

Running Head: ASSESSING WINDSHIELD DAMAGE ASSESSMENTS

Assessing Windshield Damage Assessments

Jeremy M. Shaffner

Montgomery County Fire and Rescue Service

Gaithersburg, Maryland

Certification Statement

I hereby certify that this paper constitutes my own product, that where language of others is set forth, quotation marks so indicate, and that appropriate credit is given where I have used the language, ideas, expressions, or writings of another.

Signed: Jeremy M. Shaffner  
Jeremy M. Shaffner

A handwritten signature in blue ink, consisting of stylized, overlapping loops and curves, positioned to the right of the printed name.

### **Abstract**

Montgomery County has experienced several natural disasters or significant events including 23 earthquakes, tornados, flooding, and other weather events. In total, the Federal Emergency Management Agency (FEMA) has issued 32 emergency declarations for the state of Maryland with 18 of them involving Montgomery County. Montgomery County's proximity to Washington, D.C. and the numerous government facilities located within the county, make it an area with an increased likelihood of a man-made disaster.

A critical component of post disaster response is performing a Rapid Damage Assessment (RDA) to identify the status of critical infrastructure, as well as identifying areas with the greatest damage and in the most need of assistance. RDA provides a method to prioritize resource allocation when needs exceed resource availability. The problem is Montgomery County Fire Rescue Service (MCFRS) did not have a policy directing the use of windshield damage assessments following significant events. MCFRS personnel and resources will play a critical "front line" role in this process, but no policy exists to educate, guide, or control MCFRS in this process.

The purpose of this applied research project was to identify and develop a policy to train and guide MCFRS personnel on conducting a RDA. This research was carried out using action research and produced a deliverable policy and answered the following questions:

- What is the role of MCFRS in RDA following a disaster;
- What are the components of a damage assessment policy and;
- What training should applicable personnel take to ensure accurate damage assessments?

The research found that the RDA policy should include sections outlining roles and responsibilities of unit officers, battalion chiefs, and shift chief; data collection methods,

reporting methods, backup reporting methods, and a formalized training standard to ensure data accuracy.

**Table of Contents**

Abstract	3
Table of Contents	5
List of Figures	6
Introduction	7
Background and Significance	8
Literature Review	11
Procedures	18
Results	22
Discussion	26
Recommendations	30
Reference List	31
Appendix A: MCFRS Windshield Assessment Survey Form	33
Appendix B: Online Survey	39
Appendix C: Online Survey Results	41
Appendix D: Draft Policy and Procedure for RDA	48

**List of Figures**

Figure 1: Who conducts surveys	24
Figure 2: Percent of departments expected to complete RDA that receive training	24
Figure 3: Departments of similar demographics that receive training	25
Figure 4: Training by type	26

## Introduction

Montgomery County Fire and Rescue Service (MCFRS) is a “full spectrum life safety agency protecting about 500 square miles and over 1 million people who live and work in Maryland’s most populous jurisdiction” (Montgomery County, “About Us”, 2017). The department is a combination career and volunteer agency that is charged with protecting “lives, property, and the environment with comprehensive risk reduction programs; and safe, efficient, and effective emergency response” (Montgomery County, “About Us”, 2017). Many guiding documents direct MCFRS personnel to handle a multitude of emergency incidents and these documents highlight effectiveness and efficiency numerous times. For example, one principle provided by the Fire Chief indicates that MCFRS personnel will “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” (Montgomery County, “About Us”, 2017).

Disasters, both manmade and natural, fall within the response expectations of MCFRS personnel. This response not only includes handling the emergencies directly related to the disaster itself, but also through conducting “Rapid Damage Assessments” (RDA) or “windshield surveys”. RDA is defined as a “quick survey of the area impacted by a disaster or emergency to ascertain the scope of the event and determine immediate life-threatening situations and imminent hazards” (*Damage assessment annex*, 2013, p. 4). This mission is carried out in direct support of the Department of Permitting Services as outlined in the Emergency Operations Plan. (*Emergency Operations Plan*, 2013, p. 25-33).

The problem is, Montgomery County Fire Rescue Service does not have a policy directing the use of windshield surveys following significant events. The lack of guidance on this

crucial task results in a wide range of responses and confusion when units/personnel are requested to perform RDAs. This directly contradicts the goals of effectiveness and efficiency previously mentioned.

The purpose of this applied research project is to identify and develop a policy to train and guide MCFRS personnel on conducting RDA. This research is carried out using action research to produce a deliverable policy and answer the following questions:

1. What is the role of MCFRS in RDA following a disaster?;
2. What are the components of a damage assessment policy?; and
3. What training should applicable personnel take to ensure accurate damage assessments?

By answering these questions, outlining agency responsibilities, and directing training of personnel, MCFRS will be able to meet expectations set forth by leadership, deliver accurate and reliable data to decision makers and better serve the community during times of crisis.

### **Background and Significance**

Montgomery County Fire Rescue Service (MCFRS) is a department that staffs 37 fire stations across a county of approximately 500 square miles. Career staffing in stations fluctuates by time-of-day and volunteer participation, but averages out to be 279 personnel per day, staffing 35 engines, 26 ambulances, 16 medic units, 16 aerial units, and six heavy rescue squads (Montgomery County, CountyStat, 2017). In addition, a variety of specialized units are cross-staffed by in-station personnel including a technical rescue unit, hazardous materials units, numerous water rescue assets, brush trucks, medical ambulance buses, mass casualty support units, tankers, and others. The department responded to over 116,000 incidents in 2016 and the numbers continue to increase annually.



Many citizens may believe that Montgomery County is located in a relatively safe location and protected from natural disasters however, there have been several incidents which could be classified as natural disasters or have serious potential to be a natural disaster. For example, over the past 15 years, a total of 10 earthquakes have occurred that have led to seismic activity registered in the county. This includes one earthquake centered in Germantown, Maryland that registered a 3.4 on the Richter Scale and a IV on the “Did You Feel It” scale (“Recent Quakes”, 2017).

Additionally, according to the website <http://www.tornadohistoryproject.com>, Montgomery County has experienced 13 tornados since 2000 with the most recent occurring in June of 2017 (“Historical tornado data”, 2017). This specific tornado destroyed two homes in a densely populated area and damaged many others (Davis, “100 blk Northwood Drive”, 2017). Historically, the most significant tornado was rated an EF2 on the Enhanced Fujita Scale (EF). EF2 tornados have winds up to 157 MPH and can cause considerable damage to include “roofs torn off frame houses; mobile homes demolished; boxcars overturned; large trees snapped or uprooted; light-object missiles generated; cars lifted off ground” (“Fujita tornado damage scale”, 2017).

A further review of FEMA disaster declarations since 1953 details 32 declarations for the state of Maryland with 18 of these disaster declarations involving Montgomery County. Broken down by categories, Montgomery County was included on five declarations related to snow/severe winter weather, five related to hurricanes, five related to severe storms/straight line winds, and three related to flooding (“Data visualizations: Disaster declarations for states and counties”, 2017).

These reviews only account for naturally occurring disasters. Montgomery County shares a border with Washington, D.C. and is home to many areas sensitive to national security as well as national infrastructure. A 2013 “Standard of Cover” states, “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, D.C. Reagan National, Dulles International and Baltimore Washington International airports....In addition, a high volume of railway routes travel through Montgomery County carrying both commuter passengers and hazardous materials” (*Standard of Cover*, 2013, p. 65-66).

Montgomery County houses five federal installations that are considered valuable targets such as National Naval Hospital (Bethesda Naval Hospital), Walter Reed National Military Medical Center, US Naval Surface Warfare Center, National Institutes of Health (NIH), and National Institutes of Standards and Technology (NIST). These targets coupled with numerous other high value targets like the Department of Energy (DOE), Nuclear Regulatory Commission (NRC), United States Health and Human Service headquarters (HHS), Food and Drug Administration (FDA), and National Oceanic and Atmospheric Administration (NOAA), and a high population density which is one of the most diverse in the country, all make Montgomery County highly susceptible to terrorist activities.

Sufficient threats exist to Montgomery County that would provide ample opportunity for the department to participate in disaster response and for personnel to be required to perform RDA. Since these assessments help to guide disaster response and these immediate assessments play critical roles in the mitigation of the incident, direction and training need to be given to personnel to ensure accuracy and efficiency in the process.

The high likelihood of significant events and the responsibility of MCFRS to act upon these events and fill critical leadership and support roles during times of disaster, directly falls in line with the lessons learned in the *Executive Analysis of Fire Service Operations in Emergency Management* as part of the Executive Fire Officer Program. This is in direct support of Goal 3 of the United States Fire Administration (USFA) *Strategic Plan* which aims to, “improve the fire and emergency services’ capability for response to and recovery from all hazards” (“*Strategic Plan*”, n.d., p. 13).

### **Literature Review**

In 2016, FEMA issued 102 disaster declarations nationally. These declarations covered severe weather, severe winter weather, fires, hurricanes, floods, and mud slides. The five-year average for declarations at a federal level is 94.4 declarations/year (“*Disaster declarations by year*”, 2017). In comparison to 20 years prior, the five-year average was only 72.8 declarations per year. This represents an increase of over 20% over 20 years. This change may be attributed to changes in FEMA policies regarding declarations, but a report published by the New England Journal of Medicine titled *Natural Disasters, Armed Conflict and Public Health*, further reviews the instances of the occurrence of disasters and not solely the number of FEMA declarations. This report states that “there were three times as many natural disasters from 2000 through 2009 as there were from 1980 through 1989” and that the “growth is mainly in climate-related events, accounting for nearly 80% of the increase” (Leaning & Guha-Sapir, 2013, p. 1836-1838). A review of the Global Terrorism Database which tracks terrorism related events from around the world was also reviewed. Searching for terrorist events that occurred in the United States from 2000-2016 found that 402 entries existed. This includes actual terror attacks such as bombings, mass shootings, etc., as well as plans/attempts foiled by law enforcement agencies. Thirty-nine

of these incidents (10%) occurred in the Washington, D.C., Maryland, or Virginia area (“U.S. terror incidents”, 2017).

