

# DuPage River Feasibility Study

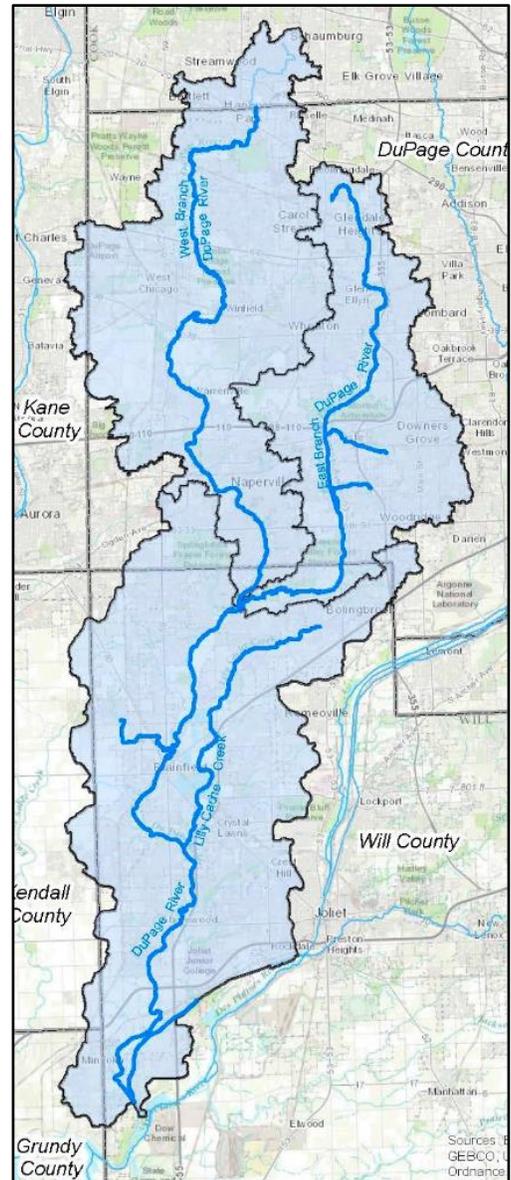
U.S. Army Corps of Engineers, Chicago District

## Study Overview

**Description:** The DuPage River, Illinois Feasibility Study is an investigation of overbank and backwater flooding along the DuPage River and its major tributaries, focusing on prioritizing high risk areas and developing a range of possible structural and non-structural alternatives to address flooding. A range of possible solutions will be evaluated including floodwater storage, levees or floodwalls, diversion channels, channel modifications, flow control structures, flood-proofing, structure elevations and buyouts. The study is being conducted by the U.S. Army Corps of Engineers, Chicago District in partnership with the DuPage County Stormwater Management Planning Committee and Will County Executive Office.

**Study Area:** The DuPage River and tributaries drain approximately 378 square miles in suburban Cook, DuPage and Will Counties in Illinois. The study area has experienced rapid development over the past two decades, and currently includes 40 communities and approximately 900,000 residents. Major storm events resulting in overbank flooding in the basin occurred in 1996, 2008, 2009, and most recently in April 2013. The April 2013 flood impacted at least 20 communities and caused significant damage to residential and non-residential structures, critical infrastructure and the closure of two major interstate highways (I-80 and I-55) for several days.

Communities within DuPage County where flooding will be evaluated include, but are not limited to: Bartlett, Carol Stream, Glen Ellyn, Hanover Park, Lisle, Lombard, Naperville, Roselle, Warrenville, West Chicago, Westmont, Winfield and Woodridge. Communities within Will County include, but are not limited to: Bolingbrook, Joliet, Romeoville, Crest Hill, Plainfield, Minooka, Channahon, Plainfield Township, and Wheatland Township.



