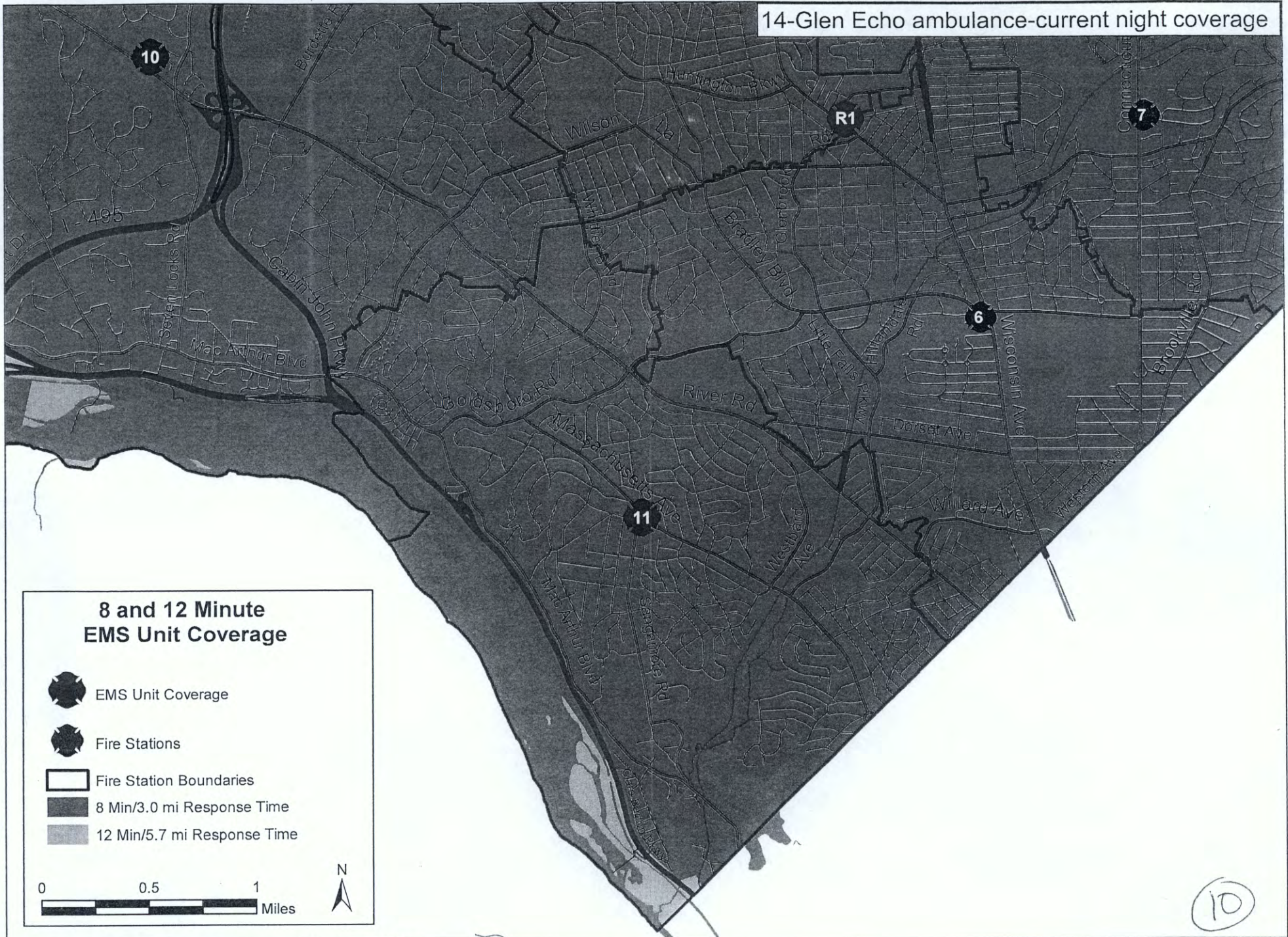
**13. FY18 expenditures exceeded the budget by \$12.8 million. If these savings are not approved, what is the projected overrun for FY19?**

Without savings, FY19 expenditures are expected to be roughly the same as FY18, which will have a compounding impact of \$25.6M in FY20.

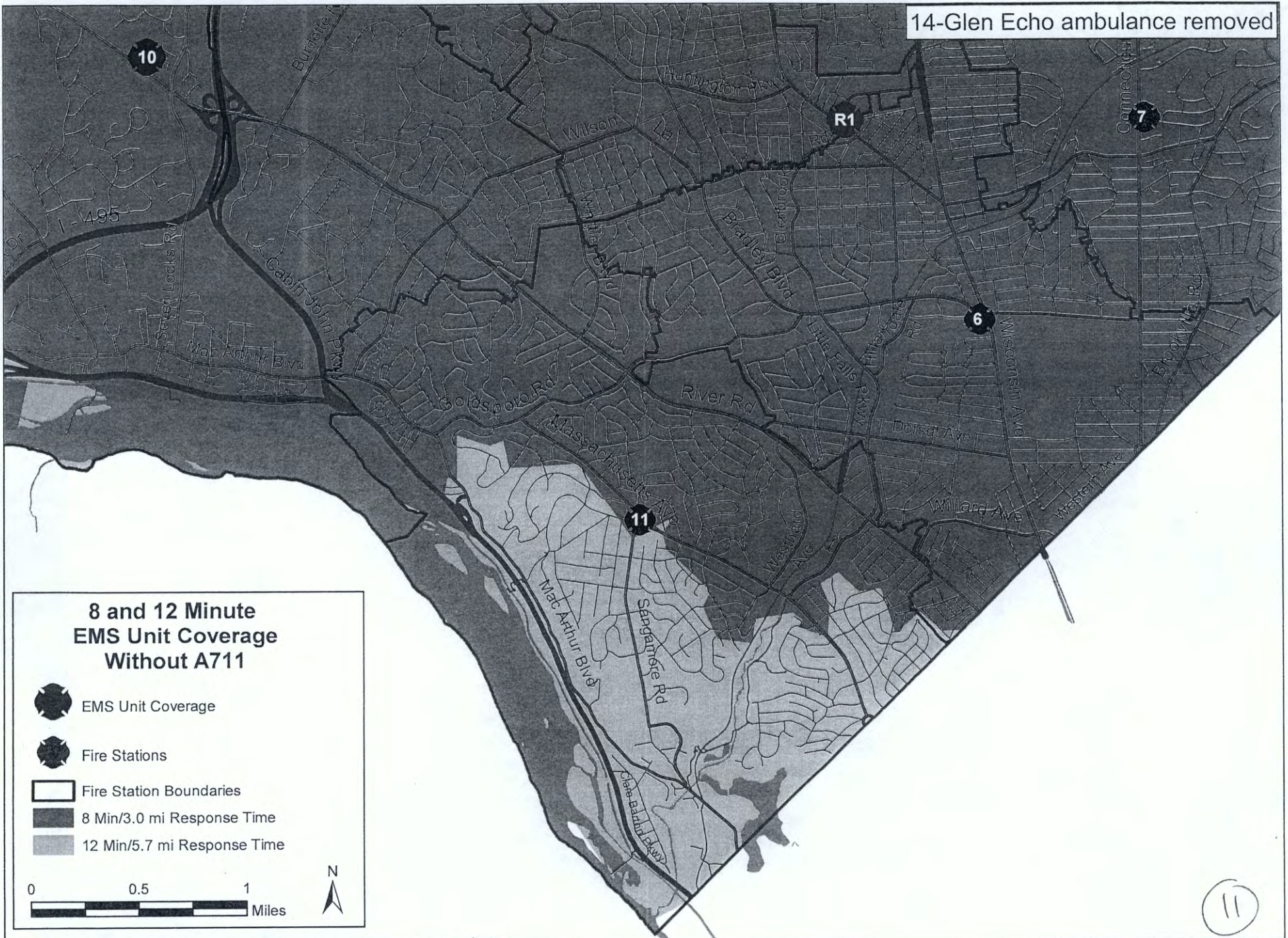
	A	B	C	D
1			<b>FY19 OPERATING BUDGET</b>	AGENDA ITEM #2
2			<b>FINAL RECONCILIATION LIST</b>	May 17, 2018
3			May 17, 2018	
4			<b>Agency/Department</b>	<b>Council</b>
61			<b>OTHER COUNTY GOVERNMENT TAX-SUPPORTED FUNDS:</b>	
62			<b>(EXCLUDING DEBT SERVICE)</b>	
63			<b>Fire and Rescue Service</b>	
64			Restore Hyattstown - 12 full-time, 12.0 FTE	2,477,000
65			Restore Germantown - 9 full-time, 9.0 FTE	1,788,750
66			Restore Hillandale - 8 full-time, 8.0 FTE	1,542,500
67			Daytime staffing Burtonsville - 4 full-time, 4.0 FTE	674,930
68			Restore EMST distribution to Local Fire & Rescue Departments	114,780
69			Add funding for Bethesda-Chevy Chase Rescue Squad	88,000
70			<b>Subtotal, Fire and Rescue Service</b>	<b>6,685,960</b>
71				
72			<b>Economic Development Fund</b>	
73			Small Business Innovation Research Matching Program	425,000
74			<b>Subtotal, Economic Development Fund</b>	<b>425,000</b>
75				
76			<b>Recreation (excluding Debt Service)</b>	
77			Restore Extended Hours at Mid-County and White Oak Community Recreation Centers - 2.05 FTE	53,826
78			Restore PLAR: Grounds Maintenance	30,000
79			Restore PLAR: Janitorial/Custodial	70,000
80			Restore PLAR: Furniture, Fixtures & Equipment	50,000
81			Add 2 new Excel Beyond the Bell Elementary Program sites - 1 full-time, 8.86 FTE	397,318
82			<b>Subtotal, Recreation</b>	<b>601,144</b>
83				
84			<b>Mass Transit</b>	
85			<b>Transit Services</b>	
86			Extend Route 75 to Germantown MARC, January 2019 (offsetting revenue = 4,203) - 1 full-time, 1.0 FTE	84,894
87			<b>Subtotal, Mass Transit</b>	<b>84,894</b>
88				
89			<b>TOTAL, OTHER COUNTY GOVERNMENT TAX SUPPORTED FUNDS (excluding Debt Service)</b>	<b>7,796,998</b>
90				
91			<b>TOTAL COUNTY GOVERNMENT TAX SUPPORTED FUNDS (excluding Debt Service)</b>	<b>11,570,668</b>
92			<b>OUTSIDE AGENCIES &amp; DEBT SERVICE</b>	
93			<b>MCPS:</b>	
94			Expand half day classrooms to full day at 8 elementary schools	877,944
95			After school program transportation for Excel Beyond the Bell Elementary Program (2 sites)	34,000
96			<b>Total, MCPS</b>	<b>911,944</b>
97				
98			<b>College:</b>	
99			<b>Current Fund</b>	
100			Funding to support College's request	750,000
101			<b>Total, College</b>	<b>750,000</b>
102				
103			<b>MNCPPC:</b>	
104			<b>Administration Fund</b>	
105			University of MD's National Center for Smart Growth - Purple Line impacts on small business	50,000
106			University of MD's National Center for Smart Growth - Bicycle Master Plan - Consulting	75,000
107			Ashton Minor Master Plan - Consulting	25,000
108			Shady Grove Sector Plan /Minor Master Plan Amendment - Consulting	25,000
109			Aspen Hill Vision Zero Pedestrian Study/Zoning Analysis - Consulting	75,000
110			<b>Total, Administration Fund</b>	<b>250,000</b>
111				

