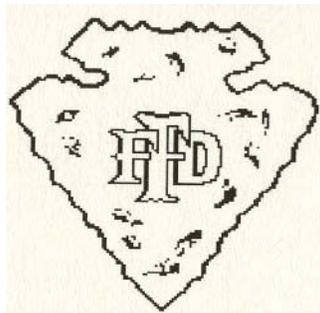


Vacant Structure Fires
And
Firefighter Injuries
In
The City of Flint
April 2006 – April 2007



© Primary Captain Andy Graves
City of Flint Fire Department
June 2007

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Introduction

Fires in vacant structures are a major problem in the City of Flint. In order to better understand the extent of the problems that vacant buildings represent to the Flint Fire Department, a study of structure fires occurring between April 1, 2006 and April 1, 2007 was begun. Data was retrieved from the Department's NFIRS¹ fire incident reports and entered into a variety of Excel spreadsheets and Access databases for analysis and calculations. Detailed information about employee injuries was obtained from the Employee Health Clinic. Injuries were then analyzed based on where they occurred, the extent of hours lost, and the cost incurred by them. Brief surveys were conducted at locations where fire occurred in vacant structures to determine the condition of the building after a fire. A review of a pertinent National Fire Protection Association (NFPA) firefighting standard and case law was conducted. Vacant building ordinances and vacant building fire procedures in other cities were also reviewed.

The key findings of this study are:

- Vacant structure fires represent 40% of the Department's structure fire volume.
- The Department's injury rate at structure fires exceeds the national average.
- 62% of the Department's fireground injuries occurred at vacant structure fires.
- 79% of the cost from fireground injuries resulted from fires at vacant structures.
- 93% of the cost of injuries at fires in vacant structures occurred in buildings that were unsecured when firefighters arrived.

Special thanks to Chief Richard Dicks, Assistant Chief Dandre Williams, Fire Marshal Ron Stamps, Dwyana Dunlap, Alicia Alfaro, and Jim Mitchum for their support and assistance with this project.

Vacant Structures

Like many cities across the United States, Flint is faced with a large amount of vacant structures. These structures pose particular hazards to firefighters entering them in attempts to rescue civilians and preserve property. NFPA statistics in 2000 estimated that 6,000 firefighters are injured annually in vacant buildings.² Some of the hazards encountered by Flint firefighters are poor structural integrity, advanced fire conditions due to the use of accelerants, large amounts of trash and debris, entanglement and entrapment hazards, loose ammunition, human and animal excrement, discarded drug paraphernalia, vermin, and many other safety concerns.

Beyond firefighting concerns, vacant buildings present nearly immeasurable problems to communities. A study in Austin, Texas found that city blocks with unsecured vacant buildings experienced a much higher frequency of police calls in general, police calls for theft, and police calls for violent incidents.³ A study in Philadelphia, Pennsylvania found that houses located within 150 feet of a vacant or abandoned house lost over \$7,000 in property value.⁴

Due to limitations in the way NFIRS reports collect information about buildings, vacant property could not be separated from abandoned property for statistical purposes in this report. A vacant property could be a well-maintained house that is simply transitioning between owners or tenants. A vacant property could also be a dilapidated fire-damaged abandoned building. NFIRS views them both as simply vacant. For the purposes of this report, use of the term “vacant” when describing buildings in general refers to property that is vacant and property that is abandoned.

¹ NFIRS stands for National Fire Incident Reporting System

² Karter, M. (2003) *Patterns of Firefighter Fireground Injuries*. NFPA, Quincy, MA

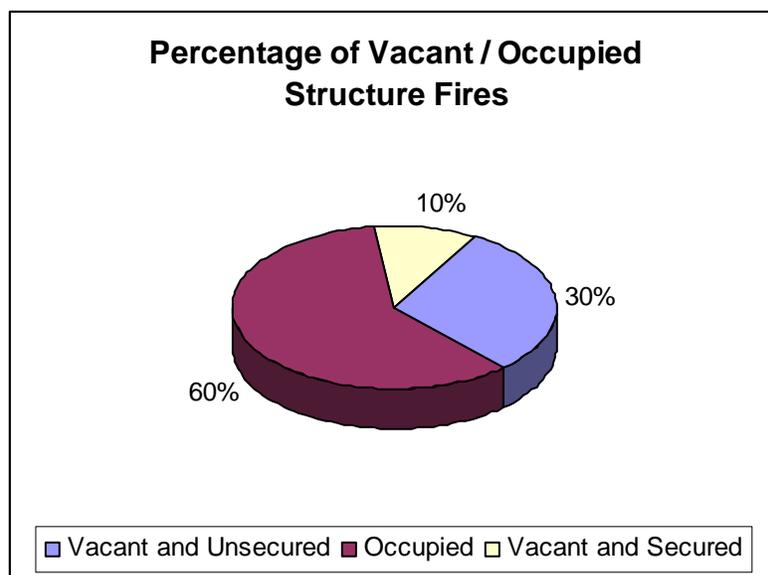
³ National Vacant Properties Campaign (2005). *Vacant Properties: The True Cost to Communities*.

⁴ Id.

Fire Activity in the City of Flint, April 2006 – April 2007

During the survey period of April 1, 2006 through April 1, 2007, a total of 767 structure fire calls were dispatched in the City of Flint. 596 were dispatched as residential structure fires, 134 were dispatched as commercial or large structure fires, and 37 were dispatched as structure fires with occupants possibly entrapped.

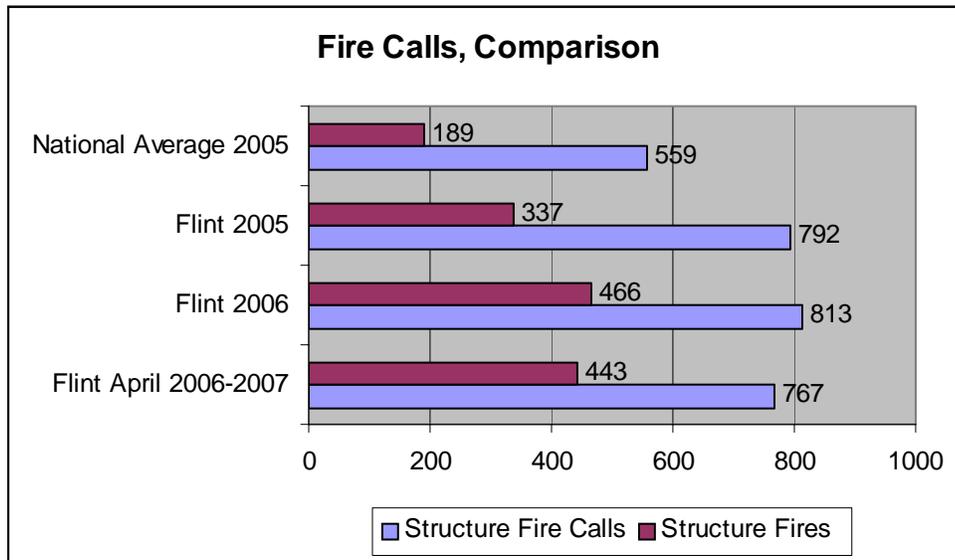
Out of the 767 total structure fires dispatched, 443 resulted in a report of an actual structure fire occurring.⁵ The remainder was an assortment of non-structure fire incidents such as false alarms, food on the stove calls, and smoke scares. The 443 actual structure fires involved 264 occupied structures and 179 vacant structures. Property loss due to fire during the April 2006 to April 2007 period was in excess of \$8.1 million or an average of \$22,191 in property loss due to fire each day.⁶



⁵ Fires classified as “111 – Structure Fire” on NFIRS reports were reviewed for this report. Fires not classified as “111 – Structure Fire” were not reviewed.

⁶ Damage estimates were unavailable for 107 buildings at which fires occurred. Flint’s \$8.1 million in reported property loss in 336 buildings yields an average loss of \$24,107 per fire. Applying the average fire loss of \$24,107 to the 107 buildings lacking a damage estimate raises Flint’s total estimated property loss to \$10.6 million.

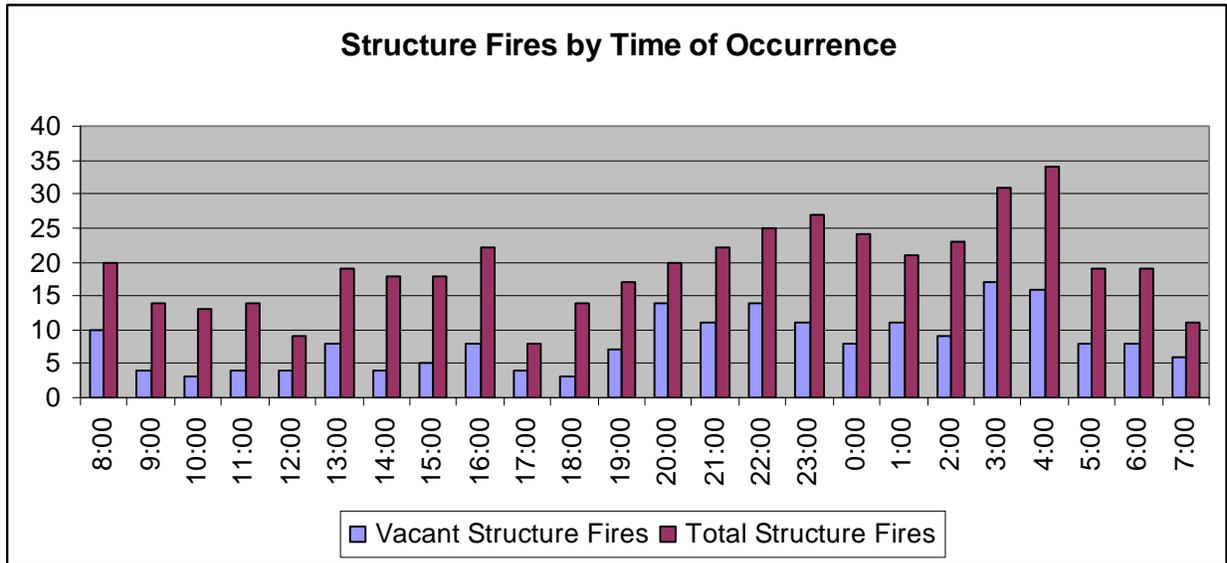
By comparison, the National Fire Protection Association reported that in 2005 the average community with a population between 100,000 and 249,999 experienced 559 fire calls resulting in 189 structure fires with a property loss of \$4.1 million.⁷



Structure fires in Flint occur predominantly at night. Out of 443 total structure fires, 307 occurred between the hours of 6:00 pm and 7:59 am. Vacant structure fires have an even higher rate of a nighttime occurrence, with 143 out of 179 vacant fires occurring between 6:00 pm and 7:59 am.

