Khlem Watershed Assessment

Introduction

Material presented in the following summary documents current stormwater management and flooding issues for the Khlem 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 Khlem watershed is located in the northern part of the City of Rockford on the east side of the Rock River. The watershed drains approximately 1,027 acres at its mouth. 42% of the watershed is located within the City of Rockford. The remaining 58% lies within unincorporated Winnebago County. The watershed is compact and small, with the receiving stream being the Rock River to its east.

Watershed Statistics: Khlem	
Total Area:	1,027 ac.
Total Area within City:	435 ac.
% of City within Watershed:	1.1%
Other Stakeholders:	None
No. of Detention Facilities	1
No. of Outfalls	0

The Khlem watershed is about 40% developed. The Khlem watershed contains a few commercial properties and light residential development in the northern portion and scattered throughout the watershed. The southern portion of Khlem is largely undeveloped with vacant plots and agricultural land.

Topography and Soils

The topography of the Khlem 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 750 feet NAVD near Harrison Road to about 675 feet NAVD near the watershed's boundary with the Rock River.

Soils within the Khlem watershed consist primarily of type B soils, with a thin strip of type D soils along the Rock River bank. 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.[21] The predominance of type B soils in the Khlem 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

The Rock River is the receiving stream for the Khlem 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 Khlem.

There is no readily available flow data for the Khlem watershed as the watersheds contribution to the Rock River can not be feasibly measured.

Given the character of the watershed, flooding within Khlem is primarily caused by pooling due to wet weather events. As shown in Figure Kh-1, the floodplain along the Rock River is very narrow, and along the Khlem boundary, it does not enter any developed area, except for a small outcrop north of Seminole Rd.

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 Khlem watershed during the past 30 years.

Water Quality and NPDES Discharges

SCORE has no sampling sites within the Khlem watershed. One NPDES-permitted point source has been identified within the watershed (Table Kh-1).

Table Kh-1
NPDES POINT SOURCES LOCATED WITHIN THE KHLEM WATERSHED
ROCKFORD, ILLINOIS

NPDES Permit #	Facility Name	Receiving Water
IL0071544	Dasco Pro, Inc. - Rockford	Storm Sewer Trib to Rock River

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

Runoff from industrial sites is a potential pollutant source for receiving waters. Table Kh-2 lists the two industrial sites in the Khlem watershed.

Table Kh-2
INDUSTRIAL SITES LOCATED WITHIN THE KHLEM WATERSHED
ROCKFORD, ILLINOIS

Name	Street	Land Use Code (LUC)	LUC Description
West Side Tractor	Prairie Rd.	5000	Wholesalers & Retail Outlets
Jacobson Warehouse Company	Southrock Dr.	4220	Warehouses

Existing Drainage Network
Drainage within the Khlem watershed occurs through completely surface drainage to the Rock River. The lack of storm sewers, and storm sewer outfalls can be seen in Figure Kh-2. The figure also shows the general location of identified detention basins within the Khlem watershed. The Khlem watershed has one identified detention facility along Iroquois Rd.

Available Data Resources

Previous Drainage Studies

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

Historic Flow Data
No source of historic flow data has been identified for the Khlem watershed.

Historic Water Quality Data
No source of historic water quality data has been identified for the Khlem 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/>

Drainage Issues

Table Kh-3 provides a summary listing of current identified drainage issues and projects within the Khlem watershed. The general locations of these issues and projects are shown on Figure Kh-1.

There are few flooding and stormwater management issues in this watershed. Most complaints stem from overgrown drainage ditches in need of maintenance, or ponding from wet weather events. The City responds to these complaints to the best of their ability. 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 Kh-3
SUMMARY OF STORMWATER/FLOOD CONTROL ISSUES AND PROJECTS
KHLEM WATERSHED, ROCKFORD, ILLINOIS

		Issue Type				Action			
#	Brief Description of Issue	Over-bank Flooding	Major Surface Flooding	Localized/Nuisance Flooding	Water Quality Impacts	Improvements Completed	Maintenance Required	Future Projects	Proposed Project
1	***Elizabeth Center (NW of Heath and Main Streets)*** - Property is poorly drained and experiences frequent flooding.			•					
2	***SE of Forsythia Drive and Ogilby Road*** - Residents along the east side of Forsythia have requested that the 60-foot grassed drainage easement located adjacent to their back lots is in need of channel maintenance. The City plans to perform maintenance along this channel and may convert a portion of the land downstream into a park.						•	•	
3	***Barbara Coleman Complex (Loomis and Main Streets)*** - Redevelopment							•	