“When the need for emergency services arises, the citizens of Montgomery County expect to have easy access to the fire and rescues 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...” (*Standard of Cover*, 2013, p. 59). How does an agency as large as MCFRS, covering an area as large as Montgomery County, know how/where to respond and send resources? The simple answer is a Rapid Damage Assessment. “An RDA is a size-up on a large scale...Accurate RDAs conducted using standardized procedures facilitate getting the appropriate emergency response to the disaster area much more effectively and efficiently” (Donohue, 2016, p. 2). “Information gathered by the damage assessment response team provides a snapshot of the situation detailing the extent and location of damages...identifies needs, helps sets priorities, and drives response and recovery actions” (“Local damage assessment”, 2013, p. 1).

The Montgomery County *Emergency Operations Plan* (EOP) was reviewed. This plan is 490 pages and managed by the Office of Emergency Management and Homeland Security (OEMHS). This plan “establishes the overall roles and responsibilities for emergency operations, as well as the concept of operation for the county” (*Emergency Operations Plan*, 2013, p. 2). The EOP contains a table that outlines the 16 Emergency Support Functions (ESF) established by the National Response Framework (NRF), and an additional nine critical items/scenarios as identified by the OEMHS. The EOP assigns responsibilities to applicable county departments in the manner of Primary Agency, Support Agency, and Cooperating Agency. MCFRS is listed as a primary agency for the following (*Emergency Operations Plan*, 2013, p. 25-33):

- ESF #4 – Firefighting;
- ESF #9 – Search and Rescue;
- ESF #10 – Oil and Hazardous Materials Response; and
- Nuclear and Radiological Incidents.

Additionally, MCFRS is listed as the Support Agency for the following:

- ESF #2 – Communications;
- ESF #6 – Mass Care, Emergency Assistance, Housing and Human Services;
- ESF #8 –Public Health and Medical Services;
- ESF #14 – Long-term Community Recovery;
- ESF #15 – External Affairs;
- Damage Assessments;
- Training and Exercises;
- Biological Incident;
- Dam Failure Incident;
- Mass Fatality Incident;
- Severe Weather Incident; and
- Terrorism Incident.

This review found that the Department of Permitting Services (DPS) is listed as the Primary Agency under the category of Damage Assessment. This responsibility is later expanded upon with the task to “coordinate damage assessment operations and inspections in support of emergency operations (*Emergency Operations Plan*, 2013, p. 46).

This EOP provides several guiding principles that apply to MCFRS roles and responsibility regarding RDA. For example, the EOP specifically states that “department and

agencies assigned damage assessment responsibilities will develop appropriate internal procedures to accomplish their assigned tasks” and “each department and agency tasked in this annex will ensure staff members are trained in their designated damage assessment roles and responsibilities” (*Damage assessment annex*, 2013, p. 5). Furthermore, it defines the RDA as “a quick survey of the area impacted by a disaster or emergency to ascertain the scope of the event and determine immediate life-threatening situations and imminent hazards. The RA is coordinated by the IC supported by other public safety personnel on-scene normally within 24 hours of the incident onset.” (*Damage assessment annex*, 2013, p. 4). In summary, these guidelines highlight that MCFRS will have an active role in the RDA process and that MCFRS is responsible to provide guidance and training to members regarding proper RDA procedures.

A review of existing policies and procedures of MCFRS found no information pertaining to RDA procedures. However, this policy review did find training qualifications of officers in the department. Each “heavy apparatus” (engine, aerial, rescue squad) is generally staffed with a minimum of three personnel (most engines have four, to include a paramedic) and one of the personnel is an officer at the rank of Lieutenant or Captain. Per the *Promotion Procedure Policy 512* issued in October 2006, when an employee is promoted to the lowest unit officer position (Lieutenant), they will have completed training and certification to the following levels

(*Promotion Procedure*, 2006):

- NFPA 1001 – Firefighter II;
- Maryland EMT-B;
- Current CPR Certification;
- Current AED Certification;
- Current Blood Borne Pathogen Certification;

- Current SCBA Certification;
- Current Hazardous Materials Operations Certification;
- Weapons of Mass Destruction Training;
- Emergency Vehicle Operator Course;
- Human Relations Class;
- Practical Rescue;
- Pumps and Hydraulics;
- Aerial Operations;
- NFPA 1002 – Fire Officer I;
- ICS 100;
- ICS 200;
- ICS 700;
- Incident Command / Strategies and Tactics;
- NFPA 1041 – Instructor I;
- 15 Credit hours in an accredited college or university;
- EEO/AA and the Law Course;
- Managing Diversity Course; and
- Minimum of 6 years of experience in the department.

This extensive training list covers many important topics, however none of the trainings include more than a mere mention of natural disasters, nor do they cover any topics of RDAs. The “Weapons of Mass Destruction” (WMD) course covers a variety of topics including identifying WMD incidents and preliminary emergency responses to WMD incidents, however it does not cover RDAs for manmade disasters.

Additionally, during this review, a copy of an excel spreadsheet titled “windshieldsurveyv2” was found in an obscure location on the department’s servers. A copy of this form is provided in Appendix A. This form contains some cursory info on how/why to conduct a windshield survey, what assessment teams should be designated as on the radio, and some basic information on how to classify damage. In analyzing some of the form information, this form is intended to be used by “unit officers” for data gathering but no formal training on RDA exists by department mandate.

Montgomery County Fire Rescue maintains a “Tech Training Website” and “Tech Training Blog”. These sites host a variety of information applicable to operations and several online training resources, many of which are optional, but some are required. Examples include interactive training on the fire reporting software, mobile data computers, cultural diversity, electronic time card reporting, and others. A review of both of these sites found no information pertaining to RDA (“MCFRS IT Blog”, 2017).

Upon completing the internal review of documents, the researcher turned to the internet to review other agencies policies on RDA during disaster. Several agencies online policy and procedure manuals were reviewed, but most did not contain any documentation on RDA procedures. These agencies reviewed included: Toppenish Fire Department, WA; Manheim Township Fire Rescue, PA; Winter Park Fire-Rescue, FL; Sunrise Fire Rescue, FL; Cherry Hill, NJ; Dallas Fire Rescue, TX; Fresno Fire, CA; North County Fire and Medical, AZ; Miami Dade, FL, and Clay County Fire Rescue, FL.

Additionally, many other agencies located in the D.C. Council of Governments (COG) were informally polled to determine if they had a policy in place and the answer was a resounding “no”. This included Washington, D.C.; Prince Georges County Fire Rescue, MD; Fairfax County



Fire and Rescue, VA; Arlington Fire Department, VA; Frederick County Fire Rescue, MD; and Howard County Fire Rescue, MD.

Of the agencies that were reviewed that did contain information pertaining to RDA, the policy and content varied greatly. For example, the Fresno Fire Department in California has a Standard Operating Procedure (SOP) manual and contains a policy that addressed natural disasters, but only in relation to the air field within their response area. This policy did, however, highlight responsibilities of the different groups within the fire department, their obligations during disasters, what information to report, and to whom they are to report the information (202.15e *Natural Disaster*, 2007, p. 2-3).

The “*Hurricane Plan*” of the Sunrise Fire Rescue Department in Florida outlines a brief section on “SNAPSHOT” damage assessments for the agency. Of the 63-page policy on preparation, response, and recovery of hurricanes, two pages are dedicated to directing members on how to complete the “snapshot” report, and when it must be done. It also dictates that upon notification of a potential disaster, the department shall:

- distribute and review assessment tools with assigned members;
- review responsibilities, including assessment procedures; and
- assure all members review and prepare for post-incident assessments and grid searches (“*Operations and policies manual*”, 2015, p. 52-55).

Clay County, Florida, SOP manual provided the most detailed policy and focuses solely on RDA. This policy covered the responsibilities of firefighters and officers during the RDA process, a prioritization list of when and where RDA’s should occur, and a section outlining annual training requirements to maintain proficiency on the RDA (“*Rapid damage assessment*”, 2009, p. 2).

The FEMA IS559 course on *Local Damage Assessment* highlights criteria that should be included in damage assessment plans. This include methods for conducting assessments, specifies roles and responsibilities, assigns zones, and includes basic check lists of damage assessment bench marks (2013, p. 13). The course further goes on to state that RDA plans “will need to be exercised so you can verify that it works and so all who perform damage assessment will be familiar with the processes, methods, forms and responsibilities in the plan (2013, p. 16).

### **Procedures**

The initial procedures of this research process were heavily focused on reading/reviewing other agencies plans, policies, and procedures. Much of this research was conducted via the internet and through the Learning Resource Center at the National Fire Academy (NFA). Additionally, informal conversations were held with officers at other similar agencies and an e-mail interview was conducted with the Director of the Office of Emergency Management and Homeland Security for Montgomery County.

