

North Main Watershed Assessment

Introduction

Material presented in the following summary documents current stormwater management and flooding issues for the North Main Watershed. Information presented is based on a review of available information related to current conditions in the drainage basin. No comprehensive analysis of stormwater management and flooding issues in the watershed has been performed in the last 20 years.

Watershed Description

Description and Land Use

The North Main watershed is located in the northern part of the City of Rockford on the east side of the Rock River. The watershed drains approximately 2,822 acres at its mouth. 80% of the watershed is located within the City of Rockford. The remaining 20% lies within unincorporated Winnebago County. The watershed is long and narrow, with a round segment to the north, with the receiving stream being the Rock River to its east.

Watershed Statistics: North Main	
Total Area:	2,822 ac.
Total Area within City:	2,278 ac.
% of City within Watershed:	5.8%
Other Stakeholders:	None
No. of Detention Facilities	0
No. of Outfalls	18

The North Main watershed is about 75% developed. The North Main watershed consists of heavy urban residential and commercial development in the south, center, and along the River. In the north, the watershed is much less developed with the entire northwest corner devoted to agricultural land, and the area along the River being light residential development. The watershed contains Rockford Country Club and Golf Course, Sportscore recreational facility, and a large retail development.

Topography and Soils

The topography of the North Main watershed is that of a relatively flat and compact watershed on the west bank of the Rock River. Ground elevations within the watershed range from about 800 feet NAVD in the far northeastern corner of the watershed, to about 700 feet NAVD near the watershed's boundary with the Rock River. There is very little variation in elevation throughout this watershed. Almost the whole watershed elevation lies between 700 and 750 feet NAVD.

Soils within the North Main watershed consist almost solely of type B soils; with a small area of type D soils at the far south end. Type B soils are soils with moderately low runoff potential when thoroughly wet. Water can be transmitted through these soils without impediment. Type B soils typically have less than 20 percent clay, and between 50 and 90 percent sand with a loamy sand or sandy loam textures. These soils have moderately fine to moderately coarse textures. Type D soils are characterized by properties that restrict water movement through the soil. Type D soils typically have greater than 40 percent clay, less than 50 percent sand, and have clayey textures. They have high runoff potential when thoroughly wet.²⁵ The predominance of type B soils in the North Main watershed should facilitate infiltration of rainfall in pervious areas, thereby contributing to lower runoff volumes and rates than in basins with less pervious soil types. It is important to note that the impervious soils are located in the most heavily urbanized area of the watershed.

Primary Receiving Stream

The Rock River is the receiving stream for the North Main watershed. The watershed is flat and the gentle slope to the River is the direction of runoff flow.

Due to the lack of a receiving stream within the watershed itself, there are no impoundments or gauging stations in North Main.

There is no readily available flow data for the North Main watershed as the watershed's contribution to the Rock River can not be feasibly measured.

Given the character of the watershed, flooding within North Main is primarily caused by pooling due to wet weather events, and over-bank flooding of the Rock River in the indicated areas on Figure NM-1. As shown in the Figure, the floodplain along the Rock River is very narrow, and along the North Main boundary, it does not enter any developed area, except where it widens, north of Campus Hills, where the Sportscore playing fields are located.

Records maintained by the Federal Emergency Management Agency (FEMA), indicate that no letters of map revision (LOMRs) have been issued for development projects in the North Main watershed during the past 30 years.

Water Quality and NPDES Discharges

SCORE did not sample water quality in the North Main watershed.

Table NM-1 provides the NPDES-permitted point sources identified within the watershed using the Illinois EPA's water quality mapping program, BASINS.

²⁵ Burke, Christopher and Thomas Burke. HERPICC Stormwater Drainage Manual. West Lafayette, Indiana: Purdue Research Foundation, 1994.

Table NM-1
NPDES POINT SOURCES LOCATED WITHIN THE NORTH MAIN WATERSHED
ROCKFORD, ILLINOIS

NPDES Permit #	Facility Name	Receiving Water
IL0048291	United Bank of Illinois	Rock River
IL0074462	Ingersoll Prod-Rockford Eddy	Not listed

Runoff from industrial sites is a potential pollutant source for receiving waters. Table NM-2 lists the industrial sites within the North Main watershed.