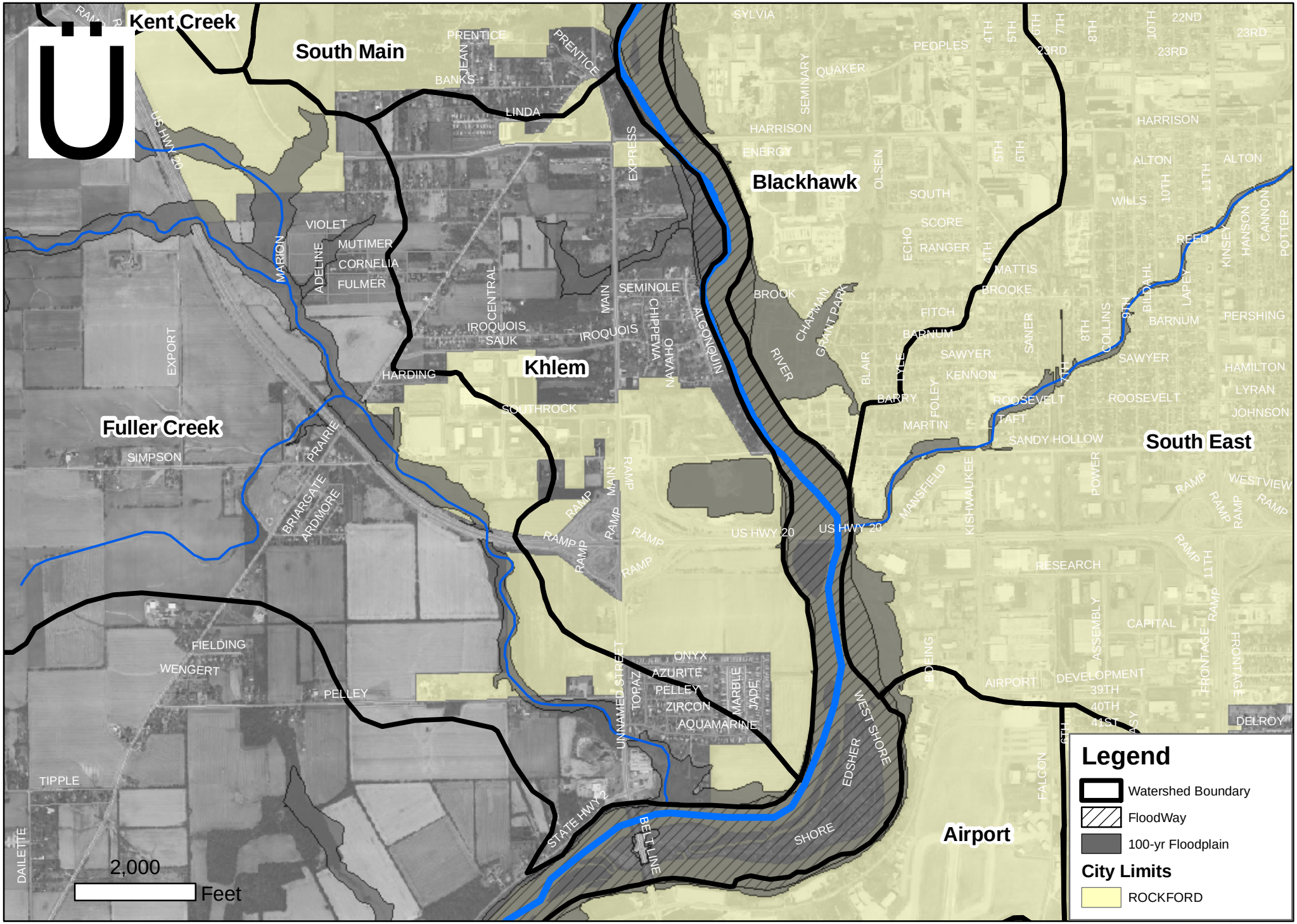

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Figure Kh - 1

Khlem Watershed Flooding Issues
City of Rockford, Illinois
Autumn 2008