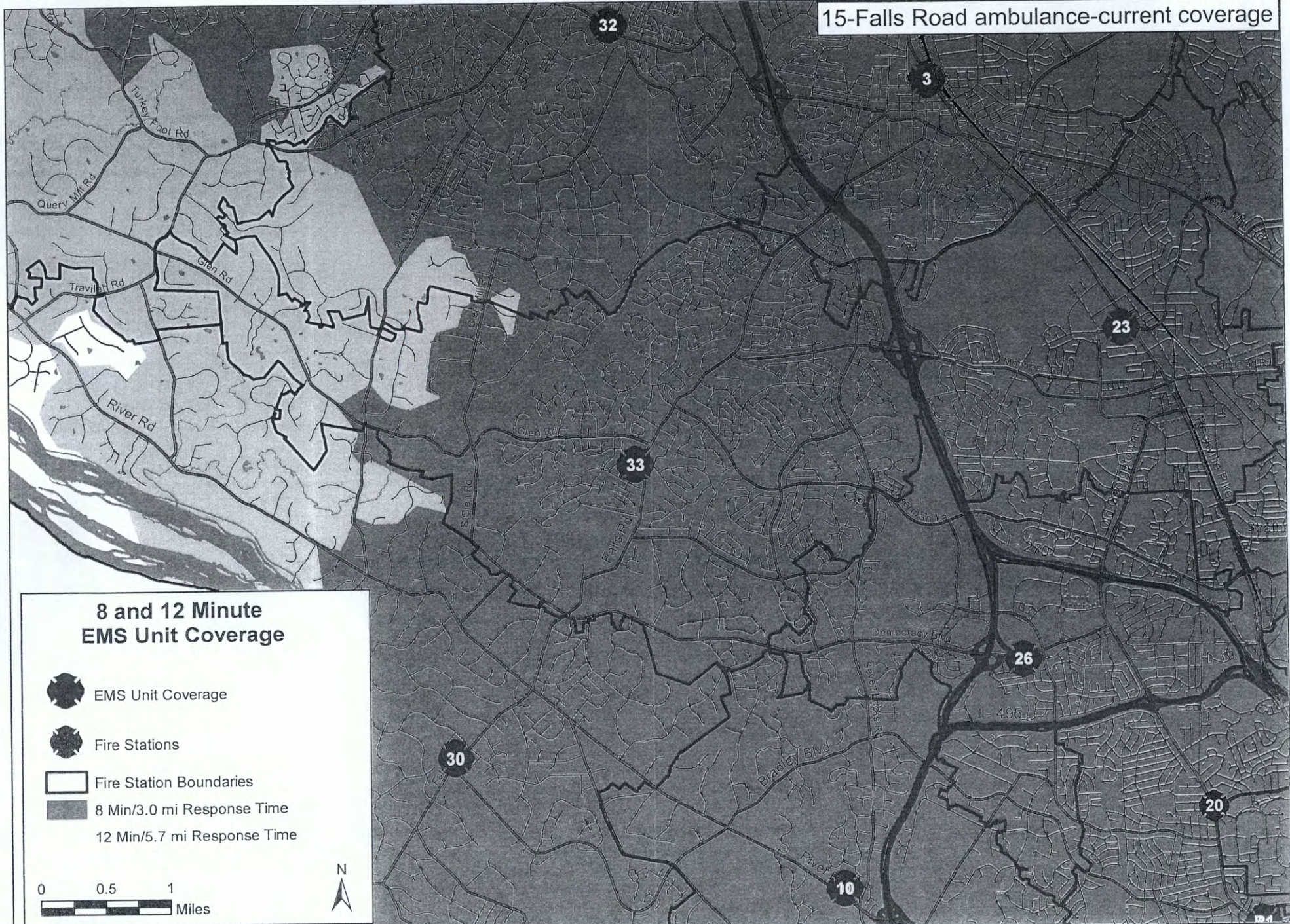
9

14-Glen Echo ambulance-current night coverage

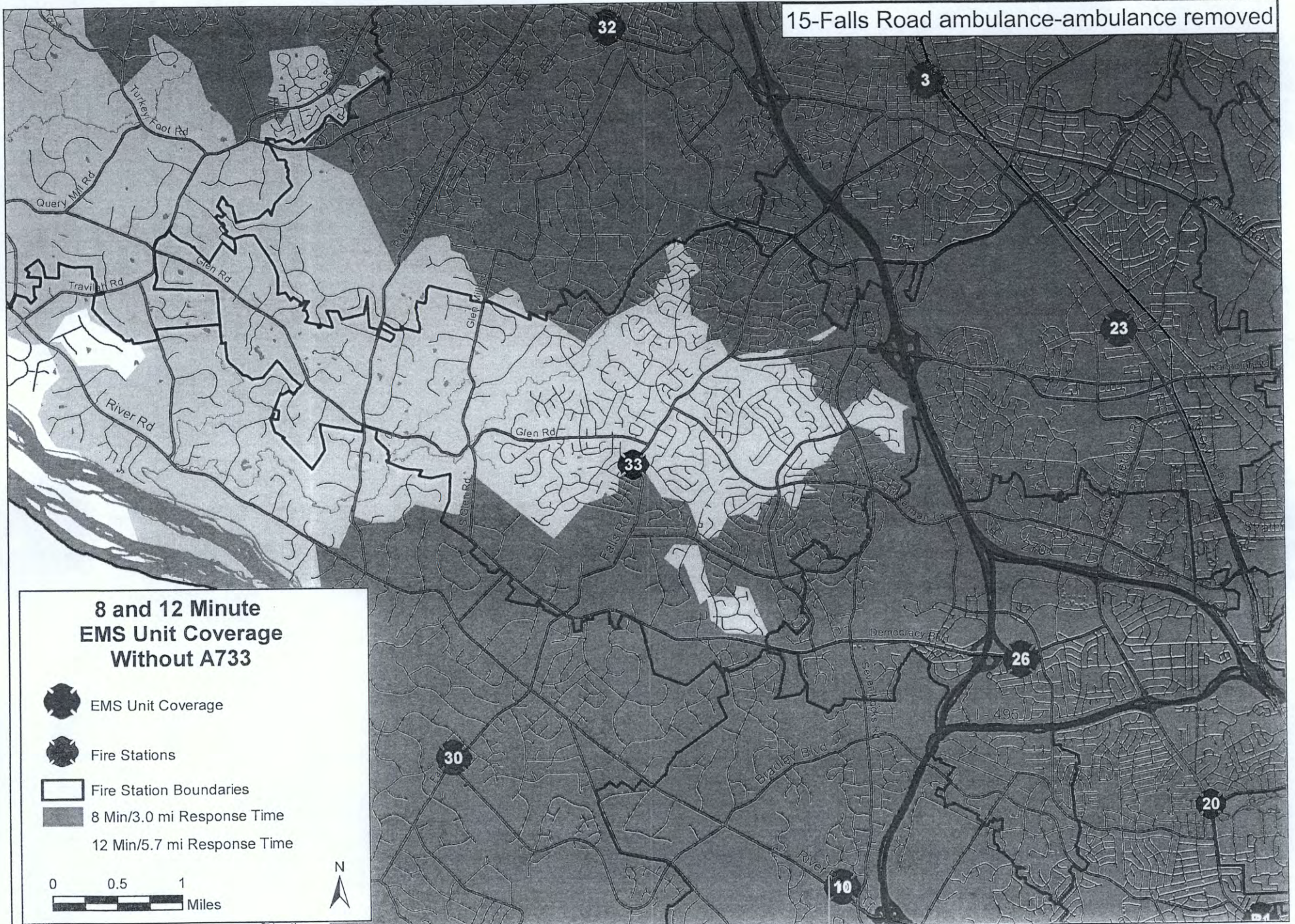


14-Glen Echo ambulance removed

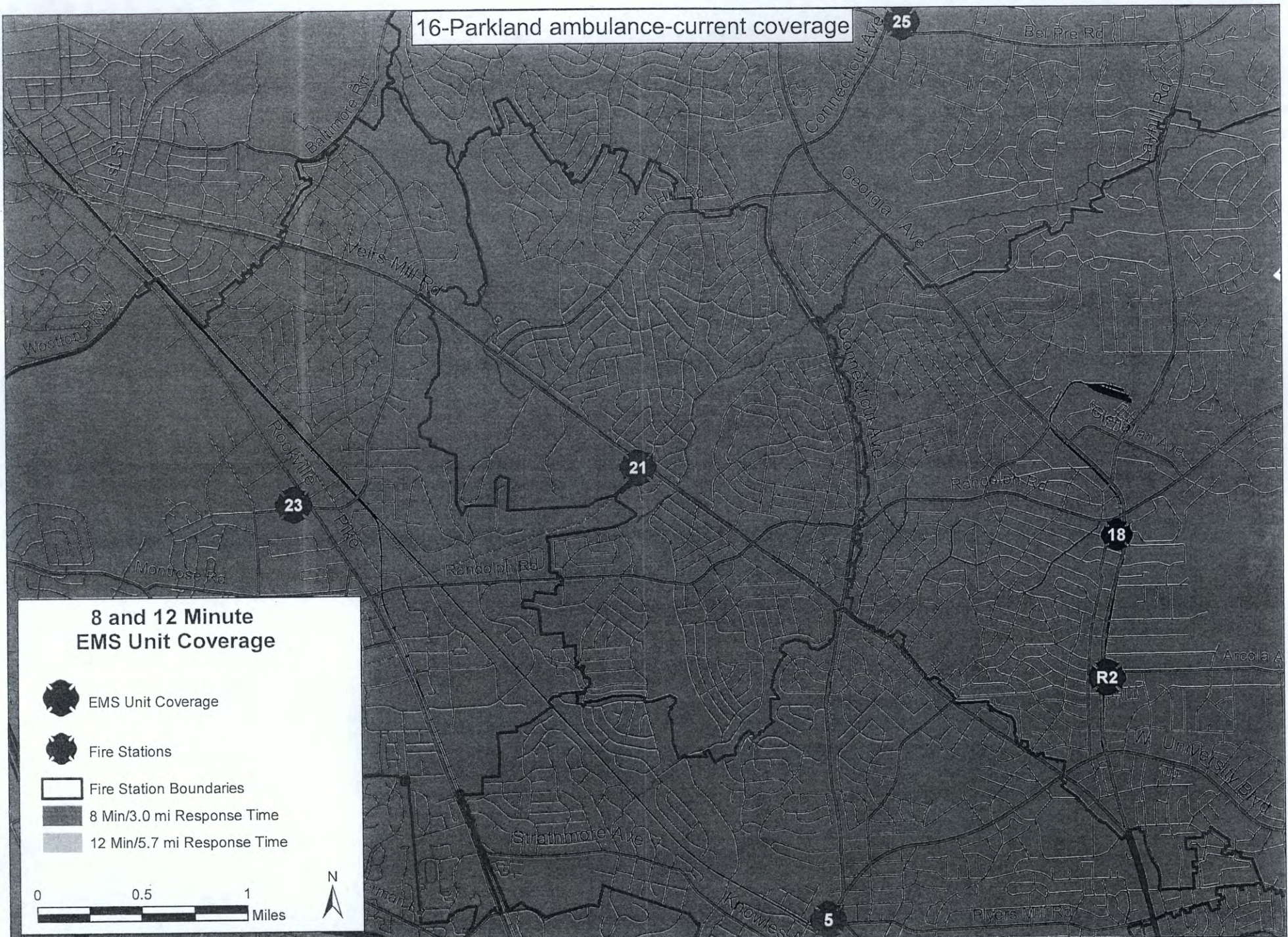