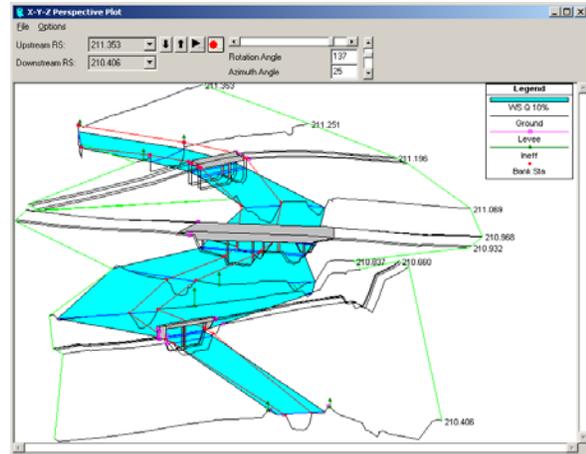
*The DuPage River Watershed*



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## Current Status

During the initial phase of the study, the partners are collecting available data and developing preliminary alternatives to address the flood risks. This initial phase included public scoping as required by the National Environmental Policy Act (NEPA) and coordination with Federal, state, and local resource agencies. Once the scoping phase was completed, the Corps and the non-Federal sponsors began the process of developing computer models to simulate flooding and flood impacts in the watershed. The computer models use rainfall estimates, river capacity, and inventories of structures and infrastructure at risk to estimate potential impacts. These models will allow the study team to estimate the likely extent of flood risks and evaluate how effective proposed projects would be for managing those risks.



*Schematic for a computer model of river flows and stages using the Corps' Hydrologic Engineering Center River Analysis System (HEC-RAS) software.*

The study team has also identified possible solutions to flood problems. The potential projects include levees, floodwalls, storage reservoirs, changes to bridges that obstruct the river, changes to the channel to increase its capacity, diversions to redirect floodwater around areas at risk of flooding, and non-structural measures such as buyouts and floodproofing. All of the information developed for the study has been coordinated with representatives of the communities at risk of flooding.

## What's New?

The quantity, frequency, and intensity of rainfall is a significant input to the computer models. An accurate estimate is important for capturing the likely extent of flooding. The rainfall estimates used in the State of Illinois for planning purposes are based on long-term rainfall records for the region, but haven't been updated since 1989. Recently the Illinois State Water Survey conducted a review of rainfall trends in northeast Illinois and determined that the overall quantity of rainfall as well as the intensity of individual events is increasing. To support planning for the current conditions and future trends, the State of Illinois is updating the current rainfall estimates and developing future rainfall estimates.

The study team determined that this new data will be critical for estimating the current and future impacts of flooding in watershed communities. To allow for consideration of the increased rainfall trends in plan selection, the study schedule has been extended to allow for inclusion of the State of Illinois updates.

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# April-May 2017 Flooding

Over the weekend of April 29 and 30, a storm system impacted the Chicago region. The two-day rain totals, according to the National Weather Service, ranged from 1.5 to over 5 inches. The heaviest rain totals of 3 to over 5 inches centered on the Illinois River Valley and the Chicago area during the afternoon and evening of April 29. Within the DuPage watershed, rainfall totals varied from 4.47 inches in Naperville, 4.64 inches in Plainfield, 4.21 inches in Joliet and 3.95 inches in Channahon.



*Flooding at Royce Road in Bolingbrook on the morning of May 1.*

These rainfall amounts resulted in flooding in across the watershed, with peak stages and flows reached on May 1. Information from this event will be added to the data used to verify the hydrology and hydraulic models.

## Peak Flows at Gages in the DuPage River Watershed (May 1, 2017)

| Gage                                      | Peak Flow <sup>1</sup> | Flood Level <sup>2</sup> |
|---|------------------------|--------------------------|
| West Branch DuPage River in West Chicago  | 888 cfs                | <i>Not defined</i>       |
| West Branch DuPage River in Warrenville   | 1,770 cfs              | Minor                    |
| East Branch DuPage River in Downers Grove | 692 cfs                | <i>Not Defined</i>       |
| East Branch DuPage River in Bolingbrook   | 1,420 cfs              | Moderate                 |
| DuPage River in Plainfield <sup>3</sup>   | --                     | Minor                    |
| DuPage River in Shorewood                 | 7,330 cfs              | Moderate                 |

cfs = cubic feet per second

<sup>1</sup> Stream flows are recorded by the U.S. Geological Survey and posted online at <https://waterdata.usgs.gov/nwis/rt>

<sup>2</sup> Flood levels are defined by the National Weather Service as part of their advanced hydrologic prediction service, available at [water.weather.gov/ahps](http://water.weather.gov/ahps)

<sup>3</sup> The gage on the DuPage River in Plainfield was struck by lightning overnight on Friday, April 28, and stopped recording data until it was repaired on Monday, May 1.

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## What's Next?

The Corps, the study sponsors, and resource agencies are continuing to review and evaluate potential flood risk management projects in the watershed. A draft report documenting the study is expected to be available for public review in Spring of 2018. We look forward to sharing the results of the study with you. Your feedback and comments on the recommendations are an important part of the planning process.

### Contact Us

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