



2008 Flood Report

Executive Summary

The intent of this report is to inform the elected officials and the citizens of Park Ridge as to the events that took place during the flooding that occurred on September 13th and 14th of 2008 as well as ongoing actions that have been taken since. The goal of this report is to ascertain what areas the City can improve upon to mitigate future flooding and be better prepared to respond to future flood events. The analyses and subsequent recommendations contained within this report represent the culmination of a collaborative, team effort among City staff representing the Fire, Police and Public Works departments.

Table of Contents

Executive Summary.....	2
September 13 and 14 Flooding.....	4
Emergency Operations Center.....	7
Public Works Response.....	9
Public Safety Response	11
Damage Assessment.....	12
Costs Incurred by the City	13
Reimbursement.....	14
Grant Opportunities	15
What Went Well.....	19
Areas to Improve Upon	20
Future Mitigation Efforts.....	21
Additional Information Resources.....	23

September 13 and 14 Flooding

On September 13 and 14, 2008 the metropolitan area of Chicago experienced a record rainfall. According to the National Weather Service, the City of Park Ridge was one of the communities most heavily affected, receiving almost ten inches of rain, starting late Friday evening and continuing through Sunday morning. Six inches of rain alone fell from Friday evening into early Saturday morning. The magnitude of the storm was estimated to be in excess of a 125-year storm event.

The City undertook massive flood control efforts after the 1986 and 1987 floods, and therefore fared better than many surrounding communities. After the flooding in the late-80's, floodwalls were built at Dempster Street (west of Potter Road) and along Riverside Drive (near Boardwalk). Earthen berms were also constructed as part of the Riverside Drive Floodwall Project. The Dempster floodwall was built to handle Des Plaines River elevations of 632.5 feet above sea level (FASL) and the Riverside floodwall was built to handle river elevations of 634.5 FASL. The normal river level is about 618.5 FASL. These improvements were in addition to several major trunk line sewer installations built in the 1960's and 70's. These projects alone improved the overall system's capacity to handle an average magnitude 10-year storm. This is a significantly higher capacity than the original sewer design of the area (built in approximately 1920) that was acceptable at that time. Standard engineering design for sewers provides capacity to handle run-off from a 10-year storm.

Beginning in the 1990's, the City began implementation of a relief sewer program. Since that time, approximately 45 block-long relief sewers have been installed, in addition to approximately 65 new paved alleys which each contain a relief sewer underneath.

Chicago and 51 older municipalities in Cook County have combined sewer systems. This means that storm and sanitary flows are in the same sewer pipe. Park Ridge's sewer capacities are considered better than most of the other 51 municipalities per our most recent sewer study.

When the City's sewer system and MWRD interceptor sewer to the sewage treatment plant in Stickney fills, combined sewers overflow into diversion chambers which outflow directly to the Des Plaines River at combined sewer outflows (CSO's). Park Ridge's four CSO's flow into the Des Plaines River at Algonquin, Sibley, Touhy and Devon. The City also has a drop shaft to the Metropolitan Water Reclamation District's (MWRD) Tunnel and Reservoir Plan (TARP, also know as the Deep Tunnel) in the Sibley Lift Station. The Deep Tunnel has the capacity to hold 1 billion gallons of sewage. When it fills, the pumps within the station are activated in sequence and they pump the overflow into the Des Plaines River. During this particular event, the Deep Tunnel filled quickly due to the intensity of the rain, and all 8 pumps were activated.

Relief sewers take stormwater from street inlets and separate storm water from the sanitary system for that specific block. Relief sewers store stormwater and slowly release it into the combined sewer system at a connection point. Relief sewers are designed to

handle an approximately 100-year storm event, but clearly their capacity was exceeded during this event. They filled, and in turn, any excess water was stored in the street.

It should be noted that many residents who experienced street flooding in particular noticed a quick drop in the level of water in the street during various times on September 13. This drop was not due to the opening of any valve or storage chamber gate at O'Hare, Lake Michigan, or anywhere else. Once the intensity of rain subsides, even slightly, surcharged sewers are given a chance to catch up and again begin taking water. When a full sewer is again able to accept water, a quick drop and even swirling water into drains may be observed. This can be compared to having a sink or tub full of water, then suddenly opening the drain.

