

WINDSHIELD DAMAGE ASSESSMENT:

Windshield Damage Assessment Procedures

Richard J. Russell IV

Noblesville Fire Department, Noblesville, Indiana

CERTIFICATION STATEMENT

I hereby certify that this paper constitutes my own product, that where the 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.

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## Abstract

The problem is that the Noblesville Fire Department (NFD) does not have an effective way to collect windshield damage assessment information following a natural disaster or manmade event. The purpose of this research is to develop a windshield damage assessment procedure for use by NFD personnel during, or immediately following, a natural disaster or manmade event in and around the City of Noblesville.

Descriptive research was used to formulate a correct course of action. The research questions included information regarding: a) what benefit is a windshield damage assessment after a natural disaster or manmade event has occurred? b) What type of natural disaster or manmade event is likely to occur in the City of Noblesville? c) How are other jurisdictions performing windshield damage assessments in their communities? d) What documentation is utilized to record the windshield damage assessment? The results indicate the implementation of a windshield damage assessment program is very feasible and this researcher recommends steps be taken to implement such a program at the Noblesville Fire Department.

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## Windshield Damage Assessment Procedures

### Introduction

The Noblesville Fire Department (NFD) responds to several storm weather events each year. Natural disasters and manmade events normally happen suddenly, without warning, covering a wide area that affects highways and infrastructures and have a large impact on human life. Often the fire department responds to one dispatched call after another, without thinking about recording the damage in a way that best utilizes our resources efficiently. The NFD works hard to prevent harm by mitigating the effects of natural disasters and manmade events. High quality, cost-efficient fire prevention, public education, fire suppression, advanced emergency medical service and rescue responses are provided, while minimizing firefighter safety. However, in a natural disaster or manmade event, we tackle the task on our own, without utilizing other agencies within our city and county, to help us capitalize on resource deployments and economic refunds for our efforts.

The problem is that the NFD does not have an effective way to collect windshield damage assessment information following a natural disaster or manmade event. Trying to ensure that our citizens are well protected is always our number one goal. In our desire to keep our community safe, we find ourselves inefficient in the process of collecting and documenting windshield damage assessments. Because of this, the City of Noblesville is not receiving emergency relief funding from state and federal authorities.

The purpose of this research is to develop a windshield damage assessment procedure for use by NFD personnel during, or immediately following, a natural disaster or manmade event in and around the City of Noblesville. A windshield damage assessment is the term used to describe the way in which first responders utilize their access to rapidly estimate the damage at a specific

incident or site, which is then used to deploy necessary assistance to the area. Descriptive research will be the method used to form a basis for analysis of this problem. The research questions include the following:

- a) What benefit is a windshield damage assessment after a natural disaster or manmade event has occurred?
- b) What type of natural disaster or manmade event is likely to occur in the City of Noblesville?
- c) How are other jurisdictions performing windshield damage assessments in their communities?
- d) What documentation is utilized to record the windshield damage assessment?

#### Background and Significance

The City of Noblesville is a suburban community located 20 miles north of Indianapolis, Indiana, in Hamilton County. To establish a foundation of the approximate number of people in our community that could be affected by a natural disaster or manmade event, the United States (U.S.) Census Bureau provides tabulation by zip code. The 2008 Census showed that the City of Noblesville has a population of approximately 42,155 people. This is an estimated population increase of 47.4%, compared to year 2000 when the estimated population was 28,590.

Throughout this period of time, our city has grown and so have the vulnerabilities our community faces each day. The community risk assessment of our city has identified target hazards that are potential locations for domestic terrorism. The City of Noblesville is the county seat and with that status comes numerous governmental buildings, jails and hospitals. However, the highest risk to our community is the contamination of our reservoirs, rivers and streams. With the abundance of water in our area, many water utilities utilize our water resources to

provide water to neighboring towns and cities. Indianapolis Water, Westfield Public Works, Cicero Water Utility, Indiana American Water and South Madison Utilities all use our wells, reservoirs, rivers and streams to provide water to approximately 500,000 individuals. While susceptible to various forms of regional disasters, flooding of these waterways represents the largest, common threat to the citizens of Noblesville.

To show the historical crest flood stages in our city, the National Weather Service (NWS), *Advanced Hydrologic Prediction Services*, provided a fact sheet that shows March 25, 1913 was the worst flood reported in Noblesville. The crest was 23.80 feet. To understand the significance of that number, the NWS lists flood categories in feet for our city. This is broken into depths and labeled as stages. At 10.00 feet, the situation is listed as the action stage. This progresses to 14.00 feet as the flood stage, 19.00 feet as moderate flood stage with streets and households affected, and 21.00 feet as major flood stage, where numerous evaluations will occur in our city. To understand the historical significance of our flood problem, the most notable flood levels should be taken into account, including each of those events where the levels were above 20.00 feet. On July 10, 2003, the flood level crested at 21.86 feet while on April 22, 1964, the crest was 21.31 feet. The fourth highest crest was established on December 31, 1990, with the crest reaching 21.29 feet. January 13, 2005 is noted as the record for the fifth highest crest, reaching 21.00 feet, while the sixth highest recorded crest occurred on May 14, 2002, at 20.65 feet. As the historical data has shown, flooding is an event that has caused our city significant turmoil throughout the years; however, we are not immune to other types of natural events.

To assist in the background regarding manmade events within the City of Noblesville, the Noblesville Police Department's (NPD) year-end report illustrates the foundation of criminal activity within our community. Though the City of Noblesville does not have an immediate

threat of an international terrorist attack, it can be vulnerable to domestic terrorism. The report indicates that NPD responded to 44,244 events in 2009, a decrease of 1.5% from the year before. The report showed that crimes against persons, such as homicides, rapes, robberies and assaults dropped by 28% in 2009. However, overall property crimes, such as burglary, theft, auto theft and arson increased 3% from the prior year.

Like NPD, the crews of the Noblesville Fire Department are adequately equipped to handle single, day-to-day, routine events. However, major emergencies within our community, such as natural disasters or manmade events, which last for extended periods, exceed these day-to-day capabilities. Routinely, during events like this in our community, we rely on mutual aid from adjacent fire jurisdictions, as well as state and federal resources as needed.

It is imperative that the NFD formulate a basis for a windshield damage assessment procedure to better allocate resources, provide clear documentation for assistance from state authorities, and provide substantial and accurate data to the federal authorities for funding allocation. The United States Fire Administration (USFA) can help the NFD follow the five operational objectives. Multi-hazard risk-reduction plan that provides community education material that meets the needs of individuals living in high-risk area for natural disasters or manmade events. The National Fire Academy's (NFA) Executive Analysis of Fire Service Operations in Emergency Management (EAFSOEM), course curriculum concept, to respond appropriately in a timely manner to emerging issues can also help the NFD research. It is clearly stated in the above referenced material that our vulnerability to natural disasters or manmade events is elevated.