⁷ Karter, M. (2006). *Fire Loss in the United States 2005, Full Report*. NFPA, Quincy, MA

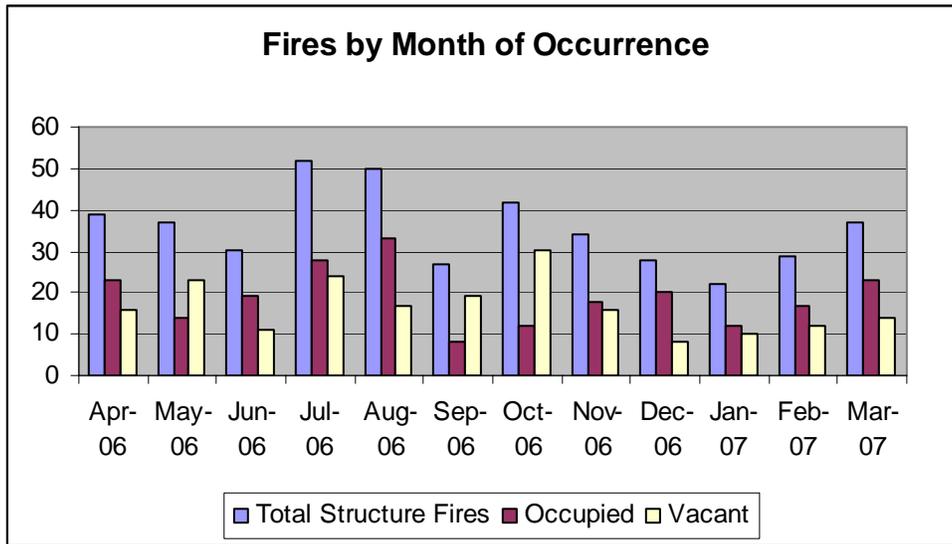
Structure fires as they occur chronologically during a standard 24-hour shift are depicted in the following chart:



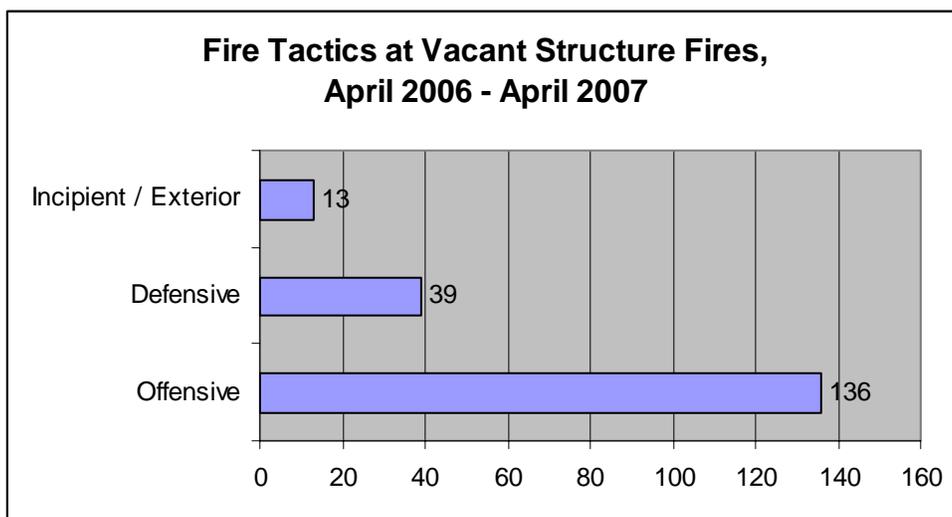
An average of 15 vacant house fires occurred each month in the City of Flint. The busiest months for vacant structure fires during the survey period were May (23), July (24), and October (30).

There were a total of 8 vacant structure fires on Devil’s Night between 6:00 pm on October 30th and 7:59 am on October 31st. 2 firefighters were injured at vacant house fires on Devil’s Night. Halloween was also a busy period, with 9 vacant structure fires occurring between 8:00 am on October 31st and 7:59 am on November 1st. 1 firefighter was injured at a vacant house fire on Halloween.

The monthly pattern of house fires is displayed in the following graph:



Fires at vacant structures were examined to determine the tactics employed to combat them. They were then classified as offensive mode, defensive mode, or incipient or exterior fires. At fires in which tactics transitioned, the incident was classified by the tactics originally initiated upon the arrival of fire crews. Fire tactics at vacant structure fires were as follows:



Firefighter Injuries

1. Overview

During the survey period of April 1, 2006 through April 1, 2007, employees of the Flint Fire Department reported 57 injuries to the Employee Health Clinic. The injuries represent a total of 5,416 hours lost due to injury at an estimated cost of \$94,633.⁸ Additional costs for any overtime required to supplement staffing shortages caused by injury was not calculated. Further, the cost incurred by the City for medical treatment of injuries was not calculated.

Injuries incurred by Fire Department personnel during the survey period were as follows:

- 34 injuries occurred during fire suppression operations
- 10 injuries occurred within a fire station
- 7 injuries occurred during EMS operations
- 3 miscellaneous injuries occurred⁹
- 2 injuries occurred due to apparatus accidents
- 1 injury occurred at a hazardous materials incident

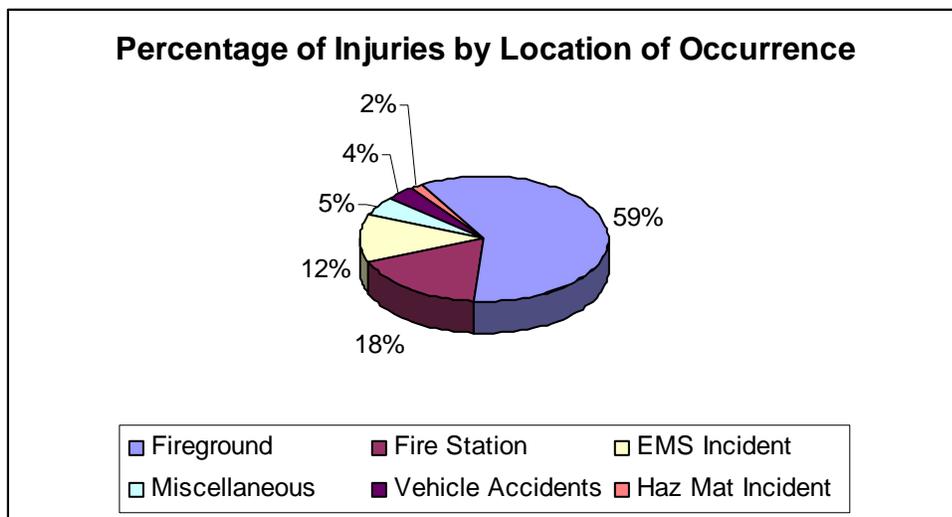
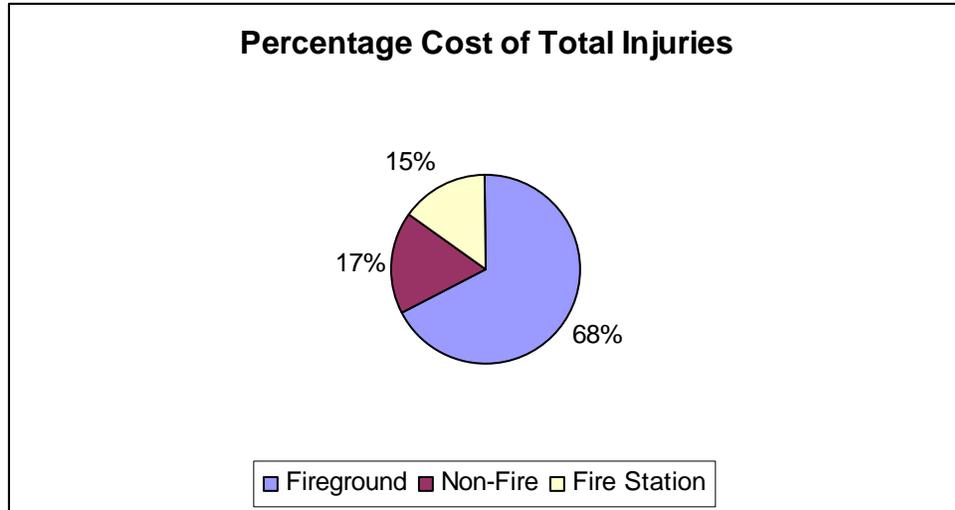
The cost of injuries and lost hours is represented in the table below. Not all injuries listed above resulted in time lost.

<u>Location</u>	<u>Hours Lost</u>	<u>Estimated Cost</u>
Fireground	3,880	\$63,692 ¹⁰
Non-Fire Incident	760	\$16,435
Fire Station	776	\$14,506
Total	5,416	\$94,633

⁸ Injury hours are based on MI-OSHA 300 and MI-OSHA 301 forms provided by the Employee Health Clinic. Injury cost was calculated by multiplying the injured employee's pay rate by the hours lost to injury.

⁹ One firefighter suffered an animal bite, one suffered an eye injury after debris flew in the open window of the moving apparatus he was riding in, and one firefighter was exposed to a communicable disease.

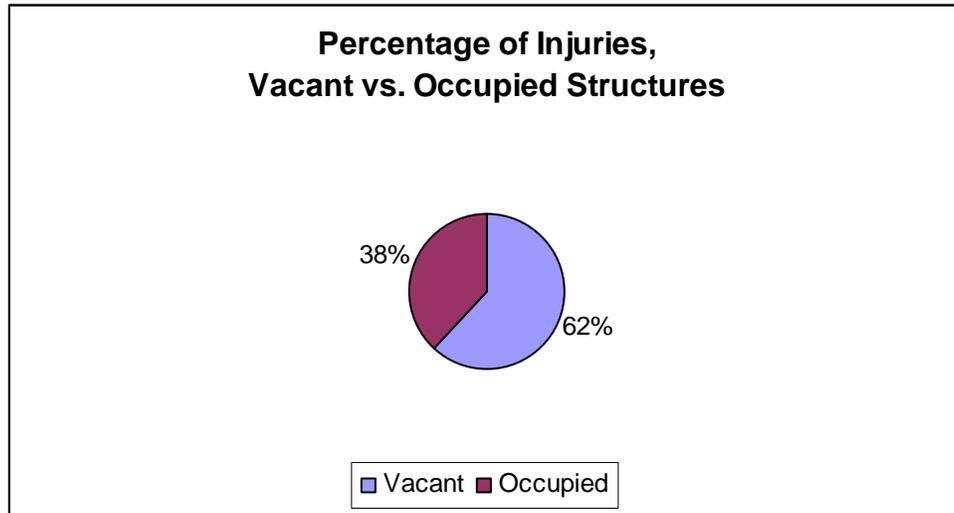
¹⁰ 7 fireground injuries were listed as resulting in no time lost on MI-OSHA 300 forms.



Firefighters suffered the following injuries during fire suppression activities:

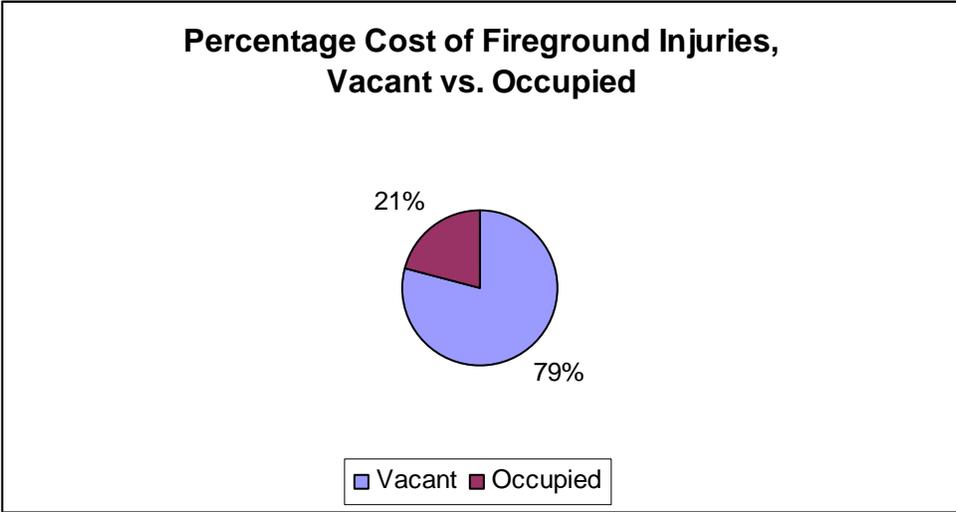
- 14 burns
- 8 strains or sprains involving an extremity
- 3 back strains
- 3 contusions to an extremity
- 2 abdominal strains
- 3 incidents of debris in the eye
- 1 puncture wound to an extremity

Fireground operations produced 21 injuries at vacant buildings. 13 injuries occurred during fires at occupied buildings.