The following is a timeline of events for September 13:

3:00 a.m. Public Works supervisors call in crews to clean inlets, pump streets and flush sewers and inlet lines. By 6 a.m. many streets were experiencing flooding.

7:00 a.m. MWRD's Deep Tunnel is filled to capacity and is closed. 60% of the city's area, mostly from the north side of town, empties into the Deep Tunnel. The Sibley Lift Station automatically kicks on and begins pumping water into the Des Plaines River. The Deep Tunnel did not reopen until 4:35 a.m. on September 17.

10:30 a.m. Sewer levels at the Sibley Lift Station jump to 626 FASL. Normal level is 618.5 FASL.

11:45 a.m. the Des Plaines River is at 627.3 FASL. It is anticipated that the river will continue to rise an additional 3 feet. Flood action stage is 623.7 FASL. Flap gates at Riverside Drive and Boardwalk are covered at approximately 625.8 FASL.

3:30 p.m. The Des Plaines River is at 629 FASL and rising. The City's zero point of the Des Plaines River is approximately 618.5 FASL. High water marks from readings ranged from 620.0 FASL at 5:00 a.m. to a high of 631.3 FASL at 9:00 p.m. on September 14. According to the National Weather Service, the river crested at 9.76 ft above flood stage at 2:45 p.m. on Sunday.

The following is a timeline of events for September 14:

Despite overnight pumping operations by Public Works crews, the water level at Riverside, Cherry to Boardwalk was found to be rising steadily. Additional pumps were put in place to mitigate the rising floodwaters.

As the water level continued to rise, concern among the residents increased. Later in the morning, sandbagging efforts began at Cherry and Riverside Drive and at Boardwalk and Riverside Drive.

The CERT Team was activated to assist in filling sandbags at the Service Center.

Public Works delivered sandbags to the area. PW crews, residents and elected officials assisted in sandbagging operations.

Floodwaters begin to recede in the afternoon when the rain subsides.

Total rainfall in the gauge at the Public Works Service Center at 7 a.m. on September 15 was 8.13". News reports totaled 9.95" of rain.

Emergency Operations Center

Early reports of sporadic flash flooding in the streets coupled with the rising level of the Des Plaines River prompted staff to open the City's Emergency Operations Center (EOC) at approximately 10:00 A.M. on Saturday, September 13th.

The Mayor and elected officials initially reported to the EOC at approximately 11:00 A.M. and were briefed on the situation. At the conclusion of the briefing, the aldermen departed and the Mayor stayed in the EOC with staff from the Fire Department (FD), Public Works (PW) Department and the Police Department (PD) to develop an Incident Action Plan (IAP). Additional staff from the FD, PW and PD were called in to augment existing staffing levels. Administrative staff from City Hall (Cathy Doczekalski and Cheryl Peterson) were called in to the EOC to assist in staffing phone lines, taking notes, and continually posting informational updates on the City's website. They also established an automated message line at (847) 318-5200 to provide informational updates for residents without power or Internet service. Their assistance was extremely helpful.

Due to an influx of numerous 911 calls reporting "popping and buzzing" in flooded basements, the first course of action taken was to utilize the Communicator system (commonly referred to as the 'Reverse 911' system) located at the North Suburban Emergency Communications Center (NSECC) to warn residents not to enter flooded basements in order to avoid electrocution hazards. The system was utilized three more times during the event to send out important informational messages to residents.