## Literature Review

The literature review is based on research obtained from the following: United States Government Accountability Office (USGAO) Preliminary Observations Regarding Preparedness, Response, and Recovery, the Guilford County Emergency Operations Plan, the National Fire Protection Association (NFPA), the San Marcos Fire Department (SMFD) Preliminary Damage Assessment, the South Carolina Emergency Management Division (SCEMD), the Cobb County Georgia Damage Assessment, the Hazard Mitigation Plan by Christopher B. Burke Engineering Ltd., the Federal Bureau of Investigation (FBI) eGuardian Threat Tracking System, the California Emergency Management Agency (CEMA), Geocove Damage Assessment Products and the Executive Analysis of Fire Service Operation in Emergency Management (EAFSOEM) Student Manual.

To provide a proper understanding for the research, the term damage assessment is defined in the EAFSOEM Student Manual as a gathering of information related to the impact of an event, or series of events, on life and property within a defined area. The manual elaborates on two types of damage assessment procedures: an immediate, or windshield process, and a post incident process. Immediate, or windshield damage assessments, are conducted by initial arrival units at a site or area. For the purpose of this research, windshield damage assessment will be the terminology used throughout this paper. The student manual further points out that an important objective is to immediately assess the damage in the area that has already occurred. The assessment and documentation of the damage will help formulate mitigation activities.

NFPA 1600, *Disaster/Emergency Management and Business Continuity Programs*, defines damage assessment as an appraisal or determination of the effects of the disaster on human, physical, economic and natural resources. The document further states that damage assessment

and the identification of resources needed for the incident and recovery needs to be conveyed to operational personnel and then conducted.

In reviewing the literature to determine why a damage assessment is to be conducted, a recently released document was discovered and found crucial as a means for information. The USGAO released the Hurricane Katrina Preliminary Observations Regarding Preparedness, Response and Recovery report on March 8, 2006.

The testimony before the Senate Homeland Security and Governmental Affairs Committee, given by David M. Walker, highlighted the fact that critical emergency management capabilities need to be ramped up to manage a disaster properly. There are suggestions in the testimony that many organizations provide significant support in certain areas. However, many were lacking in efficiency, which delayed getting resource materials to the appropriate areas of need. Mr. Walker's testimony indicates that damage and needs assessments should be conducted immediately after a natural disaster or manmade event, allowing infrastructure and services needed by disaster areas to be identified. The testimony pointed out, concerning Hurricane Katrina that some resource capabilities were employed, however, there had been no advance planning among federal, state, and local responders as to how damage assessments would be provided in a catastrophic disaster. Windshield damage assessments are critical to the overall success of recovery.

The benefit of a windshield damage assessment according to the SMFD in California is to report to the California Emergency Operation Center (CEOC) how badly the city has been damaged. This information is used to determine which parts of the city need emergency resources the most. The windshield damage assessment is meant to give decision-makers quick information. Those individuals must be able to balance the speed and accuracy of the

information that is coming in, so the safety of first responders is never compromised in their effort to mitigate the situation. The SMFD further states the need to maintain uniform documentation forms during these assessment events. Clear and defined structure damage levels are needed for accuracy in order for the assessment to be successful.

In March 2006, Christopher B. Burke Engineering, Ltd. evaluated historical data and calculated priority risks for natural disaster and manmade events in Noblesville. They prioritized numerous hazards by utilizing the Calculated Priority Risk Index (CPRI), which was adopted from their mitigation plan. The CPRI evaluates each hazard based on its probability of occurrence, severity/magnitude, warning times and duration. Furthermore, probability values, 1 through 4, are assigned to these descriptions respectfully identified as unlikely, possible, likely and highly likely. They defined probability, as the likeliness of the hazard occurring over a given period of time. Unlikely is defined as the probability that a hazard event is possible within the next ten years, while possible is defined as the probability that a hazard event is probable within the next five years. Further descriptions include the term of likely, meaning a hazard event would occur within the next three years and highly likely, meaning a hazard event is probable within the next calendar year.

Magnitude and severity were also figured into the calculation. These are measured by the extent of injuries, shutdown of critical facilities, and extent of property damage in an area. The measuring levels of negligible, limited, critical and catastrophic were the chosen. Negligible is defined as the situation when a hazard event has occurred causing injury or illnesses that are treatable with first aid, critical facilities are shut down for 24 hours or less, and 10% of the community has been severely damaged. The second tier, limited, is defined as the situation when a hazard event would not cause injuries or illnesses that could cause disability yet. This

event would cause a complete shut down of businesses for one week and more than 10% of the community has been severely damaged. The third tier of this measurement is identified as critical. This critical event is defined as the situation when a hazard event would cause injuries, illness, and possibly permanent disability. It would also cause a complete shut down of businesses for at least two weeks and more than 25% of property has been severely damaged. The fourth tier of the measurement is the catastrophic level. This is when a hazardous event would cause multiple deaths, a complete shut down of businesses and services for 30 or more days and more than 50% of the property in the community has been severely damaged. According to the CRPI, flooding 3.4, ranked as the number one hazard in our community, followed by a severe winter storm at 3.1, thunderstorm or high winds at 2.4, a tornado at 2.2, the storage and transportation of hazardous materials at 2.0, utility failure at 1.9, dam failure at 1.8, and an earthquake at 1.5.

To further identify the possibility of a manmade threat to our community or our state, the National Threat Center Section (NTCS) of the FBI Counterterrorism Division is the focal point for all threat information, preliminary analysis and assignments for action of all international terrorism and domestic terrorism threats. To help track the threats, the eGuardian program is an informational technology system maintained to collect suspicious activity. Indiana eGuardian, *Threat Tracking System*: February 25, 2010, provided updated, unclassified information that was reported during 2008 and 2009 in Indiana. In 2008, there were 63 incidents assigned to field units. In 2009, the number of incident investigations jumped to 111. The incidents ranged from individuals recruiting for terrorism groups, air travel security, chemical sales, sale of sniper style guns, threats against water supply systems, anti-abortion demonstrations in Noblesville, suicide bombing in the Indianapolis area, White Supremacists and numerous individuals with weapons.

Many of the incidents were quickly investigated and closed; however, some incidents required more follow up to determine if it was a credible international or domestic terrorism threat. With the numerous possible manmade and naturally occurring disasters identified previously, determining how each jurisdiction will perform windshield damage assessments in their communities is imperative.

With all the data that needs to be recorded during a windshield damage assessment determining who conducts the assessment needs to be identified. The *CEMA Post-Disaster Safety Assessment Program* states that local police and fire departments will perform this operation. The local police and fire departments should perform this initial assessment within minutes after the disaster occurs. Police and fire units are normally in good positions throughout the city or town, allowing them to travel up and down streets within their jurisdiction looking for damaged areas and individuals in need. However, this process can be cumbersome and tedious for fire and police personnel. In order for the foundation of a successful mitigation plan following a natural disaster or manmade event, it may require police and fire personnel to initially pass by businesses and individuals in need of help. This may seem extreme; however, it is necessary for an organization to complete the entire assess of the situation.