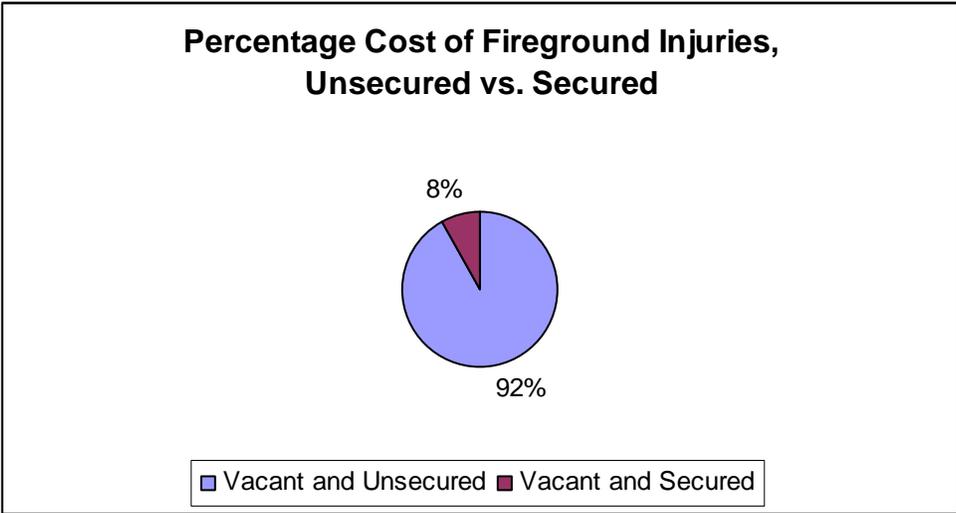


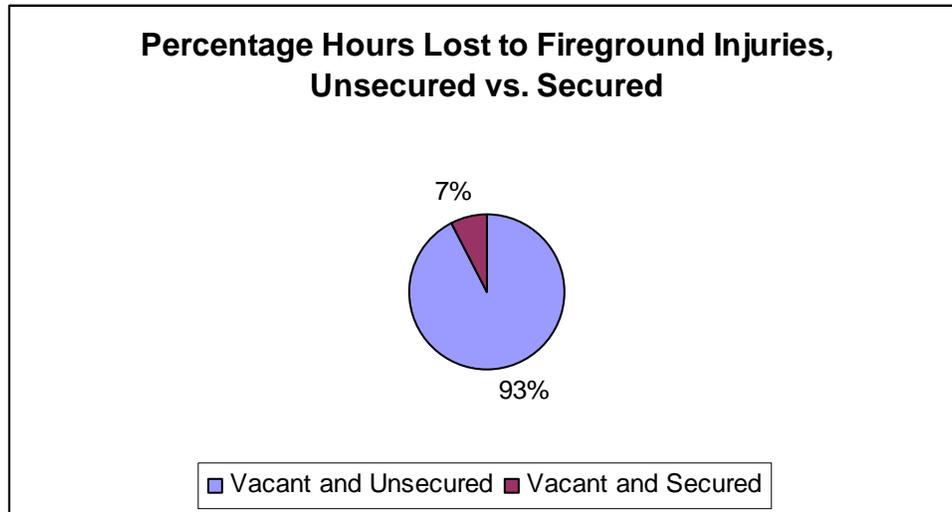
Injuries occur more frequently at vacant structure fires and have a higher degree of severity. The cost due to injuries at vacant buildings was \$50,431 for 3,112 hours lost. Injuries at vacant buildings accounted for 53% of the Department's total cost for all injuries combined. Injuries at vacant buildings resulted in an average cost of \$2,401 and 148 hours lost per occurrence.

By comparison, the cost of injuries suffered at occupied buildings was \$13,261 for 768 hours lost. Injuries at occupied buildings resulted in an average cost of \$1,020 and 59 hours lost per occurrence.



16 of the 21 injuries suffered at vacant buildings were at buildings that were vacant and unsecured (i.e., abandoned) when firefighters arrived. Injuries occurring at vacant and unsecured buildings caused 2,880 lost hours at a cost of \$46,376. Injuries at vacant and unsecured buildings accounted for 49% of the Department’s total cost for all injuries combined. The average injury at a vacant and unsecured building resulted in 180 lost hours at a cost of \$2,898.





The National Fire Protection Association reported a national average of 3.7 firefighter injuries per 100 special structure fires and 1.9 firefighter injuries per 100 structure fires in general.¹¹ The NFPA defines special structures as vacant buildings and buildings under construction.

The rate of injury for Flint firefighters is alarmingly higher than the findings in the NFPA report. During the survey period, Flint firefighters incurred an injury rate of 11.7 per 100 vacant structure fires. An injury rate of 4.9 per 100 occupied structures was incurred. The rate of injury for structure fires in general was 7.6 per 100.

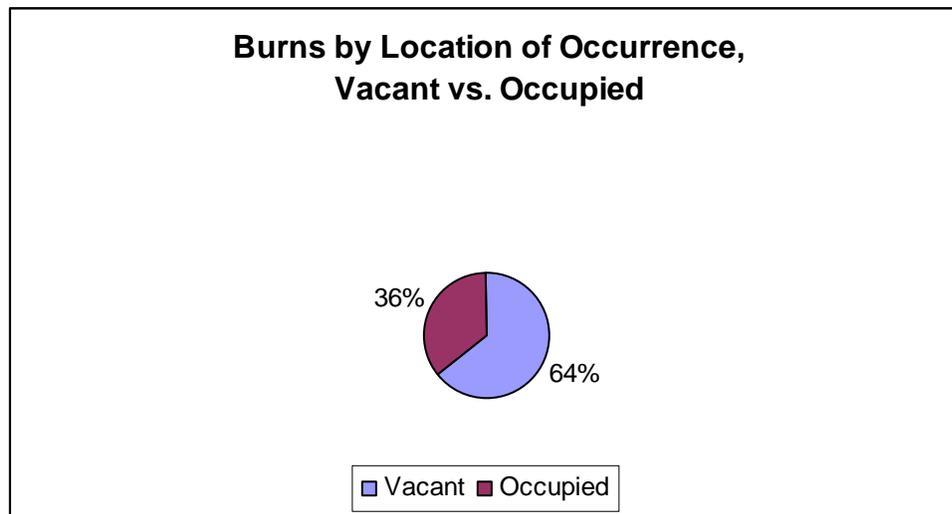
2. Specific Injuries

Injuries at vacant structure fires exceeded injuries at occupied structure fires in all but one category. 15 injuries, or 71% of the total incurred at vacant structures occurred during interior operations. The remaining 6 injuries occurred during exterior operations at vacant structures.

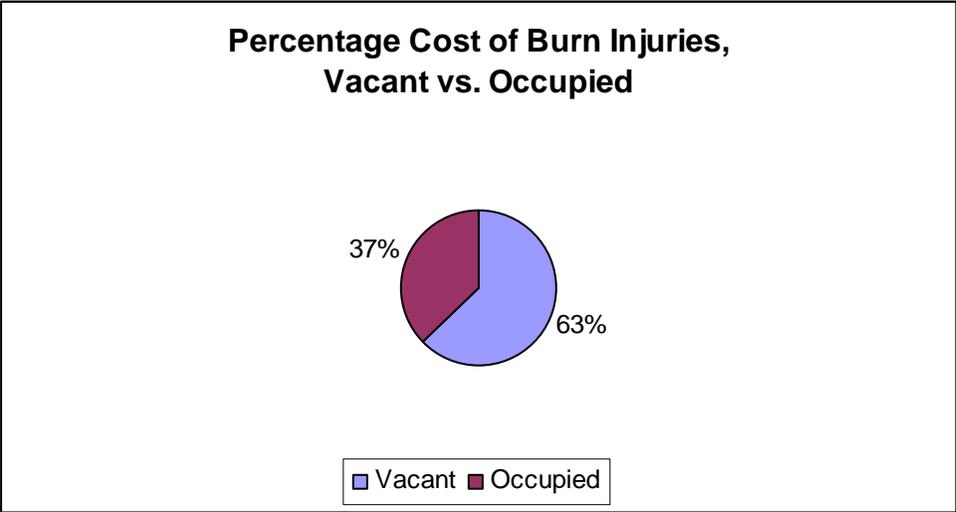
A. Burns

A total of 14 burn injuries were reported during the survey period. 9 burns were suffered at vacant building fires. Burns at vacant buildings caused a loss of 1,088 hours at a cost of \$16,165, with an average loss of 120 hours and \$1,796 per occurrence.

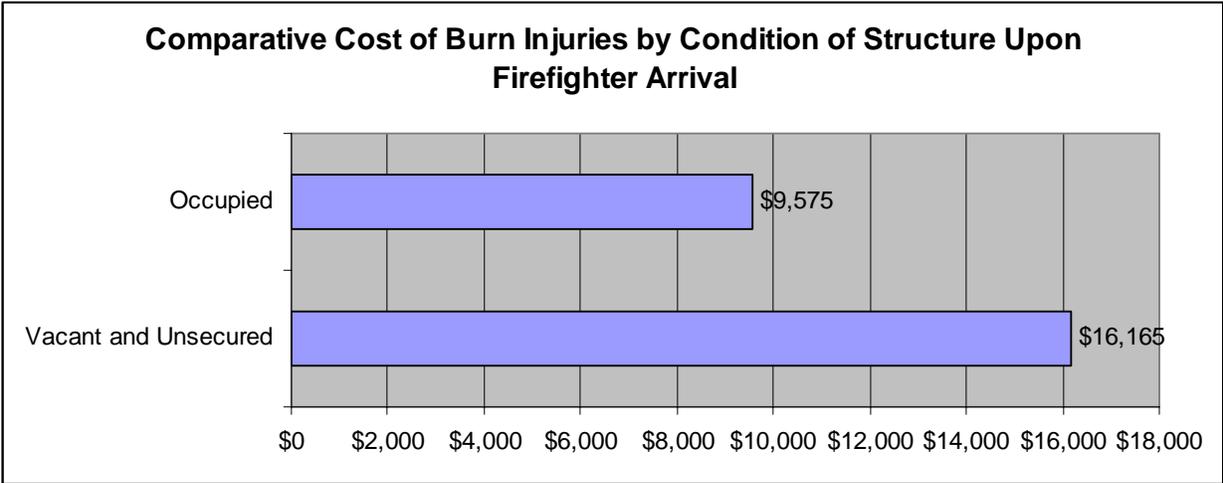
In comparison, burn injuries were suffered 5 times at occupied buildings. 552 hours were lost at a cost of \$9,575, with an average loss of 110 hours and \$1,915 per burn injury at occupied buildings.

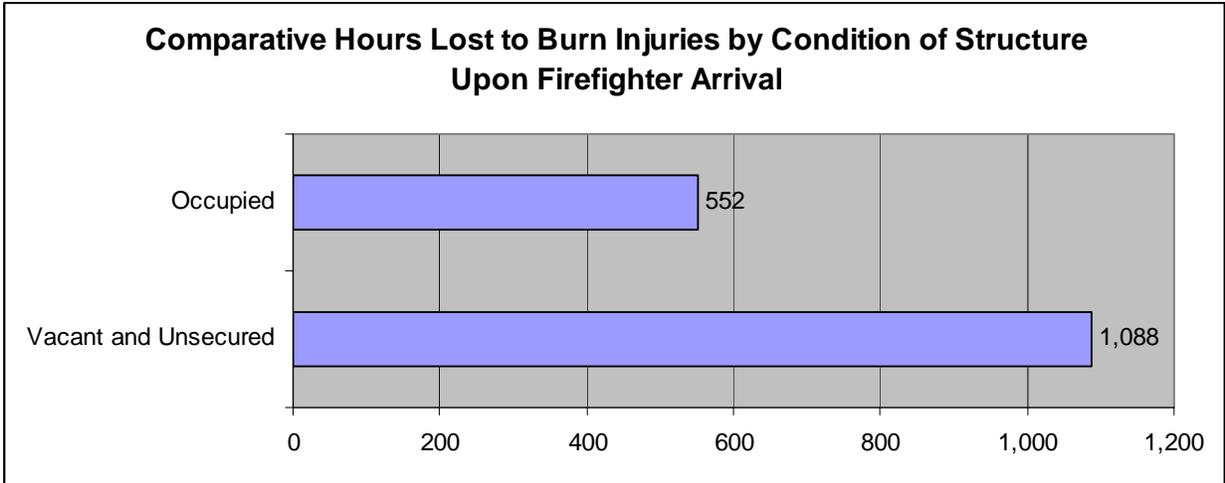


¹¹ Karter, M. (2007) *Patterns of Firefighter Fireground Injuries*. NFPA, Quincy, MA



Nine burns occurred at structure fires that were vacant and unsecured upon the arrival of firefighters. Eight of the burns occurred during offensive attacks at vacant, unsecured structures. One burn was suffered during a defensive operation at a vacant, unsecured structure.



