Severe Winter Weather: Chicago Style

“Severe winters are characterized by either extremely cold periods one to two months in duration, or by severe ice storms or heavy snowfalls occurring repeatedly over a period of six to twelve weeks,” (Rauner). This is relevant for this report because the focus is the tremendous amounts of snow accumulated within Cook County’s own, Chicago, Illinois. Chicago, a major city not only known throughout Illinois, but all over the world, was first established in 1833 as a town, but also marked as a city in 1837. During that time, it’s population peaked to about 4,000 (Chicago, History). However, because of its location in the northern part of the state of Illinois, it is always hit with tremendous and dangerous amounts of snow that can be life threatening. Some examples of this would include, but are not limited to, the snow storm in 1967, 1999, 2011 and 2015, all obtaining between nineteen and twenty three inches of snow within one to three days.

According to the same mitigation plan listed above, the 2018 Illinois Hazard Mitigation Plan, “An Illinois winter does not pass without a severe winter storm somewhere in the State. On average, five severe storms strike each year. As few as two and as many as 18 have occurred in some years.” Many have since been documented that fit this statement. First, in 1967, January 26 through the 27 were hit with just about 23 inches of snow, or roughly two feet (Robaugh) (see Image 1). During this time, nearly 50,000 automobiles and roughly 800 buses were left buried in snow and stranded on the roads unable to move. While not many people were leaving the town due to this immobility, none were entering either. Nearly ten feet of snow piled up in drifts along the runways to the airports leaving fliers stuck where they were until the snow had melted or been removed. Better yet, students were also stuck in their same places: school, where the all slept overnight because there was no way home. The worst part, however, was all of the deaths that occurred as a result. Twenty-six people died just in Chicago in these two days, including a male that was ran over by a plow truck trying to uncover the roadways and a little girl only ten years old that was fatally shot by police when trying to stop individuals from looting. “Across the Midwest, [however], 68 people were killed by the storm, many by snow-shoveling induced heart attacks,” wrote Dennis Robaugh from the Patch Staff (Robaugh). Next, a little over thirty years later in 1999 the first three days of January, 21.6 inches of snow fell in the span of only 72 hours. This storm was so brutal and dangerous, that the President of the United States at the time, Bill Clinton, declared that over half of Illinois was considered to be a disaster area. Not only was the snow debilitating enough, but the temperatures were at the same intensity reaching twenty below zero. Within this time frame, seventy-three people lost their lives due to this extreme weather. Same as the last, however, roadways and airports were completely out of the question as a means of transportation (Robaugh) (see Image 2). Then, a couple years over a decade later in 2011, a storm that invaded as far as the state of Texas to Canada was not only full of snow, but ice as well. On January thirty-first to the second of February, roughly 21.2 inches of snow accumulated causing 900 cars and buses to be left stranded on the sides of the road. Winds reached a high speed of thirty-five miles per hour and tornadoes were predicted because of this in some areas. Crazy as it sounds, there were even sightings of lightning and thunder could be heard in the distance. Unfortunately, eleven people also died in this storm, one due to the extreme wind that blew him from the sidewalk into Lake Michigan (Robaugh) (see Image 3). Last but not least, the same days as the last were struck, January thirty-first through February Second, but only four years later in 2015. This time, the calculated amount of snowfall

measured up to be just under twenty inches at 19.3. During this time frame, “On Feb. 1, 16 inches of snow fell, a record for a single-day Chicago snowfall in February. We handled this storm better than most,” (Robaugh). During this time was the Super Bowl and regardless of the tremendous amounts of snow on the ground, the Metra kept running with delays that did not last more than an hour and people didn’t try to steal from stores or kill each other. Out of all of these marked events in Chicago’s severe winter weather history, this was one of the calmer times (Robaugh) (see Image 4). Altogether between the years 1951 and 2017, as indicated by a graph on the 2018 Illinois Hazard Mitigation Plan, there have been 27 severe winter storms with only an annual probability of one happening equaling 41% (Rauner) (see Image 5).