The initial research was focused on determining what role MCFRS and its personnel play in the Rapid Damage Assessment process. For obvious reasons, this research was focused internally and involved a review of existing departmental procedures and orders. MCFRS operates an internal website in which all of these policies and procedures are stored electronically. This review covered the following documents:

- “Fire Chief’s General Orders” (FCGO) from 2005-2017;
- all Department of Fire Rescue Service (DFRS) Policies and Procedures. This date range spans from January 1988 to today. Note: These are policies and procedures applicable only to career personnel in the department;

- all MCFRS/Fire Rescue Commission Policies and Procedures. These begin in January 1989 through today. Note: These are policies and procedures applicable to all personnel, career and volunteer in the MCFRS system. These must be approved by the Fire Rescue Commission prior to being implemented;
- Information Bulletins issued since 2007;
- Department Directives issues since 1990; and
- Review of all Rescinded FCGO, MCFRS/FRC Policy and Procedures, DFRS Policy and Procedures, Info Bulletins, and Directives.

The results of this review found that despite well over 150 documents being analyzed, none of them provided guidance or direction on MCFRS' role in the RDA process. It should be noted that any documents issued before the dates previously mentioned would be in paper format only and unsearchable by the researcher since they are supposed to be maintained in a binder in each station, however, in the researcher's personal experience, this binder is difficult to locate and rarely exists any more.

This search process did however, locate a form to be used by unit officers to conduct Rapid Damage Assessments in the community immediately following an event. This document was a "stand-alone" document with no policy, procedure, or guidance attached to it. An in-depth review of the "windshieldsurveyv2" document found minimal directions or explanation as to the proper method to conduct a survey.

The next step to obtaining roles and responsibilities of MCFRS in the RDA process involved reviewing the county's Emergency Operation Plan. This is an incredibly large document totaling approximately 500 pages. The researcher conducted a search on the term "windshield survey" and only found three matches, one of which was closely tied to the term "rapid assessment". A

document search of this term found an additional twelve references. A review of these references individually found several tied to MCFRS and clearly identified that MCFRS is a support agency in conducting rapid assessments under the direction of the Department of Permitting Services. The exact role of MCFRS is not directly outlined.

Research seeking to outline the components of a damage assessment policy focused on identifying other agencies that have similar policies and reviewing these policies. This proved problematic since the research identified that the terms “rapid damage assessment”, “windshield assessment”, and “rapid assessment” were used almost interchangeably between agencies. Additionally, other departments call guiding documents policies, procedures, guidelines, or plans. This leaves numerous variations on search criteria. The researcher chose to search “fire department rapid damage assessment policy” and “fire department windshield survey policy” to find comparative documents. These searches turned up only a small number of applicable documents. The researcher then searched for “fire department policy and procedure manual online” to find a larger number of electronic manuals. These sites were checked for items that may be pertinent to the topic of the Applied Research Project (ARP) without much success. Over the course of several dozen site reviews, only three contained policy samples for review.

For additional information regarding damage assessments, the researcher enrolled in an interactive web based class hosted by the Emergency Management Institute (EMI) titled “IS-559: Local Damage Assessment”. This course took approximately two hours to complete and included a final exam. It contained information on the how and why assessments are needed, as well as a comprehensive review of how to conduct an assessment, what data is necessary, and provided a frame work for developing your own damage assessment plan. Although this course

appeared to be more focused on the in-depth damage assessment, there was a section on the RDA and had other lessons applicable to both the RDA and the formal assessment.

To answer the final research question, the researcher sought out to identify “what training should applicable personnel take to ensure accurate damage assessments”? This two part question was partially answered through a formal survey of other fire/EMS agencies across the country, as well as through the literature review of best practices and FEMA recommendations.

A survey was created via an online hosting agency and it was sent out to 65 persons who were in a position to provide accurate feedback on their agency’s response to Rapid Damage Assessments. A copy of this survey is enclosed in Appendix B. Surprisingly, the survey received 29 responses. The questions in the survey attempted to broadly determine department demographics and response areas, whether agencies conduct RDAs, identify and define “applicable personnel”, and agency provided training regarding RDAs. The raw responses of this survey are included in Appendix C.

This information was used to gather a “big picture” of what is occurring across the country with regards to RDA. Responses were analyzed by percentages to determine the number of agencies tasked with RDA, who have completed an RDA, and what types of training these agencies provide or require of their personnel.

Once this survey was completed, the department characteristics survey questions were used to isolate departments with similar characteristics to MCFRS. This was done by reviewing the results of agencies with 500 or more personnel and evaluating their actions in comparison to MCFRS and other respondents in an effort to determine best practices for inclusion in the policy. Although 29 responses were received, only seven were found to have the similar demographics

of MCFRS. This is a fair number of departments that responded, but to gauge nationwide best practices, a larger subset would need to be queried and evaluated to ensure accuracy.

### **Results**

At the onset of this research project, the researcher set out to answer three questions to help form the basis of a draft policy to guide future department operations during disaster responses. Through this data research, a group of “best practices” was gathered and shaped in to a draft policy that is included in Appendix D.

The first question asked was, “What is the role of MCFRS in RDA following a disaster?” Through the literature process, the researcher determined that MCFRS is a support agency and more of a “boots on the ground” type of presence in the RDA process (*Emergency Operations Plan*, 2013, p.68). This determination was reached due to the EOP having in depth directions for Department of Permitting Services in the Damage Assessment Annex while only a few mentions of MCFRS responsibilities in the same annex. Additionally, the discovery of a total lack of guiding documents regarding MCFRS operations during a disaster leads the researcher to believe MCFRS plays a supporting role in the RDA process.

That being said, it is MCFRS that will likely be operating in the most heavily damaged areas from the onset of an event and therefore bear the brunt of the workload in performing RDAs (Stoddard, “Interview Questions, 2017). Without further interpretation from the OEMHS, the researcher’s interpretation of the EOP outlines that the Department of Permitting Services will identify areas and direct MCFRS resources to these areas to conduct RDAs. After reviewing the “windshield survey” form found on a MCFRS server, it would appear that this would be handled by specific units, the forms completed, and then sent back to the EOC via a method to be

determined based upon infrastructure status at that time (*Emergency Operations Plan*, 2013, p. 92).

The second question, “What are the components of a damage assessment policy?” was reviewed through literature reviews, as well as the researcher completing an online class on the subject. Several other agencies’ Standard Operating Guide (SOG) and Standard Operating Procedure (SOP) manuals were consulted with minimal success in finding documents to review. The review of the four documents that were located had very few items that were common amongst them, therefore, the researcher had to rely on documents and training provided by FEMA and EMI to determine “best practices” and the key components of a policy. This research determined that clearly identifying roles and responsibilities of agencies is critical to the desired outcome of the RDA process. Without clear delineation of these factors, there is much duplication of effort and wasted resources (*Damage assessment operations manual*, 2016, p.14). The survey results concluded that 20 of the 29 respondents expect firefighters and unit officers to be included in the groups that conduct RDA surveys following incidents (Figure 1). Of departments with similar characteristics to MCFRS, five of the six indicated that they perform the RDA. Of these five departments, all five utilize line officers such as captains, lieutenants, or low level chief officers to complete these assessments. Therefore, the draft policy provided is focused towards providing guidance to persons in these positions.

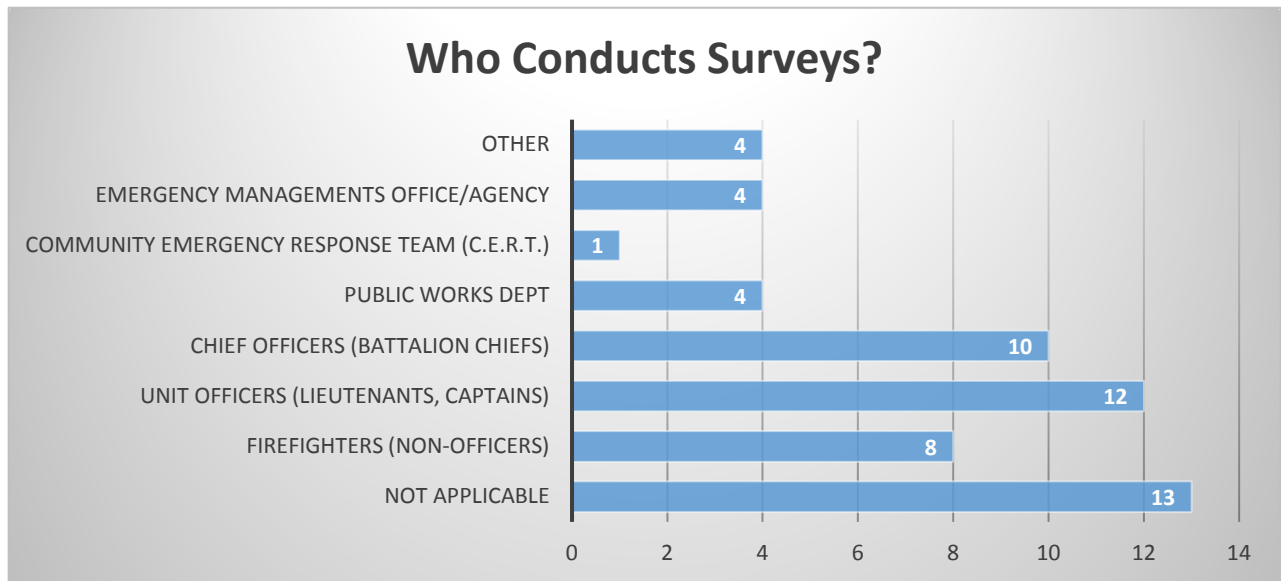


Figure 1

Question three was designed to garner information regarding training practices across the country regarding RDA. Training was also identified as crucial to the process. The first-time personnel see RDA sheets and information should not be the briefing before being deployed. Having a training program in place and exercising it periodically will increase efficiency and accuracy of the data collection process (*Damage assessment operations manual, 2016, p.14*). Of

