

VILLAGE OF NORTHFIELD FLOOD CONTROL PLAN AND HISTORY

October 6, 2008

Dear Resident,

Recent storm and flooding issues affecting the Village have raised concerns among many residents about what we can and will do about these problems. We want all our residents to know that this is something we are concerned about and, as you will see below, something that we have anticipated and that we have been working on for some time. The recent flooding came in the middle of our mapping out plans for dealing with just this kind of extreme rainfall. As you read this, you will see that this is a complex matter, involving legal, technical and funding questions that we hope to answer soon. We heartily invite your interest and participation in this process. The next community meeting will be held on **Tuesday, October 14, 2008** at 7 pm in the Village Hall, 361 Happ Road.

In the meantime, here is a review of the history and the details of how we're addressing the problem. We hope that you find it useful:

History:

In 1990, the Village identified \$8.2 million in storm water infrastructure improvements necessary to mitigate flooding in the community. To judge community support for these endeavors and to determine how best to fund them, the Village conducted a formal survey of resident's attitudes on flooding and their willingness to pay for improvements. Of the 1,806 responses received, two-thirds said they were not willing to pay more in taxes or an assessment for storm water improvements. Of the remaining one-third, only one in six were willing to pay more than \$500. Based on those results, the community has not undertaken any substantive storm water improvements over the past 18 years.

Yet, the Village has completed a number of smaller flood control projects, such as drainage-ditch maintenance and storm-sewer maintenance work funded through our annual budget.

Current Plan:

In recent years however, flooding and storm water concerns have continued to grow and have become a primary issue for many residents. The Village Board determined that it was again time to consider a comprehensive solution to storm water management within the Village. The Board decided that the first step would be a comprehensive storm water study, which the Board funded this spring. An outside engineering firm in May began the process that will culminate this fall with a report providing:

- An overview of the Village's watershed areas.
- A detailed inventory of our existing storm water system.
- A detailed outline of the problem flooding areas.
- An outline and ranking of possible infrastructure projects to mitigate flooding.
- Cost estimates associated with each infrastructure project.

- An outline of potential funding options.

To make sure that the report is as comprehensive as possible, the study embarked on a detailed process of public involvement. A community-wide survey was conducted, with over 400 returned, and a series of public meetings are being held to gather information. The next meeting will be held at 7 pm at the Village Hall, 361 Happ Road on **Tuesday, October 14, 2008**. All interested residents are encouraged to attend to continue to provide input into this important process.

Following the completion of the storm water study, the Village will review the estimated costs associated with proposed improvements and what options are available for implementation.

What makes storm water management particularly difficult is the number of federal, state, regional, and local entities with various roles, regulations, and authority. Here is a summary:

Storm Water Management in Northern Illinois and Cook County:

Storm water management is a multi-jurisdictional issue that is regulated at both the state and federal level. Here in Illinois, the scope of the problem and the number of government entities involved requires understanding and cooperation at the local, state, county, and federal levels each sharing some control of storm water management. Below is a brief description of these agencies and their roles.

Name: Federal Emergency Management Agency (FEMA)

Level: Federal

Its primary mission is to reduce the loss of life and property and to protect America from all hazards, including natural disasters. FEMA administers the National Flood Insurance Program (NFIP), which makes flood insurance available to property owners. In support of the NFIP, FEMA produces various flood hazard map products. For residents to be eligible for flood insurance, communities must adopt FEMA's minimum building protection requirements for construction within the mapped flood hazard areas. For Northfield residents to be eligible for flood insurance, FEMA must approve our storm regulations and the Village must verify that all construction complies with these regulations.

Name: United States Army Corps of Engineers (USACE)

Level: Federal

USACE's primary mission is to provide public works engineering services to America. The Corps is responsible for maintaining and improving navigable waterways, construction of large-scale flood control projects (such as the reservoir on the Middle Fork behind Northbrook Court), and permitting projects that impact "Waters of the United States", generally interpreted as water bodies and wetlands hydraulically connected to navigable waterways. Here in Northfield, the Corps has control of the stream banks, i.e. you need a Corps permit to work on them. However, no agency has a responsibility to provide shoreline protection or to restore eroded stream banks on private property. The Corps once, but no longer provides funds for blockage maintenance.

Name: Illinois Department of Natural Resources – Office of Water Resources (IDNR-OWR)

Level: State

The IDNR-OWR is responsible for reviewing and permitting all construction within Regulatory Floodways in Illinois, plus the construction and maintenance of dams. The IDNR-OWR also

provides supporting services to FEMA to monitor local compliance with NFIP requirements. In Northfield, the IDNR-OWR is responsible for permitting any construction that happens within the Regulatory Floodway and any modifications to the Willow Road Dam.

Name: Metropolitan Water Reclamation District of Greater Chicago (MWRDGC)

Level: Local

MWRDGC's role is to collect, treat, and discharge wastewater. The District operates treatment plants and networks of interceptor sewers to collect sewage from municipal sewer systems. The District also operates the partially completed Tunnel and Reservoir Plan (TARP or "Deep Tunnel") system as well as the locks on the North Shore Channel at Wilmette, the Chicago River at Navy Pier, and the O'Brien lock and dam on the Calumet River in Burnham.