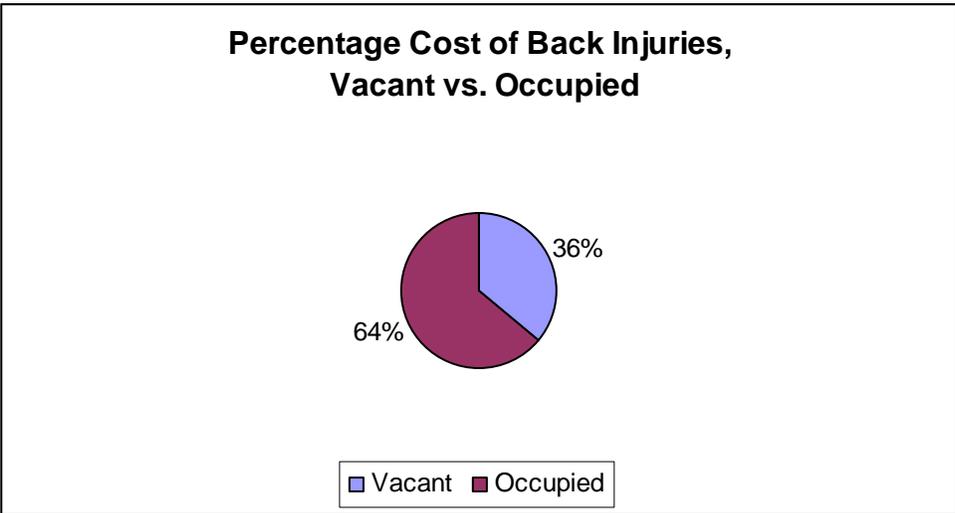
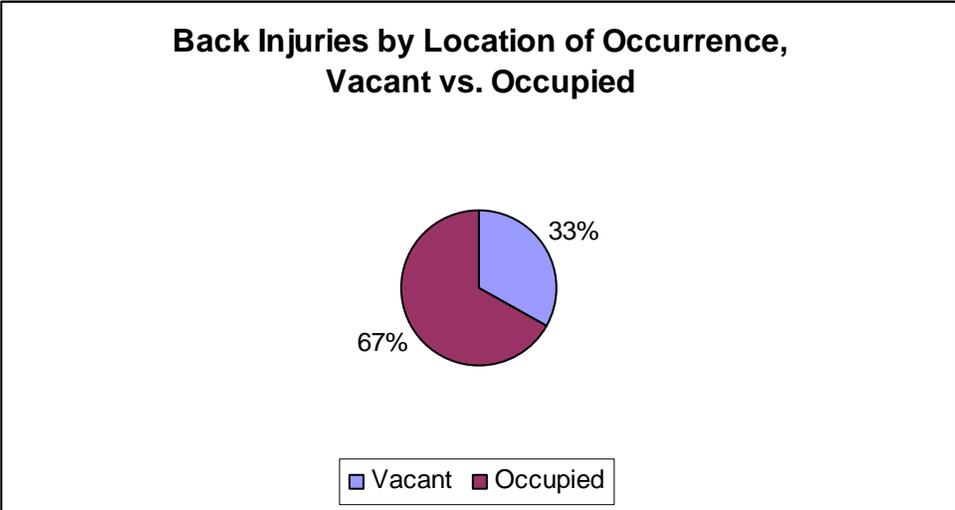


B. Falls

A total of 12 falls resulting in injury occurred during the survey period. Falls resulted in 9 injuries to extremities, 2 back injuries, and 1 abdominal injury. Time lost and cost of those injuries is addressed in the sections pertaining to extremity, back and abdominal injuries. 6 falls causing injuries occurred in vacant buildings, 4 of which occurred at vacant and unsecured buildings.

C. Back Injuries

Three back injuries were reported during the survey period. 1 occurred at a vacant structure fire due to overexertion. 2 occurred at occupied house fires after a fall. The back injury at the vacant house resulted in 48 hours lost at a cost of \$920. The back injuries at occupied houses resulted in 96 lost hours at a cost of \$1,659.



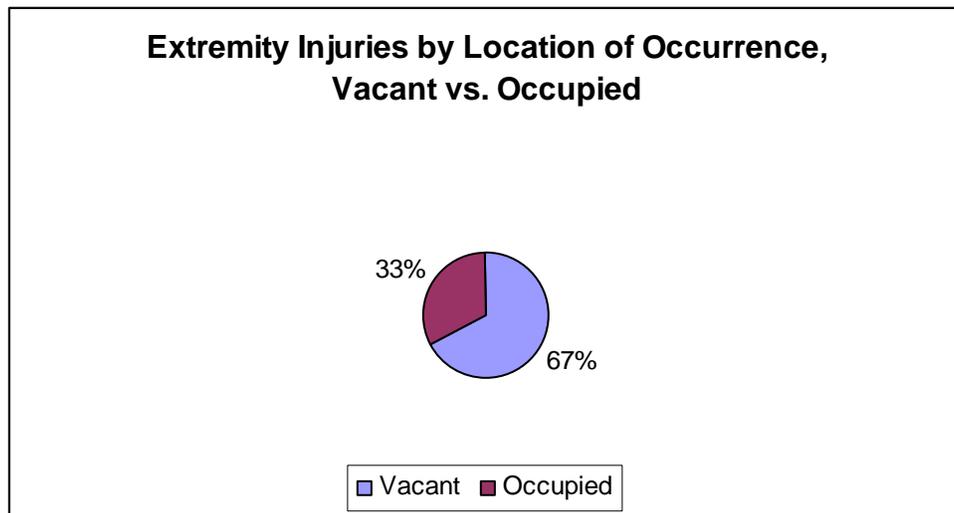
Back injuries represent the only category of injury in which the frequency, cost, and lost hours from injuries that occurred in occupied buildings exceeded that which occurred in vacant buildings.

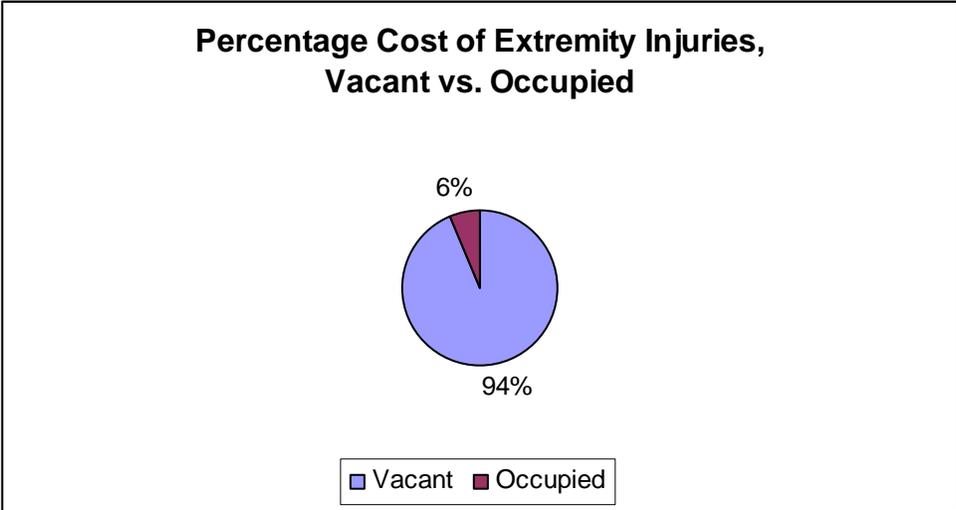
D. Abdominal Injuries

Two abdominal injuries were reported. Both occurred at secured vacant buildings. One was caused by a fall, with the other being caused by overexertion. Abdominal injuries resulted in 144 hours lost at a cost of \$2,569.

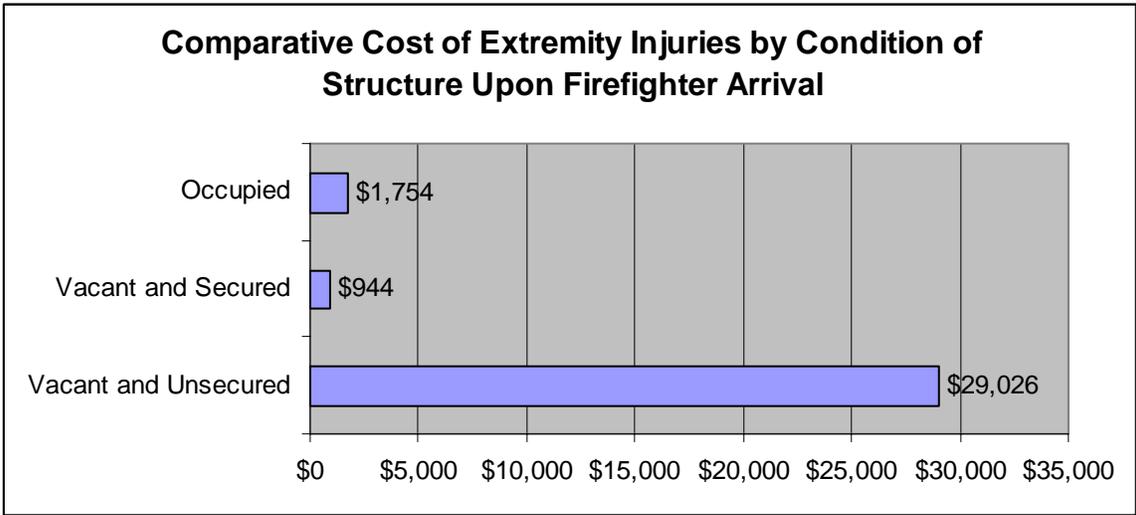
E. Extremity Injuries (excluding burns)

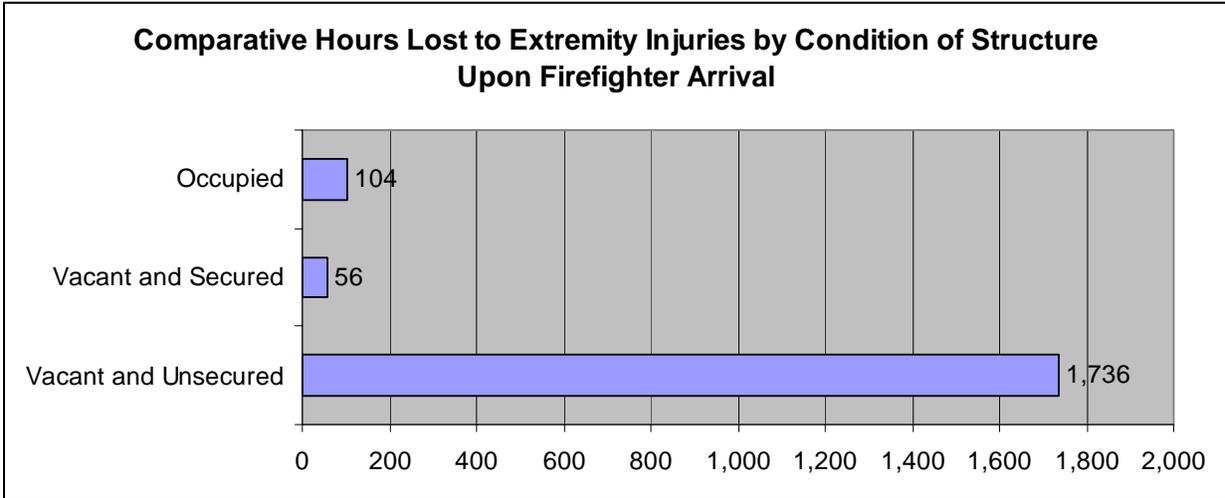
12 injuries to extremities were reported. They consist of 1 foot puncture wound, 3 contusions to an extremity, and 8 strains or sprains of an extremity. 7 extremity injuries at vacant house fires resulted in 1,792 lost hours at a cost of \$29,971. 5 extremity injuries at occupied house fires resulted in 104 lost hours at a cost of \$1,754.