The SCEMD jurisdiction performs windshield damage assessments by utilizing the team concept. Police, fire and other city officials are assigned areas by the Emergency Management Agency (EMA) staff. The group of individuals report to their assigned area, then canvas the area individually. By using a group of people functioning as a team, they summarize their findings and report to the command center more quickly than a single individual. The team concept goal is to lessen the time it takes to assess the area affected, which in turn, speeds up the mitigation process. In the team report, there should be a sheet with each individual's assessment of the

area, which must have the individual's name, phone number, addresses of locations assessed and structure types defined.

In order for the windshield damage assessment to be recorded, a pre-structured form should be provided. This form is uniform and utilized by each person, or group, and is essential in determining how other jurisdictions perform windshield damage assessments in their communities, as well as, what documentation they are using to record the windshield damage assessment. In Cobb County, Georgia, they provide the Individual/Business Damage Assessment Collection Packet (Appendix A). A packet is given to each person, or group, for the windshield damage assessment process. The packet outlines the overview of the process and provides preparedness information for all participants. It also outlines the activation of persons or groups, lists those who you report to who are operations for the mitigation process, lists any safety issues you should be concerned about, and explains how to assess the damage. The 8.5" x 11" spreadsheet has been developed with information that emergency management levels believe are important collection topics. The heading of the form requires the recording of the county they are in, jurisdiction, date, damage assessor contact telephone number, general description of area/comment of your assignment location. The main body of the form has collection boxes from left to right. These boxes include the property address, property types with subheadings of single family, multi-family, mobile and manufactured home or apartment, business, and a column for the own/rent status. The damage level is recorded with checkboxes of subheadings listed as destroyed, major damage, minor damage and affected. Within the packet, there is a definition sheet for the assessor to better understand the meaning of destroyed, major damage, minor damage and affected. The form also has a yes or no checkbox for the assessor to record whether or not the individual property has insurance. Another area is used to record the water

depth, if necessary, and any comments about the area of property. At the bottom of the form, it allows for a quick calculation of the assessment. One side of this section of the form lists single family, multi-family, manufactured homes and business. The header section lists destroyed, major, minor and affected. This part allows the assessor the ability to total all findings and then report them to the pre-determined operation division.

In July 2007, Guilford County, North Carolina developed the Guilford County Emergency Operation Plan, *Damage Assessment Annex 9*. This Annex provides guidelines for the windshield damage assessment used to appraise or determine the severity of damage to public and private property, and the status of key facilities. This process will provide a basis for the identification of needed actions, the determination of priorities, and the allocation of local government resources in the disaster area during the early states of the recovery effort. It also determines if any outside assistance will be required. In Guilford County, they utilize the Guilford County Initial Damage Survey (Appendix B). The windshield damage assessment is conducted in four phases: windshield survey, initial damage assessment, preliminary damage assessment and detailed damage assessment. The first phase conducted is the windshield survey. This phase is coordinated using local resources to provide a quick overview of the damage. The damage assessment teams, fire department, and local law enforcement agencies will complete the windshield survey. A detailed instructional form that provides insight into terminology is included with the data collection form. The forms' instructions include the building type descriptions, single-family dwelling (SFD), multi-family dwelling (MFD), mobile home (MH), business and industry (BUS), governmental building, structure or location (GOV) and anything else (OTHER). It includes categories of choice, such as, debris, road, water facility, public utility and parks. Damage type descriptions are defined as well, and consist of destroyed home

or business with 60 or more inches of water, total collapse, shift on foundation, or not feasible to repair. Also defined in the section under destroyed, is mobile home with 48 inches of water, collapsed walls, turned over, and frame buckled or twisted. Major damage is defined as, a home or business with 30-60 inches of water, with a large portion of the roof displaced or debris penetration, and one or two walls missing. The mobile home damage in the major section is defined as 24-48 inches of water, with slight twisting or bowing of the frame, and forceful penetration of the mobile home walls with debris. The third damage category is minor. They define minor damage as a home or business with 12-36 inches of water, with minor structural damage, damage to small sections of the roof, numerous broken windows, large portions of roof material missing, large portions of siding missing, and penetration damage where it is believed no structural damage has occurred. The difference in the mobile home section of minor damage lists the water level at 6-24 inches. The last two damage type descriptions in this section are affected and isolated. Affected is listed as a home or business with 0-12 inches of water including basement flooding, some shingles and siding missing, debris against or around the dwelling, structural damage considered to be a nuisance, as well as, mobile home damage that consists of 0-6 inches of flood water, with skirting either damaged or missing. The last recording in this section is titled isolated, which is defined as a building that cannot be accessed from the roadway or cannot be accessed at all.

The initial damage survey form for Guilford County has three other sections that they ask the assessor to give an opinion about; estimated market value, estimated dollar loss and comments/damage descriptions. The estimated market value helps with the overall loss total, which can help with funding allocation to the area. They do however; point out that the federal or state tax department will make corrections if they deem it necessary. Estimated dollar loss should be an



estimate of the cost of repairing the facility if possible, and any additional comments to describe damage or details on the location. If there are questions, those should be recorded in the comment and damage description section.

Accurate damage assessments are critical for informed decision-making. The Geocove Company provides a tool with the primary function of assessing conditions of structures after a disaster event. The Incident Inventory Control (I<sup>2</sup>C) offers field data collection applications, using the latest Geographic Information System (GIS) technology, to collect, map and report windshield damage assessment information electronically. This wireless, handheld technology provides a method for local governments and other reporting agencies to rapidly determine the extent of the damage live, as field teams record it.

In summary, the literature review provided valuable information upon which to determine a windshield damage assessment procedure, for use by NFD personnel during or immediately following a natural disaster or manmade event, which is essential. Research has discovered that common terminology should not be taken for granted. Providing a packet of information that allows personnel the ability to refresh themselves on what is documented and desired, is important in the process of collecting data. This packet also provides common paperwork utilized by everyone in the assessment process. The literature review also reported that most agencies involved in windshield damage assessments conduct the process through the windshield of first-responders equipment, specifically fire and police vehicles. Further, the literature review clearly demonstrated the need for a well-developed plan of action regarding the development of a windshield damage assessment procedure. This review of research has given the foundation and rationale for this research project.

## Procedures

The procedures utilized for this descriptive research methodology consisted of the following steps. First of which involved an in-depth review of available literature. The review of available literature began on the campus of the National Fire Academy (NFA) in Emmitsburg, Maryland in November 2009. Database searches focused on windshield damage assessments, EMA damage assessments, documentation of damages, recording methods of natural disasters and manmade events, and fire department procedures in assessing damage during a natural disaster or manmade event. The articles and publications reviewed provided a general idea in each specific area. The majority of current data came from the World Wide Web (WWW) using Google and Yahoo search engines.