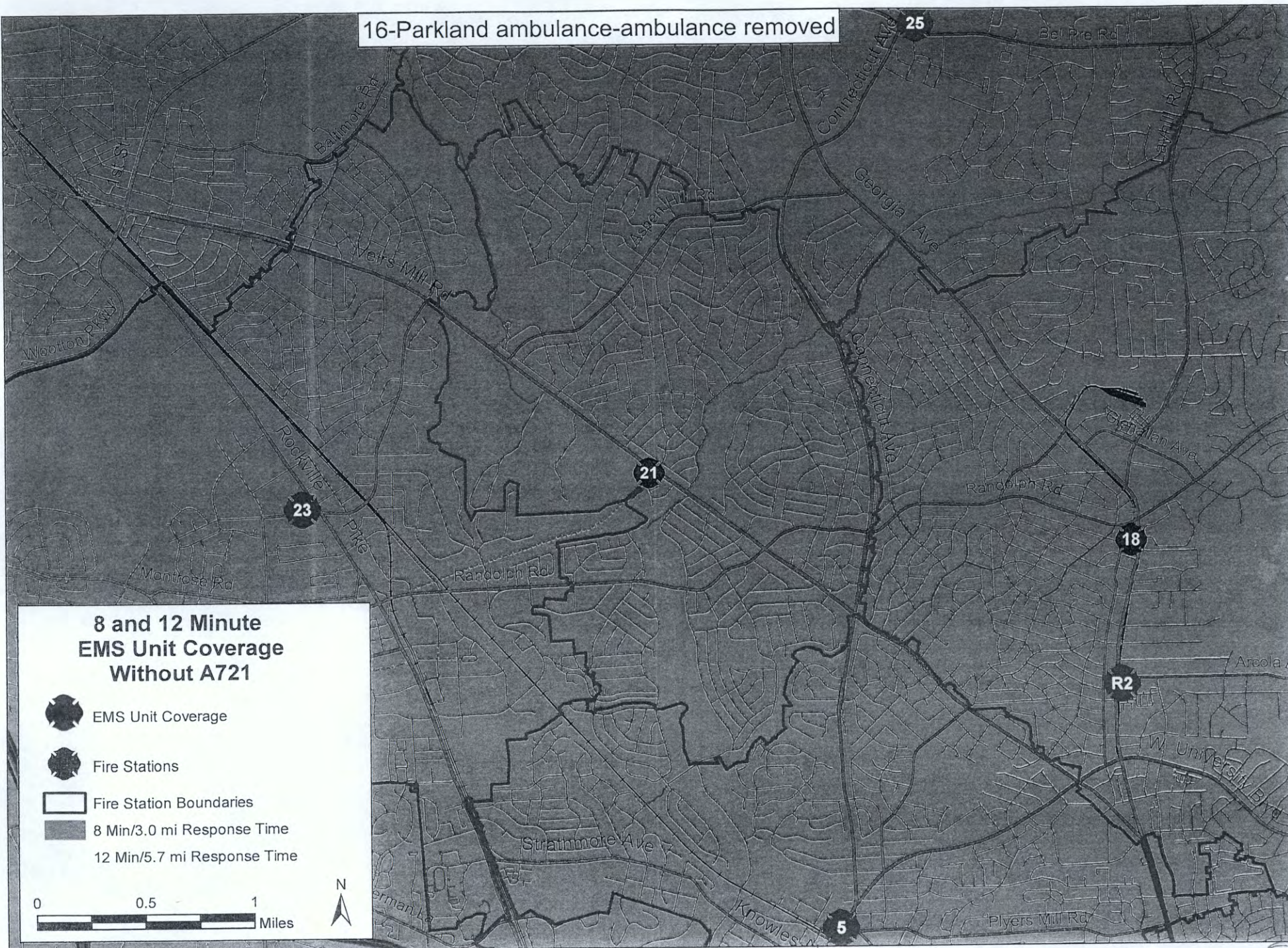
15-Falls Road ambulance-ambulance removed



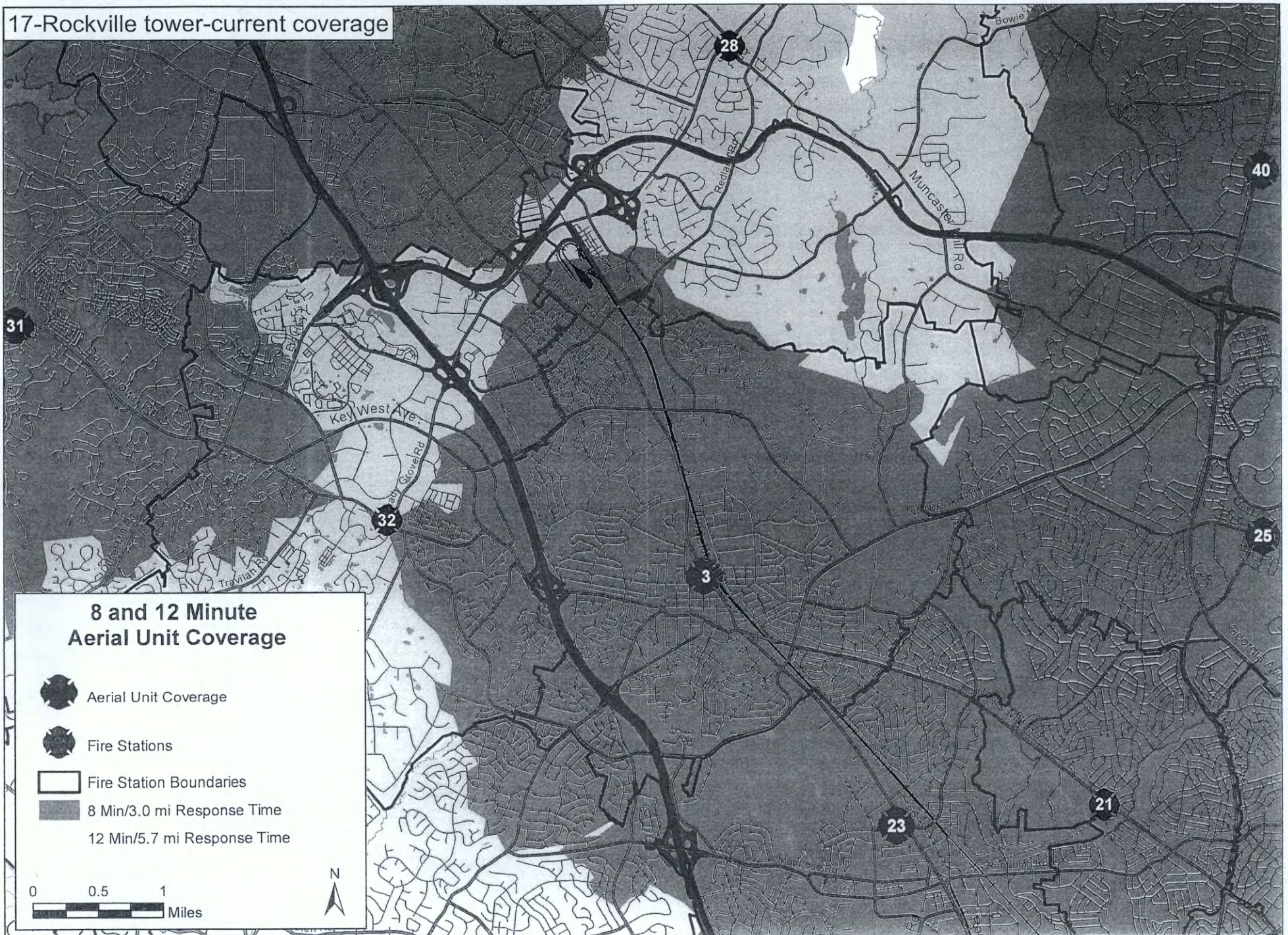
# 16-Parkland ambulance-current coverage