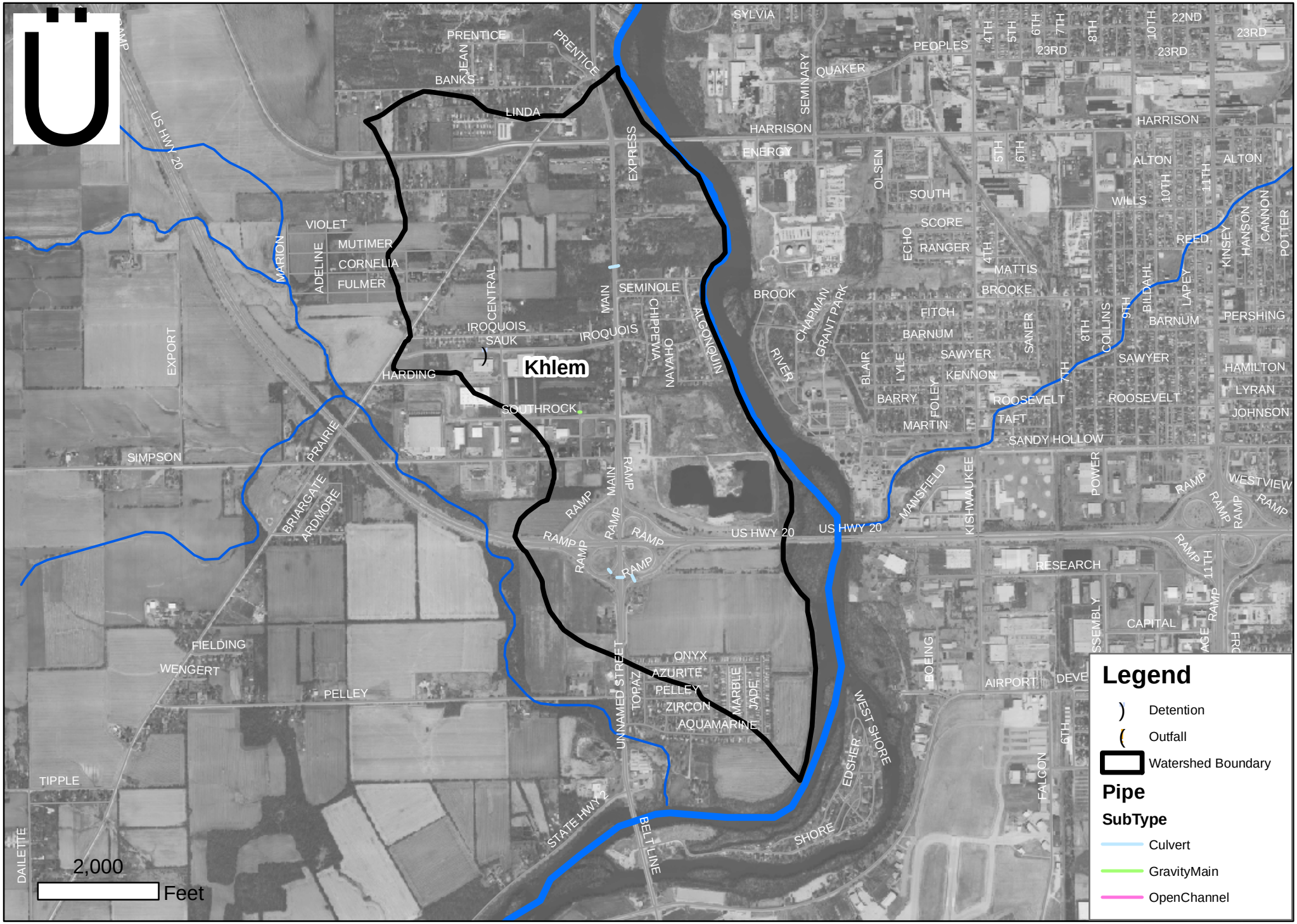

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Figure Kh - 2

Khlem Outfalls, Detention and Storm Sewer

City of Rockford, Illinois

Current Data as of Autumn 2008