The results of this initial procedure provided questions and general reference ideas that were needed when meeting with Hamilton County Emergency Management Director David Bice (personal communication, February 13, 2010) in Noblesville, Indiana about this research. Director Bice is versed in recording vulnerability and probability that a natural disaster or manmade event will occur. He understands the needs of local municipalities, state and federal agencies for the process of planning a mitigation plan and documentation needed for the reimbursement of funds to the area.

The next process was to identify the estimated population that could be affected if a natural disaster or manmade event occurred in our city. This process included checking the U.S. Census Bureau (2008) for relevant information. The U.S. Census Bureau provided the population that could be affected, but more importantly, it helps with pre-planning the number of individuals that might need to be evacuated. With approximately 42,000 people in our city, our available shelter

resources will be overwhelmed; therefore, adjacent communities will be affected by evacuating this number of individuals.

To coincide with the population in our community, this researcher completed a community risk and capability assessment of the City of Noblesville. This process identified and assessed the critical hazards and vulnerabilities in our city. This process provided a valuable source of information for emergency management planning, priority setting and strategy development. This analysis was mapped as a hard copy as well as electronically, allowing for a visual reference of priority and effected areas.

With the previous steps completed, a questionnaire was constructed, and then emailed to EMA directors throughout the state of Indiana, along with emails to state officials with the Indiana Department of Homeland Security (IDHS). The email provided an explanation of the purpose of the questionnaire, and requested their assistance with completing the questionnaire as it pertains to their specific municipality. Questions 1 through 10 were constructed with the forced answer format, with questions 4 and 5, allowing response for all applicable choices. The questionnaire was sent to all 92 EMA directors in Indiana, as well as an additional 33 emails to individuals at the IDHS. The basis for this number of recipients was simply to get a response from the target group within the state of Indiana.

The intent was to get a sample of whether or not organizations have a windshield damage assessment procedure. This included answering the following questions. How dispatching of events occurs, the importance of a windshield damage assessment process, who conducts the assessment, is the assessment done as teams or groups, who assigns units to conduct the assessment, what areas need to be assessed, how is the assessment reported, who do the field assessment personnel report to and how would you rate your immediate windshield damage

assessment process. There was a response rate of 80 %. One hundred of the 125 recipients responded to the questionnaire.

The next step in the research was to identify the benefit of a windshield damage assessment after a natural disaster or manmade event has occurred. This process was to gain an understanding of the benefit other communities could receive by having an assessment program. This analysis was based solely on the literature review of: *Executive Analysis of Fire Service Operations in Emergency Management (EAFSOEM) Student Manual* (March 2009), *NFPA 1600 Standard on Disaster/Emergency Management and business Continuity Program* (2004), *Hurricane Katrina Preliminary Observation Regarding Preparedness, Response and Recovery* (March 8, 2006), and the *Preliminary Damage Assessment* (SMFD 2009).

Next in the process identifying what types of natural disasters or manmade events are likely to occur in the City of Noblesville is critical in the foundation of a successful windshield damage assessment program. This process gave an understanding of the City of Noblesville's vulnerability to a catastrophic event. This process was completed through literature review of *Multi-Hazard Mitigation Plan* (Christopher B. Burke Engineering, Ltd. 2006), and *eGuardian Threat Tracking System* (FBI, Indianapolis, Indiana, February 25, 2010).

The next step in the research was to discover how other jurisdictions perform windshield damage assessments in their communities. This included but was not limited to who conducts the immediate assessment, and determine if it was done by single individuals, groups or crews. This process had very significant value. For example, the number of assessors functioning individually, or assessors in groups, made a difference in the time it took for a complete assessment of the area. The value of having a group of assessors canvassing an area helped to increase the speed and accuracy, which in turn, allowed for early deployment of resources to the

people affected by the natural disaster or manmade event. This process was completed through literature review of *Post-Disaster Safety Assessment Program* (California Emergency Management Agency, August 2009), and *Help after the Disaster* (SCEMD, 2009).

The last, and most critical, procedure obtained from *Damage Assessment* (Cobb County Georgia), and *Damage Assessment Annex 9* (Guilford County Emergency Operations Plan, July 2007), included what documentation is utilized to record the windshield damage assessment. This research aided in the understanding of the current trends. It provided insight into the different methods in preparing individuals for assessing damage and the need for a uniform process. Every assessment individual or team needs a packet of information that outlines the expectation of the process, who you report to, the area you are responsible for and documentation sheets listing report expectations.

The results of this applied research had some limitations. There is an adequate amount of data available, but the majority of data was from other agencies outside Indiana. This author discovered that terminology from state to state is different. Even the forms for recording the damage are different at the local level, compared to the state level. Nevertheless, the research available does point out that to be successful, you have to have a windshield damage assessment process in order to deploy resources properly and to collect funding from state and federal offices. The quantitative and qualitative data have remained the same throughout the years. For example, the documentation continues to be written, time spent working does not change, nor does what resources are deployed during these events. However, due to advancement and the community's desire for a quick response, the plan for the next operational phase is critical in your mitigation plan and the reimbursement for your community to survive.

## Results

The purpose of the research is to develop a windshield damage assessment procedure for use by NFD personnel during or immediately following a natural disaster or manmade event in and around the City of Noblesville. Four research questions drove this research. The original questionnaire is included in the paper as Appendix C. A second copy of the questionnaire, with the recorded responses to each question, is attached as Appendix D.

The research focused on the existence of a windshield damage assessment in the given organization. The results showed that 54% of the counties throughout Indiana have a windshield damage assessment procedure in place.

Another focal point of the questionnaire is to determine if the organization continues to dispatch EMS fire and rescue incidents as if it were a normal day, without a natural disaster or manmade event? Seventy-five percent of the respondents reported that they continue to operate like a normal day. They do not stop deploying resources and focus on the catastrophic event that is occurring in their jurisdiction.

With the above listed information, we must now determine how an organization rates the importance of having a windshield damage assessment program in the community following a natural disaster or manmade event. It was overwhelming, 85% of respondents feel it is important to have an assessment program.

With the three previous baseline questions answered, the next issue is to define who is conducting the immediate windshield damage assessment in your community. The respondents had multiple choices to choose from, including fire, police, public works, building inspectors, helicopter units, emergency management volunteers, storm spotters, Community Emergency Response Teams (CERT), or a combination of all. Forty-seven percent, of the responses rely on

the fire department to conduct the immediate windshield damage assessment, followed by the police department at 30%, public works and building inspectors at 29%, emergency management volunteers at 28%, combination of all at 24%, helicopter units and community CERT teams at 8% and storm spotters at 6%. These results provided a good foundation for the development of a program for the City of Noblesville.