Since the event, there have been several citizen inquiries regarding the use of the Communicator. The Communicator is an emergency notification system that was cooperatively purchased and implemented by Des Plaines and Park Ridge 12 years ago. The Communicator has a total of 14 dedicated phone lines that intentionally generate from a remote location in the event a disaster in Des Plaines or Park Ridge is affecting phone service from the North Suburban Emergency Communications Center (the NSECC is our shared 911 center in Des Plaines located at 1420 Miner Street). The remote location that calls usually generate from is Franklin, Tennessee. If that center is busy, the calls 'bounce' to the next call center, which happened to be a location in Arizona the weekend of the flooding. A specific geographical area can be selected to send messages to by entering coordinates into the system. The desired message and coordinates are sent via file transfer protocol to the central office where they are subsequently sent out to every home or business in that area with a listed phone number. A message sent to a small geographical area can be sent out relatively quickly with 14 phone lines. A message sent to a larger area takes longer, and a citywide message takes an extended period of time. When the system is being used concurrently by two cities, as occurred over this particular weekend, it can take several hours to get the message out using only 14 phone lines. This is the reason that some residents received calls after midnight. Since the flooding situation presented a safety hazard to residents, and many were unable to safely occupy their homes, city staff felt it necessary to make sure that as many residents as possible received important information through the use of the Communicator system.

As of 4:00 p.m. on Saturday, it was determined that the worst affected area was west of Potter, south of Dempster, and north of Farrell. EOC staff used the Communicator to notify residents in that area that they may need to prepare for a voluntary evacuation. PW assigned personnel to pump water from the storm sewer system on the south side of the Dempster wall at Elliot to Dempster Street to alleviate the volume of flooding. Police and Fire personnel were assigned as teams to go door-to-door in this area to check on the well being of residents. The Community Emergency Response Team (CERT) was activated to provide additional assistance in support of the first responders. In addition to responding to numerous emergency calls, Fire and Police personnel also rescued people throughout the day that became stranded in standing water after attempting to drive through it.

A temporary emergency shelter was established at Maine East High School to provide shelter for evacuees until approximately 10:00 p.m. After 10:00 p.m. residents were directed to go to the Red Cross Overnight Shelter located at 515 E. Thacker in Des Plaines (Thacker west of Wolf Road). The final message sent out by the Communicator system on Saturday was to notify residents of their shelter options if needed. Most residents either stayed in their homes or found alternative lodging. A handful of residents showed up at the Maine East emergency shelter. The shelter was staffed with Fire and Police personnel as well as nine members of the CERT.

The purpose of the EOC is to provide a place for key decision makers representing the various City departments to collaboratively develop action plans and coordinate efforts of City personnel in the field to insure good communications and cooperation. EOC operations concluded around 8:30 P.M. on Saturday evening, but the EOC remained set up in the event that it needed to be reopened.

Public Works Response

The Public Works Department (PW) played a central role in this event. All supervisors were called in and a full callout of crews worked in shifts around the clock until Monday morning. Public Works responsibilities included the following:

- Continually monitor the river and flooding levels at various points throughout the City
- Provide barricades to close flooded roadways
- Provide sandbags to residents
- Vehicle maintenance on PW, PD and FD vehicles affected by high water
- Clean inlets, flush sewer and inlet lines
- Provide personnel with portable pumping units at various locations

PW crews began road closures on September 13 at 8:15 a.m. All city-owned barricades were used including 200 standard barricades, 4 arrow boards and 12 Type II barricades. Major road closures were required at many locations including the following:

- 1021 St. James
- 1100 block of Hoffman
- 1100 block of South Washington
- 1100 block of West Crescent
- 1200 block of South Prospect
- 1400 block of Brophy
- 1400 block of Carol
- 1425 Lahon
- 200 block of North Western
- 200 Chester
- 2000 block of South Washington
- 300 block of Vine
- 400 block of Northwest Highway
- 500 block of North Broadway
- 900 block of North Fairview
- Aldine at Albion
- Belle Plaine at Cumberland
- Boardwalk at Riverside
- Burton at Parkside
- Cherry at Riverside
- Cleveland, Albion to Devon
- Courtland at Albion
- Cynthia at Western
- DeCook at Parkside
- Dee Road at Sibley
- Dempster, 294 to Western
- Forestview at Sibley
- Francis Parkway at Greenwood

- Habberton
- Home at Des Plaines
- Lahon at Ottawa
- Lois at Greenwood
- Marvin Parkway, Seminary to Wilkinson Parkway
- Mayfield at Good
- Northwest Highway at Seminary
- Northwest Highway, Greenwood to Western
- Oakton at Dee
- Sibley, Dee Road to Riverside
- Western at Devon
- Western at Granville
- Western, Touhy to Garden

Flood debris removal began on Monday, September 15 and ran through September 27. Yard waste collection was suspended, but refuse and recycling collection continued, relatively on schedule. On September 20 ARC sent an additional 23 trucks to Park Ridge to assist in the removal of flood debris. On September 27, an additional 6 trucks assisted in debris removal. In this two-week period, approximately 1,177 tons of flood debris was collected.