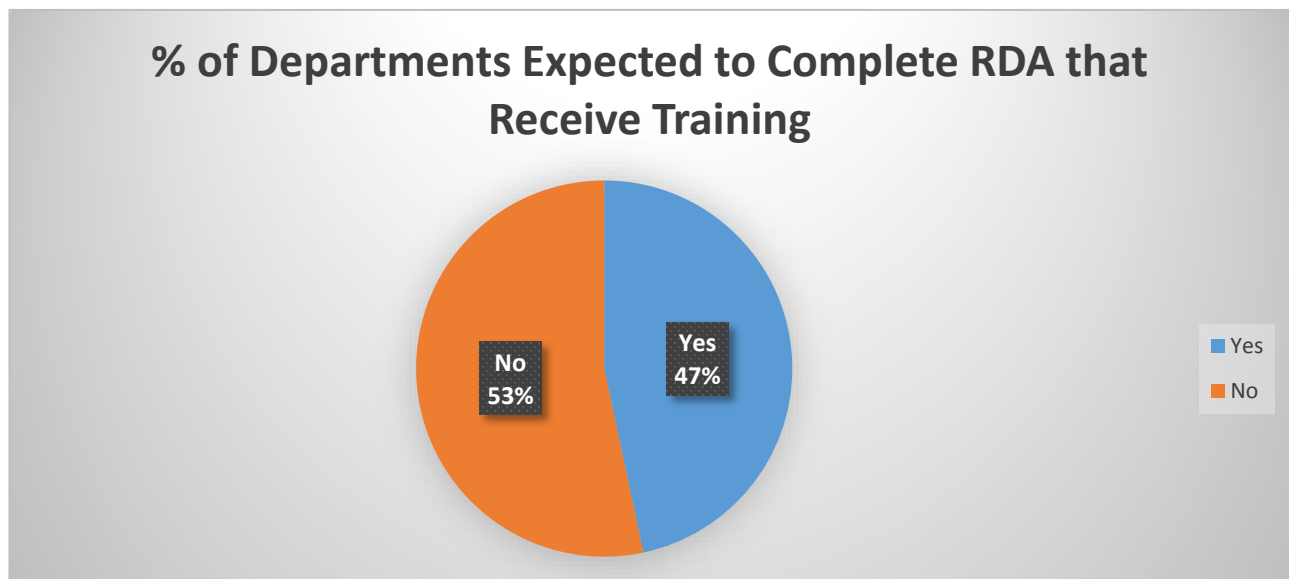


Figure 2



the surveyed respondents, fifteen advised that they conduct RDA post incident, but only seven advised they received training on the matter (less than 50%). This is represented in Figure 2. Of the five agencies with similar demographics to MCFRS that conduct RDAs, only two received some sort of formalized training on the subject (Figure 3).

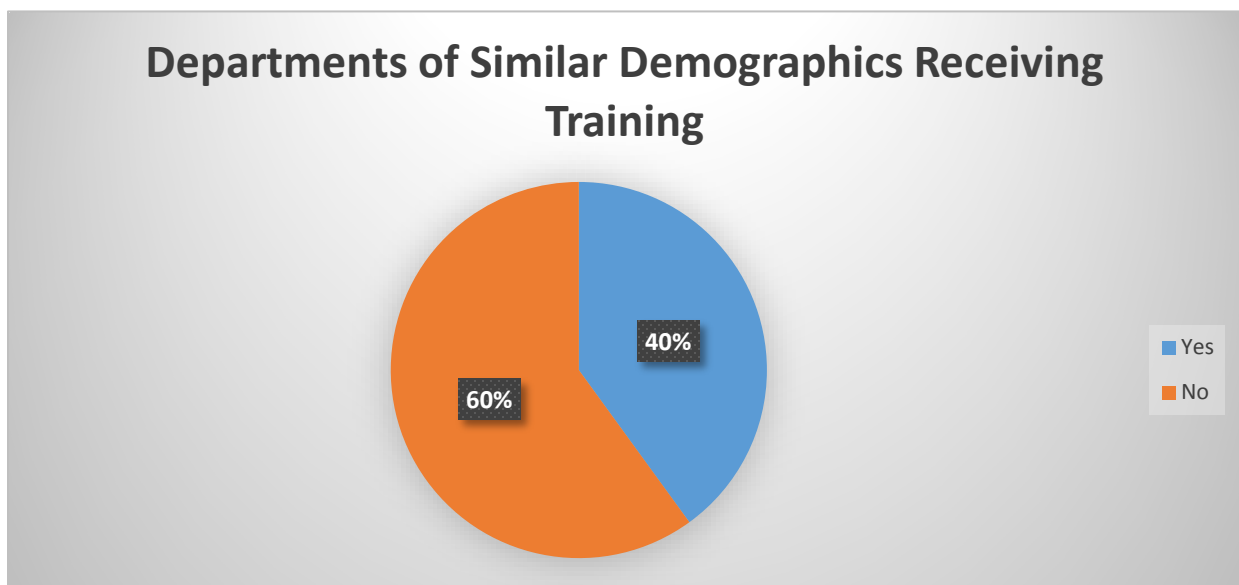


Figure 3

A deeper review of the RDA training found that the majority of those departments that offered training found a mix of training types to be fairly even across the options provided. By a slight majority, training conducted immediately preceding the assessments prior to deployment is the most common type of training followed by online training classes, such as an in-house version of the program of the EMI online classes (Figure 4).

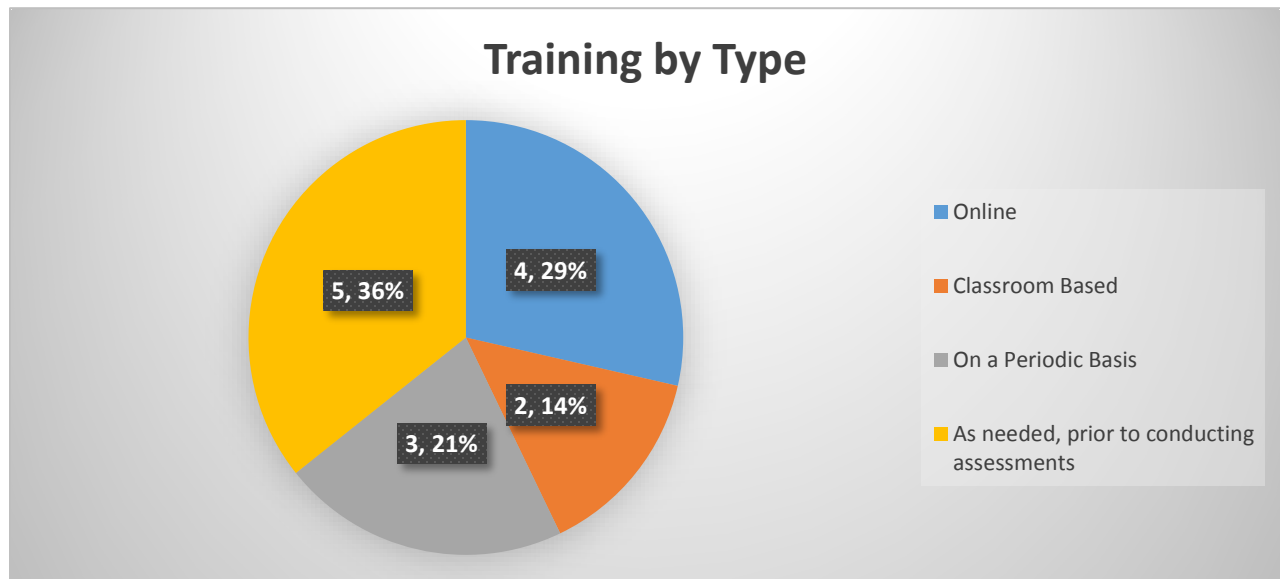


Figure 4

Based on these responses, the draft policy contains direction for personnel to complete an online training class such as IS 559 with periodic interval trainings and a refresher training immediately pre-deployment. The periodic interval training can be included in the annual refreshers for personnel to complete and should consist of online PowerPoint and assessment tool via the MCFRS IT website.

### Discussion

Ample evidence exists to show that the need for RDAs has serious potential in Montgomery County. The RDA process is a critical process in the early stages of post disaster response and also “because the FEMA documentation are a necessary part of requesting federal

aid” (Stoddard, “Interview Questions”, 2017). A solidified policy regarding the implementation of RDA is a must for an agency the size of MCFRS and scope of operations and its accuracy is very important.

The information gathered for this research project identified many critical points that need to be taken into consideration in the development of an RDA policy for MCFRS. An overview of the literature surrounding these types of assessments found that when fire departments are used as a first level of assessment, Dr. Stoddard states “...is the earliest, broadest, and least detailed portion of the process. The goal is to identify at a gross level the locations where there is damage (trees/wires down, roadways blocked, damaged vehicles/homes/buildings, power outages, etc.)” (“Interview Questions, 2017). The EOP defined MCFRS as a support agency to the RDA process and provided a framework in which the RDA geographic boundaries are determined, but did not provide any specific information on the process that MCFRS will play or how MCFRS will conduct the assessment. It is crucial to remember that MCFRS’ role in this process is almost a “first line of defense” to the process. In the previously mentioned e-mail conversation with Dr. Stoddard, he stated, “we utilize a tiered process for damage assessment...the various reports [RDA] are mapped by GIS, then more trained teams combining CERT volunteers (a FR asset) and DPS are deployed to areas based on levels of reported damage” (“Interview Questions”, 2017). It is important to keep this “first level” role MCFRS provides in mind when developing and reviewing the policy in order to keep it in line with expectations. These items helped to answer question one of this research project.