By identifying who is conducting the assessment, the next factor is to determine if the immediate windshield damage assessments are conducted as single person, individual assessment-ground crew, single person, individual-air crews, single person, individual assessment-ground and air crews. Other options were assessment team(s) - ground crew, assessment team(s) - air crews or assessment team(s) -ground and air crews.

Sixty-two percent of the respondents reported utilizing assessment team(s)-ground crews. Single person, individual assessment-ground crew followed with 33%, single person, individual assessment-air crews, single person, individual assessment-ground and air crew, assessment team(s)-air crews and assessment team(s)-ground and air crews all received less than 10% of responses.

Now that we have received data on the existence of a windshield damage assessment program, its importance, who conducts the process and how the process is conducted, the next step is to collect data identifying who assigns these units to complete the windshield damage assessment. The respondents indicated that 66% of them receive their assignment from the emergency management office. Sixteen percent indicated that they receive no assignment, meaning it is a random patrol by police and fire units. The local dispatch center assigned 13% of the agencies with their assignment, while random patrol by a combination of city or town public works, public safety or volunteers, were 12% of the respondents conducted damage assessments.

With numerous available units ready to conduct windshield damage assessments, the areas being assessed need to be defined. Specifically whether the areas are pre-determined hazard targets, pre-determined geographical areas in the town, city, or county, including if units only travel major roadways assessing damage, are units assessing the damage based on the operational chief assignments, and whether random searches are being conducted with no specific task assigned. Forty-five percent of respondents received their assignment from the operational chief's assignment. Pre-determined geographical areas in the town, city or county are being utilized 38% of the time. Pre-determined hazard targets in the area are the basis for the assessment 21% of the time and random searches, with no specific task assigned, are conducted 14% of the time.

With units in the field assessing the damage, the need for them to communicate their findings is essential, including how the windshield damage assessment is reported to the operations chief or the EMA office. The questionnaire respondents reported that 61% record the data on a piece of paper, then turn it in directly to the pre-identified location, or they have a runner turn in the data collection forms. Fifty-three of respondents report they utilize radio transmission to report the assessment damage, while cellular phone communication is utilized 30% of the time. Face-to-face reporting is utilized 29% of the time. The collection of this data process needs to be well defined. This step in the process is the key component to the revitalization of the area.

Tallying the collection of data is important, and having a means to report the information is vital to a successful mitigation plan, as is determining to whom field assessment personnel report the initial windshield damage assessment. The windshield damage assessment questionnaire listed area dispatch, incident commander, EOC and other as choices for the target audience. Seventy-one percent of respondents report their findings to the EOC. Twenty percent of



respondents indicate they report to the incident commander. Fourteen percent report to the area dispatch, while 10% report to another source.

Cities, towns and counties throughout Indiana have identified different techniques in the assessment process of a natural disaster or manmade event. With the different assessment processes out there, the question was asked, "How would you rate the immediate windshield damage assessment process in your area?" Forty-four percent of respondents rate their process as good, 34% believe they have a fair process, 18% believe that their process is poor, while 5% rated their windshield damage assessment process as excellent.

The conclusion of this research has shown that it is important to have a windshield damage assessment program at the NFD. The research can recommend who conducts the assessment of the community, as well as utilizing groups of individuals to assess the damage. Having an operational chief direct units to their assigned area, and providing a clear and direct point of contact will assist NFD personnel during, or immediately following, a natural disaster or manmade event in and around the City of Noblesville.

### Discussion

An objective of this applied research paper was to identify an effective way to collect windshield damage assessment information following a natural disaster or manmade event for the NFD. The findings of the research were beneficial in gathering criteria that needs to be included in a windshield damage assessment procedure for the use by NFD personnel during, or immediately following, a natural disaster or manmade event. The literature review research created some concern about the lack of uniformity across the state of Indiana. With the multi-levels of risk that a community has to deal with, do they prepare themselves adequately for natural disaster or manmade event? Every fire or police agency believes they can handle

anything thrown at them. We are trained to perform physically and mentally, but we may not be prepared to record the activity we are performing proficiently. The results from question one in the questionnaire identified that 54% of the counties in Indiana feel that they are recording their activities adequately, meaning that the rest are not recording anything at all.

The 2006 testimony given to the Senate Homeland Security and Governmental Affairs Committee by David M. Walker regarding Hurricane Katrina highlighted the fact that critical emergency management capabilities need to be ramped up. Mr. Walker pointed out that damage and need assessments should be conducted immediately after a natural disaster or manmade event. Delaying this process only slows down the infrastructure and services needed in the mitigation process. His testimony added that overall success to recovery from a natural disaster or manmade event is the immediate windshield damage assessment.

The research has provided insight into who is performing rapid damage assessment in their community. A group, or team of individuals, who are assigned to an area, that have been briefed with the objectives, provided with data collection forms, have previous training which allows them to ability to split up within their area and quick assess the damage is the preferred technique. Once the individuals have canvassed the area, regrouping at a pre-determined location so the data can be compiled into a single report, then reporting that tallied data to the EMA officer has been found to be beneficial by other jurisdictions.

Another limitation in the research was the fact that not all data collection forms were the same. The forms can be developed by each agency, with accordance to their community risk assessment, however, no matter what forms are used, they must be the same for each individual or team conducting windshield damage assessments. Both Cobb County Georgia and Guilford County Emergency Operation Plan in North Carolina have a packet for assessment personnel.

The packet includes terms with definitions for the assessor, and guidelines for assessing the minor, major and destroyed properties. It further outlines the process for reporting your assessment to the EMA officer, as well as radio communications that are being utilized and the safety concerns in the areas being assessed.

The implications of this research led this researcher to believe that implementation of a windshield damage assessment procedure for use by the NFD personnel during or immediately following a natural disaster or manmade event is a tangible goal for the NFD. This gathering of research is good for the NFD and the citizens within the City of Noblesville. By having a windshield damage assessment process that addresses specific needs such as, existing, or potential need for emergency action, life safety threat to the general public, possible hazards to emergency personnel, existing property damage, obstructions to site or area access, damage to roadways, damage to municipal services and other unsafe conditions, we can help policy makers within the EOC get a hold on the task at hand. This task consists of life safety, incident stabilization, property conservation while recording and managing expenses.

### Recommendations

The problem statement that this research addressed was that the NFD does not have effective way to collect windshield damage assessment information following a natural disaster or manmade event. The purpose of the research is to develop a windshield damage assessment procedure for use by the NFD personnel during or immediately following a natural disaster or manmade event in and around the City of Noblesville.

Based on the research results, it is clear that a windshield damage assessment procedure could be a reality. This research constitutes a starting point or a foundation for the program to move forward. Legal issues, potential assessors, or teams of assessors, forms, administrative issues

and evaluative tools have been identified. A strategic plan for the development of the windshield damage assessment procedure should be instituted from this point and move forward. The NFD should set goals, or establish measurement steps, for the process of developing an assessment program. The following is a summarized set of recommendations for consideration when moving forward with the program.