Although everyone within the Chicago area was affected by these storms, certain areas obviously get hit worse. For example, during each one of the severe snow storms listed in the previous paragraph, the roadways were closed, but so were the airports. So between 1961 and 2016, which fits the range of years of all of the discussed hazards, there is a chart from the National Weather Service webpage (National Weather Service) (see Image 6) that explains how many times so many inches of snow fell in a two day range. For example, in the month of February, less than one inch of snow had fallen 5 different times within 2 days. However the highest amount of times that this phenomenon occurred was in January, when less than one inch of snow fell roughly 6.3 times in a 2 day period. Because of such open ground and space, the runways to airports are going to accumulate more drifts of snow piling up because there is no building, tree, monument, etc. to break it up (National Weather Service) (see image 7). Airports are also more largely affected because it prevents both departures and arrivals of travelers, causing them to suffer with the inconvenience of delayed flights that can last more than just hours, but days. Going back to the highest amount of two-day intervals of snow fall being in January, another graph also from the National Weather Service webpage (see Image 8), also confirms this by showing that between 1884 and 2019, an average interval of five to twenty inches had dropped just in the month of January during these recorded years (National Weather Service). So, with this information, it can be concluded that during the month of January is when the most amount of inconvenience, danger, possible catastrophe, death and more can occur just due to snow fall. However, that does not limit the amount of issues that can arise for other months, as stated earlier, because some of the worst snow related incidents happened just at the beginning of February as well. Lastly, another map, named the IEMA Illinois Natural Hazard Mitigation Plan Severe Winter Storms Hazard Rating by County, indicates that only 4 counties in the state of Illinois are considered to be in the severe range for winter weather, with Cook County, Chicago’s home county, being one of them (Rauner) (see Image 9).

Just as this hazard has greatly impacted the bustling city of Chicago, it can, and has, hit smaller towns like La Salle and Peru. Not only are these hazards an annoyance and an inconvenience at least, they are dangerous and life threatening at most for both individuals inside of homes, schools, hospitals, etc. but travelers as well. Residents of the Midwest are at a great risk of snowfall each year, which is something they all have to come to terms with by choosing to reside in the area. First off, many jobs, it is believed to be anyways, would close if the weather called for twenty inches of snow. That does not apply to health care workers, factory workers that need someone there because the plant cannot shut down ever, or emergency response teams. Their jobs still need coverage and finding a way there can be awfully tough due to the major risk they would be taking to drive down a road that is covered in a thick, icy, slick layer of freshly fallen snow. Same goes for health care professionals, such as nurses, doctors and EMTs and other emergency response teams. If a call comes in that needs immediate attention,

their response time is very slowed down because if that much snow has added up, there may not be a safe and secure way to make it to the called upon location in a timely manner. Along with the fact that ice can also build up, that leads into the next partnering possible hazards: sleet and freezing rain (if it does rain). Sleet, described by the Illinois Natural Hazard Mitigation Plan, is, “a sleet (ice pellet) accumulation of ½ inch or more in depth,” (Rauner) (see Image 10). Freezing rain, also defined in the Illinois Natural Hazard Mitigation Plan, is, “an ice accumulation of ¼ inch or more in thickness,” (Rauner) (see Image 10). So, as it can be inferred, if either of the two happen during the same time a heavy snowfall happens, the amount of possible hazards can double or even triple in severity. This would be worse for major cities because the amount of traffic is incredible and without the appropriate amount of dry spots to increase friction for tires, stopping would be nearly impossible, which would then lead to potential automobile accidents and pile-ups.

In response to all of the negative impacts of severe winter weather, Illinois has decided that their needs to be different plans in place to keep the city of Chicago as in line and safe as possible, even though sometimes, just staying inside is the safest option possible for its residents and visitors. According to the Winter Storm Preparedness Guide put in place by the State of Illinois: Illinois Emergency Management Agency, there are many different steps and actions that can be put in place and taken in order to minimize the impact of the tremendous amounts of snowfall. “2019 proved to be a historic weather-year for the State of Illinois. Record breaking cold temperatures in late January, along with high amounts of snow and rain through March, set the stage for the historic flooding that would occur later in the Spring. This dangerous weather pattern demonstrated that the best time to prepare for a winter’s snow, cold and ice is before such weather hits,” reads the first few lines of this guide. It goes on to mention that money does not play a role in being prepared for severe winter weather and neither does time. First, Illinois makes sure that every radio, television, phone and bulletin is aware of different watches, warnings and advisories. Some of these include but are not limited to: winter storm watches, blizzard warnings, ice storm warnings and wind chill advisories, all meaning different things and point to various levels of temperature and snow/ice fall. For example, the Blizzard Warning calls for strong winds that measure thirty-five miles per hour or greater, snow that is nearly blinding while driving/walking along with zero visibility and life threatening conditions. Whereas the typical Winter Storm Watch is issued for “potentially significant winter weather” that also includes some heavy snow, but also potential ice/sleet and blowing snow, but only four a maximum of a couple of days. It is important to know the differences between all of these, but the effects of the warning, watch or advisory are often mentioned when they are heard or appear on the television. Next, it is pointed out that there is a number of different terms/names that should be well known for every individual before severe winter weather begins. Those are weather terms that include but are not limited to: freezing rain and sleet, which have already been defined earlier, and wind chill. Wind chill, as described by the State of Illinois in this guide is, “A calculation of how cold it feels outside when effects of temperature and wind speed are combined. Wind chill ONLY applies to bare, human skin. The effects of wind chill are different for animals and don’t apply to non-living objects.” Next would be to know and be familiar with all of the counties than an individual works, travels through and resides in. Outside of those different terms and county names, it is also important to understand health precautions which are to dress appropriately for the weather and understand potential physical damages, such as frostbite and hypothermia. Disaster kits are also very helpful and should include at the least a battery operated weather radio and extra batteries to keep up to date with the current weather status, different foods that do not require refrigeration, freezing or cooking, medications for several days, water, flashlights, important pet supplies, and a first aid kid with