To outline the critical components of the RDA policy to answer question two, the researcher reviewed other existing policies, as well as FEMA guidance documents. Roles and responsibilities is a component of a RDA plan that the research found replicated in numerous

other locations. Again, referring back to the Sunrise Fire Rescue policy, the policy contains six pages of responsibilities for its members, from the Fire Chief all that way down to the firefighters. This includes items such as: where do they report; what tasks must be completed; what other responsibilities do they have to the chain of command above and below them (2015, p. 52-55). Additionally, the Clay County *Rapid Damage Assessment* policy outlines responsibilities for routing and reporting functions, an important task to ensure all areas are covered and the necessary data is relayed back to the appropriate parties (2015, p. 2).

An additional item found in the policies that had not been previously considered by the research is an initial “self-assessment” conducted by the fire asset prior to conducting an outside RDA. “Station officers should conduct a RDA on their crews and respective buildings and report any casualties or damage of either the structure or equipment at the firehouse to their battalion officer” (Donohue, 2016, p.1). Sunrise Fire Rescue indicates that personnel are to “check all communications links, establish a workable communications system, and conduct a roll call”, as well as “inventory all station of supplies and damaged equipment” as steps one and two of the “Recovery Phase” of a hurricane (“Operations and policies manual”, 2015, p. 24).

A closer review of the *Damage Assessment Annex* found a small section that specifies an immediate assessment of all agencies responsible for supporting the ESF outlined previously. This section is aimed at determining the “status of operation readiness”, “status of facilities”, and “status of personnel and equipment”. This annex requires a RDA of fire stations to be completed internally by MCFRS a minimum “within 6 hours of the event onset or within two hours of EOC activation, whichever occurs first. Updates due 30 minutes prior to the end of each operational period” (2013, p. 13). The policy must include a section on self-evaluation to properly evaluate the department’s capabilities and personnel status.

The research discovered that it is not merely enough to have a policy, but the policy and its contents need to have some sort of periodic training to remain effective and efficient. Of the many policies reviewed, only a handful required annual drills such as the Clay County *Rapid Damage Assessment* policy that states "...will be exercised annually in May for each shift to evaluate the effectiveness of this SOP and recommend revisions" (2009, p.6). Even the Damage Assessment Annex of the EOP of Montgomery County requires that "staff members are trained in their designated damage assessment roles and responsibilities" (2013, p. 5). A review of the "*Hurricane Plan*" for the Sunrise Fire Rescue agency in Florida found a very comprehensive plan to handle that specific emergency, but it could be readily adapted to a variety of other natural disasters. Although this plan contained significant details and great information, it did not contain a section pertaining to training staff to conduct their "SNAPSHOT" assessments other than a quick one page document prior to completing their form. This form, however, did contain information guiding the person who would be completing it to an outside website for additional information and examples of damaged structures.

An interesting point that was discovered during the research process that was echoed by both the Director of Montgomery County OEMHS and by the MCFRS Assistant Chief in charge of Special Operations, Maurice Witt, is that the collection of RDA information, by the current method is slow, ineffective, and problematic. Chief Witt advised "they are done infrequently and ineffectively....it has never worked because it is paper based, makes it to the DOC [Duty Operations Chief] office and then stops" (Witt, "Research Paper", 2017). Dr. Stoddard advised when discussing next steps in advancement of technology, is to solve "what today is a lagged process for windshield assessments" in general (Stoddard, "Interview Questions", 2017). Chief Witt and Dr. Stoddard both indicated a need for a technological upgrade to allow for better and

faster reporting processes. This should include modernized technology with additional means outlined should the primary method be compromised.

### **Recommendations**

MCFRS has been long established as a policy driven department. The department has policies on most daily operations, emergency operations, administrative items, and more. It would only make sense for MCFRS to adopt a policy guiding operations and assessment policies in disaster scenarios, especially since depending on the severity of the disaster and the potential to severely, if not entirely, eliminate communications and the infrastructure the department relies on for operations. The distinct possibility exists for periods of “communications blackout” to occur following a disaster and units and personnel may need to operate autonomously until communications can be re-established.

Since this policy would guide RDA operations on both man-made and natural disasters and these disasters vary widely in type and scope, this policy needs to be crafted so that it is a framework of a concept and not overly specific to allow for the needed flexibility of a variety of situations. This policy should include the feedback and input from all applicable parties, specifically those of DPS (since MCFRS is a support agency to their lead) and OEMHS. Having this policy will provide consistency and improve department efficiency.

This policy should include sections outlining roles and responsibilities of unit officers, battalion chiefs, and shift chief; data collection methods, reporting methods, backup reporting methods, and a formalized training standard to ensure data accuracy.

### References

- [Disaster declarations by year]. (2017, August 10). Unpublished raw data.
- 202.15e Natural disaster*. (2007). Fresno, CA: Fresno Fire.
- About us. (2017, January 16). Retrieved May 15, 2017, from  
<https://www.montgomerycountymd.gov/mcfrs/about/index.html>
- CountyStat. (2017, March 30). Retrieved June 6, 2017, from  
<https://reports.data.montgomerycountymd.gov/countystat/department/mcfrs>
- Damage assessment annex*. (2013). Gaithersburg, MD: Montgomery County.
- Damage assessment operations manual*. Washington, D.C., FEMA, 2016.
- Data visualizations: Disaster declarations for states and counties. (2017, January 26). Retrieved July 30, 2017, from <https://www.fema.gov/data-visualization-disaster-declarations-states-and-counties>
- Davis, M. (2017, June 19). 100 blk Northwood Drive [Web log post]. Retrieved August 2, 2017, from <http://thedoclog.blogspot.com/2017/06/100blk-northwood-drive.html>
- Donohue, D. (2016, August 1). The windshield survey . *Fire Rescue Magazine*.  
doi:<http://www.firerescuemagazine.com/articles/print/volume-11/issue-8/firefighting-operations/the-windshield-survey.html>
- Emergency operations plan*. (2013). Gaithersburg, MD: Montgomery County.
- Feiertag, J. (n.d.). MCFRS IT Blog [Web log post]. Retrieved August 06, 2017, from  
[https://www.mcfrsit.com/Students/s\\_toc.aspx](https://www.mcfrsit.com/Students/s_toc.aspx)
- Fujita tornado damage scale. (n.d.). Retrieved August 17, 2017, from  
<http://www.spc.noaa.gov/faq/tornado/f-scale.html>
- Historical tornado data. (n.d.). Retrieved June 10, 2017, from

<http://www.tornadohistoryproject.com/tornado/Maryland/Montgomery/map>

Leaning, J., & Guha-Sapir, D. (2013). Natural disasters, armed conflict, and public health. *The New England Journal of Medicine*, 369(19), 1836-1842.

*Local damage assessment* [PPT]. (2013, October 31). Washington, D.C.: Federal Emergency Management Agency.

*Operations and policies manual*. (2015, July 15). Sunrise Fire Rescue, Sunrise.

*Promotion procedure*. (2006). Gaithersburg, MD: Montgomery County Fire Rescue.

*Rapid damage assessment*. (2009, October 30). Clay County Fire Rescue, Clay County.

Recent quakes. (n.d.). Retrieved June 6, 2017, from <https://earthquaketrack.com/us-md-germantown/recent>

*Standard of cover*. (2013). Gaithersburg, MD: Montgomery County.

doi:[https://www.montgomerycountymd.gov/frs-ql/Resources/Files/ofc/MCFRS\\_Standard\\_of\\_Cover2013.pdf](https://www.montgomerycountymd.gov/frs-ql/Resources/Files/ofc/MCFRS_Standard_of_Cover2013.pdf)

Stoddard, E. P. (2017, August 28). Interview questions [E-mail to the author].

*Strategic plan fiscal years 2010-2014*. (n.d.). Emmitsburg, MD: United State Fire

Administration. doi:[https://www.usfa.fema.gov/downloads/pdf/strategic\\_plan.pdf](https://www.usfa.fema.gov/downloads/pdf/strategic_plan.pdf)

“U.S. terror incidents.” *Global terrorism database*, [www.start.umd.edu/gtd/](http://www.start.umd.edu/gtd/). Accessed 8 Aug. 2017.

*Windshieldsurveyv2* [XLS]. (n.d.).

Witt, M. (2017, August 29). Research paper [E-mail to the author].



## APPENDIX A - MCFRS Windshield Assessment Survey Form

**Montgomery County Fire and Rescue Service  
WINDSHIELD ASSESSMENT SURVEY**

The following form, the Montgomery County Fire and Rescue Service WINDSHIELD ASSESSMENT SURVEY, will serve as a quick assessment of the county to determine damage, access issues, possible risk, and disposition of citizens. It will give the Incident Management Team (IMT) and the Emergency Operation Center (EOC) a better idea of county needs and how we can best deploy resources. We will plot the information in a Geographic Information System so we can use maps to assess conditions. **Read the whole form first then complete. ONE FORM FOR EACH AREA SURVEYED!!**

The WINDSHIELD ASSESSMENT SURVEY should be printed as neatly as possible with a ball point pen. Avoid using roller ball or other water soluble ink pens. The information provided in your assessment must be legible as it may be faxed. The goal is to be able assess total county condition. More specific info will be provided on where and how to transmit the information. **Be mindful to avoid damaging your vehicle tires or in any way compromise the continued use of your vehicle!!!**

The following descriptions are provided as explanations for each information item:

(1) Team: Identify the assessment team. If MCFRS apparatus use the radio designation, i.e. E241, Utility 5, Car 34; or, the IMT may designate a team name.