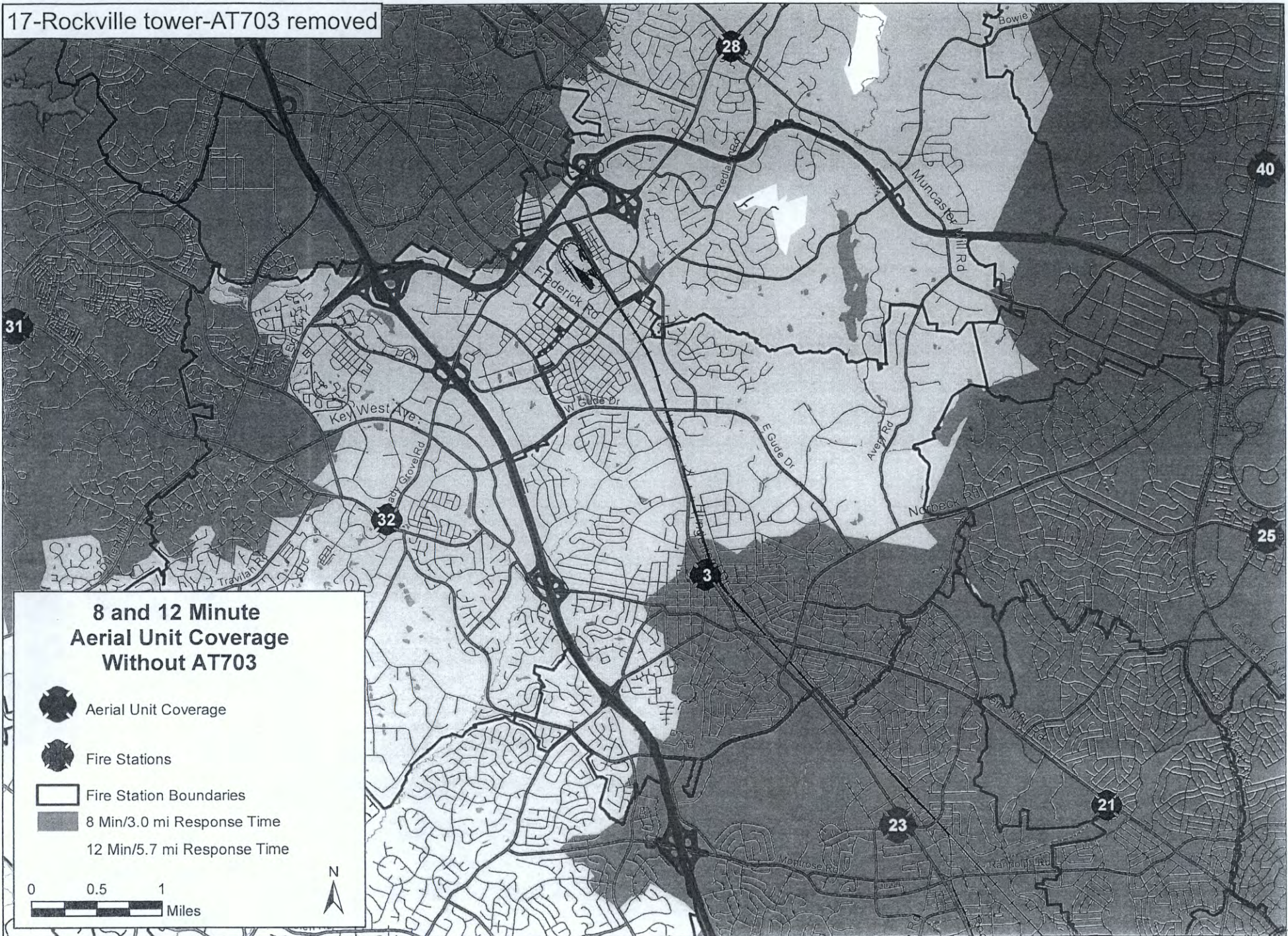
16-Parkland ambulance-ambulance removed

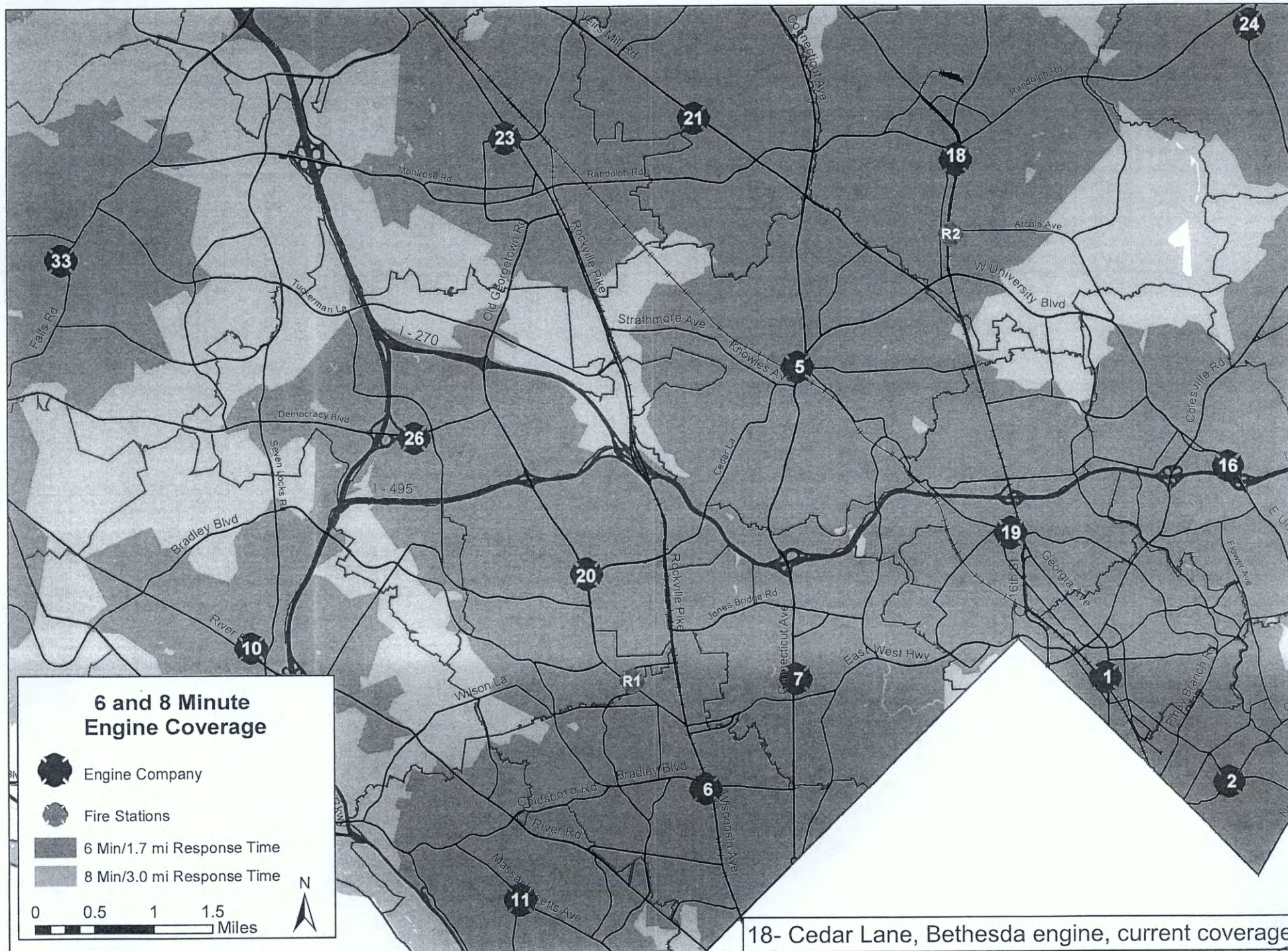


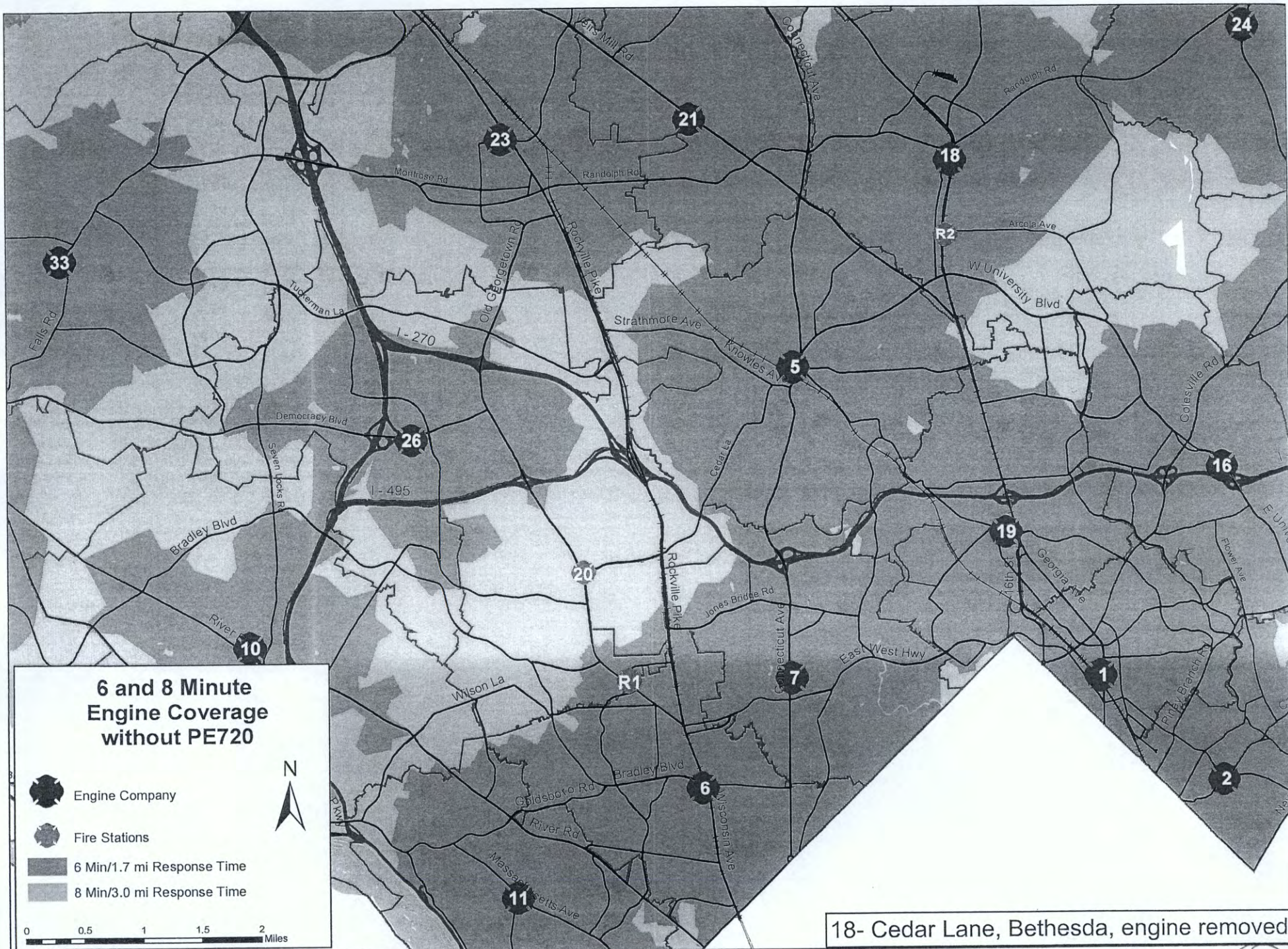
# 17-Rockville tower-current coverage

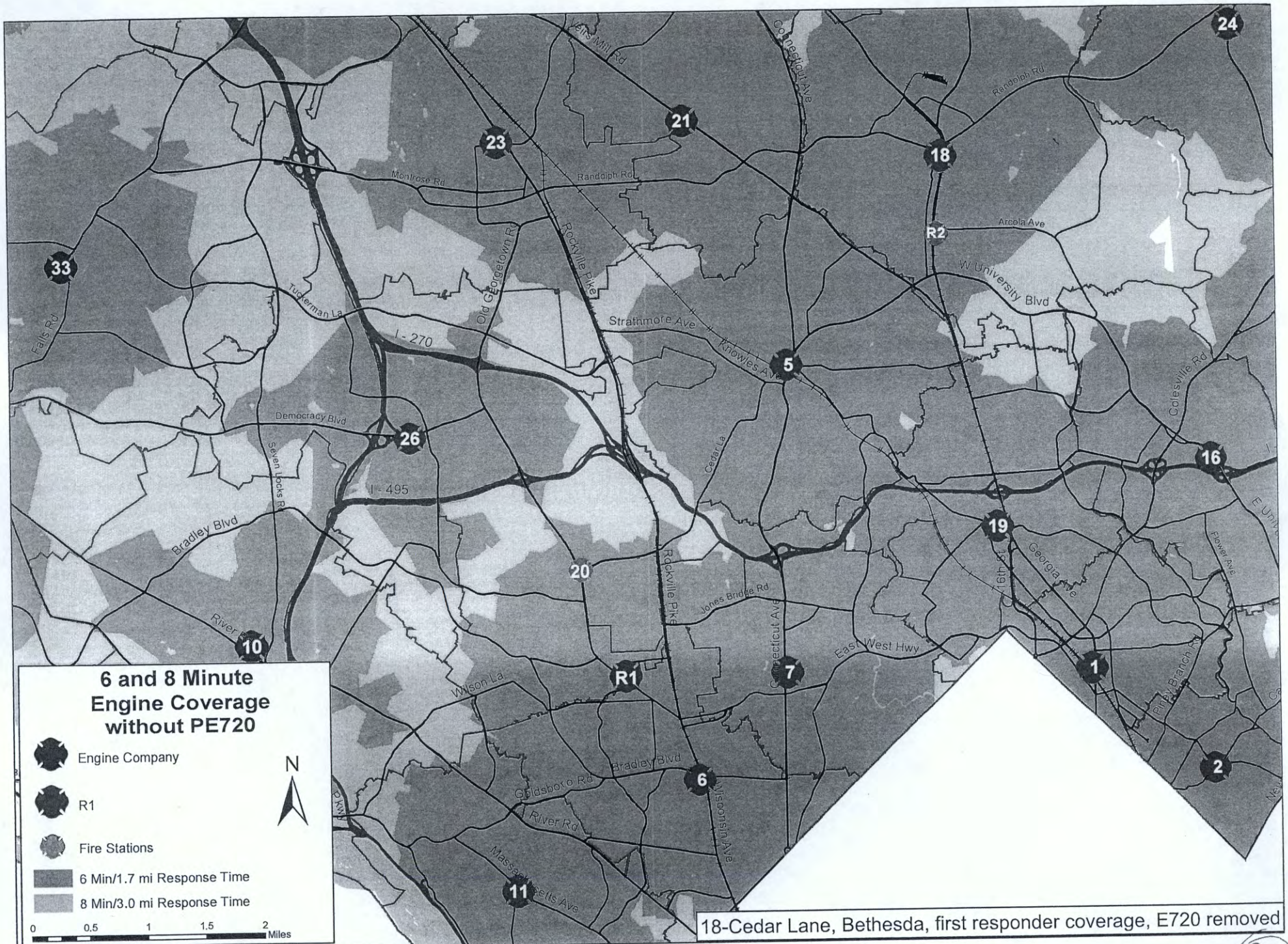


17-Rockville tower-AT703 removed



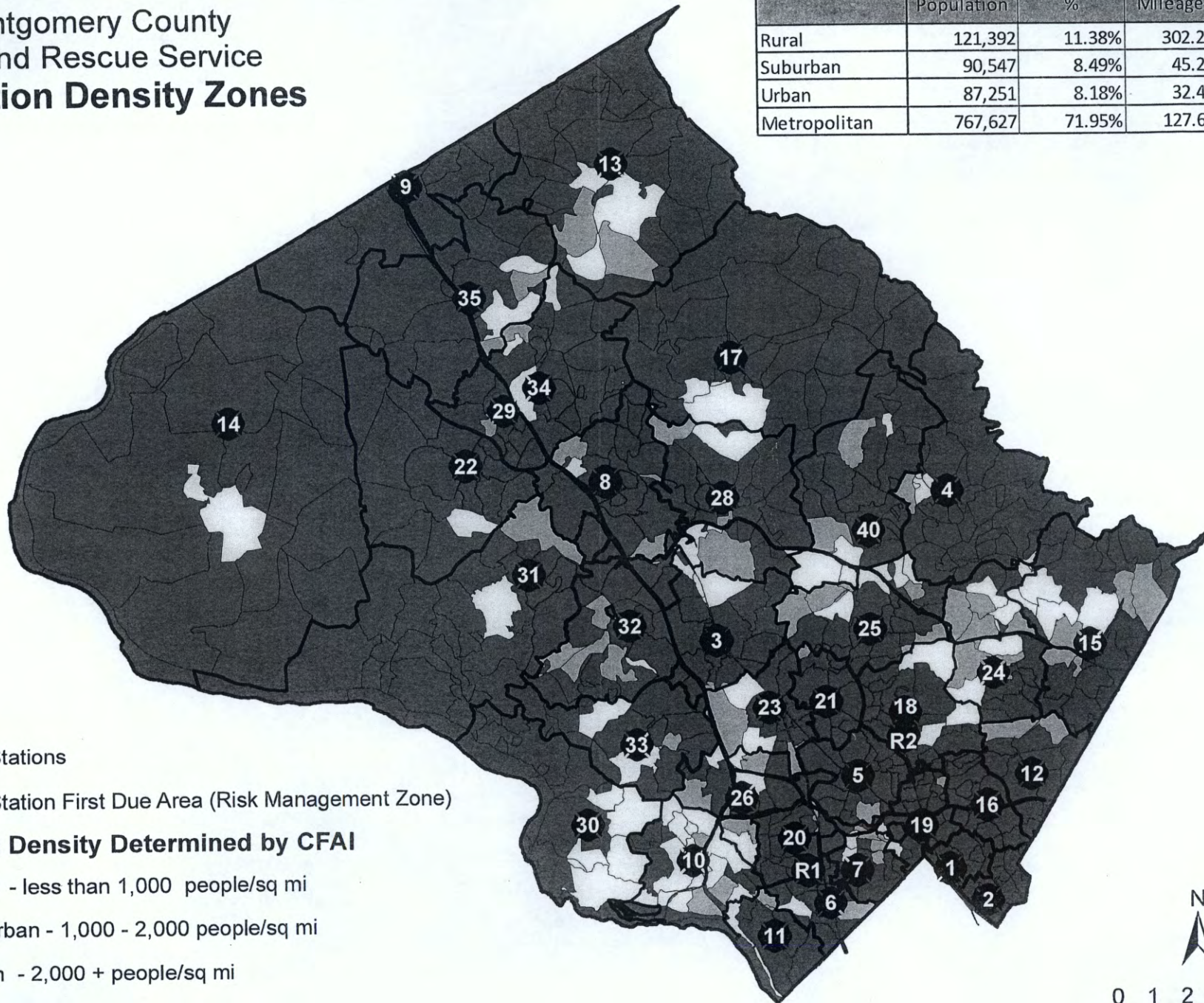
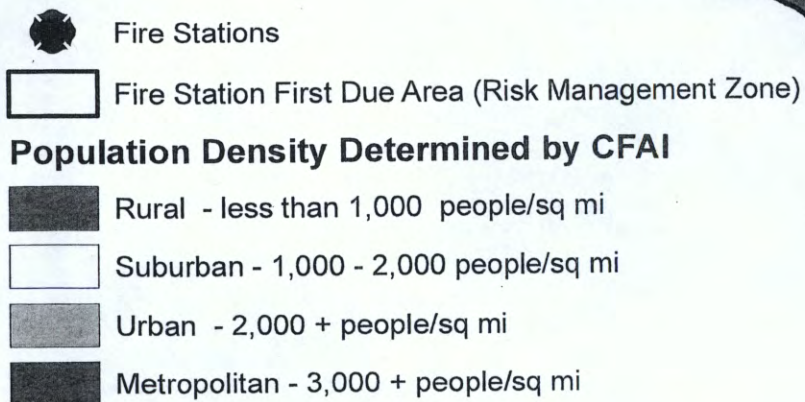






# Montgomery County Fire and Rescue Service Population Density Zones

Zone	Est. 2020 Population	Population %	Square Mileage	Square Mileage %
Rural	121,392	11.38%	302.20	59.54%
Suburban	90,547	8.49%	45.20	8.91%
Urban	87,251	8.18%	32.49	6.40%
Metropolitan	767,627	71.95%	127.68	25.16%



PS COMMITTEE #1  
October 15, 2018

**ADDENDUM**

**MEMORANDUM**

October 11, 2018

TO: Public Safety Committee

FROM: Susan J. Farag, Legislative Analyst *SJF*

SUBJECT: **ADDENDUM:** FY19 Montgomery County Fire and Rescue Service (MCFRS) Savings Plan

PURPOSE: Review and Vote on Proposed FY19 MCFRS Savings Actions

In preparation for the review of the proposed FY19 MCFRS Savings actions, Council staff requested a copy of the latest CountyStat report on Net Annual Work Hours. At the time the packet was printed, this report was not available. It has been forwarded and is included here for the Committee's review (©1-9).

The report indicates that for FY15-FY17, MCFRS first responders, which includes the ranks of Firefighter III through Assistant Chief, were available 74% of their contract hours. This results in a shift relief factor of 4.7, meaning, 4.7 Full Time Equivalent (FTE) positions are needed to maintain minimum staffing requirements, 24/7, with little use of overtime.

On page 4 of the report (©4), there is a table that illustrates varying surpluses and shortages for FTEs across the uniformed compliment. The largest deficit for shiftwork was for Master Firefighters, with a shortage of -101 FTEs. The second largest deficit is in Captain positions, with a shortage of -49.3 FTEs. Conversely, there is an overage of 30.6 Lieutenant positions. There are operational reasons for some of these variances. Lieutenants, for example, can fill in for Captains in certain situations at a lower overtime rate.

Excluding the Emergency Communications Center staffing and the Fire and Explosive Investigations staffing, the net deficit in positions is 179.6 FTEs. This is the number of additional positions that theoretically would be required to fully staff all positions without reliance of overtime. The Committee may wish to ask Chief Goldstein how adding positions would impact overtime, and how long staffing increases could take.