The MWRDGC is also authorized to administer the development of the Cook County Stormwater Management Ordinance, currently in progress. It also administers the Small Streams Maintenance Program to remove blockages and debris from local drainage ways. In Northfield, MWRDGC has permit authority for all sanitary sewer construction and storm water for all non-single family properties. Northfield's local sanitary system directly feeds into the MWRDGC system, which transports the waste to the MWRDGC treatment plants. In Northfield, we are prohibited by the MWRDGC from connecting any storm drain to our sanitary system. Communities downstream of us, such as Skokie, Wilmette, and Evanston still operate combined sewers with both storm and sanitary discharges.

Name: Village of Northfield (VOF)

Level: Local

The Village is responsible for permitting all local construction projects to ensure compliance with local, state, and federal standards. In addition, the Village maintains the local sanitary system that ties into the MWRDGC's system and any local storm sewer infrastructure. During natural disasters, the Village works closely with FEMA and Cook County on disaster declarations and local clean up. Also, during these times, the Village establishes and maintains a local emergency shelter; assists with public information distribution; provides access to sand bags; provides full public safety services through Police and Fire; maintains all public sanitary, storm, and roadway systems; and coordinates all clean up and service restoration efforts with local utilities such as NICOR, COM ED and Waste Management. Storm water drainage in the Village of Northfield is improved by nearly 35 miles of storm sewers. These sewers are different from the sanitary sewers which collect and transport waste from houses and businesses to the MWRDGC treatment system. The storm sewers collect surface runoff and convey it, untreated, directly to our streams or rivers. The amount of water a storm sewer is able to convey is generally dependant on the size of the sewer, but every sewer has its limit. When a storm sewer's capacity is exceeded, water will begin to pond at the upstream end and/or begin to flow out of the inlets and manholes.

Regional Flood Control: Regionally a number of initiatives are underway to mitigate storm water impacts in the area. Here are the details:

- ***Tunnel and Reservoir Plan.*** The Tunnel and Reservoir Plan is partially completed. Generally speaking, the plan consists of two phases. Under Phase I - primarily a pollution control project that is generally complete – the "deep tunnels" collect and store sewage and stormwater from overtaxed MWRDGC interceptor sewers to minimize discharge of pollutants into local waterways. This phase is generally complete. Phase II - primarily a flood control project - consists of the construction of large reservoirs at the tunnels end to temporarily store storm water for treatment. The 10.5 billion gallon McCook Reservoir is scheduled for completion in 2014. Until the reservoirs are completed, the tunnels will have minimal effect on flood control.

- ***Operation of the Wilmette and Navy Pier Locks.*** Their purpose ordinarily is the regulation of water flow from Lake Michigan into the North Shore Channel (Wilmette) and the Chicago River (Navy Pier). This flow must be regulated because the amount of water diverted from the Great Lakes by the State of Illinois is limited by a Supreme Court decree. However, under extreme runoff conditions, when the MWRDGC interceptors and the Deep Tunnel are filled to capacity, the MWRDGC can open the locks to allow “reverse” flows from the Channel and/or Chicago River into Lake Michigan. The purpose is to lower levels on these waterways, relieving backup on connected storm sewer systems, and MWRDGC interceptor overflows. The operation of these locks, and the resultant effect on water levels in the Channel and River, has very little practical effect on local flooding.
- ***Revised FEMA Maps.*** FEMA recently partnered with the IDNR to “modernize” the flood hazard mapping in Cook County. The purpose of this project was to migrate the flood hazard information from paper maps to digital data suitable for use in a Geographic Information System (GIS) environment for more accurate mapping. The revisions did not include any new hydraulic studies in Northfield.
- ***Winnetka Pumping Station.*** The Winnetka Pumping Station on Winnetka Road takes water which is naturally tributary to the area and pumps it into the Skokie River. The station has a pumping capacity of approximately 40,000 gallons per minute. The “natural” flood flow of the river at this point is on the order of 650,000 gallons per minute. This system was permitted through the IDNR and has been in place since 1995.
- ***Skokie Lagoons/Willow Road Dam Modifications.*** The Willow Road dam, owned by the Cook County Forest Preserve District, was recently modified by the District in order to resolve maintenance issues with the previous configuration. Specifically, the three, 36-inch diameter conduits through the dam were capped and an 8-foot section of the spillway was replaced with a weir (effectively a notch in the dam) at the same elevation as the bottom of the conduits. This new configuration generally passes more flow than the conduits and is less prone to debris blockage. According to the District, the reduction in debris buildup on the upstream side allows the Lagoons to typically remain at a lower level prior to a storm, increasing the flood storage capacity during and after a storm. We are currently working to review the hydraulic model prepared for the District to verify this claim.

As you can see, this is a complex matter, involving legal, technical, and funding questions that we hope our study will answer soon. We encourage your interest and participation in this process, which is the critical first step in identifying and addressing our storm water needs. We invite each of you to participate in the upcoming meeting being held at 7 pm at the Village Hall, 361 Happ Road, on **Tuesday, October 14, 2008.**