(2) Team OIC: Identify the highest ranking official in the team as indicated in the IECS.

(3) Area Surveyed: Provide a general identity of area, either as assigned by the IMT, areas in your first due, or as a community, sub-division or ADC Map Grid, example: Town of Laytonsville, Westmorland Hills, ADC Map 28 E8 (North Glen Hills). Info in this block needs to be accurate!

(4) Date you complete the survey

(5) Time you completed the survey

(6) Boundaries of Areas Surveyed: Repeat info from #3 but be more specific, including the actual boundaries of where you surveyed. You may actually survey several grids from the ADC map, such as four to six adjacent grids. In rural areas, the survey will cover much larger areas than the dense suburban and urban areas. Goal is for IMT to know where you surveyed.

(7) Description of damage. In general terms describe what you see, i.e., roofs blown off, collapse, trees down, shingles removed from roofs, siding removed, windows broken, Electric poles and wires damaged. etc.

(8) Characteristics of Surveyed Area: (Residential, Business, Mix): Describe the types of occupancies, i.e., town house, single family, etc.

**Montgomery County Fire and Rescue Service  
WINDSHIELD ASSESSMENT SURVEY**

(10) Current conditions: what is needed in this area? Will it require IMT to focus resources to help? Flooding conditions, fire or life safety hazards?

(10) Access to Area and Road Conditions: (open, closed, partially blocked, etc): Describe any access issues, or indicate the partial or complete lack of barriers. Also indicate problems we may have that would flatten fire rescue vehicles.

(11) Resource Needs: (Indicate any contacts with citizens and their concerns/comments) What do citizens generally need?

**Montgomery County Fire and Rescue Service  
WINDSHIELD ASSESSMENT SURVEY**

(12) Definitions of the Level of Damage:

**Minor.** Habitable or usable if cleaned up such as:

- ⊖ Carpets soaked on first floor
- ⊖ Damage to the home's mechanicals such as furnace, water heater, baseboard heat, and air-conditioner in need of repair or replacement
- ⊖ Sewer backup or flood water in unfinished basement
- ⊖ Insulation damage in crawl space or mobile home belly board
- ⊖ Interior floor, walls; minor structural damage to exterior walls
- ⊖ Trees fallen on structure, minor damage to exterior walls and interior floor
- ⊖ Shingles/roofing removed or damaged exposing the sheathing
- ⊖ Business inventory destroyed (business), fire escape not usable (pertains to businesses and multi-family units), fleet/vehicle damage (business)

**Major.** Not habitable or unusable until extensive repairs are made such as:

- ⊖ Water on first floor 6 inches to doorknob
- ⊖ Water on main floor more than 24 hours
- ⊖ Foundation damaged (bowed or collapsed wall)
- ⊖ One exterior wall collapsed, exterior frame damage (bowed walls-non cosmetic), roof off or collapsed, 6 inches or less of water in a mobile home
- ⊖ Exits blocked in addition to other damage
- ⊖ One room destroyed (pertains to apartment renters)
- ⊖ Accessory/service/outbuildings damaged (business)
- ⊖ Production equipment/office equipment (business)
- ⊖ Utilities damaged to include well, septic system, electrical service, and gas

**Montgomery County Fire and Rescue Service  
WINDSHIELD ASSESSMENT SURVEY**

Destroyed. Not possible to repair such as:

- ⊕ Water above the first-floor doorknob
- ⊕ Two or more basement walls collapsed
- ⊕ Structure leveled above foundation
- ⊕ Second floor is gone
- ⊕ Two exterior walls collapsed
- ⊕ Moved off foundation

If in doubt, use the next higher level of damage in the report.

*Record this entry as a hash mark for each structure that is damaged. Place the hash mark under the heading that corresponds with the type of damage observed. The process is 4 hash marks, then the fifth is a cross mark through the first four. This will help you group in numbers of 5. Provide a number total by adding all groups of five plus individual hash marks. When in doubt about a damage category indicate the next higher category. A finer assessment will be completed for very specific damage assessment later.*

**Montgomery County Fire and Rescue Service  
WINDSHIELD ASSESSMENT SURVEY**

(1) Team: \_\_\_\_\_ (2) Team OIC: \_\_\_\_\_

(3) Area Surveyed: \_\_\_\_\_

(4) Date: \_\_\_\_\_ (5) Time: \_\_\_\_\_

<b>(6) Boundaries of Areas Surveyed:</b>	
Area Name: (Sub Div, ADC Map Grid)	
North:	
South:	
East:	
West:	

<b>(7) Description of Damage:</b>

<b>(8) Characteristics of Surveyed Area: (Residential, Business, Mix)</b>

<b>(9) Current Conditions:</b>

<b>(10) Access to Area and Road Conditions: (open, closed, partially blocked, etc):</b>

**Montgomery County Fire and Rescue Service  
WINDSHIELD ASSESSMENT SURVEY**

<i>(11) Resource Needs: (Indicate any contacts with citizens and their concerns/comments)</i>

<i>(12) Summary of Damage</i>				
<i>Type of Occupancy</i>	<i>Destroyed</i>	<i>Major</i>	<i>Minor</i>	<i>Totals</i>
Dwellings				
Multi Family				
Business				
Industrial				
Other				
<b>Totals</b>				

APPENDIX B – Online Survey

1. Please select your department size with regards to number of career firefighters

Less than 20
  251-500  
 21-50
  501-1000  
 51-100
  More than 1000  
 101-250

2. Please define the area serviced by your agency:

Rural
  Mixed  
 Urban
  Other: Territory, Federal Installation, etc.  
 Suburban

3. Does your agency use "windshield damage assessments" or "rapid damage assessments" to assess the status of: building/homes, infrastructure, or at risk populations following disasters, both man made or natural?

Yes  
 No

4. If applicable, who conducts your surveys? Select all that apply.

Not Applicable
  Public Works Department  
 Firefighters (non-officers)
  Community Emergency Response Team (C.E.R.T.)  
 Unit Officers (ex. Lieutenants, Captains)
  Emergency Management Office/Agency  
 Chief Officers (ex. Battalion Chiefs)
  Do not know  
 Other (please specify)

5. Does your agency provide training/instructions on how/when to conduct "windshield damage assessments" or "rapid damage assessments"?

Not Applicable  
 Yes  
 No

6. Please select all applicable options. Is this training conducted:

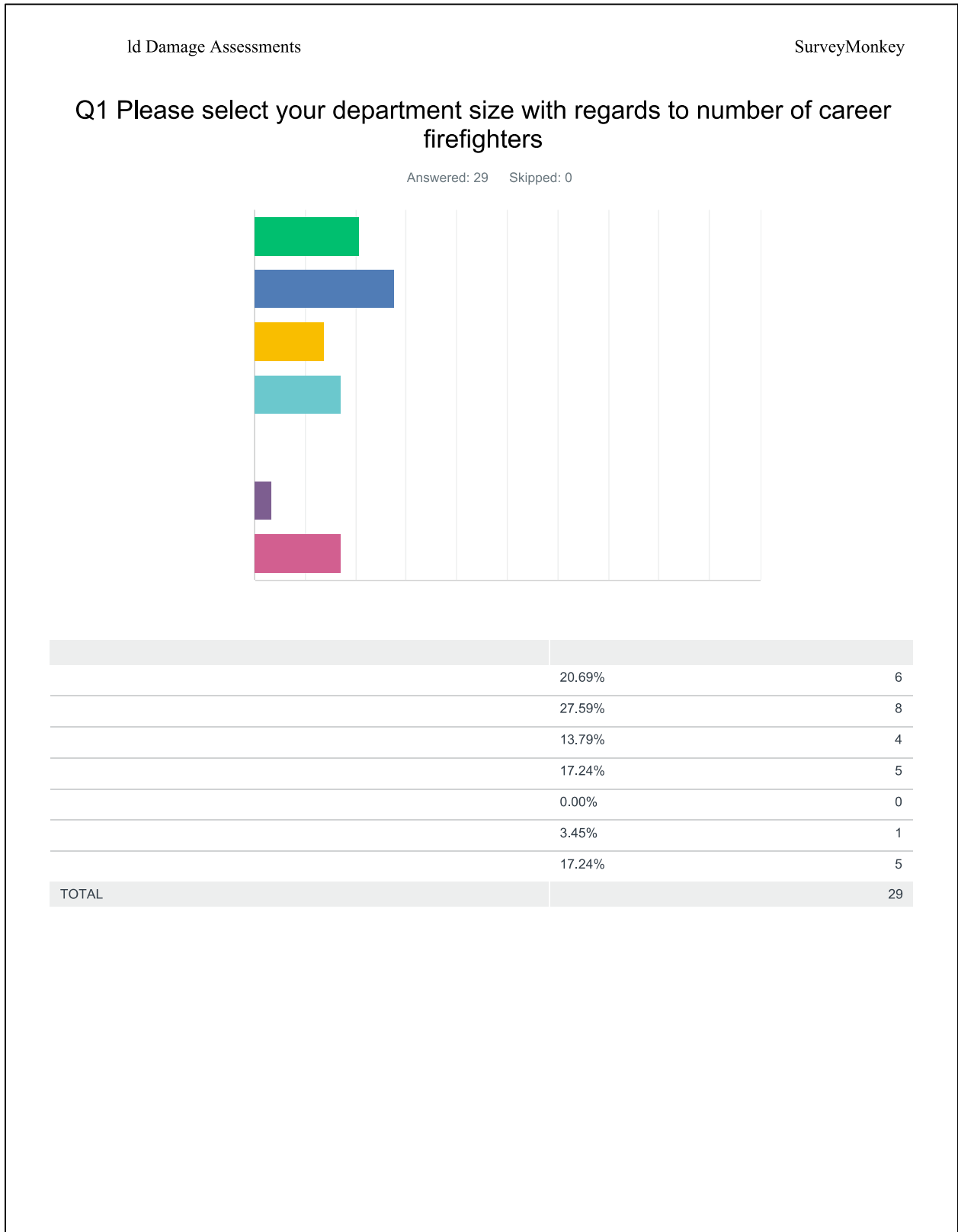
- Not Applicable
- online?
- classroom based?
- on a periodic basis (I.E. quarterly, yearly, bi-annually)?
- as needed, prior to conducting assessments?
- Other (please specify)

7. Does your agency have a policy guiding personnel on the use of "windshield damage assessments" or "rapid damage assessments"?