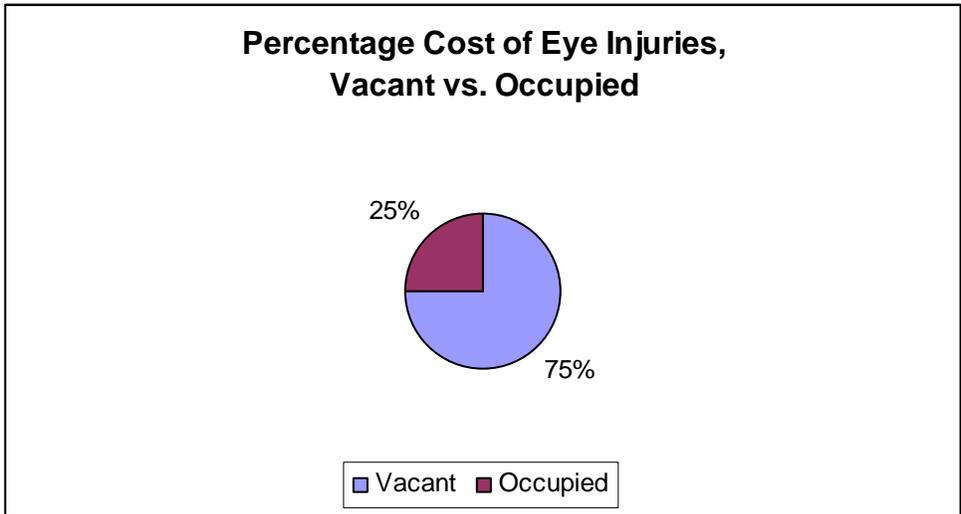
5 extremity injuries occurred at structure fires that were vacant and unsecured upon the arrival of firefighters. Extremity injuries at vacant and unsecured structures caused 1,736 lost hours at a cost of \$29,026. Extremity injuries at vacant and secured structures caused 56 lost hours at a cost of \$944. Extremity injuries at vacant and unsecured structures accounted for 97% of cost and 91% of lost hours. The comparative cost and lost hours due to extremity injuries at structure fires is depicted below:





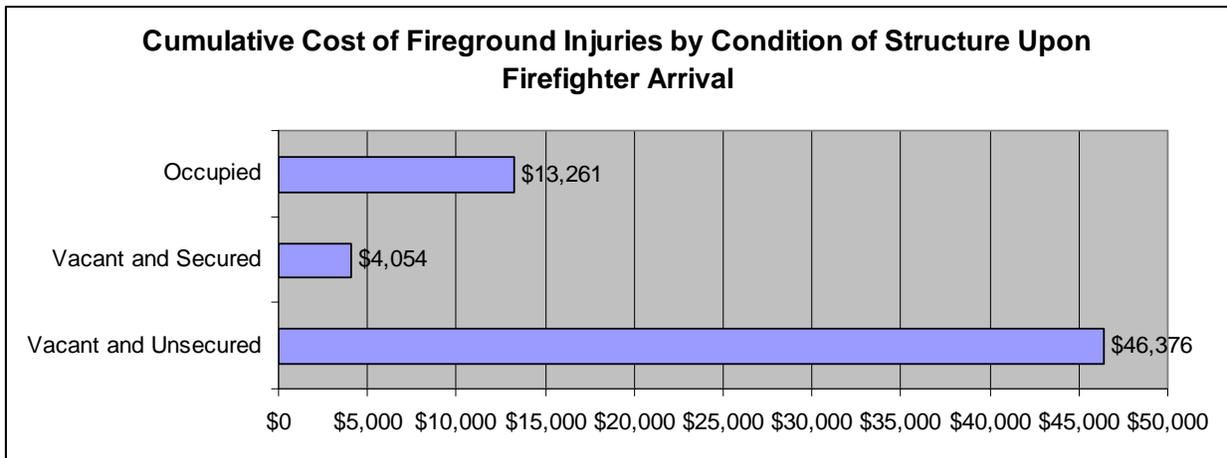
F. Eye Injuries

Firefighters suffered three instances of debris in the eye at structure fires. 2 of the injuries occurred at vacant house fires. Eye injuries at vacant houses resulted in 40 hours of lost time at a cost of \$798. One eye injury occurred at a vacant and unsecured house. The eye injury occurring at an occupied house resulted in 16 hours of lost time at a cost of \$269.

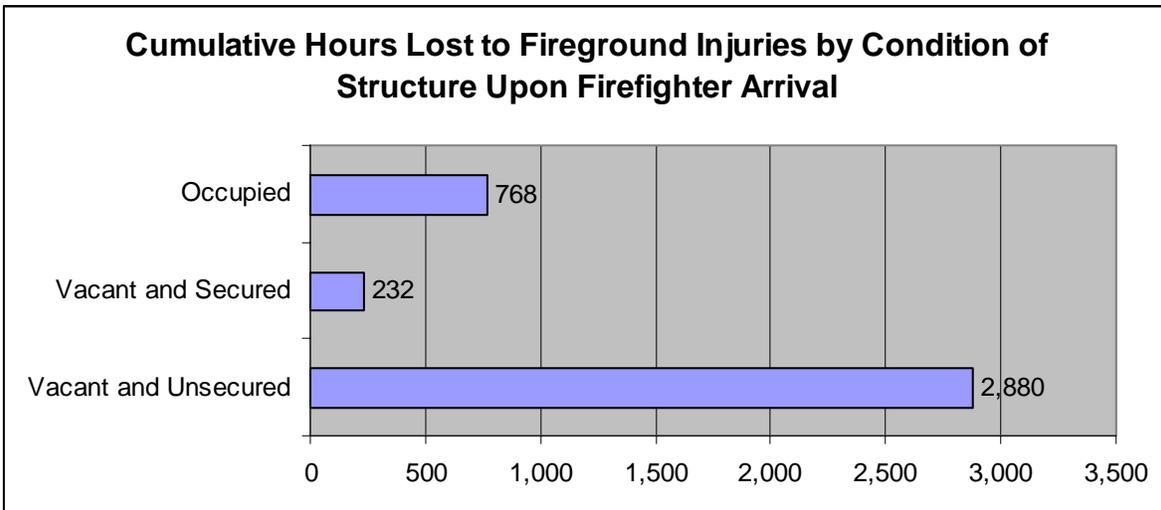


3. Injuries at Vacant and Unsecured Houses

Fire incidents at buildings that were found vacant and unsecured upon firefighter arrival caused by far the most injuries, most lost hours, and highest cost. Many of these structures were open and abandoned and presented advanced fire conditions when firefighters arrived. The cumulative cost of fireground injuries is shown below:



The cumulative hours lost to fireground injuries is shown below:



Results of Firefighting Efforts at Vacant Structures

Firefighters enter burning structures with two goals – to save lives (life safety) and to preserve property. The City of Flint had two issues of civilian life safety at vacant structure fires during the survey period. The two incidents involving civilian life safety represent 1.1% of total vacant structure fires.

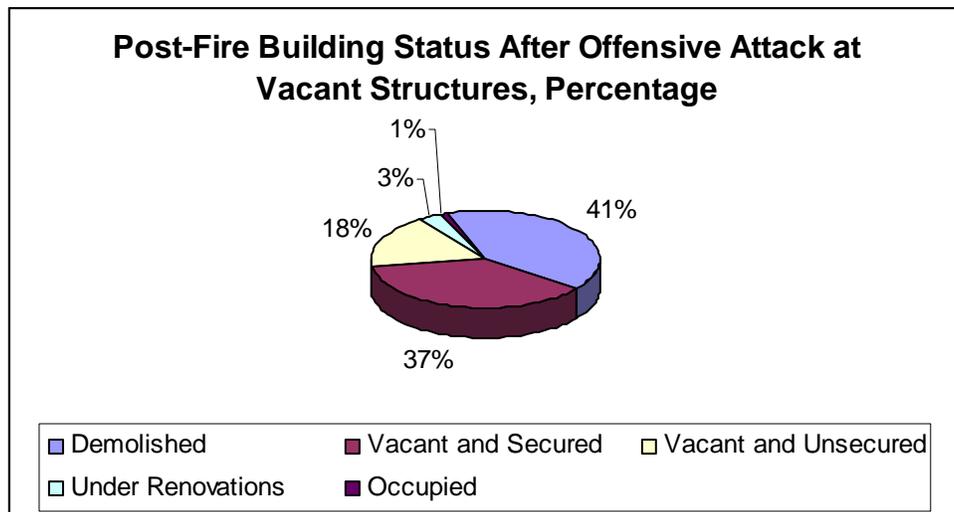
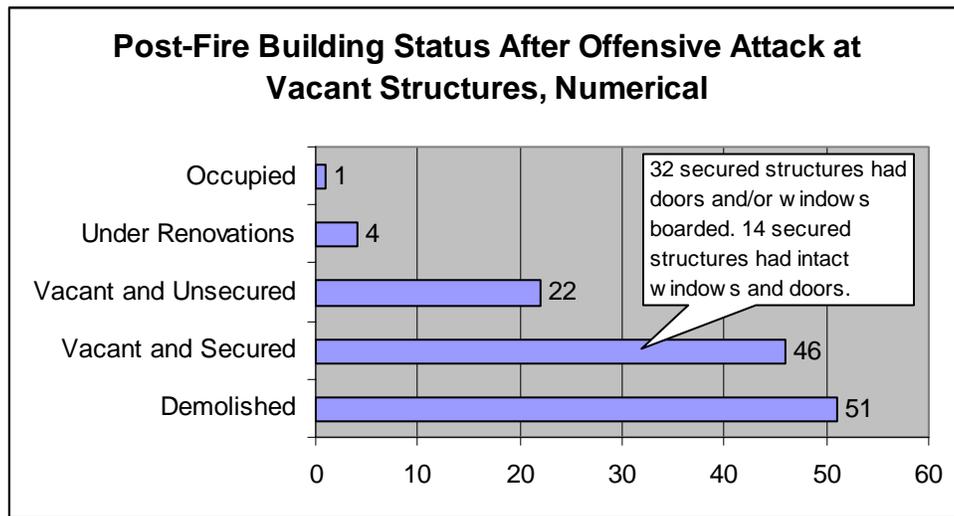
In the first incident, firefighters arrived to find a vacant two-story house fully involved in fire. Defensive operations were initiated. Reports were received from bystanders that a vagrant might be inside the building. Despite the appearance that the fire would be non-survivable for anyone inside, fire crews then made an interior attack into poor conditions. They encountered structural instability on the stairway and noted the fire was growing despite their suppression efforts. Crews were withdrawn from the building and defensive operations were resumed. Several hours after extinguishment, the remains of a civilian were discovered in the basement.

In the second incident, firefighters arrived to find a vacant two-story house with fire emanating from one room on the second floor. No reports of persons trapped within the building were made to fire crews or the 911 Center. Fire crews initiated an interior attack and successfully rescued two injured civilians, one conscious and one unconscious, who were found on the second floor and whose means of escape down the stairway had been blocked by the fire.