Additionally, Councilmembers received a letter from Dr. Lori Moore-Merrell with International Association of Fire Fighters, discussing national fire response standards, response times, County demographics, and the need for four-person staffing (attached at ©10-15). Dr. Moore-Merrell also provides background on a study that quantified the effects of crew sizes and arrival times on the fire service's lifesaving and firefighting operations. According to her, the data indicates there was a 10% difference in "water on fire" time between two-person and three-person crews, and an additional six percent time difference between three-person and four-person crews. Four-person crews were nearly 25% (or 5.1 minutes) faster than three-person crews for the overall time required to complete all tasks.

# MCFRS Net Annual Work Hour Update FY15 – FY17

## 1 SUMMARY

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The net annual work hour (NAWH) shows the hours employees are available to work, based on the contracted number of hours per year minus the number of hours off on leave, training, or other activities not contributing to minimum staffing requirements.<sup>1</sup> Combining the NAWH with the number of employees and coverage hours required, MCFRS can see where there are shortages or surpluses of employees and make short- and long-term staffing decisions to manage number of new hires versus overtime.

From FY15-FY17, MCFRS first responders, ranging from FF-III through Assistant Chief, were available for 74% of their contracted hours, which converts to a shift relief factor of 4.7.<sup>2</sup> The shift relief factor has increased by one-tenth from the 4.6 factor calculated by the Office of Legislative Oversight (OLO) in 2006. Section 2 has a further breakdown of the change by position. In addition to the positions considered by OLO, CountyStat calculated the NAWH for field operation ranks of Assistant and Battalion Chiefs, the Emergency Communications Center (ECC) and the Fire and Explosive Investigations (FEI) section. For the ECC, the NAWH was lower than field staffing at 70% and a shift relief factor of 5.7. Fire and Explosive Investigations fell between field staffing and the ECC at 72% of contracted hours and shift relief factor of 5.6. A detailed breakdown by position is shown in Table 1 below.

Section 3 shows the number of positions needed to minimize overtime reliance and fulfill all minimum staffing requirements with the same position level (i.e. fill a vacant Captain slot with a Captain). The surplus and shortage by position vary from +30.6 FTEs for Lieutenants to -101.0 FTEs for shiftwork Non-Paramedic Master Firefighters. Some of the variance was deliberate. MCFRS keeps the number of Captains and Master Firefighters intentionally low and Lieutenants high. The officer ranks are imbalanced to allow Lieutenants to cover some of the Captain vacancies, which results in lower staffing costs. Master Firefighters have not been staffed above a 3.0 shift relief factor, leading to some primary driver coverage by qualified FF-IIIs.

The next steps for utilizing the net annual work hour are:

- Combine data from the NAWH, current staffing levels, scheduled attrition, and planned trainings to improve overtime forecasting. With a better forecast, MCFRS will be able to better monitor overtime and the potential for overages throughout the year.
- Determine if the current staffing model of intentional surplus and shortages is efficient and sustainable. The current staffing model allows MCFRS to cover vacant Captain positions at a lower cost, but if Lieutenants are overused as Captains this could lead to grievances.
- Explore options for part/full-time training positions to replace instruction done currently by officers to keep field staff working towards minimum staffing and avoid overtime earned when teaching on an off day.

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<sup>1</sup> (Miller, Wetzel, & Hart, 2016)

<sup>2</sup> The shift relief factor is the number of positions needed to maintain coverage for each first responder staffing slot 24 hours a day, 7 days a week with minimum reliance on overtime.

- Examine leave utilization patterns, particularly detailed off the floor assignments, to determine if any improvements can be made to the amount of time employees are available for minimum staffing assignments.

Table 1 - Net Annual Work Hour by Position

Shift	Position	Net Annual Work Hour	Shift Relief Factor	% Available to Work towards Minimum Staffing
<b>Shiftwork (24/48)</b>	Assistant Chief	2,078	4.2	83%
	Battalion Chief	1,834	4.8	73%
	Captain	1,868	4.7	75%
	Lieutenant	1,869	4.7	75%
	Master	1,861	4.7	75%
	Master Paramedic	1,840	4.7	74%
	FF I-III	1,850	4.7	74%
	FF I-III Paramedic	1,902	4.6	76%
<b>Daywork (4/10)</b>	Captain	1,553	1.7	75%
	Lieutenant	1,417	1.8	68%
	Master	1,196	2.2	58%
	Master Paramedic	1,388	1.9	67%
	FF I-III	1,346	1.9	65%
	FF I-III Paramedic	1,410	1.8	68%
<b>Emergency Communications Center</b>	Captain	1,595	5.5	73%
	Lieutenant	1,573	5.6	72%
	Master	1,378	6.3	63%
	FF I-III	1,566	5.6	72%
<b>Fire and Explosive Investigations</b>	Captain	1,698	5.2	78%
	Lieutenant	1,508	5.8	69%

## 2 CHANGE IN NAWH SINCE 2006 OLO REPORT

For employees working 24-hour shifts, the net annual work hour has not altered significantly in the past decade, though the distribution of leave has changed. The Office of Legislative Oversight (OLO) calculated a shift relief factor of 4.6 in CY06 for the ranks of FF-III – Captain that staff fire stations. From FY15-FY17, the shift relief factor moved one-tenth to 4.7. Use of annual, personal, and compensatory leave increased 42% from 210 hours in 2006 to 298 hours across FY15-FY17. Much of the increase was due to the introduction two personal days in FY10. Sick and disability leave increased 58%. These increases in vacation, sick, and disability leave were offset by a 47% decrease in light duty and other leave.

Table 2 - Comparison of Leave Use for 24-Hour Shiftwork FFIII-Captain from 2006 to FY15-FY17

NAWH/ Leave Type	CY2006 (914 FTEs)	FY15-FY17 (992 FTEs)	Change
<b>NAWH</b>	<b>1,911.9</b>	<b>1,857.6</b>	<b>-54.3</b>
Admin. Leave	20.0	17.5	-2.5
Annual Leave	164.7	177.9	+13.2
Comp. Leave	44.9	72.4	+27.5
Disability	25.0	71.1	+46.1
Sick/Donated Sick	102.3	130.4	+28.1
Personal	0.0	48.1	+48.1
Light Duty	139.8	46.6	-93.2
Other	89.9	74.5	-15.4

NOTES: Column totals may not add to 2,496 due to rounding. Other category includes physicals, off-the-floor details, leave without pay, absent without leave, and military leave.

Of the 6 shiftwork positions with comparable 2006 data, 3 increased and 3 decreased their net annual work hours. The largest improvement was for Lieutenants with an additional 172 hours (7.2 shifts) towards minimum staffing. The major improvements for Lieutenants came from 223 less hours used for light duty. The light duty improvements were offset by increases in other leave types with sick leave and comp leave use up 26.2 and 14.1 hours, respectively. The largest drop in net annual work hours was for Non-Paramedic Master Firefighters at 89 hours (3.7 shifts). This position decreased use of light duty by 8.2 hours, a much lower decrease compared to other positions. There were increases in annual, comp, and disability of 15 hours, 35 hours, and 29 hours, respectively for Non-Paramedic Master Firefighters.

Table 3 - Comparing NAWH by Position

Position	CY2006	FY15-FY17	Change
<b>Captain</b>	<b>1,912</b>	<b>1,868</b>	<b>-44</b>
<b>Lieutenant</b>	<b>1,697</b>	<b>1,869</b>	<b>+172</b>
<b>Master</b>	<b>1,840</b>	<b>1,861</b>	<b>+21</b>
<b>Master Paramedic</b>	<b>1,929</b>	<b>1,840</b>	<b>-89</b>
<b>FF I-III</b>	<b>1,977</b>	<b>1,850</b>	<b>-127</b>
<b>FF I-III Paramedic</b>	<b>1,840</b>	<b>1,902</b>	<b>+62</b>

NOTE: Other positions included in this report are not shown in this table since there is no comparable 2006 data. See Table 1 for complete NAWH data.

### 3 NAWH ESTIMATES FOR SURPLUS AND SHORTAGE OF POSITIONS

MCFRS had varying surpluses and shortages for FTEs across its uniformed compliment. A surplus indicated that MCFRS had a large enough compliment to cover nearly all of its minimum staffing requirements without overtime. A deficit showed MCFRS regularly needed overtime to meet minimum coverage requirements. The largest surplus was for shiftwork Lieutenants with an overage of 30.6 FTEs and the largest deficit was for shiftwork Non-Paramedic Master Firefighters with a shortage of 101.0 FTEs.

Table 4 - Three Year Average Surplus or Shortage of FTEs by Position

Shift	Position	Surplus/ Shortage FTEs	Notes
Shiftwork (24/48)	Assistant Chief	-1.2	Shortage calculation inclusive of one A/C covering on Fridays.
	Battalion Chief	-5.9	
	Captain	-49.3	Shortage was partially mitigated by Lieutenants covering Captains' shifts on straight and overtime pay. Lieutenant coverage not incorporated into shortage calculation.
	Lieutenant	+30.6	Overage was partially mitigated by Lieutenants covering Captains' shifts on straight and overtime pay.
	Master	-101.0	Master Firefighters are currently staffed using a 3.0 shift relief factor to create a shortage.
	Master Paramedic	-3.5	Master Firefighters are currently staffed using a 3.0 shift relief factor to create a shortage.
	FF I-III	+10.6	During the 3-year period, there was a surplus of 41 positions in FY15 then dropped to a deficit of 13 positions in FY17 due to lack of recruit class.
	FF I-III Paramedic	-31.2	
Daywork (4/10)	Captain	-0.2	
	Lieutenant	-2.1	
	Master	-5.4	
	Master Paramedic	-0.7	
	FF I-III	-21.6	
	FF I-III Paramedic	+1.3	
Emergency Communications Center	Captain	-0.8	
	Lieutenant	+0.2	
	Master	-3.9	
	FF I-III	+3.6	
Fire and Explosive Investigations	Captain	-1.7	FEI requires two officers (Captain or Lieutenant) for minimum staffing. One position must be a bomb technician.
	Lieutenant	+2.4	

#### 4 DETAILED OFF THE FLOOR

Detailed off the floor refers to hours spent on-duty, but the employee is assigned to a task that takes him or her away from fulfilling minimum staffing requirements. Details are used by MCFRS to staff the training academy, on-going training and professional development, and provide

necessary staffing for non-station work. Because there is some discretion in how details are assigned, MCFRS can adjust use or find alternatives to lower the impact on overtime.