- Not applicable
- Yes
- No



APPENDIX C – Online Survey Results

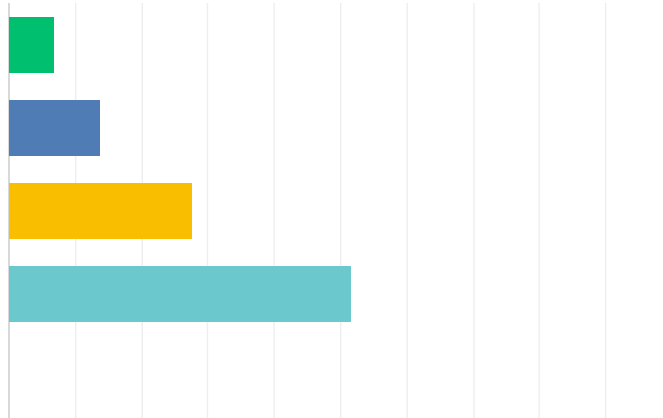


Windshield Damage Assessments

SurveyMonkey

Q2 Please define the area serviced by your agency:

Answered: 29 Skipped: 0



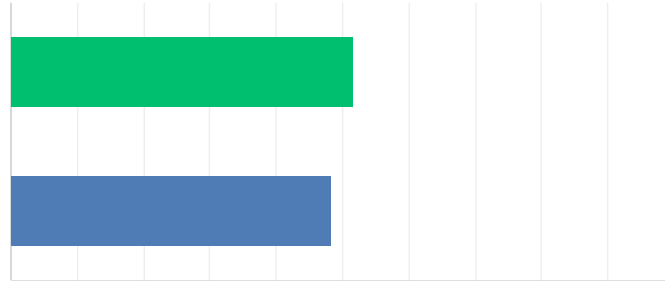
	PONSES	
Rural	6.90%	2
Urban	13.79%	4
Suburban	27.59%	8
Mixed	51.72%	15
Other: Territory, Federal Installation, etc.	0.00%	0
<b>TOTAL</b>		<b>29</b>

age Assessments

SurveyMonkey

Q3 Does your agency use "windshield damage assessments" or "rapid damage assessments" to assess the status of: building/homes, infrastructure, or at risk populations following disasters, both man made or natural?

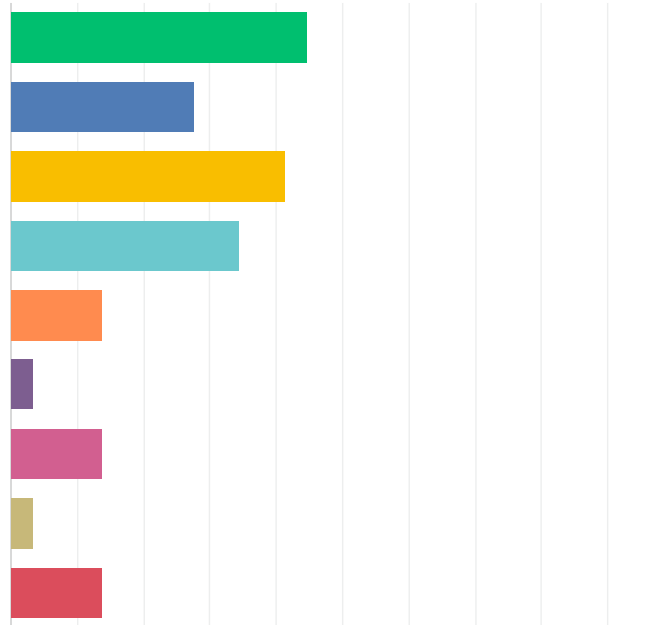
Answered: 29 Skipped: 0



	51.72%	15
	48.28%	14
TOTAL		29

Q4 If applicable, who conducts your surveys? Select all that apply.

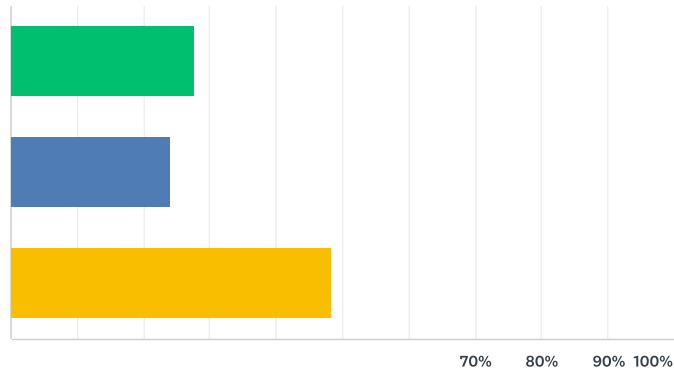
Answered: 29 Skipped: 0



	44.83%	13
	27.59%	8
	41.38%	12
	34.48%	10
	13.79%	4
	3.45%	1
ce/Agency	13.79%	4
Do not know	3.45%	1
Other (please specify)	13.79%	4
Total Respondents: 29		

Q5 Does your agency provide training/instructions on how/when to conduct "windshield damage assessments" or "rapid damage assessments"?

Answered: 29 Skipped: 0



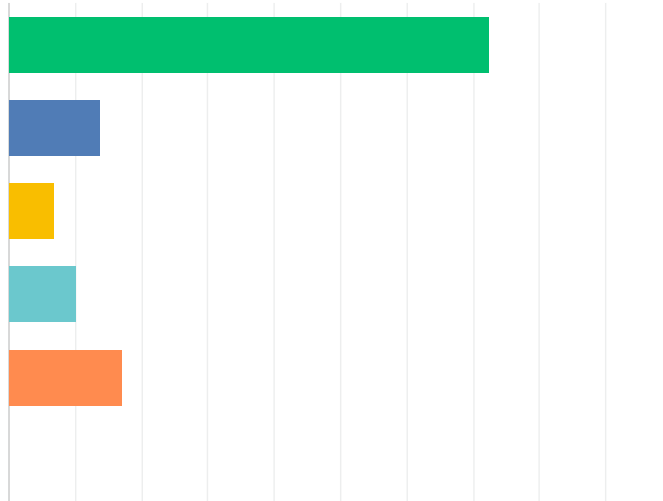
	27.59%	8
	24.14%	7
	48.28%	14
TOTAL		29

Windshield Damage Assessments

SurveyMonkey

Q6 Please select all applicable options. Is this training conducted:

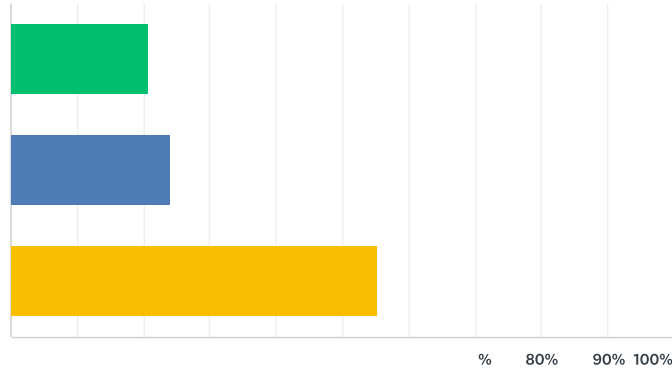
Answered: 29 Skipped: 0



	72.41%	21
	13.79%	4
	6.90%	2
	10.34%	3
	17.24%	5
	0.00%	0
Total Respondents: 29		


Q7 Does your agency have a policy guiding personnel on the use of "windshield damage assessments" or "rapid damage assessments"?