With life safety issues discussed, the effect of firefighting in vacant structures as it relates to property conservation is indicated. Firefighters made offensive attacks into 136 vacant buildings during the survey period. Between April 30, 2007 and May 6, 2007, site surveys were conducted at each vacant building that received an offensive attack to determine if the building was now occupied, under renovation, vacant and secured, vacant and unsecured, or demolished.

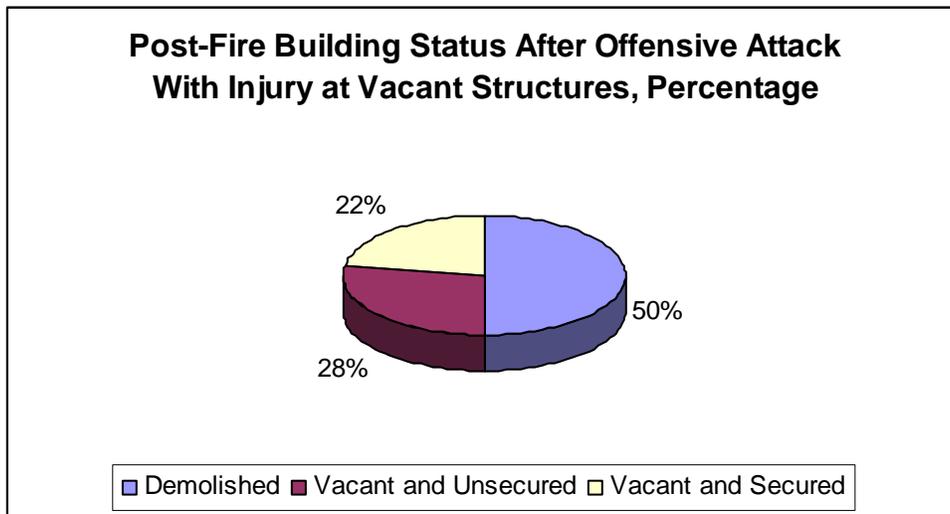
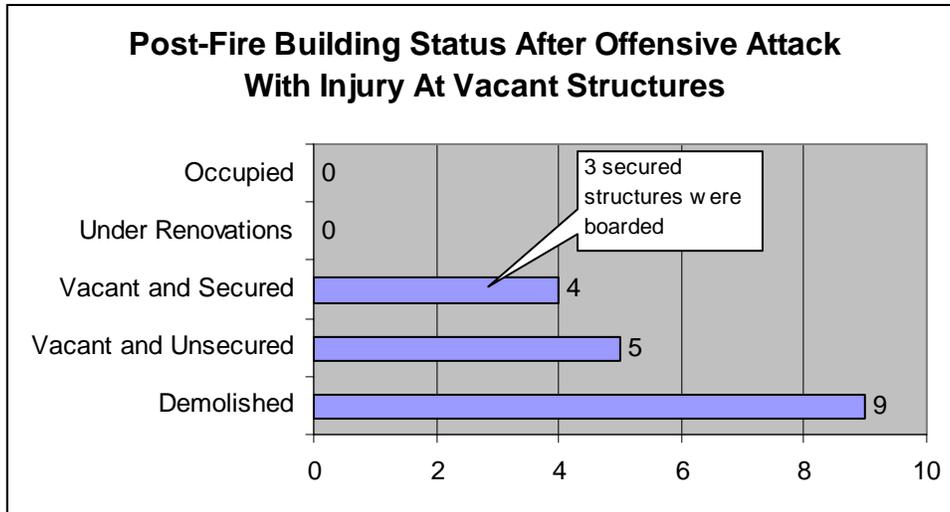
The results, when viewed in the context of the frequency and severity of firefighter injuries occurring at vacant structures, can only be described as discouraging.

For statistical purposes, the status of a building was counted once even though it may have been the subject of multiple responses. The post-fire building status of vacant structures receiving an offensive attack during the survey period is represented in the following graph and chart:



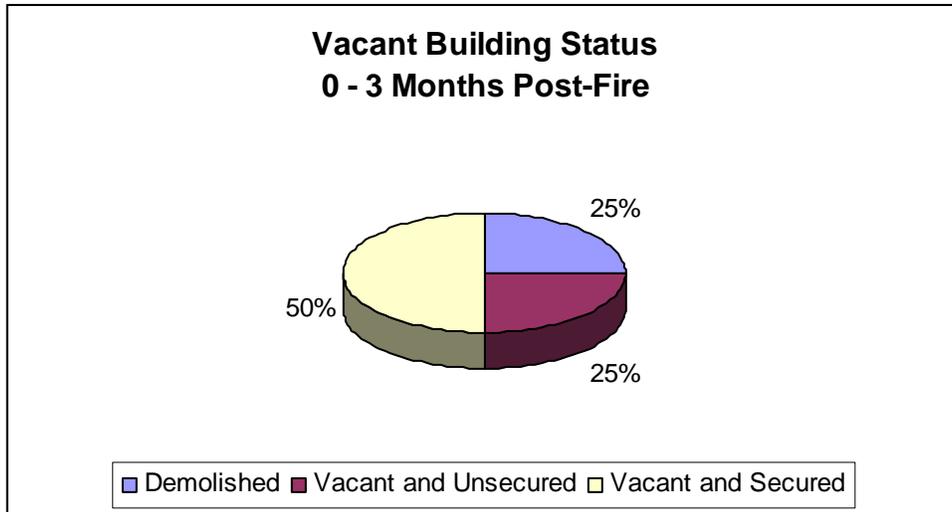
18 firefighter injuries occurred during offensive operations at vacant buildings. One vacant building caused 2 injuries. 100% of those buildings are demolished or vacant. The status

of the 18 vacant buildings in which a firefighter was injured during an offensive attack was as follows:

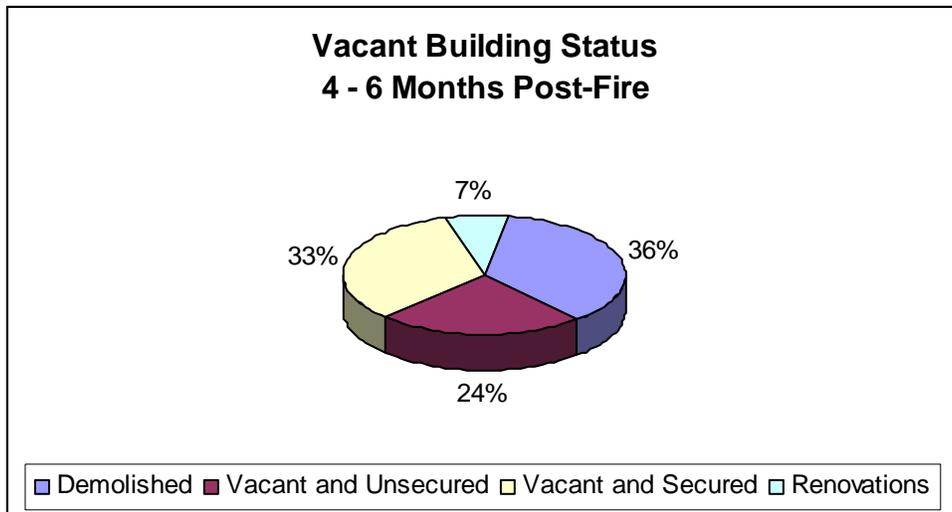


The passage of time after a fire does have an effect on building status. 100% of vacant structures experiencing a fire at which offensive attacks were made within the last 0 - 3 months are demolished or vacant. 95% of vacant structures experiencing a fire at which an offensive attack was made within the last 4 - 6 months are demolished or vacant. 91% of vacant structures experiencing a fire at which an offensive attack was made within the last 7 - 9 months are demolished or vacant. 100% of vacant structures experiencing a fire at which an offensive attack

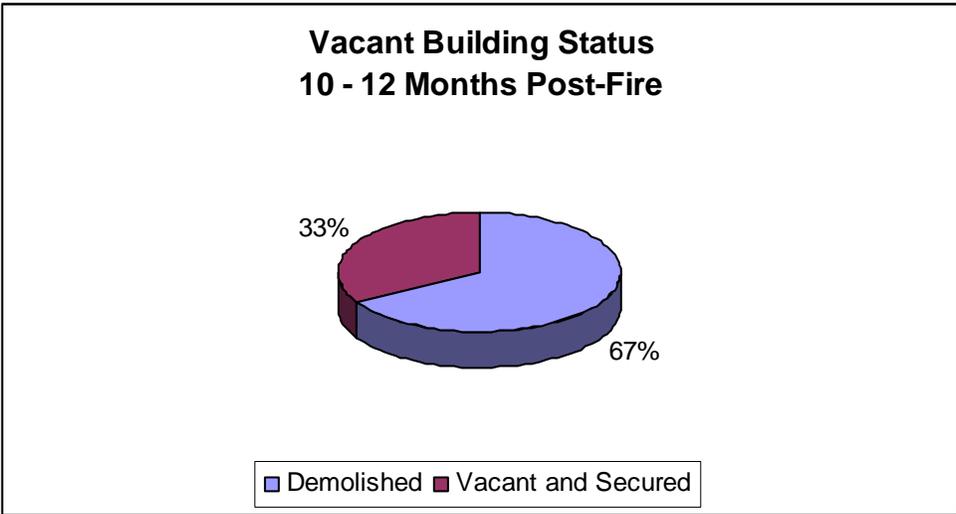
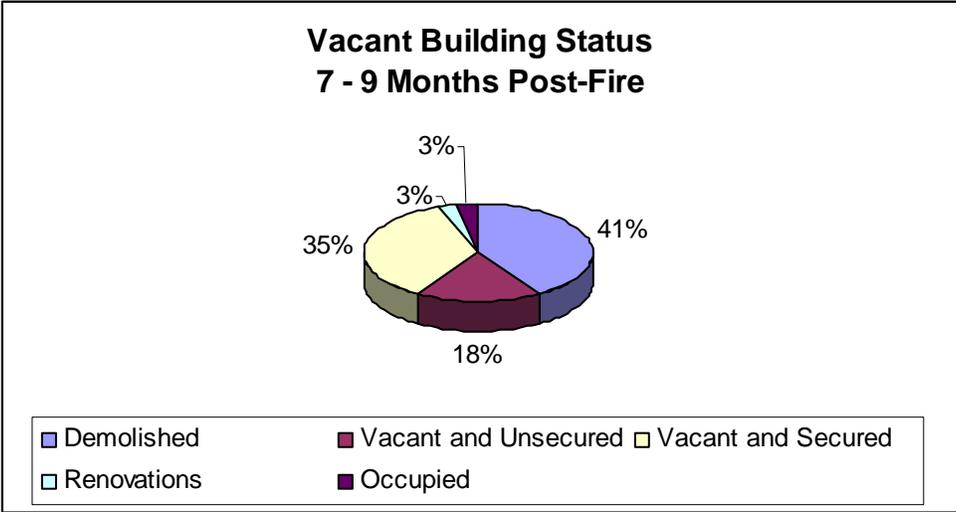
was made within the last 10 - 12 months are demolished or vacant. The effect of time following a fire and its effect on building status is shown in the following charts:



No buildings were found to be occupied or under renovations within 0 to 3 months after their fire incident.



No buildings were found to be occupied within 4 to 6 months after their fire incident.



No buildings were found to be vacant and unsecured, occupied, or under renovations within 10 to 12 months after their fire incident.

Examples from Site Surveys



An occupied house at 2209 North Chevrolet. Fire occurred here on July 11, 2006. The house was vacant at the time of the fire. No firefighters were injured.



A vacant house undergoing renovations at 939 Pettibone. Fire occurred here on October 31, 2006. No firefighters were injured.



A vacant house at 2106 Dakota undergoing renovations. Fire occurred here on August 16, 2006. No firefighters were injured.



A vacant and secured house at 609 East Pasadena. Fire occurred here on January 13, 2007 and on January 14, 2007. No firefighters were injured.