First, the team approach can eliminate the duplication of effort that results when several agencies complete windshield damage assessments. The development of teams from the fire department, building department, public works, street and highway departments and police departments can provide accurate information by persons who are knowledgeable in specific areas.

Secondly, the use of specific forms for recording windshield damage assessment information will make the process easier and accurate. The development of the forms must occur before they are actually needed. The teams of assessors must receive training in the use of the forms.

Third, the program should educate individuals about the Incident Command System (ICS). Regardless of the size or complexity of the event, everyone should understand how information is disseminated up and down the matrix of the command system.

The critical need for a windshield damage assessment program at a large-scale incident is vital for response to the emergency and recovery. The recovery efforts are much more effective when windshield damage assessments are performed immediately following the event. Providing the necessary information in a timely manner helps policy makers and operational chiefs make decisions about the incident, in addition to allocation and deployment of resources in a timeframe that is acceptable by citizens and others.

Lastly, it is recommended that the members of the NFD be allowed ample time to absorb and discuss the program with management in an open format. A change in response allocations and response deployment is much different from normal day-to-day operations during a natural disaster or manmade event. Allowing time for suppression personnel to process the objective will help with the overall understanding of the common goal, which is outlined in the operational plan for the detail.

The purpose of this research has been met, but it is recommended that the NFD closely monitor the program when moving this project forward to fruition. Evaluative instruments should commence immediately after implementation or at a reasonable interval thereafter.

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## Appendix A

### Damage Assessment

#### Overview

Multiple damage assessments may be warranted when an area receives damage from severe weather. Quick assessments (referred to as windshield assessments) of governmental damage (in dollar estimates) and private damage (number of residences and businesses) should be tallied. At the same time, volunteer organizations such as the Red Cross, Salvation Army, and the faith-based community normally are obtaining information to provide individual and family support. The National Weather Service personnel will respond to verify the cause of damage, if needed.

Thorough assessments by professionals (such as building inspectors, tax assessors, and storm water management personnel) may be necessary later. Representatives from the state, and/or federal governments, will also verify and/or participate in damage assessments if the county receives, or might receive, a state or federal declaration,

#### Preparedness

Government staff and trained civilians can perform damage assessments. Government staff that is already tasked with the maintenance of facilities is responsible for assessments of those respective facilities. Government staff and trained civilians can be utilized for private assessments. All participants shall complete the Cobb Emergency Management Agency (CEMA) Damage Assessment Course prior to assessing damaged facilities

##### Government

Personnel within each city/county government department/agency should be identified and trained to assess building, property, and equipment damage following a disaster or emergency. These personnel, as well as an appointed agency representative, will provide contact information (pager, cell numbers, etc.) to CEMA so they can be notified when needed. Hard copies of the assessment forms should be provided to, and maintained by, assessors in case of a callout. The forms will also be available on the CEMA website <http://ema.cobbcountyga.org>, under the forms link).

##### Civilian/Support

CEMA maintains the contact information for all Community Emergency Response Team (CERT) members that have completed the damage assessment course. CERT members can be paired with government staff to assess public property, or can complete windshield damage assessments with a team of only CERT members.

#### Activation

The reverse callout system shall be used, as well as blast emails, contacting pre-identified personnel to complete public infrastructure assessments. Each agency/department should develop an assessment plan so that when assessors are contacted, they report to their assigned facilities to assess and document the damage, which includes completing forms and taking pictures.

CERT members will also be contacted via reverse callout system and/or blast emails, if needed.



Activation information will include the type of incident that occurred and a meeting site. The information will also include time to begin, area(s) to avoid, and resources needed, if applicable.

Contacts will be made by phone, if necessary.

## **Operations**

Cobb Emergency Management Agency (CEMA) has primary responsibility for damage assessments (refer to Cobb Local Emergency Operations Plan, ESF 5). Once CEMA is notified of damage resulting from severe weather within the county, the following assessments shall be directed, as needed, by the CEMA Director or his/her designee.

### Public Infrastructure Assessments

Public infrastructure assessments require documenting the estimated dollar loss of county department/agency property. Government staff shall complete assessments of facilities for which they are responsible. Those agencies include, but are not limited to, the following:

- Acworth Police Department
- Austell Fire and Emergency Services
- Kennesaw Police Department
- Marietta Fire and Emergency Services
- Powder Springs Police Department
- Cobb County Fire and Emergency Services
- Cobb County Property Management
- Cobb County Public Services—Parks and Recreation
- Cobb County Sheriff's Office
- Cobb County Water System

The damage assessors should report to their assigned facilities to assess and document the damage, which includes completing forms and taking pictures. Documentation of estimated property damage dollar loss should be delivered to the Emergency Operations Center (EOC) located at 140 North Marietta Parkway, Marietta, Georgia 30060, (770) 499-4567, as soon as possible. CEMA will report damage to the Georgia Emergency Management Agency (GEMA).

### *Summary*

1. Receive notification of event from Cobb EMA;
2. Inspect damage of respective assigned facilities;
3. Deliver damage documentation to the EOC;
4. Prepare for residential and business assessments.

### Private Residential and Business Assessments

These site assessments require documenting numbers of damage and damage levels (Windshield Assessment Part 1 & 2 forms). The purpose of the damage assessments is to determine the extent to which individuals and private businesses have been impacted by the disaster. Two basic categories of eligible private damage have been established.

*Damage to Residents-* assessors will estimate the degree of damage to the home, the habitability, and obtain information on insurance coverage, if possible.

*Damage to Businesses*—the same procedures used to assess damages to residents will be used to quantify damages and determine the impact those damages will have on the community. Loss of a business may result in lost jobs, income, etc., to the individual owner and employees. Privately-owned businesses that are damaged or destroyed by the disaster may qualify for assistance programs.

Windshield assessments are the first rough estimates of the areas affected and the damage levels of residential and business infrastructure. These assessments should be completed on foot, or from inside a vehicle, by teams of trained personnel. Damage assessment forms should indicate if the property is single family, multi-family, or business property, the level of damage incurred, and should include photographs. Verbal status reports should be provided to the EOC in two-hour intervals. All forms should be returned to the EOC on the same date of the damage assessment. CEMA will report damage to GEMA.

*Section Summary:*

1. Receive notification from Cobb EMA\*;
2. Report to the EOC for area and team assignment;
3. Inspect quantities and levels of damage, *not* dollar amounts;
4. Deliver documentation of damage to the EOC.

\*Self-activated CERT members shall follow procedures notifying the EOC, or Deputy Director, of activation and **911** for emergencies.