Answered: 29 Skipped: 0




	20.69%	6
	24.14%	7
	55.17%	16
TOTAL		29

APPENDIX D – Draft Policy and Procedure for RDA

	<b>MONTGOMERY COUNTY FIRE AND RESCUE SERVICE</b>	17-TBD
	<b>Policy and Procedure</b>	Page 1 of 5
	<b>MCFRS Draft Policy “Rapid Damage Assessments”</b>	TBD
<p>Issued by: Fire Chief Scott Goldstein                  Policy Number: 17-TBD                  Authority: Montgomery County Code Section 21-3 (b)                  Supersedes: None                  Effective Date: March 1, 2018</p>		
<p><b>SECTION 1. Purpose:</b></p> <ul style="list-style-type: none"> <li>a. To provide a framework for the conduct of Rapid Damage Assessments given a wide variety of incident types;</li> <li>b. To provide the necessary training requirements to ensure these assessments are completed as accurately and efficiently as possible therefore providing the best intelligence for decision making;</li> <li>c. To ensure the Rapid Damage Assessments performed by MCFRS personnel can seamlessly integrate in to the <i>Emergency Operations Plan</i> of the Office of Emergency Management and Homeland Security; and</li> <li>d. To provide for system redundancy and station autonomy given critical infrastructure system failure of MCFRS (radio communications failure, etc.).</li> </ul>		
<p><b>SECTION 2. Applicability:</b>                  This policy applies to all personnel of MCFRS, both career and volunteer when operating in an operations capacity.</p>		
<p><b>SECTION 3. Background:</b>                  The <i>Emergency Operations Plan</i> developed by the Office of Emergency Management and Homeland Security identified MCFRS as a support agency in the <i>Disaster Assessment Annex</i> and tasked with completing Rapid Damage Assessments. These assessments are one of the most important activities to be completed post disaster. To fulfill this role, MCFRS personnel must have the basic skills and understanding of what a Rapid Damage Assessment is, the manner in which it is conducted, necessary information to include, and how and to whom to transmit the information.</p>		
<p><b>SECTION 4. Definitions:</b></p> <ul style="list-style-type: none"> <li>a. <b>Duty Operations Chief (DOC):</b> the rostered Assistant Chief or subordinate responsible for coordinating county-wide operations on a daily basis.</li> <li>b. <b>Rapid Damage Assessment (RDA):</b> a quick survey of the area impacted by a disaster or emergency to ascertain the scope of the event and determine immediate life-threatening situations and imminent hazards.</li> </ul>		



	<b>MONTGOMERY COUNTY FIRE AND RESCUE SERVICE</b>	17-TBD
	<b>Policy and Procedure</b>	Page 2 of 5
	<b>MCFRS Draft Policy “Rapid Damage Assessments”</b>	TBD

**SECTION 5. Policy:**

**a. Training**

1. All personnel must complete an initial online training session.  
<https://training.fema.gov/is/courseoverview.aspx?code=is-559>
2. All personnel must complete an annual in-house recertification in February of each year.
3. A practical drill must be completed at a battalion level in March of each year and include functional exercises on:
  - A. RDA Form (electronic and/or paper) usage;
  - B. Area routes for fire district assessments; and
  - C. Identification of critical infrastructure and high-risk facilities.
4. Immediately preceding deployment of resources for the purpose of RDA, a brief review should be conducted with all personnel and specifically the unit officer/team leader of each team conducting surveys if possible.


b. Rapid Damage Assessment Forms must be kept in-station and ready for use. An electronic medium is the preferred method of data collection and transmission. Links to the electronic form are stored on the “desktop” of the MDC in each unit.

c. The RDA process must be initiated for affected areas if it is reasonable and safe to do so immediately following a significant event as determined by the DOC or EOC, within two hours of EOC activation, or within six hours of event onset, whichever occurs first.

d. The RDA process must begin with MCFRS self-assessment to determine response capabilities. This assessment must include:


1. Status of personnel (accountability, injury, inability to work, etc.).
  - A. Any injury needs to be treated and reported through the Chain-of-Command.
2. Apparatus assessment (damage, response capability, deficiencies, etc.).
  - A. Any apparatus incapable of response due to identified issues must be placed out-of-service with ECC.
3. Station Assessment (integrity issues, roll-up door issues, status of utilities, communication systems, and station habitability, etc.).
4. Any other information that ranking officer feels is important.


e. Fire District Assessment – A RDA will be done to develop a general sense of area infrastructure and community status. This information will be relayed to the EOC to assist in determining the level of EOC activation, disaster declaration, and the assistance required to mitigate the disaster

	<b>MONTGOMERY COUNTY FIRE AND RESCUE SERVICE</b>	17-TBD
	<b>Policy and Procedure</b>	Page 3 of 5
	<b>MCFRS Draft Policy “Rapid Damage Assessments”</b>	TBD

1. Unless given specific direction by the DOC, Battalion Chief, or EOC, the ranking station officer shall pre-designate travel routes thru affected areas to be driven by station apparatus.
  - A. Consideration should be given to:
    - i. Apparatus size and capabilities when selecting routes
    - ii. Ensure apparatus remains ready for response should the need arise
    - iii. Areas of assessment are evaluated beginning with the most damaged to least damaged. Priority should be given to high risk facilities, shelters, primary transportation routes, and other critical infrastructure.
  - B. Units involved in the RDA process must remember the objective is to observe and report information to the EOC.
    - i. Unless a priority life or death situation is encountered (at the discretion of the unit office), personnel should refrain from involving themselves in operations.
    - ii. If a situation requiring immediate action is encountered, the unit must notify the ranking station officer, Battalion Chief, and ECC, if possible; and initiate the appropriate actions to correct the situation.
    - iii. Be sure to provide reassurance to the community that additional assistance is on the way
    - iv. If large area are inaccessible due to flooding or debris, the RDA should be completed from a good vantage point such as a near-by uncompromised roof, aerial apparatus, etc.
  - C. All information collected should be recorded on the appropriate forms (electronic or paper). In accordance with FEMA guidelines on damage assessment training and scoring
  - D. Each assessment team should have a unique identification. IF MCFRS apparatus is used, use the units radio designation
  - E. A RDA form must be completed for each “grid” area as determined by the station officer (or other authorizing person/entity)
  - F. If collected electronically, RDA should be submitted as frequently as possible.
  - G. If paper forms are used, consideration should be given to allow for frequent transmissions to the EOC.
  - H. Electronic reporting via the EOC link is the preferred method of submission
  - I. All paper information will be forwarded to the EOC via the Chain-of-Command via e-mail. If the next level of the Chain-of-Command is unavailable or unreachable, permission is granted to contact the EOC directly to rely critical information

	<b>MONTGOMERY COUNTY FIRE AND RESCUE SERVICE</b>	17-TBD
	<b>Policy and Procedure</b>	Page 4 of 5
	<b>MCFRS Draft Policy “Rapid Damage Assessments”</b>	TBD
<p>J. In the event of communications systems failure, the information should be relayed via other electronic means (i.e. fax, telephone, radio).</p> <p>K. If this is not possible due to systems failure, information needs to be delivered via messenger (apparatus, spare vehicle, etc.) to the Battalion Office.</p> <p>L. In the event that transmission of this information is not possible, periodic attempts should be made as the restoration of systems occurs.</p> <p>M. Any report submitted other than the electronic EOC reporting feature, the station officer should keep a paper copy for recordation purposes</p> <p><b>SECTION 6. Responsibility:</b></p> <p><b>a. All personnel are responsible for:</b></p> <ol style="list-style-type: none"> <li>1. Maintaining the knowledge, skills, and proficiency to conduct RDA</li> <li>2. Knowing the nature and location of incidents that they will be assessing</li> <li>3. Reducing the risks associated with known and potential hazards while conducting RDA</li> <li>4. Conduct on going risk assessment</li> <li>5. Monitoring the health and well-being of crews operating</li> <li>6. Using the appropriate personal protective equipment as dictated by the situation</li> </ol> <p><b>b. Unit officers are responsible for all of the above and:</b></p> <ol style="list-style-type: none"> <li>1. Ensuring the safety of the crew and apparatus during all portions of the RDA</li> <li>2. Completion of necessary documentation</li> <li>3. Submission of all documentation</li> </ol> <p><b>c. Station Officers are responsible for all of the above and:</b></p> <ol style="list-style-type: none"> <li>1. Completion of MCFRS Self-Assessment;</li> <li>2. Developing and maintaining lists of critical infrastructure and high-risk facilities in the “first due”;</li> <li>3. Developing and testing assessment areas and routes; and</li> <li>4. Ensuring an adequate number of RDA paper forms are kept in-station at all times.</li> </ol> <p><b>d. Battalion Chiefs are responsible for all of the above and:</b></p> <ol style="list-style-type: none"> <li>1. To ensure crews are completing RDA as necessary;</li> <li>2. Continuous assessment of station and apparatus response capabilities;</li> <li>3. If an incident is limited to a specific area, facilitate the reallocation to resources to support RDA;</li> </ol>		

	<b>MONTGOMERY COUNTY FIRE AND RESCUE SERVICE</b>	17-TBD
	<b>Policy and Procedure</b>	Page 5 of 5
	<b>MCFRS Draft Policy “Rapid Damage Assessments”</b>	TBD
<p>4. Enable a fast “pass-thru” of all information submitted from RDA teams;</p> <p>5. If necessary, serve as a messenger to shuffle RDA forms to the EOC if communication systems are down; and</p> <p>6. Provide annual training for all personnel assigned to their command.</p> <p>e. Duty Operations Chiefs are responsible for all of the above and:</p> <ol style="list-style-type: none"> <li>1. Ensuring department response capabilities can support the RDA teams;</li> <li>2. If not, additional resources should be requested; and</li> <li>3. Keep senior staff not directly involved in EOC operations updated on department / incident status.</li> </ol> <p>f. MCFRS IT is responsible for the development and maintenance of an online training program for use as an annual refresher for RDA policy.</p> <p>g. EOC representatives are responsible for the periodic testing of the electronic form to ensure it is accurate and connectivity exists.</p> <p><b>SECTION 7. Cancellation:</b> This is a new policy.</p> <p><b>SECTION 8. Attachments:</b> Appendix A: Windshield Damage Assessment Form</p> <p><b>Approved:</b></p> <p><i>Signature</i></p> <p>_____</p> <p>Fire Chief</p> <p style="text-align: right;">TBD Date</p>		