The prevalence of detailed assignment hours varies across ranks. For Non-Paramedic Firefighters, detailed off the floor was the third highest reason to be away from the station behind annual and sick leave with an average utilization of 97 hours (4.1 shifts) a year per employee. Higher use should be expected since these were the least experienced firefighters and need to be trained for paramedic and emergency call center duties. The lowest detailed off the floor use was for Non-Paramedic Master Firefighters with 22 hours (0.9 shift) a year per employee.

Table 3 - Top 3 Detail Assignments by Rank

Shift	Position	Average Use	Top Detail Reason	2 <sup>nd</sup> Detail Reason	3 <sup>rd</sup> Detail Reason
<b>Shiftwork (24/48)</b>	Assistant Chief	50.6	Incident Management Team (21.4)	National Fire Academy (8)	Admin Services (5.7)
	Battalion Chief	52.7	Admin Services (20.4)	Grant Funded (8.9)	Operations Staff Work (4.4)
	Captain	49.9	Admin Services (6.7)	Grant Funded (5.8)	Special Ops Admin (5.8)
	Lieutenant	66.9	ECC Training (17.1)	FEI Training (13.4)	Non EMS Instructor (5.1)
	Master	22.2	Grant Funded (5.2)	Special Ops (4.3)	Non EMS Instructor (1.9)
	Master Paramedic	34.2	ECC Training (7.9)	Grant Funded (5.6)	EMS Instructor (3.7)
	FF I-III	97.1	ALS Student (39.2)	ECC Training (18.1)	ALS Intern (14)
	FF I-III Paramedic	16.2	ECC Training (6.5)	Recruit (1.5)	Special Ops (1.4)
<b>Daywork (4/10)</b>	Captain	107.2	Admin Services (65.6)	Office of the Fire Chief (10)	Grant Funded (5.9)
	Lieutenant	93.1	Office of the Fire Chief (33.4)	Recruit Training (21.5)	Risk Reduction (21.3)
	Master	17.1	Honor Guard (9.6)	Admin Services (5.8)	FROMS (1)
	Master Paramedic	22.9	ALS Student (10.4)	Admin Services (4.8)	Grant Funded (3.3)
	FF I-III	20.2	ALS Resident (8.6)	Workers Comp (5)	Recruit (3.2)
	FF I-III Paramedic	18.6	Workers Comp (8.2)	Special Ops (3.6)	Recruit (3.3)
<b>Emergency Communications Center</b>	Captain	76.8	ECC Staff Work (53.8)	ECC Training (10.7)	Grant Funded (4.4)
	Lieutenant	96.3	ECC Training (53.2)	Grant Funded (17.4)	National Fire Academy (16.2)

	Master	117.4	ECC Staff Work (67.1)	ECC Training (24.5)	ALS Instructor (18.5)
	FF I-III	56.6	ALS Student (25.4)	ECC Training (20.8)	Non EMS Student (4.0)
<b>Fire and Explosive Investigations</b>	Captain	48.1	FEI Training (17.2)	NonOps (16.2)	Admin Services (8.7)
	Lieutenant	162.6	FEI Training (127.8)	NonOps (23.3)	Special Ops (9.5)

Fire and Rescue Service

24 hr Shiftwork

Net Annual Work Hours  
(Average FY2015 - FY2017)

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12

	Assistant Chief 24/48 3 Year Avg.	Battalion Chief 24/48 3 Year Avg.	CAPT 24/48 3 Year Avg.	LIEUT 24/48 3 Year Avg.	MASTER 24/48 3 Year Avg.	MASTER 24/48 Paramedic 3 Year Avg.	FF I-III 24/48 3 Year Avg.	FF I-III 24/48 Paramedic 3 Year Avg.
<b>Total Hours in Workyear</b>	2,496.0	2,496.0	2,496.0	2,496.0	2,496.0	2,496.0	2,496.0	2,496.0
<b>Average FTE</b>	2.8	17.9	123.7	96.1	138.5	58.2	468.7	120.4
<b>Admin Leave</b>	0.9	11.6	18.4	10.7	22.7	24.2	17.9	14.3
<b>Annual Leave</b>	190.4	237.9	216.4	204.7	201.8	198.3	157.4	166.5
<b>Comp Leave</b>	38.1	89.5	69.6	72.4	71.3	104.5	65.7	90.2
<b>Disability</b>	0.0	57.6	50.4	54.0	81.7	66.2	79.2	68.3
<b>Sick</b>	95.4	120.7	132.7	131.5	144.5	133.0	123.4	129.0
<b>Sick Leave Bank / Donated Leave</b>	0.0	0.0	2.3	1.9	0.7	0.0	0.7	1.8
<b>Military</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0
<b>Personal</b>	42.7	52.1	49.5	48.6	45.6	49.0	48.1	48.1
<b>Religious</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Leave Without Pay</b>	0.0	0.0	0.2	0.6	3.8	0.3	6.9	1.3
<b>Light Duty</b>	0.0	40.4	38.5	35.3	41.0	46.2	48.7	58.3
<b>Detailed Off the Floor</b>	50.6	52.7	49.9	66.9	22.2	34.2	97.1	16.2
<b>Total Average Annual Hours Off-Post Per FTE</b>	418.1	662.3	627.8	626.6	635.3	655.8	646.0	594.0
<b>Net Annual Work Hours (NAWH)</b>	2,077.9	1,833.7	1,868.2	1,869.4	1,860.7	1,840.2	1,850.0	1,902.0
<b>Shift Relief Factor</b>	4.2	4.8	4.7	4.7	4.7	4.7	4.7	4.6
<b>Annual Coverage Hours Required</b>	8,736.0	43,680.0	323,232.0	122,304.0	445,536.0	113,568.0	847,392.0	288,288.0
<b>FTE Adjustment</b>	0.2							
<b>Number of FTEs Required to Fill 100% of Required Annual Coverage Hours</b>	4.2	23.8	173.0	65.4	239.4	61.7	458.1	151.6
<b>Surplus FTE/(Shortage FTE)**</b>	(1.2)	(5.9)	(49.3)	30.6	(101.0)	(3.5)	10.6	(31.2)
<b>Notes and Comments</b>	(Click Drop Down to Left of A114 for Notes)							

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Net Annual Work Hours  
(Average FY2015 - FY2017)

4 - 10 Daywork

	CAPT 4/10 3 Year Avg.	LIEUT 4/10 3 Year Avg.	MASTER 4/10 3 Year Avg.	MASTER 4/10 Paramedic 3 Year Avg.	FF I-III 4/10 3 Year Avg.	FF I-III 4/10 Paramedic 3 Year Avg.
<b>Total Hours in Workyear</b>	2,080.0	2,080.0	2,080.0	2,080.0	2,080.0	2,080.0
<b>Average FTE</b>	3.2	5.3	3.3	3.0	20.9	3.1
<b>Admin Leave</b>	14.7	62.3	580.5	98.3	30.2	16.5
<b>Annual Leave</b>	175.3	162.2	107.4	160.3	153.7	143.8
<b>Comp Leave</b>	40.2	53.3	27.9	115.6	39.2	43.7
<b>Disability</b>	0.5	29.7	5.3	27.1	53.6	125.9
<b>Sick</b>	144.7	124.1	107.9	152.5	112.5	166.1
<b>Sick Leave Bank / Donated Leave</b>	0.0	36.1	0.0	0.0	16.1	0.0
<b>Military</b>	0.0	0.0	0.0	0.0	0.0	0.0
<b>Personal</b>	42.5	30.0	37.5	30.8	37.6	28.6
<b>Religious</b>	0.0	0.0	0.0	0.0	0.0	0.0
<b>Leave Without Pay</b>	0.1	2.5	0.0	0.0	122.1	0.4
<b>Light Duty</b>	1.7	70.2	0.8	84.7	148.7	126.5
<b>Detailed Off the Floor</b>	107.2	93.1	17.1	22.9	20.2	18.6
<b>Total Average Annual Hours Off-Post Per FTE</b>	526.9	663.3	884.3	692.2	733.7	670.1
<b>Net Annual Work Hours (NAWH)</b>	1,553.1	1,416.7	1,195.7	1,387.8	1,346.3	1,409.9
<b>Shift Relief Factor</b>	1.7	1.8	2.2	1.9	1.9	1.8
<b>Annual Coverage Hours Required</b>	5,200.0	10,400.0	10,400.0	5,200.0	57,200.0	2,600.0
<b>FTE Adjustment</b>						
<b>Number of FTEs Required to Fill 100% of Required Annual Coverage Hours</b>	3.3	7.3	8.7	3.7	42.5	1.8
<b>Surplus FTE/(Shortage FTE)**</b>	(0.2)	(2.1)	(5.4)	(0.7)	(21.6)	1.3

Notes and Comments

2

Net Annual Work Hours  
(Average FY2015 - FY2017)

Fire and Rescue Service

Emergency Communications Center

Fire and Explosive Investigations

CAPT

LIEUT

MASTER

FF I-III

CAPT

LIEUT

3 Year Avg.

3 Year Avg.

3 Year Avg.

3 Year Avg.

3 Year Avg.

3 Year Avg.

Total Hours in Workyear

2,184.0

2,184.0

2,184.0

2,184.0

2,184.0

2,184.0

Average FTE

4.7

5.8

8.8

20.4

3.5

8.2

Admin Leave

5.8

23.3

18.9

8.4

6.4

22.3

Annual Leave

191.5

168.6

149.4

184.4

143.3

204.9

Comp Leave

174.6

168.6

227.4

150.1

103.9

37.1

Disability

0.0

0.0

24.6

2.5

1.0

74.8

Sick

97.1

98.7

141.1

141.6

121.4

129.0

Sick Leave Bank / Donated Leave

0.0

0.0

0.0

0.0

0.0

0.0

Military

0.0

0.0

0.0

0.0

0.0

0.0

Personal

43.2

55.3

50.0

49.6

46.8

43.2

Religious

0.0

0.0

0.0

0.0

0.0

0.0

Leave Without Pay

0.0

0.0

0.0

0.6

0.0

0.0

Light Duty

0.0

0.0

76.9

24.4

17.5

2.1

Detailed Off the Floor

76.8

96.3

117.4

56.6

48.1

162.6

Total Average Annual Hours Off-Post Per FTE

589.0

610.9

805.8

618.3

488.3

676.1

Net Annual Work Hours (NAWH)

1,595.0

1,573.1

1,378.2

1,565.7

1,695.7

1,507.9

Shift Relief Factor

5.5

5.6

6.3

5.6

5.2

5.8

Annual Coverage Hours Required

8,736.0

8,736.0

17,472.0

26,208.0

8,736.0

8,736.0

FTE Adjustment

Number of FTEs Required to Fill 100% of Required

Annual Coverage Hours

5.5

5.6

12.7

16.7

5.2

5.8

Surplus FTE/(Shortage FTE)\*\*

(0.8)

0.2

(3.9)

3.6

(1.7)

2.4

Notes and Comments

2



# INTERNATIONAL ASSOCIATION OF FIRE FIGHTERS®

HAROLD A. SCHAITBERGER  
General President

EDWARD A. KELLY  
General Secretary-Treasurer

October 9, 2018

Marc Elrich, Chair  
Public Safety Committee  
Montgomery County Council  
100 Maryland Avenue, 4<sup>th</sup> Floor  
Rockville, MD 20850

Dear Mr. Elrich,

I am Dr. Lori Moore-Merrell, a 32-year fire service professional with 7 years as a member of an urban city fire department and 25 years with the International Association of Fire Fighters serving as an Assistant to the General President and the Head of the Research Division. I am a tenured research scientist in the area of fire department staffing and resource deployment and am a principal investigator on the National Institute of Standards and Technology (NIST) Field Experiments in both the Residential and High-Rise environments.