Table NM-2
INDUSTRIAL SITES LOCATED WITHIN THE NORTH MAIN WATERSHED
ROCKFORD, ILLINOIS

Name	Street	Land Use Code (LUC)	LUC Description
Midas Muffler Shop	Main St.	4100	Transportation Services
Advanced Machine & Engineering	Church St.	3300	Foundries, Mills & Heat Treat
Mrs. Fisher's, Inc.	Fulton Ave.	2000	Food & Related Products
Hershey Manor	Main St.	R037	Not listed
Metro Centre	Elm St.	7990	Rcrtn. – Amsnt. – Scf. & Flgs. w/o S-Fac.
Hayes Beer Distributing	Elmwood Rd.	5000	Wholesalers & Retail Outlets
City Juvenile Detention Center	Northrock Dr.	9000	Governmental Buildings w/o SPC Fac.
Martin Automatic	Northrock Ct.	3550	Machinery Mfg. (dry shop)
National Detroit, Inc	Northrock Ct.	3550	Machinery Mfg. (dry shop)
Eclipse, Inc	Elmwood Rd.	3400	Fabricated Metal Prod. (wet)
Siemens Water Technologies Corp.	Shepherd Tr.	3500	Machinery Mfg. (wet shop)
Method Molds	Elmwood Rd.	3450	Fabricated Metal Prod. (dry)

Existing Drainage Network

Drainage within the North Main watershed occurs through equal parts surface drainage to the Rock River, and via gravity storm sewer network. The storm sewers and storm sewer outfalls can be seen in Figure NM-2, and are heavily concentrated and complete in the south and central

watershed area which are the urbanized areas. The North Main watershed uses completely surface drainage in the north, rural areas, and has no identified surface detention facilities.

Available Data Resources

Previous Drainage Studies

A review of available data identified no recent, comprehensive studies of drainage issues within the North Main watershed.

Historic Flow Data

No source of historic flow data has been identified for the North Main watershed.

Historic Water Quality Data

No source of historic water quality data has been identified for the North Main watershed.
(pending input from David Pott)

Other

Flood Insurance Study:

Winnebago County and Incorporated Areas, (FEMA, 2006)

Soil Characteristics:

“Soil Survey Geographic (SSURGO) database for Winnebago County, Illinois.”

Fort Worth: U.S. Department of Agriculture, Natural Resources Conservation Service, 2007.

[URL:<http://SoilDataMart.nrcs.usda.gov/>](http://SoilDataMart.nrcs.usda.gov/)

Drainage Issues

Table NM-1 (on the following page) provides a summary listing of current identified drainage issues and projects within the North Main watershed. The general locations of these issues and projects are shown on Figure NM-1.

There are only slight flooding and stormwater management issues in this watershed. Most resident complaints stem from ponding at low spots on the roads. The other form of flooding in this watershed is over-bank flooding that occurs along the public beaches on the Riverfront. The City has done well at limiting land-use within the Rock River floodplain to recreational and park area.

The City responds to the complaints to the best of their ability. There are Neighborhood Plan Projects in this watershed. Further evaluation of site-specific stormwater management/flood

control improvement needs is required to provide a basis for effective planning, budgeting, and prioritization of potential projects.

**Table NM-3
 SUMMARY OF STORMWATER/FLOOD CONTROL ISSUES AND PROJECTS
 NORTH MAIN WATERSHED, ROCKFORD, ILLINOIS**

#	Brief Description of Issue	Issue Type				Action		
		Over-bank Flooding	Major Surface Flooding	Localized/Nuisance Flooding	Water Quality Impacts	Improvements Completed	Maintenance Required	Proposed Project
1	N. Main Street between Elm and Mulberry Streets - Street Improvements							●
2	N. Main Street at Napoleon Street - Proposed Development							●
3	Ford Avenue and Latham Street - Residents report street main problems.			●				
4	Willoughby Avenue and Douglas Street - Residents report surface flooding.			●				
5	South of Fulton Avenue and Harlem Boulevard - Part of the Neighborhood Plan. Installation of new 12-inch storm sewer and inlet at low spot in roadway.							●
6	Country Club Beach - Substantial out of bank flooding.	●						
7	Browns Beach - Substantial out of bank flooding.	●						



