

Manning Creek Watershed Assessment

Introduction

Material presented in the following summary documents current stormwater management and flooding issues for the Manning Creek 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 Manning Creek watershed is located in the far eastern part of the City of Rockford and drains into the Kishwaukee River. The watershed drains approximately 1480 acres at its mouth. Roughly 40% of the watershed is located within the City of Rockford. The remaining 60% of the watershed extends into the Village of Cherry Valley and unincorporated Winnebago County. The very far eastern edge of the watershed is located in Boone County.

Watershed Statistics: Manning Creek	
Total Area:	1,480 ac.
Total Area within City:	574 ac.
% of City within Watershed:	1.5 %
Other Stakeholders:	Cherry Valley
No. of Detention Facilities	6
No. of Outfalls	0

The Manning Creek watershed is about 50% developed. The majority of the current development has occurred in the south and central portions of the watershed. The Manning Creek watershed also contains light residential and commercial developments, as well as large plots of agricultural land. Two large properties worth noting within the watershed are Elliot Golf Course and the Northern Illinois University - Rockford. Most homes within the watershed are not built adjacent to the creek, rather are located in small developments. The City of Rockford may experience development in the northern part of the watershed, within the current municipal boundaries, with possible annexations in the future.

Topography and Soils

The topography of the Manning Creek watershed is slightly different from the other watersheds east of the Rock River in that it's drainage is obviously reversed. Ground elevations within the watershed range from about 875 feet NAVD north of Rote Road to about 750 feet NAVD near the creek's confluence with the Rock River.

Soils within the Manning Creek watershed consist completely of type B soils, with thin pockets of type D soils surrounding the creek bed. 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.²³ The predominance of type B soils in the Manning Creek 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.

Primary Receiving Stream

Manning Creek is the primary receiving stream for the Manning Creek watershed. The creek is approximately 14,760 feet (2.8 mi.) long and exists in essentially a natural state. Manning Creek has a stream bed elevation of 724 feet (NAVD) at its mouth, and 853 feet (NAVD) at its origin. The creek is steep, with an average fall of 46 feet per mile. The profile of the stream is shown in the Flood Profile extracted from the 2006 Flood Insurance Study for Winnebago County and Incorporated Areas.

There are no significant impoundments on Manning Creek.

There are no USGS Gauging stations in Manning Creek.

Flow data for the Manning Creek watershed is unavailable.

Given the character of the watershed, flooding within Manning Creek is of a flashy nature. Localized flooding along the creek is aggravated by the number of small bridges, vegetative debris and trees along the stream channel. As shown in Figure MAN-1, the floodplain along Manning Creek is relatively narrow over most of the length of the stream, and only reaches over dry land across the Golf Course. Areas where the mapped floodplain appears to include developed properties include:

- Elliot Golf Course
- South of Newburg Road

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 Manning Creek watershed during the past 30 years.

²³ Burke, Christopher and Thomas Burke. HERPICC Stormwater Drainage Manual. West Lafayette, Indiana: Purdue Research Foundation, 1994.

Water Quality and NPDES Discharges

Manning Creek is a clear, spring-fed stream. The waters are generally cool and clear with thriving aquatic life. Sedimentation has occurred in certain portions of the creek, indicating that the stream is susceptible to impacts resulting from erosion of upstream agricultural lands.

No National Pollutant Discharge Elimination System (NPDES) point sources have been identified within the Manning Creek watershed.

Existing Drainage Network

Drainage within the Manning Creek watershed occurs through a mix of surface drainage paths, storm sewers, and creek channels. In the less developed northern part of the watershed, surface drainage is the primary mode of stormwater conveyance. In the central portions of the Manning Creek watershed, just north and south of State Street, there are moderate networks of storm sewers as shown in Figure MAN-2. These differences in drainage mechanisms are analogous with the respective development in these sections of the watershed.

Figure MAN-2 also shows the general location of identified detention basins and storm sewer outfalls within the Manning Creek watershed. The Manning Creek watershed has 6 identified detention facilities, all in the northern half of the watershed. There are no identified storm sewer outfalls within the watershed.

Available Data Resources

Previous Drainage Studies

A review of available data identified no recent, comprehensive studies of drainage issues within the Manning Creek watershed. Previous drainage studies that included consideration of the watershed are listed below:

“A Master Drainage Plan for the Rockford Regional Area: Rockford-Winnebago County Regional Drainage Plan and Study.” Espey, Huston & Associates, Inc. November 1981.

Historic Flow Data

No source of historic flow data has been identified for the Manning Creek watershed.