Public Works personnel dedicated over 800 staff hours in responding to this event.

As a result of the storm, several repairs have been done including the following:

- **Flapgate on Riverside Drive**, west side behind floodwall: Broken concrete was discovered between the gate and the piping. This has been repaired and proved watertight during the rain event of December 27 when the river rose to 626.9 FASL.
- **Mayfield Lift Station**: The pump that burned out in the lift station pump has been replaced.
- **Sibley Lift Station**: The station has been cleaned, and 2 of the 8 pumps are awaiting parts for repair. The pumps performed well during the December 27 rain event.

Public Safety Response

Both the Fire and Police Departments were immediately taxed by this event, beginning Saturday morning with the flash flooding. Both agencies called in additional personnel to assist in handling the tremendous increase in call volume. Efforts in the field were coordinated through the Emergency Operations Center.

Challenges faced early on were a large increase in call volume coupled with significant street inaccessibility. Police personnel continually reported inaccessible streets to the EOC, which tracked these locations on a large wall map to keep personnel in the field apprised of areas that could not be passed as well as providing alternative routes. Due to the substantial amount of flash flooding, existing on-duty PD personnel were quickly overwhelmed in trying to direct traffic and block off impassible streets. This problem was slowly alleviated as additional personnel were called in to duty, although several more people could have been utilized had they been available. There simply weren't enough personnel to post at the barricaded streets to prevent motorists from driving around the barricades, subsequently creating wakes that forced additional water into people's homes. Late Saturday afternoon, several PD personnel were tasked along with FD personnel to physically check on the well-being of residents by going door-to-door in the area west of Potter, south of Dempster, and north of Farrell. PD personnel were also assigned to provide security at the temporary emergency shelter located at Maine East High School.

The FD had to deal early on with numerous calls for electrical shorts occurring in basements due to the rising floodwaters in people's homes. Some calls required FD personnel to rescue elderly people with limited mobility from the lower levels of some homes. Several rescues were also required for elderly residents as well as children that were stuck in vehicles that had driven into deep water and subsequently stalled. FD personnel worked closely with PD personnel in checking on residents as described above. Three members of the FD's water rescue team were called into MABAS Division 20 (Stone Park and Franklin Park areas) to assist in rescuing people in swift water situations. The decision was made to keep the dive boat (Boat 35) in Park Ridge in the event it was required here.

Limited access due to flooding presented one of the biggest challenges to the FD. For example, it was realized that while the sandbagging was necessary to save the homes in the Boardwalk Place complex nearest the entrance, it would also prevent residents from removing their vehicles. PW personnel warned residents of this fact prior to commencing sandbagging operations. The Communicator was again utilized to notify residents of the sandbagging operations. A larger geographical area was notified in the hope of initiating some spontaneous volunteers living in the area to assist, which worked. Fire Department personnel cut a lock on an emergency gate adjoining the adjacent Park Lane complex to provide for emergency access in the event of a fire or emergency medical call. Fire and Police personnel went door-to-door at Boardwalk on Monday morning to update residents of the situation. The Cherry Street and Boardwalk areas remained sandbagged until late Monday, when the water finally receded to a point where vehicles could safely pass through the water.

Damage Assessment

On Sunday, September 21, the Fire Chief escorted a team with representatives from the Illinois Emergency Management Agency (IEMA), Federal Emergency Management Agency (FEMA) and the Small Business Administration (SBA) through Park Ridge to conduct a preliminary damage assessment. Staff was informed that the assessment would be used to determine what, if any, federal assistance the City (and residents) may be entitled to if a federal declaration was approved. Approximately 200 homes were visited in various areas of the City. At the conclusion of the visit, the FEMA and SBA officials refused to share their reports or the notes they had taken.