Damage Assessment Areas

The assessment area will be determined from phone calls to the EOC, **911** calls, responder reports, and other incident information. This documentation will be logged by the Geographical Information System (GIS) staff: GIS personnel will map the identified areas; then each team will be assigned to geographical areas.

Damage Assessment Schedules

Unless otherwise notified, assessors should:

- Limit work time to normal amount of working hours
- Complete windshield assessments only during daylight hours

Damage Assessment Teams

Damage Assessment Team composition will vary depending on the severity and type of damage and personnel availability. Each team should have a team leader who will arrange transportation, obtain the proper forms, map(s) with vital markings, camera, and GPS Unit. The ideal team will have four members: a driver, guide, photographer, and scribe. Assessment teams may include those already listed as well as the following:

- Police and Fire officials
- Building Inspectors
- Tax Assessors
- Cobb Emergency Management Agency staff
- Other county employees

## **Other Considerations**

### Protective Clothing/Basic Equipment

- Good boots and footwear • Rain Gear
- Work gloves
- Eye protection
- Head protection
- Whistle
- Emergency Blanket
- First aid kit
- Chalk /lumber crayon
- Spray paint
- GPS units
- Cameras

### Safety Requirements

- No less than two assessors at any site; **do not separate**
- Provide status to EOC every two hours

### Safety Awareness

- Debris – glass, wood, metal
- Fuel / gas leaks
- Vehicles = hybrids / electric
- Unstable structures
- Downed wires
- Flooded areas
- Animals
- Criminals

### Diseases in Disasters

- Hepatitis
- HIV/AIDS
- West Nile virus — mosquitoes
- Lyme disease — ticks
- Diarrheal diseases
- Bacterial infections

Cobb Emergency Management Agency  
Disaster Assessment Form - Government Facilities

Cobb Emergency Management Agency  
140 N. Marietta Parkway  
Marietta, GA 30060  
Office (770) 499-4567  
Fax (770) 499-4558

Agency responsible for government Facility:			
Person inspecting-:		Agency:	
Date/time:		Event:	
Facility name:			
Facility address:			
Description of facility damage: (including specific buildings if multiple buildings comprise a single facility).			
Estimated cost of damages to the facility:			\$
Other remarks:			

**INDIVIDUAL/BUSINESS DAMAGE ASSESSMENT  
COLLECTION FORM INSTRUCTIONS**

The purpose of this assessment is to (yet a quick overview of damage to the community. This assessment should be completed within 48 hours after the disaster occurs. **Respect private property by conducting the assessment from the outside of homes and businesses.**

<u>FIELD</u>	<u>EXPLANATION</u>
COUNTY	Name of the county where the damage assessment is being done. Use separate forms for each county surveyed.
JURISDICTION	City/area being surveyed. Try to keep all damage assessment information for a city/area together.
DATE	Day, month, and year that the survey is completed. Use the format mm/dd/yy for dates.
DAMAGE ASSESSOR	Name(s) of those completing the survey.
CONTACT TELEPHONE	Area code and 7-digit phone number where the assessor(s), or someone who can interpret assessment results, can be reached.
GENERAL DESCRIPTION OF AREA/ COMMENTS	Describe, in general terms, the effects of the disaster on homes and businesses in the community Surveyed.
PROPERTY ADDRESS	Enter the street address of the property being surveyed. If no street number is available, list the file number or other identification number the property has been assigned. In the event that none of these methods of II) are available, describe in the address and notes blocks using any information about the house that would set it apart from others. An example would be "white house on south side of the road, 5 houses from the intersection of Flower and Cactus Streets."
PROPERTY TYPE	Check the <b>single family</b> block if the property is a one-family home. Check <b>multi-family</b> if a duplex, triplex, four-plex, or an apartment, condominium, or townhome. Count each unit as a separate dwelling (i.e., an apartment building with 20 apartments is considered 20 dwellings). Check the <b>MH</b> dwelling type if the dwelling is a mobile or manufactured home. If the property is a <b>business</b> , check that block <b>on</b> the form.

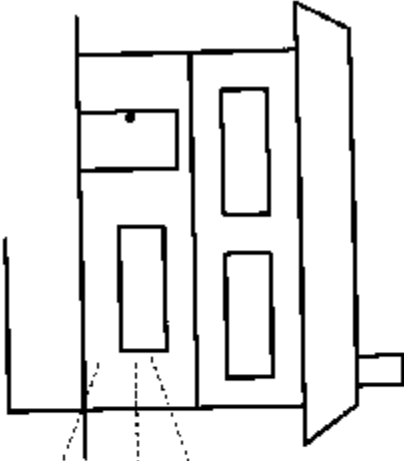
STATUS	An exact count is not necessary; a rough percentage is acceptable. Indicate whether the dwelling is owned or rented by the resident to the extent you are able. In general terms (for estimating when necessary), facilities listed as apartments are rented. Most condominiums are owner-occupied. Manufactured housing (mobile home) is usually a mix of rented and owner-occupied units. In many cases, mobile home park managers, townhome, and condominium associations can provide more accurate information on the number of owner-occupied dwellings.
DAMAGE LEVEL	<b>Use the FEMA criteria for estimating damage contained on the chart at the end of these instructions.</b>
APP INS (Y/N)	Does the resident/business owner have the appropriate type of insurance to cover his/her disaster loss?
WATER DEPTH	Indicate floodwater depth in the residence or business if the disaster includes flooding; report depth in feet/inches for each floor involved (e.g., 8 feet of water in basement/3 feet of water in main floor).
COMMENTS	Note any observations you have made at this address which aided you in making your damage rating decision. Also note any special situations (i.e., low-income housing, elderly population, etc.)

Levels of Disaster Damage (10/24/2000)	
DAMAGE LEVEL	FEMA DEFINITION (Use this criteria when making reports)
Affected	This structure is habitable. A structure which received damage but is useable for its intended purpose. <b>Water Damage:</b> (Single/Multi) Less than 1 foot in basement, minor access problem. (Mobile) Water causes access problems underneath. No water touched unit.
Minor Damage	This structure is currently <b>uninhabitable</b> . A structure which has received such damage that it is no longer useable (or its basic purpose but can be easily repaired and made useable in a short time. Water Damage: (Single/Multi) <b>Less</b> than 2 feet on first floor. No basement or 1 to 8 feet in basement. (Mobile) Utilities flooded, piers shifted/washed out.
Major Damage	Structure currently <b>uninhabitable</b> , which has received substantial damage and will require considerable time to repair, but is economically feasible to repair. Water Damage: (Single/Multi) 2 feet or more on first floor. Structural damage; collapsed basement walls. (Mobile) Water-soaked bottom board, shifted on piers.
Destroyed	Structure is permanently <b>uninhabitable</b> , has received severe damage and repair is not economically or technically feasible. Water Damage: (Single/Multi) Not economical to repair, home pushed off of foundation. (Mobile) Water above floor level, or unit swept off of foundation.