Historic Water Quality Data

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

Other

Floodplain and Floodway:

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.

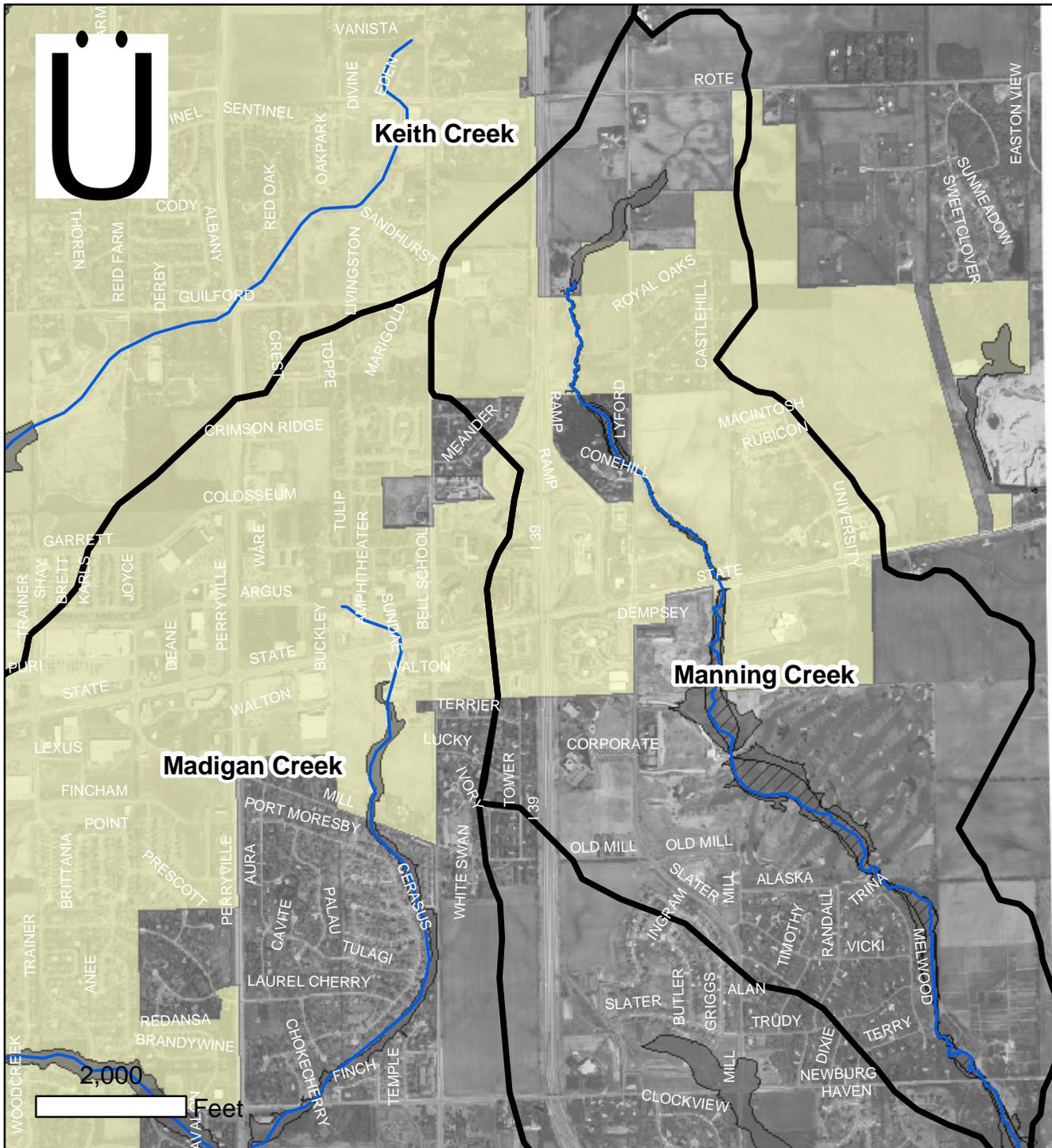
URL:<<http://SoilDataMart.nrcs.usda.gov/>>

Drainage Issues

There is very little existing information on the nature of flooding in the Manning Creek watershed, as it has not been studied in any of the literature available. Judging from the aerial and watershed characteristics, the steep sloping watershed suggests flooding of a flashy nature. The City has done a good job of limiting development within the watershed and at this time, there seems to be no areas besides the Golf Course that would be affected by over-bank flooding.