On the afternoon of Tuesday, September 23, Fire Department staff was notified that the Cook County Emergency Management Agency (CCEMA) wanted all municipalities in Cook County to complete an independent flood damage assessment and submit the data by 5:00 p.m. on Thursday, September 25. This assessment was in addition to the one completed by state (IEMA) and federal (FEMA) officials on Sunday, September 21 here in Park Ridge. On Wednesday, September 24, damage assessment teams comprised of Fire, Public Works and Police personnel were assigned territories and went door-to-door with the directive to visit as many homes as possible to collect data. Residents were informed that this was an independent damage assessment being performed at the request of Cook County to determine if the City may qualify for federal assistance. This information was also posted on the City website. As of 5:00 P.M. on September 24, 543 homes were visited. Of the people that were home, 183 reported some level of water in their residence as a result of the flood. This information was then sent to the CCEMA along with a completed IEMA Public Assistance Form documenting the City's costs from the flood in a report filed at 5:30 p.m.

Staff developed a flood assessment form to gather detailed information from residents that experienced flooding, but may not have been located in the areas checked on September 21 or 24. It was impossible for staff to ascertain how many residents experienced flooded basements without enlisting their help in informing us. Staff disseminated information regarding the availability and use of the flood assessment form through the City's website and local press. As of January 1 2008, 340 completed flood assessment forms had been received (although the deadline for submittal had expired, City staff continued to encourage as many residents as possible to submit the form so more data could be analyzed).

Costs Incurred by the City

Total staff hours	1,155.5	(PW 632.75 Overtime & 215.5 Regular)
Fire OT	\$4,066.36	
Public Works OT	\$37,363.36	(Approx. \$35,200 + benefits)
Police OT	\$3,648.98	
Equipment Usage	\$29,382.37	(PW Approx. \$16,090)
Materials	\$5,494.38	(PW \$4,050)
Garbage Pickup	ARC: \$83,708 & SWANCC est. \$46,765	
Sibley Lift Station Cleanup	\$34,665	
Service calls to Sibley & Mayfield Lift Stations	\$632.50	
Sibley Lift Station Pump Cable Repair	\$5,440	
Emergency Sewer repair / Western @ Touhy	\$19,942	

Reimbursement

On October 3rd 2008, the Federal Emergency Management Agency (FEMA) announced that federal disaster aid in the form of Individual Assistance (IA) had been made available for Cook County. As additional information was received, the City posted it on the website and forwarded it to local media outlets to insure the residents of Park Ridge were aware that they may be eligible to receive federal assistance.

Two representatives from FEMA assigned to Park Ridge met with the Fire Chief on October 13th as they started the process of canvassing the City. They were ecstatic to see that staff had created the flood assessment form and had started to receive data from residents. They used this data as a starting point from which to visit residences to gauge the flood damage and assist residents in completing the necessary paperwork to receive federal assistance. As of December 8th 2008, 330 forms had been received and were still being forwarded to FEMA as the deadline to apply for federal assistance had been extended to December 16th.

On October 15th 2008, FEMA approved Public Assistance (PA) to municipalities to contribute in defraying some of the costs incurred as a result of their response to the flooding. On October 28th, the City Manager and Fire Chief met with FEMA officials in Des Plaines to complete and submit the required PA forms and documentation. As of mid December, staff again met with FEMA officials and was in the process of completing the lengthy and comprehensive documentation required for federal assistance. Once FEMA receives and approves the Public Assistance forms, they authorize the Illinois Emergency Management Agency (IEMA) to process payment for the appropriate federal share of the costs, which is 75%.

As of mid January, Fire Department Administration had spent nearly 40 staff hours conducting an assessment, compiling, organizing, and submitting information to FEMA seeking reimbursement for flood expenses. The information has all been received by FEMA and is being reviewed at the present time. The City will receive 75% of approved labor and equipment costs incurred during the declared disaster time period. Record keeping is an essential aspect of the City's response, as all costs must be itemized and only those costs directly related to the disaster are reimbursable. The total submitted cost was more than \$200,000, meaning the reimbursement to the City could be in the range of \$150,000. The City can expect reimbursement to be made in a 30-90 day time period, in an amount that has not been definitively calculated as of the date of this report.