**Flooding Estimates Visual**



<p><b>Destroyed:</b> Structure is <b>permanently uninhabitable</b>, has received severe damage and repair is not economically or technically feasible.</p> <p><b>Water Damage:</b> (Single/Multi) Not economical to repair. Incur pushed off of foundation.</p> <p>(Mobile) Water above floor level or unit swept off of foundation.</p>
<p><b>Major Damage:</b> Structure currently <b>uninhabitable</b>, which has received substantial damage and will require considerable time to repair, but is economically feasible to repair.</p> <p><b>Water Damage:</b> (Single/Multi) 2 feet or more on first floor. Structural damage; collapsed basement walls.</p> <p>(Mobile) Water soaked beyond board, shifted on piers</p>
<p><b>Minor Damage:</b> This structure is currently <b>uninhabitable</b>. A structure which has received such damage that it is no longer useable for its basic purpose but can be easily repaired and made useable in a short time.</p> <p><b>Water Damage:</b> (Single/Multi) Less than 2 feet on first floor.</p> <p>No basement or 1 to 3 feet in basement.</p> <p>(Mobile) Utilities flooded, piers shifted/washed out.</p>
<p><b>Affected - 0' - 12"</b> This structure is <b>habitable</b>.</p> <p>A structure which received damage but is useable for its intended purpose.</p> <p><b>Water Damage:</b> (Single/Multi) Less than 1 foot in basement, minor access problem.</p> <p>(Mobile) Water causes access problems underground. No water launched unit.</p>



## Appendix C

## Windshield Damage Assessment

I am currently enrolled in the Executive Fire Officer Program through the National Fire Academy. Through the program, each student is to conduct an applied research project after each course. Your participation in my questionnaire is very important for my research project. If you would please take 5 minutes of your time to complete my Windshield Damage Assessment questionnaire, the result will not only help with my paper, but will help save lives in the City of Noblesville, Indiana.

1. Does your organization currently have Windshield Damage Assessment procedures?
  - Yes
  - No
  
2. During an immediate Windshield Damage Assessment, does your organization continue to dispatch or assign EMS, Fire and Rescue incidents as if it was a normal day, without a natural or manmade tragedy.
  - Yes
  - No
  
3. How would you rate the importance of having a Windshield Damage Assessment program in your community following a natural or manmade disaster?
  - Important
  - Unimportant
  - Somewhat important
  
4. Who conducts your immediate Windshield Damage Assessment in your community?
  - Fire
  - Police
  - Public Works
  - Building Inspectors
  - Helicopter Units
  - Emergency Management Volunteers
  - Storm Spotters
  - Community CERT
  - Combination of all
  
5. Are your immediate Windshield Damage Assessment conducted as:
  - Single person, individual assessments – ground crew
  - Single person, individual assessments – air crew
  - Single person, individual assessments – ground & air crew
  - Assessment Team(s) – ground crew
  - Assessment Team(s) – air crew
  - Assessment Team(s) – ground & air crew

6. Who assigns units to a conduct a Windshield Damage Assessment?
  - Area Dispatch
  - Emergency Management Office
  - No Assignment, random patrol by police and fire
  - Radon patrol by city or town public works, public safety or volunteers
  
7. Conducting a Windshield Damage Assessment, are the areas you assess:
  - Pre-determined hazard targets in the area
  - Pre-determined geographical areas in the Town, City or County
  - Units travel only major roadways.
  - Units assess the damage, based on the Operations Chief assignments
  - Random search with no specific task assigned
  
8. How is the Windshield Damage Assessment reported in your area?
  - Radio Transmissions
  - Cell Phones
  - Face to Face
  - Written Forms turned in, or turned into a runner
  - Other:
  
9. Who do the field assessment personnel report the initial Windshield Damage Assessment to?
  - Area Dispatch
  - Incident Commander
  - Emergency Operation Center
  - Other:
  
10. How would you rate your immediate Windshield Damage Assessment process?
  - Excellent
  - Good
  - Fair
  - Poor

Appendix D

Windshield Damage Assessment

I am currently enrolled in the Executive Fire Officer Program through the National Fire Academy. Through the program, each student is to conduct an applied research project after each course. Your participation in my questionnaire is very important for my research project. If you would please take 5 minutes of your time to complete my Windshield Damage Assessment questionnaire, the result will not only help with my paper, but will help save lives in the City of Noblesville, Indiana.

- 1. Does your organization currently have Windshield Damage Assessment procedures?
  - Yes 54
  - No 46
  
- 2. During an immediate Windshield Damage Assessment, does your organization continue to dispatch or assign EMS, Fire and Rescue incidents as if it was a normal day, without a natural or manmade tragedy.
  - Yes 65
  - No 23
  - Skipped Question* 13
  
- 3. How would you rate the importance of having a Windshield Damage Assessment program in your community following a natural or manmade disaster?
  - Important 80
  - Unimportant 2
  - Somewhat important 13
  - Skipped Question* 6
  
- 4. Who conducts your immediate Windshield Damage Assessment in your community?
  - Fire 40
  - Police 26
  - Public Works 25
  - Building Inspectors 25
  - Helicopter Units 7
  - Emergency Management Volunteers 24
  - Storm Spotters 5
  - Community CERT 7
  - Combination of all 21
  - Skipped Question* 14

5. Are your immediate Windshield Damage Assessment conducted as:	
Single person, individual assessments – ground crew	27
Single person, individual assessments – air crew	1
Single person, individual assessments – ground & air crew	1
Assessment Team(s) – ground crew	51
Assessment Team(s) – air crew	1
Assessment Team(s) – ground & air crew	8
<i>Skipped Question</i>	18
6. Who assigns units to a conduct a Windshield Damage Assessment?	
Area Dispatch	11
Emergency Management Office	55
No Assignment, random patrol by police and fire	13
Radon patrol by city or town public works, public safety or volunteers	10
<i>Skipped Question</i>	17
7. Conducting a Windshield Damage Assessment, are the areas you assess:	
Pre-determined hazard targets in the area	18
Pre-determined geographical areas in the Town, City or County	32
Units travel only major roadways.	3
Units assess the damage, based on the Operations Chief assignments	38
Random search with no specific task assigned	12
<i>Skipped Question</i>	16
8. How is the Windshield Damage Assessment reported in your area?	
Radio Transmissions	44
Cell Phones	25
Face to Face	24
Written Forms turned in, or turned into a runner	51
Other:	3
<i>Skipped Question</i>	17
9. Who do the field assessment personnel report the initial Windshield Damage Assessment to?	
Area Dispatch	11
Incident Commander	16
Emergency Operation Center	57
Other:	8
<i>Skipped Question</i>	20
10. How would you rate your immediate Windshield Damage Assessment process?	
Excellent	4
Good	39
Fair	30
Poor	16
<i>Skipped Question</i>	11