It has come to my attention that there are active conversations regarding the reduction of fire department resources deployed in the Montgomery County. After speaking with leaders in the area, I felt it important to provide relevant information for your consideration.

National Fire Protection Association (NFPA) Standards are industry standards. These standards are developed through consensus of experienced leaders, relevant experts, and where it exists, scientific empirical data. NFPA 1710 regarding Organization and Deployment of Fire Suppression Operations, Emergency Operations, and Special Operations to the Public by Career Fire Departments, is one such standard. The entities represented on the NFPA 1710 Technical Committee include the International Fire Marshals Association, the Washington State Council of Fire Chiefs, the International Association of Fire Chiefs (IAFC), National League of Cities (NLC), Insurance Services Office (ISO), University of Florida, Public Agency Training Council, the International City/County Management Association (ICMA), the International Association of Fire Fighters (IAFF) and a host of leaders from municipal fire departments. NFPA 1710 sets minimum standards for firefighter crews, response times and other factors involved in determining the organization and deployment of firefighting and emergency medical systems.

10

Passed as a standard in 2001 and updated in 2004, 2010, and 2016, 1710 represents the culmination of a 15-year process that involved research, expert opinion, debate and finally consensus. NFPA standards apply to jurisdictions regardless of their geography, topography, fiscal capacity, service burdens, population density or similar local variations.

To understand the need for fire department resources, it is important to understand the community from a fire risk perspective. As you know, Montgomery County is a culturally diverse area spanning 507 square miles with a population over 1 million. By definition, this is an urban area. Given that fact coupled with the demographics of the community, high call volume for both fire and emergency medical responses will continue to be a reality.

The 2017 Census data show that 20%+ of the population in Montgomery County is in a vulnerable category. This category consists of persons under the age of 5 (6.3%) and persons 65 years of age and older (14.9%). Additionally, 7% of the population is living at or below the poverty level. There are 390,000 housing units, consisting of detached houses (48%), apartment buildings that have ten or more units (26%), apartment duplex and apartment buildings that have fewer than ten units (25%), and other dwellings including mobile homes. Of these structures, 22% are of pre-1960 construction, and 65% constructed between 1960 and 2000.

This demographic and housing information provides a profile for factors that contribute to the risk of fire and medical emergencies in the response jurisdiction, as well as a profile for those who may need to be rescued should a fire occur. Though efforts for public education, inspection, and prevention in these areas are important and must be continued, the fact is that fires and medical emergencies do occur. And when they occur, it is imperative that the fire department can respond with appropriate resources to provide EMS care, rescue trapped occupants and extinguish a fire.

Fire Department response performance objectives contained in the NFPA 1710 Standard include call intake and dispatch, turnout time for firefighters (80 sec), and travel time for the first responding fire pumpers to arrive on scene (objective = 4 minutes from the time they leave the station until they arrive on scene). There is also a benchmark for a full assignment of firefighters to arrive on scene (objective = 8 minutes from the time they leave the station until they arrive on scene). The full assignment is the group of firefighters needed to adequately handle the emergency situation.

The NFPA 1710 Standard also clearly states that, *'Fire companies whose primary functions are to pump and deliver water and perform basic firefighting at fires, including search and rescue, shall be known as engine [pumper] companies.'*

*These companies shall be staffed with a minimum of four on-duty personnel. In jurisdictions with tactical hazards, high hazard occupancies, high incident frequencies, geographical restrictions, or other pertinent factors as identified by the AHJ, these companies shall be staffed with a minimum of five or six on-duty members'.*

Further, NFPA Standard 1710 states that, 'Fire companies whose primary functions are to perform the variety of services associated with truck work, such as forcible entry, ventilation, search and rescue, aerial operations for water delivery and rescue, utility control, illumination,

overhaul, and salvage work, shall be known as ladder or truck companies. *These companies shall be staffed with a minimum of four on-duty personnel. In jurisdictions with tactical hazards, high hazard occupancies, high incident frequencies, geographical restrictions, or other pertinent factors as identified by the AHJ, these companies shall be staffed with a minimum of five or six on-duty personnel'.*

In addition to NFPA Standard 1710, as previously noted, the National Institute of Standards and Technology (NIST) and its study partners including the IAFC, the IAFF, the Commission on Fire Accreditation International (CFAI), the Urban Institute, and Worcester Polytechnic Institute (WPI), has conducted staffing and deployment research in both the low hazard residential and high hazard/high-rise fireground environments. In fact, the low hazard residential experiments were conducted in Montgomery County. These study reports funded by a grant from the U.S. Department of Homeland Security are the first to quantify the effects of crew sizes and arrival times on the fire service's lifesaving and firefighting operations for residential and high-rise fires. These experiments were conducted in different type structures because as noted previously, it is vital to consider the types of structures in any city and the associated risks to occupants in those structures during a fire, particularly those who cannot self-evacuate like the elderly and young children.

The results from the rigorous scientific study on residential fires, the most common and deadly fires in the country, provide quantitative data to fire chiefs and public officials responsible for determining safe staffing levels, station locations and appropriate funding for community and firefighter safety. For example, of the 22 fireground tasks measured during the experiments, certain factors like time to water on fire had the most significant impact on successful operations. There was a 10% difference in the "water on fire" time between 2-person and 3-person crews and an additional 6%-time difference between the 3- and 4- person crews. There was also a 6%-time difference between the 3- and 4-person crews conducting search and rescue. And 4-person crews were nearly 25% (5.1 minutes) faster than 3-person crews on overall scene time necessary to complete all tasks. The study noted that delayed response, particularly in conjunction with the deployment of inadequate resources, reduces the likelihood of controlling the fire in time to prevent major damage and possible loss of life and increases the danger to fire fighters.

NIST and its study partners also conducted a similar crew size and resource deployment study in the high-hazard or high-rise fireground environment. When responding to fires in high-rise buildings, firefighting crews of five or six members—instead of three or four—are significantly faster in putting out fires and completing search-and-rescue operations. Unlike most house fires, high-rise fires are high-hazard situations that pose unique operational challenges to fire service response. How big a fire gets and how much danger it poses to occupants and firefighters are largely determined by crew size and how personnel are deployed at the scene. It's not simply that larger crews have more people. Larger crews are deployed differently and, as a result, are able to perform required tasks more quickly.

In the NIST high-rise study, an analysis of 14 “critical tasks”—those undertaken when potential risks to building occupants and firefighters are greatest—found that three-member crews took almost 12 minutes longer than crews of four, 21 minutes longer than crews of five, and 23 minutes longer than crews of six to complete all tasks.

On the basis of the results of computer modeling, which incorporate data from live experimental burns, the study team concluded that smaller crews end up facing larger fires because of the additional time required to complete tasks. A three-person crew, for example, may battle a medium-growing blaze that is almost 60 percent larger than the fire faced by a larger crew, which would start extinguishing a fire roughly three-and-one-half minutes earlier than the smaller crew.

The research team also evaluated whether dispatching more three or four-member crews to a high-rise fire would be as effective as sending a smaller contingent of pumpers and trucks staffed by larger crews of firefighters. They found that a smaller contingent of pumpers and trucks with crews of size four or five outperforms a larger response of pumpers and trucks with crew sizes of three firefighters.

Based on the NIST High-Rise Study results, new language was added to the NFPA 1710 Standard. The new language in the 2016 revision states the following.

*5.2.3 Operating Units. Fire company staffing requirements shall be based on minimum levels necessary for safe, effective, and efficient emergency operations.*

*5.2.3.1 Fire companies whose primary functions are to pump and deliver water and perform basic firefighting at fires, including search and rescue, shall be known as engine [pumper] companies. These companies shall be staffed with a minimum of four on-duty members.*

*5.2.3.1.1 In jurisdictions with a high number of incidents or geographical restrictions, as identified by the AHJ [authority having jurisdiction], these companies shall be staffed with a minimum of five on-duty members.*

*5.2.3.1.2.1 In jurisdictions with tactical hazards, high-hazard occupancies, or dense urban areas, as identified by the AHJ, these fire companies shall be staffed with a minimum of six on-duty members.*

*5.2.3.2 Fire companies whose primary functions are to perform the variety of services associated with truck work, such as forcible entry, ventilation, search and rescue, aerial operations for water delivery and rescue, utility control, illumination, overhaul, and salvage work, shall be known as ladder or truck companies.*

*5.2.3.2.1 These fire companies shall be staffed with a minimum of four on-duty members.*

*5.2.3.2.1 In jurisdictions with a high number of incidents or geographical restrictions, as identified by the AHJ, these fire companies shall be staffed with a minimum of five on-duty members.*

*5.2.3.2.2.1 In jurisdictions with tactical hazards, high-hazard occupancies, or dense urban areas, as identified by the AHJ, these fire companies shall be staffed with a minimum of six on-duty members.*

In the past, some municipalities have attempted to deploy with smaller crews on each piece of apparatus using the logic that if they just send more response units it would be the same. But that logic ignores the fact that larger crews have tactical advantages that reduce risk exposure to people trapped and to firefighters. Larger crews can carry out crucial tasks simultaneously rather than in series and saving time can save occupant lives and prevent firefighter injuries and property damage. In this case, reducing the number of personnel deployed on responding fire apparatus will reduce the department's capability to meet the objectives in the industry standard making them less safe and less effective than the status quo.

Marc Elrich, Chair  
October 9, 2018  
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In closing, based on the foregoing information from industry standards and science, I urge you to help protect the firefighters and paramedics in Montgomery County, as well as the people they serve by not reducing the minimum staffing level of 4-person crews. Decisions of this magnitude must be based on science, not budgetary rhetoric.

Sincerely and Respectfully,

*Dr. Lori Moore Merrell*

Dr. Lori Moore-Merrell, DrPH, MPH. EMT-P  
Research and Data Analytics  
International Association of Fire Fighters

cc: Sydney Katz, Member, Public Safety Committee  
Tom Hucker, Member, Public Safety Committee