Grant Opportunities

Staff has thoroughly researched the possibility of grant opportunities to fund future flood mitigation efforts. Two such grant programs were discovered, including the FEMA Hazard Mitigation Grant Program (HMGP) and the Flood Management Assistance (FMA) program. Following is what was discovered regarding both the FMA and HMGP programs.

Staff spoke with Heidi Kirkman at the FEMA Region V office on October 9th regarding the HMGP and FMA programs. HMGP funds may be used to fund projects that will reduce or eliminate the losses from future disasters. Projects must provide a long-term solution to a problem and the project's potential savings must be more than the cost of implementing the project. Funds may be used to protect either public or private property or to purchase property that has been subjected to, or is in danger of, repetitive damage. Examples of projects relevant to Park Ridge are:

1. Acquisition of real property from willing sellers and demolition or relocation of buildings to convert the property to open space use.
2. Elevation of flood prone structures (must be above base flood elevation- BFE).
3. Minor flood control projects that do not duplicate the flood prevention activities of other federal agencies.
4. Localized flood control projects, such as certain ring levees and floodwall systems that are designed specifically to protect critical facilities.

The HMGP is linked to a specific disaster declaration. It is federally funded but is administered by the state (Illinois Emergency Management Agency). IEMA also establishes the mitigation priorities.

Unlike the HMGP, the FMA is not linked to a specific disaster and is available every year (as authorized and funded). The applicant must be a state emergency management agency (i.e., IEMA). A local government entity (i.e., City of Park Ridge) would be a subapplicant. The program requirements clearly state that subapplicants must be participating in the National Flood Insurance Program (NFIP) to be eligible to apply for FMA funds and to act as a subgrantee. The NFIP shows that Park Ridge participates in the NFIP (#170146) and that our most recent FEMA floodplain map is dated 8/19/2008. While the City participates in the NFIP, the FMA is only available to homes w/NFIP approved flood insurance as described below with one exception as noted in item #4. Homes located in floodplains are required to have NFIP approved flood insurance to be able to get a mortgage, but the insurance is optional for those homes not located in floodplains.

Section 4.1- Eligible Project Activities states: Only the following mitigation activities are eligible for the FMA program. To be eligible for funding, properties must be currently insured by the NFIP at the time of application and the insurance must be maintained through the completion of the project. For acquisition projects, insurance must be maintained by the property owner until the transfer of ownership.

The Special Flood Hazard Area (SFHA) is defined as the land in the floodplain within a community subject to a 1% or greater chance of flooding in any given year. Staff reviewed the most recent Park Ridge FEMA floodplain map and there are very few areas in the SFHA (as defined by FEMA). The area roughly bounded by Oakton on the north, Boardwalk on the south and Dee road on the east lies within the SFHA. Also included is part of the Maine East High School campus that doesn't contain any residential homes. Inexplicably, the Mayfield Estates area does not fall within the SFHA according to FEMA's map.

1. Acquisitions/Relocations: The voluntary acquisition of structures and underlying real property for the purpose of creating open space, demolition or relocation of the structure, and conversion of the property to deed restricted open space uses in perpetuity. The relocation must be to areas outside of the SFHA.
2. Elevations: The elevation of existing structures and elevation to at least the BFE or an ABFE or higher if required by any State or local ordinance, and in accordance with criteria established in this Guidance.
3. Dry Floodproofing: Floodproofing of existing non-residential structures in accordance with the requirements of the NFIP or higher standards if required by FEMA or if required by any State or local ordinance.
4. Minor Localized Flood Control Projects: These projects may include the installation or modification of culverts and floodgates; the creation of small retention and detention basins; and the upgrade of culverts to bridges. Minor localized flood control projects must not duplicate the flood prevention activities of other Federal agencies.