A vacant and unsecured house at 142 East Lorado. Fire occurred here on March 28, 2007. Defensive measures were initially used followed by interior overhaul. No firefighters were injured. The house is scheduled for emergency demolition.



A vacant and unsecured house at 424 Thomson. Fire occurred here on March 4, 2007. One firefighter suffered a burn.



A vacant lot at 1405 Defreest. Fire occurred here in a vacant and unsecured house on October 15, 2006. Two firefighters suffered burns.



The foundation of 209 West Baker. Fire occurred here in a vacant and unsecured house on March 26, 2007. One firefighter suffered a burn during an offensive attack. At a subsequent fire on April 18, 2007, one firefighter suffered a shoulder injury during a defensive operation.

NFPA 1500

Fire Department Occupational Safety and Health is the subject of NFPA 1500. Chapter 8 of NFPA 1500 deals with Emergency Operations. In the context of the Flint Fire Department's injury rate at vacant buildings and the ongoing status of those buildings after fire incidents, NFPA 1500 provides the following guidance:

- Emergency operations and other situations that pose similar hazards, including but not limited to training exercises, shall be conducted in a manner that recognizes hazards and prevents accidents and injuries.¹²
- The incident commander shall integrate risk management into the regular functions of incident command.¹³
- The concept of risk management shall be utilized on the basis of the following principles:
 1. Activities that present a significant risk to the safety of members shall be limited to situations where there is a potential to save endangered lives.
 2. Activities that are routinely employed to protect property shall be recognized as inherent risks to the safety of the members, and actions shall be taken to reduce or avoid these risks.
 3. No risk to the safety of members shall be acceptable when there is no possibility to save lives or property.¹⁴
- The incident commander shall evaluate the risk to members with respect to the purpose and potential results of their actions in each situation.¹⁵

¹² NFPA 1500 § 8.1.1

¹³ NFPA 1500 § 8.2.1

- In situations where the risk to members is excessive, as defined by 8.2.2, activities shall be limited to defensive operations.¹⁶
- The risk to fire department members is the most important factor considered by the incident commander in determining the strategy that will be employed in each situation.¹⁷
- When considering risk management, fire departments should consider the following Rules of Engagement:
 1. What is the survival profile of any victims in the involved compartment?
 2. We will not risk our lives at all for buildings or lives that are already lost.
 3. We may only risk our lives a little, in a calculated manner, to save savable property.
 4. We may risk our lives a lot, in a calculated manner, to save savable lives.¹⁸
- The acceptable level of risk is directly related to the potential to save lives or property. Where there is no potential to save lives, the risk to fire department members should be evaluated in proportion to the ability to save property of value. When there is no ability to save lives or property, there is no justification to expose fire department members to any avoidable risk, and defensive fire suppression efforts are the appropriate strategy.¹⁹

¹⁴ NFPA 1500 § 8.2.2

¹⁵ NFPA 1500 § 8.2.3

¹⁶ NFPA 1500 § 8.2.3.1

¹⁷ NFPA 1500 § A.8.2.2

¹⁸ NFPA 1500 § A.8.2.2

¹⁹ NFPA 1500 § A.8.2.3

Negligent Firefighting and Case Law

Flint firefighters have expressed concerns that the City and individual firefighters could be sued in cases of defensive mode operations at structure fires. Incidents in which a civilian may be inside a structure at which defensive mode operations are used raise even more serious concerns. Cases have been decided in favor of firefighters and municipalities in similar incidents.

The issue of negligent firefighting has been brought before courts in Michigan recently. In the case of *Dean v. Childs*, 262 Mich. App. 48; 684 N.W.2d 894 (2004) rev'd in part 474 Mich. 914; 705 N.W.2d 344 (2005), the mother of four children tragically killed in a house fire brought suit against the Township of Royal Oak and a firefighter. An arson fire occurred at the plaintiff's residence. She safely escaped. The fire involved the front portion of the house and the children were trapped in the rear of the house. The defendant firefighter was first to arrive. The plaintiff alleged that he was grossly negligent in that he used a hydrant approximately one block away from the fire instead of a hydrant directly in front of the building. She further alleged that he was grossly negligent in ordering hoses to be put into operation at the front of the house, forcing heat and smoke to the back of the house where the children were trapped and other firefighters were attempting rescue. She claimed gross negligence against the defendant firefighter. The case was extensively litigated with multiple appeals. The Supreme Court of Michigan, in *Dean v. Childs*, 474 Mich. 914; 705 N.W.2d 344 (2005) remanded the case back to the trial court for an entry of summary disposition in favor of the defendant firefighter, thereby dismissing the case. In its decision, the Supreme Court relied on a dissenting opinion from a Court of Appeals judge in the 2004 *Dean* case as follows:

“After reviewing the facts in a light most favorable to plaintiff, I conclude the most immediate, efficient, and direct cause of the tragic deaths of plaintiff's children was

the fire itself, not defendant's alleged gross negligence in fighting it.” *Dean v. Childs*, 262 Mich. App. 48 at 61, 684 N.W.2d 894 (2004).

In the case of *Love v. City of Detroit*, 270 Mich. App. 563; 716 N.W.2d 604 (2006), a fire occurred in an occupied house. Several occupants escaped, but four children were unable to be rescued and perished. The representative of the estates of the children brought suit against the City of Detroit and 71 individual members of the Detroit Fire Department. She alleged “that the individual defendants acted in a grossly negligent manner by failing to timely respond to the fire and failing to take effective steps to rescue the trapped individuals.” *Id.* at 605. The Court of Appeals ruled in favor of the defendants based on governmental employee immunity established in MCL 691.1407(2), which reads:

“Governmental employees are immune from liability for injuries they cause during the course of their employment if they are acting or reasonably believe they are acting within the scope of their authority, if they are engaged in the exercise or discharge of a governmental function, and if their conduct does not amount to gross negligence that is the proximate cause of the injury or damage”. *Id.*

Gross negligence is defined as “conduct so reckless as to demonstrate a substantial lack of concern for whether an injury results.” MCL 691.1407(7)(a). “In order for gross negligence to become the proximate cause of the injury or damage, thereby superseding the initial cause, the gross negligence must be the one most immediate, efficient, and direct cause preceding the injury.” *Love*, supra at 606, citing *Robinson v. Detroit*, 462 Mich. 439 at 462; 613 N.W.2d 307 (2000). The court further held that:

“[N]o evidence established that the firefighters could have reached the victims, or that, if firefighters had acted more aggressively, the victims would have been rescued. The firefighters’ actions did not constitute the proximate cause of the decedent’s deaths.” *Love*, supra at 606.

In *Frame v. Royal Oak Township Fire Department*, 2003 Mich. App. LEXIS 1894²⁰, the plaintiff left his daughter at home in care of his landlady. The house was on fire when he returned and his daughter was trapped inside. He brought suit against the fire department, two individual firefighters, the Township supervisor, the Oakland County Sheriff's Department, the Sheriff, and two deputies. Firefighters experienced problems in connecting fire hose and there was an allegedly long delay in placing water on the fire. The plaintiff claimed that the firefighters were negligent and reckless in their attempts at extinguishment, in their attempts at rescuing the trapped child, and in operating the fire truck. The Township claimed governmental immunity under MCL 691.1407. The plaintiff argued in response that the firefighters' operation of the fire truck established the motor vehicle exception to governmental immunity²¹ thereby allowing the Township and firefighters to be held liable. The Court of Appeals disagreed, citing a prior Supreme Court decision establishing that the motor vehicle exception to governmental immunity applies only to the ordinary use of the vehicle, such as driving.²² The Court of Appeals ruled in favor of the defendants, holding that:

“[P]laintiff alleged that defendants lacked training, improperly maintained the fire truck, and negligently used the fire truck's hoses to extinguish a fire. Training, maintenance, and use of fire hoses are not ordinary uses of the vehicle as a motor vehicle.” *Frame*, supra at 14.

A search of the LEXIS legal database yielded no cases of negligent firefighting involving the Flint Fire Department. However, two negligence cases filed against the City of Flint and Flint Fire Department employees have been recently decided which did not involve firefighting. They serve to further illustrate the concept of governmental immunity with a local context.

²⁰ *Frame v Royal Oak Township Fire Department*, 2003 Mich. App. LEXIS 1894 is an unpublished opinion and is not precedentially binding.

²¹ See MCL 691.1405

²² See *Roy v Dep't of Transportation*, 428 Mich. 330, 338; 408 N.W.2d 783 (1997).

First, in *Curtis v. City of Flint*, 253 Mich. App. 555; 655 N.W.2d 791 (2002), a plaintiff brought suit against the City and a firefighter. The firefighter was driving a department vehicle on an emergency run. As the firefighter approached an intersection, a civilian driver pulled over to stop. The plaintiff's car then struck that civilian driver's car, causing injury to the plaintiff. The fire department vehicle was not involved in the collision. The plaintiff alleged that the firefighter was grossly negligent in the operation of the emergency vehicle and thus was the cause of the plaintiff's injuries. The Court of Appeals disagreed, and found that the firefighter was not grossly negligent and that he followed standard emergency vehicle driving guidelines in approaching and passing through the intersection. The Court ruled that, since there was no collision or forcing of the plaintiff's vehicle from the roadway by the firefighter, the cause of the plaintiff's injuries was the abrupt stop of the other civilian's vehicle. The case was dismissed in favor of the City and the firefighter.

Second, in *Younger v. City of Flint*, 2005 Mich. App. LEXIS 622²³, a plaintiff brought suit against the City and three dispatchers. A domestic disturbance occurred at the plaintiff's residence involving a man threatening other family members with a knife. Residents placed several 911 calls for police assistance. Prior to the arrival of police, the threatening man was shot and killed by another family member. The plaintiff alleged that the dispatchers were grossly negligent in handling the 911 calls, and that their alleged delay in dispatching police allowed the situation to escalate resulting in the subsequent homicide. The City of Flint was dismissed as a defendant. The court ruled in favor of the dispatchers based on governmental immunity, holding that "it was the family member or members responsible for the final escalation of aggression who constituted the proximate cause of those injuries." *Id.*, supra at 5.

²³ *Younger v. City of Flint*, 2005 Mich. App. LEXIS 622 is an unpublished opinion and is not precedentially binding.

Two out-of-state cases involving negligent firefighting are worthy of examination. While these cases have no mandatory authority as a legal precedent in Michigan, they provide an interesting look at how courts in other jurisdictions have ruled on this issue.

First, in *Cyran v. Ware*, 413 Mass. 452, 597 N.E.2d 1352 (1992), a plaintiff property owner brought suit against the Town of Ware, Massachusetts, alleging that the town's firefighters were grossly negligent in fighting a fire at the plaintiff's residence. The Massachusetts Supreme Court dismissed the case. In its decision, the Court held:

“Society would not favor, and public policy does not support, a rule which would expose a municipality to liability for damages every time its fire department does not, in a plaintiff's view, fight a fire satisfactorily. In busy urban areas such exposure could be limitless, and in extreme circumstances...the potential cost of such governmental liability could be catastrophic.” *Id.* at 455.

Second, in *Dahlheimer v. City of Dayton*, 441 N.W.2d 534 (Minn. Ct. App., 1989), a plaintiff property owner brought suit against the City of Dayton, Minnesota, alleging gross negligence by firefighters who initiated offensive operations at a barn fire and later switched to defensive operations. The barn was destroyed. The court ruled in favor of the City of Dayton, holding that:

“It is inappropriate for a jury or court to second-guess a complicated decision made during a fire because it would submit the tactical decisions of fire chiefs to the monetary and psychological threats of litigation. Such after-the-fact scrutiny would require that courts and juries dictate firefighting strategy, the amount of equipment deployed, and services offered by municipalities. This extensive interference could undermine municipalities' willingness to provide important public services.” *Id.* at 537.

Vacant Building Ordinances in Other Cities

Vacant buildings are a problem that afflicts cities all across the United States. Flint and the Genesee County Land Bank are making great headway towards the elimination of vacant and abandoned property. The following examples illustrate how other cities are dealing with vacant property through ordinances, some of which specifically address firefighter safety.