band-aids, cleaning wipes, ointment, etc. Furthermore, there are also many different ways to winterize a house. Insulation in the walls to keep the rooms and the house warm is very important in order to stabilize an appropriate temperature, caulking around the windows and the doors to keep those areas tight and closed off which doesn't allow cold air to seep in, and storm windows and doors, or plastic covering the windows, also keeps the cold air out and the warm air in. Checking for frozen pipes also goes along with this section of preparedness. These can be very dangerous as if they are too full of liquid, they can end up bursting. Sealing leaks, using different types of heat tape and insulating pipes can all be useful ways to prevent this from happening. Just as important as a home, however, is a vehicle. The State of Illinois recommends checking wipers, tires, lights and fluid levels very regularly to make sure everything is functioning up to par. In this section, a "Winter Storm Survival Kit for Travelers" is outlined (see Image 11). Some of these items include a cell phone and its charger, water, knife, tool kit, shovel, sack of sand (cat litter), and extra clothing. However, if it can be done, using public transportation is recommended over driving oneself to their destinations. If one chooses to drive themselves and ends up stranded, it is highly suggested that the person pulls as far off the road as possible and makes sure that their hazards are turned on to indicate that they are in need of assistance. Do not leave the vehicle unattended and stay in it/with it at all times. If the amount of time stranded exceeds a certain amount of time and there is more than one person, taking turns sleeping is important because that leaves one person awake and aware in case a rescue crew does find them. However, in between sleeping, people should also exercise slightly to continue blood flow and prevent stiff muscles. Seat covers and floor mats are very useful as well with insulation that way the car battery does not have to continue running the entire time, which will eventually deplete battery level. Recommended winter attire if leaving is necessary, would be hats, gloves that are tight at the wrists, something to help cover up the persons mouth, such as a scarf, wool socks, and several layers of loose fitting and lightweight clothing. Lastly, school safety is a big priority. Because children are so young and not yet aware of the potential dangers that could occur due to such extreme cold weather and snow fall, teachers and administrators need to understand these risks and as best as they can, explain this to the kids. There must be different plans in place for these types of emergencies dealing with severe winter weather and should be practiced. Some of these provisions and plans include a way to be informed of changing weather conditions, guidelines, ways to inform parents or guardians of school cancellations or closings, or if the students need to stay at school because it would be safer, and different provisions for those kids that are in before and after school daycare if they are dropped off early or have to stay late. Bus drivers also need extensive training, multiple routes for the same drop-offs in case one is unsafe, and be they need to be aware of procedures that deal with buses that end up stranded and how to take care of the children riding (all of this information can be found on the State of Illinois: Illinois Emergency Management Agency Winter Storm Preparedness Guide).

Personally, I do not think that there are any bad points within the plan that the State of Illinois has put into place. Actually, there had been some that I had not even thought of. One being the idea to use seat covers and floor mats as insulators in order to preserve some energy from the batteries of cars. I knew that multiple layers and different protectants were important, such as gloves, scarves, and hats, but did not think much further than that. Also, I think the idea of always having a bag of sand in your car, or cat litter, is a great idea as well. The weight of these bags can be used to hold down the back end of cars that do not have rear wheel drive to keep them closer to the ground and hopefully gain more friction. However, I was somewhat shocked to not see any provisions set in place for emergency response teams, as they are an important part of the community and should know what to do when a medical emergency does occur

during such weather. These rules may be locatable in a different place online or provided just for these workers in that field, but I think they should be listed for everyone to see in the guide book, that way every residing individual is aware of what is to be expected from these EMTs, for example.

In summary, severe winter weather can be not only annoying when trying to commute to work, school, or even the grocery store, but deadly or life threatening. “There have been 788 cold weather related deaths in Illinois over the last 11 years. (2008-2018),” was written in the Winter Storm Preparedness Guide from the State of Illinois (Winter Storm Preparedness Guide). That number is increasing every year and if there can be a way to prevent even a fraction of those deaths, than there should be. With the help of this guide, new information and ideas can be spread to the public so that they are more aware of different ways to protect not only themselves, but their families and their coworkers, which could lead to more lives potentially being saved rather than lost. Severe winter weather is more than just snowfall though. It is sleet and freezing rain as well that can be invisible to the naked eye, which makes the hazard of extreme snow accumulation, increase to a whole other level of danger.