*At least 50% of the structures directly benefiting from the mitigation activity must be NFIP insured properties. Documentation must be provided in the subapplication that identifies all properties that will benefit from this activity and specifically identifies the NFIP insured properties.

Section 4.2- Ineligible Project Activities and Costs states: In addition to the specific ineligible project activities listed below, any activity that duplicates benefits received for the same purpose or is within the primary authority of another Federal program will be considered ineligible. Projects already in progress will also be considered ineligible. Certain project activities and their associated costs are not eligible. The following project activities are NOT eligible for the FMA grant program:

1. Major flood control projects related to the construction, demolition, or repair of dams, dikes, levees, floodwalls, seawalls, groins, jetties, breakwaters, waterway channelization, and erosion projects related to beach nourishment or renourishment;
2. Dry floodproofing of any residential structures;

3. Phased or partial project that is dependent on another phase or part to be effective and/or feasible;
4. Mitigation reconstruction - any mitigation activities involving demolishing of an existing structure (i.e., commercial or residential building, publicly or privately owned) and building a new structure (formerly known as demolition/rebuild);
5. Applications involving any activities for which implementation has already been initiated or completed are not eligible for funding, and will not be considered;
6. Studies that do not result in a completed mitigation project (e.g., engineering designs, feasibility studies, or drainage studies that are not integral to the proposed project);
7. Flood studies or flood mapping (i.e., general hydrologic and hydraulic studies/analyses not integral or necessary for project design or feasibility determination);
8. Projects that solely address maintenance or repairs of existing structures, facilities or infrastructure (e.g., debris removal, dredging);
9. Generators, and related equipment, such as generator hook-ups, for non-critical facilities or as a stand-alone activity;
10. Warning and alert notification systems (e.g., NOAA weather radios), response and communication equipment;
11. Projects that solely address operation, maintenance, or repairs of existing structures, facilities, or infrastructure (e.g., dredging, debris removal, bridges and dam repair/rehabilitation);
12. Properties that are subject to pending litigation; and
13. Legal procedures related to litigation for an approved application or subapplication.

On October 10th, Heidi Kirkman notified staff that any community applying for four of FEMA's five hazard mitigation programs must have an approved Hazard Mitigation Plan, which is a tool to help communities assess their risk and identify solutions. Unfortunately, Cook County does not have an approved plan. When staff spoke with Heidi on October 9th, she assumed that Cook County had an approved plan. Heidi spoke with FEMA's planning section and they have met with Cook County to discuss the development of a plan, but the county has not submitted a planning application to the state for funding.

A Hazard Mitigation Plan must be completed in coordination with the county and cannot be completed by a single community (Chicago was granted an exception and was permitted to do their own). It should be emphasized that this is not the fault of the City of

Park Ridge, its' elected officials, or staff. Typically the county applies for a planning grant and each community in the county participates in the plan's development. The only grant program available to Cook County or any of its' communities (other than Chicago) for project grants is the Repetitive Flood Claims program (RFC).

The RFC program is 100% federally funded, but it is nationally competitive. This year's appropriation is \$10 million (nationwide). The program is very similar to the Flood Mitigation Assistance program (FMA). Only NFIP insured structures are eligible and they must have had at least one previous flood insurance claim. The community applying for the RFC grant must submit a letter with the application, which states they do not have the capacity or the match required by the FMA program. All applications are ranked according to the benefit-cost ratio – highest to lowest. Each project must have at least a ratio of 1:1; for every federal dollar put in, there is at least one dollar in benefit received.

Staff spoke with Ron Davis from IEMA and he cautioned us that this program is extremely competitive. Not one community in Illinois has ever applied for the RFC program in its three years of existence. Eligible communities are generally those that cannot meet the requirements of cost sharing or management of activities of the HMGP and the FMA. When staff informed Mr. Davis of the median home value in Park Ridge, he said it is highly unlikely that we would qualify for the RFC program. It is important to note that Park Ridge would be competing with communities along the gulf coast that regularly experience hurricanes.