- Wilmington, Delaware requires owners of vacant property to register the property with the city. Registration is required for residential property that has been vacant for 45 days or more. Registration requires payment of a fee which escalates depending on how long the building remains vacant. Buildings that have been vacant for more than one year but less than two years are charged \$500. The fee rises to \$1,000 for a building remaining vacant more than 2 years, to \$2,000 for a building remaining vacant more than 3 years, \$3,500 for a building remaining vacant more than 5 years, and \$5,000 for a building remaining vacant more than 10 years. \$5,000 is charged plus \$500 per year after ten years of vacant status.²⁴ Wilmington's ordinance was upheld by the Delaware Supreme Court after a property owner challenged it.²⁵
- Burlington, Vermont requires the owner of property that is vacant for more than 90 days to apply for a permit detailing the expected period of vacancy and a timeline for re-occupancy, rehabilitation, or demolition. The owner is responsible to arrange inspections that ascertain whether repairs are needed, whether the building is a danger to the public, and whether the building is safe for firefighters and police officer to

²⁴ Wilmington Code of Ordinances § 4-125

²⁵ *Adile, Inc. v. City of Wilmington*, 2005 Del. LEXIS 192. See also *Adile, Inc. v. City of Wilmington*, 2004 Del. Super. LEXIS 384.

enter. A quarterly fee of \$500 is charged for inspections. Owners failing to make a property safe can be fined \$50 per day.²⁶

- An ordinance in Chicago, Illinois focused on vacant, open buildings. Chicago Police are authorized to cite owners of vacant open property who do not take steps to secure the property. Fines for non-compliance are \$1,000 per day with a cap of \$50,000. Open buildings are required to have an interior and exterior inspection by the Building Department. Legal action is taken in situations where the owner or property remains non-compliant.²⁷
- Ypsilanti, Michigan has enacted an ordinance in which owners of vacant property are required to register the structure with the city. The Building Department and Fire Marshal conduct periodic inspections of all registered vacant buildings within the city. One aspect of inspection is whether firefighters can conduct safe operations within the vacant building. The initial inspection must occur within 30 days of the property being registered as vacant. Property owners are charged a fee for the inspections. Unregistered buildings are subject to inspection to determine if they are dangerous.²⁸

²⁶ Burlington City Ordinance § 8-42

²⁷ *Combating Problems of Abandoned and Vacant Properties* (2006), p. 15. United States Conference of Mayors.

Vacant Building S.O.P.s at Other Fire Departments

Fire departments across the United States face ongoing problems with fires in vacant buildings. Many fire departments have established standard operating procedures to specifically govern fireground operations at vacant buildings. Four such S.O.P.s will be examined for the purpose of providing a source of reference in the possible creation of a vacant building fire procedure for the Flint Fire Department.

Fulton County, Georgia is a 529 square mile community with a population estimated at 960,000 people. It is served by 424 firefighters operating out of 23 fire stations. Fulton County Fire Department Standard Operating Procedure 4912 sets forth their Department's Rules of Engagement. Some of the provisions within the procedure are:

- No property is worth the life of a member of the Fire Department.²⁹
- Fire department members shall not be committed to interior firefighting operations in any structure that is abandoned, derelict, known or reasonably believed to be unoccupied.³⁰
- No level of risk to responders is acceptable in situations where there is no potential to save lives or property.³¹

Phoenix, Arizona is a 515 square mile municipality with a population estimated at 1.4 million people. It is served by 1,290 firefighters operating out of 46 fire stations. Phoenix Fire Department Standard Operating Procedure 202.02D sets forth safety and risk management profiles. It directly incorporates the Rules of Engagement established in the language of NFPA

²⁸ Ypsilanti City Code § 18-190

²⁹ Fulton County Fire Department Standard Operating Procedure 4912 § 1.1.1

³⁰ Id. § 1.1.1.1

³¹ Id. § 1.1.2.1

1500 § A.8.2.2. The procedure provides examples of how to apply the Rules of Engagement as follows:

- A fire in a rear bedroom of a house, with smoke throughout the house may allow for a survivable environment if a search and rescue effort is initiated quickly. We may extend risk, in a calculated manner, with these conditions.³²
- A significant fire in a residence with dense smoke under pressure to floor level throughout the building likely means victims could not survive. A very cautious, calculated rescue and fire control operation would be warranted.³³
- A well-involved building would likely represent a zero survivability profile. Similar conditions in an abandoned building would indicate little survivability and little property to be saved and members should avoid an offensive fire fight.³⁴

New York, New York is a 321 square mile municipality with an estimated population of 8 million people. It is served by 11,400 firefighters operating out of 221 fire stations. The Fire Department of New York established a 14-page procedure for vacant building fires in 1986. The most recent update available was from 1997. It provides the following guidance:

- At vacant building fires it is often possible to conduct an interior attack for the expeditious extinguishment of the fire and release of units, but the obligation for this method of attack is not mandatory as it is in an occupied building.³⁵
- Members must psychologically adjust to a “no rush” approach. In these buildings, the life hazard is to the firefighter. A slower, more cautious operation is definitely indicated.³⁶

³² Phoenix Fire Department Standard Operating Procedure 202.02D

³³ Id.

³⁴ Id.

³⁵ Fire Department of New York Firefighting Procedures, Vacant Building Fires § 1.1.2

- Since vacant buildings have low victim potential, they should be searched within the limits of safety after building conditions have been evaluated and the fire has been largely extinguished.³⁷
- The Fire Department has been charged with the protection of life and property from the ravages of fire. However, as has been emphasized, the life hazard at vacant building fires is almost solely that of our operating members...It must be stressed, the primary emphasis in vacant building operations is that of exterior attack.³⁸

Jonesboro, Arkansas is an 80 square mile municipality with an estimated population of 59,000 people. It is served by 91 firefighters operating out of 6 fire stations. Within their S.O.P.s, the Jonesboro Fire Department set forth a six-paragraph explanation of the Department's Philosophy of Firefighting. It provides the following guidance:

- The basic philosophy is that it is okay to go defensive and to keep the safety of our members paramount. Because of the culture of the JFD and the fire service in general we pride ourselves on being very aggressive interior firefighters and look down on those that fight fire from the street. However, there is a fine line between aggressive and careless firefighting.³⁹
- It is very important that all Jonesboro firefighters, especially the officers, know that we initiate offensive attacks only when lives are in jeopardy and the overall risk for protecting property is in the favor of our members surviving the incident.⁴⁰
- There are no structures in the City of Jonesboro worth the life of a firefighter.⁴¹

³⁶ Id. § 2.2.6(A)

³⁷ Id. § 4.2.1

³⁸ Id. § 7.1

³⁹ Jonesboro Fire Department Standard Operating Procedures § 307.00

⁴⁰ Id.

⁴¹ Id.

- It is perfectly okay to attack a structure fire from the outside and protect exposures when the fire has advanced to the point that the danger to firefighters reaches an unacceptable level for an interior attack, particularly when no lives are at risk.⁴²
- In some cases, it is more heroic to not make an interior attack because that officer is placing the safety of their crew first, rather than feeling compelled to take an unnecessary risk.⁴³
- It is important to state that we are not advocating all interior attacks as being inappropriate, just those that cross the line of unacceptable risk.⁴⁴
- We must be vigilant about our safety...This may require modifications in our culture and attitude to allow defensive operations to be looked upon favorably when that is the most appropriate course of action. Whereas, pushing the envelope for no significant gain, such as initiating an aggressive interior attack on a totally involved structure when there is no life hazard is not good strategy.⁴⁵

⁴² Id.

⁴³ Id.

⁴⁴ Id.

⁴⁵ Id.

Conclusion and Recommendations

The evidence of this investigation shows overwhelmingly that Flint's firefighters are regularly being exposed to a high level of risk during operations at vacant buildings. It is apparent that offensive attacks are frequently being made into vacant structures when defensive measures may have been the more appropriate tactical choice. Firefighters are being placed in a position of risk in non-life safety situations at vacant buildings where there is very little chance of recovering salvageable property. Many of the vacant buildings at which offensive attacks were initiated were abandoned properties that had almost no measurable value before the fire, making for a dangerous exercise in futility.

Firefighters must recognize that fires in vacant structures require a different approach than a fire in an occupied structure. A fire in a vacant property, especially an open and abandoned property, should be viewed for what it truly represents: *a uniquely dangerous hazard that is waiting to injure and kill firefighters.*

Solving the problem of injuries at vacant structures will require a proactive, multi-faceted approach. In a best-case scenario, the goal of reducing firefighter injuries at vacant structures should result in a cooperative effort among many City departments. The following solutions are proposed:

1. Every fire, no matter how minor, which occurs in an open, abandoned property should result in a request for boarding, demolition, or emergency demolition of the building depending on structural and / or hazardous conditions.
2. Fire crews should be encouraged to be watchful for open, abandoned property during their daily travels. When located or identified, such property should be reported for boarding or demolition. If previous fire damage, structural instability,

or other specific hazards are found, the building should be reported for emergency demolition.

3. Every fire in a non-abandoned vacant structure that causes it to be left in an open, unsecured condition should result in a request that the building be boarded and secured to prevent future trespassing and subsequent fires.
4. Fires that occur in vacant property that is not open and abandoned and no information about an owner or occupants is available should be reported to the Fire Prevention Bureau for follow-up investigation.
5. Firefighters should be trained to apply the concepts of risk management detailed in NFPA 1500 at vacant structure fires.
6. Firefighters should be trained to not make entry into vacant structure fires where there is no life safety hazard to civilians and / or no chance of preserving a salvageable property.
7. Fire officers should be trained to complete the Fire Service Casualty form on NFIRS reports to ensure that injuries to firefighters are properly documented. Out of 47 injuries incurred by the Department outside of a fire station, only 19 were documented correctly on NFIRS reports.
8. Firefighter injuries occurring in vacant structures should be reported to the Health and Safety Committee for follow-up discussion.
9. A Recommended Operating Guideline or Standard Operating Procedure for fires at vacant structures should be developed and implemented. Special attention and procedures should specifically address fires in open and abandoned structures.

10. Any lists in use by other City departments detailing vacant property, buildings scheduled for demolition, and buildings scheduled for emergency demolition should be obtained. Such lists, regularly updated, should be made available to Battalion Chiefs and / or the 911 Center as a resource to assist in making informed strategic and tactical firefighting decisions at vacant structure fires. All crews responding to fires at structures on these lists should be notified prior to their arrival so they are aware of potential dangers.
11. Methods of using paint, placards, or signs on dangerous property as warnings to arriving firefighters should be investigated and implemented as deemed appropriate.
12. Public education should be conducted so that citizens gain a better understanding that defensive tactics at structure fires result from analysis of acceptable risk to firefighters.
13. Ideas on other solutions to the problem of reducing firefighter injuries at vacant structures should be openly solicited from each and every Fire Department employee who wishes to contribute.
14. Consideration should be given to flag firefighter injuries occurring in vacant structures at Risk Management and / or the Employee Safety Clinic to allow for tracking by resources outside the Fire Department.
15. Consideration should be given to request that all City employees whose work takes them into the streets and neighborhoods assist in the recognition and reporting of open, abandoned property. Police, water, sanitation, street

maintenance, and other City employees outside the Fire Department could be a great ally in helping to reduce firefighter injuries in this manner.

16. Consideration should be given to amend existing ordinances or enact new ordinances that specifically address the safety of firefighters operating at vacant and / or dangerous property.

The goal of this report is to reduce firefighter injuries. By fighting fires in vacant and abandoned buildings in a smarter and safer way, risk and injury to firefighters can be reduced. The City of Flint is very fortunate to have a Department of aggressive firefighters who are very skilled in what they do. Their skill and ability should be rewarded by only exposing them to acceptable risk when life safety concerns or realistic property conservation concerns justify placing them in such positions.