**Table Man-1
 SUMMARY OF STORMWATER/FLOOD CONTROL ISSUES AND PROJECTS
 FULLER CREEK 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	Future Project	Proposed Project



Legend

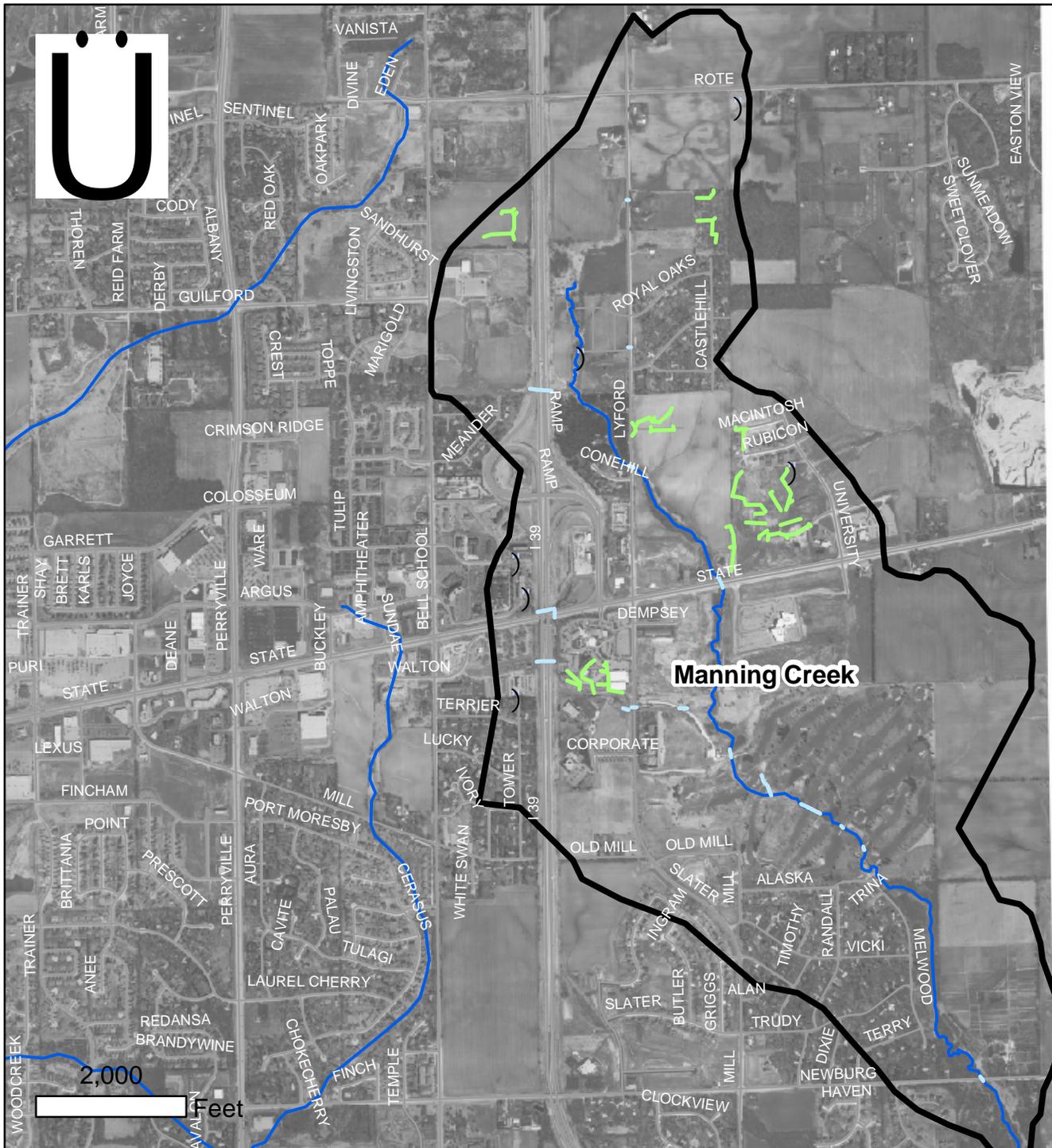
-  Watershed Boundary
-  FloodWay
-  100-yr Floodplain

City Limits

-  ROCKFORD



Figure Man - 1



Legend

-) Detention
- { Outfall
- ▭ Watershed Boundary

Pipe SubType

- Culvert
- GravityMain
- OpenChannel

Manning Creek Outfalls, Detention and Storm Sewer

City of Rockford, Illinois
Current Data as of Autumn 2008



Figure Man - 2