What Went Well

- Emergency Operations Center coordination efforts.
- Communicating information to the residents via the Communicator, website and recorded information line during the response as well as the recovery phase.
- Coordination between staff of FD, PW, PD and Administration.
- Cooperation between Mayor, Council and City staff.
- CERT activation and use of the CERT.
- Communication with Elected Officials.
- Customer service (City staff was returning voice mails left by residents as late as 8:00 P.M. on Saturday evening).
- Public Works, Fire and Police response to all areas of the community.
- Public Works monitoring of floodwaters.

Areas to Improve Upon

- Consider sandbagging operations sooner.
- Perform our own independent comprehensive damage assessment earlier after an event due to a severe lack of cooperation between federal, state and county government entities.
- Add a feature to city website to allow residents to report damage using an electronic fillable form.
- Purchase additional equipment in EOC such as a laptop, printer and radar weather station.
- Purchase a sandbagging machine to maintain at the PWSC.
- Purchase a new mass notification system that can contact residents more efficiently and effectively than the current system.
- Purchase and assemble a compliment of tools and supplies for CERT team volunteers.

Future Mitigation Efforts

The City has, and will continue to put into place, measures to mitigate flooding where available and appropriate. Staff from Public Works is in the process of analyzing the data collected from residents via the 340+ flood assessment forms submitted to identify problem areas, specifically those that have experienced repeat flooding. This data will be taken into consideration when planning for the installation of additional relief sewers.

Mr. Davis from IEMA stated that they might be able to assist the City with an inlet control device program (also known as intake restrictor valves, or “rainblockers”). A recurring problem for mature cities with combined sewers is basement backup as a result of torrential rain and flash flooding. These restrictor valves prevent the sewer system from becoming overloaded during the peak period of a storm. It is designed and calibrated to restrict the flow of water, which subsequently holds rainwater on the streets, and gradually releases rainwater into sewers. In addition to Chicago, Evanston and Arlington Heights have implemented these systems in selected areas.

The benefits of this system are:

- Surge from overflow of downpour greatly reduced.
- Streets & traffic would be undisturbed during installation.
- Costs much less than separating sewer systems.

The disadvantages of this system are:

- Water would pond in the street.
- Roof downspouts have to be disconnected.
- Less likely to get Federal declaration.
- Not effective in streets with no curbing (like some in the Manor area).
- Requires routine maintenance of catch basins.
- Increased expectations- this will not stop basement flooding altogether.
- Overland flooding is possible in areas where driveways slope down to a garage under a house. This particular home design represents some of the hardest hit on September 13th and 14th according to public comment at the last Public Works Committee meeting as well as data gleaned from the flood assessment forms that have been submitted thus far.

It is staff's opinion that the City shouldn't implement a system that may benefit some, but actually make the situation worse for others.

The cost per unit is reasonable; engineering and manufacture of control valves recently changed from stainless steel to plastic; lowering the price from \$850 to \$225 each, respectively. The City has over 9,000 inlets (at \$225 each would be over \$2 million).

In conclusion, while the rain event of September 13 and 14 was extreme and well in excess of a 100-year storm, the City's existing system and response performed well overall. There are improvements that can be made in both areas, and we have already implemented some changes. We have increased our efforts related to sewer flushing and

root cutting, as well as inlet clearing and cleaning. We also hope to obtain grant money to implement flood relief and sewer maintenance projects.

Additional Information Resources

- City of Park Ridge Public Works
<http://www.parkridge.us/government/departments-public-works.asp>
- City of Park Ridge Fire Department
<http://www.parkridgefd.org/>
- City of Park Ridge Police Department
<http://www.parkridgepolice.org/>
- Metropolitan Water Reclamation District
<http://www.mwrddc.dst.il.us/>
- Tunnel and Reservoir Plan (TARP)
<http://www.mwrddc.dst.il.us/plants/tarp.htm>
- Federal Emergency Management Agency Flood Information
<http://www.fema.gov/hazard/flood/index.shtm>
- National Flood Insurance Program
<http://www.floodsmart.gov/floodsmart/>
- Illinois Emergency Management Agency
<http://www.state.il.us/iema/>
- American Red Cross Flood Safety Information
https://www.americanredcross.com/static/file_cont180_lang0_80.pdf