Village of Elmwood Park

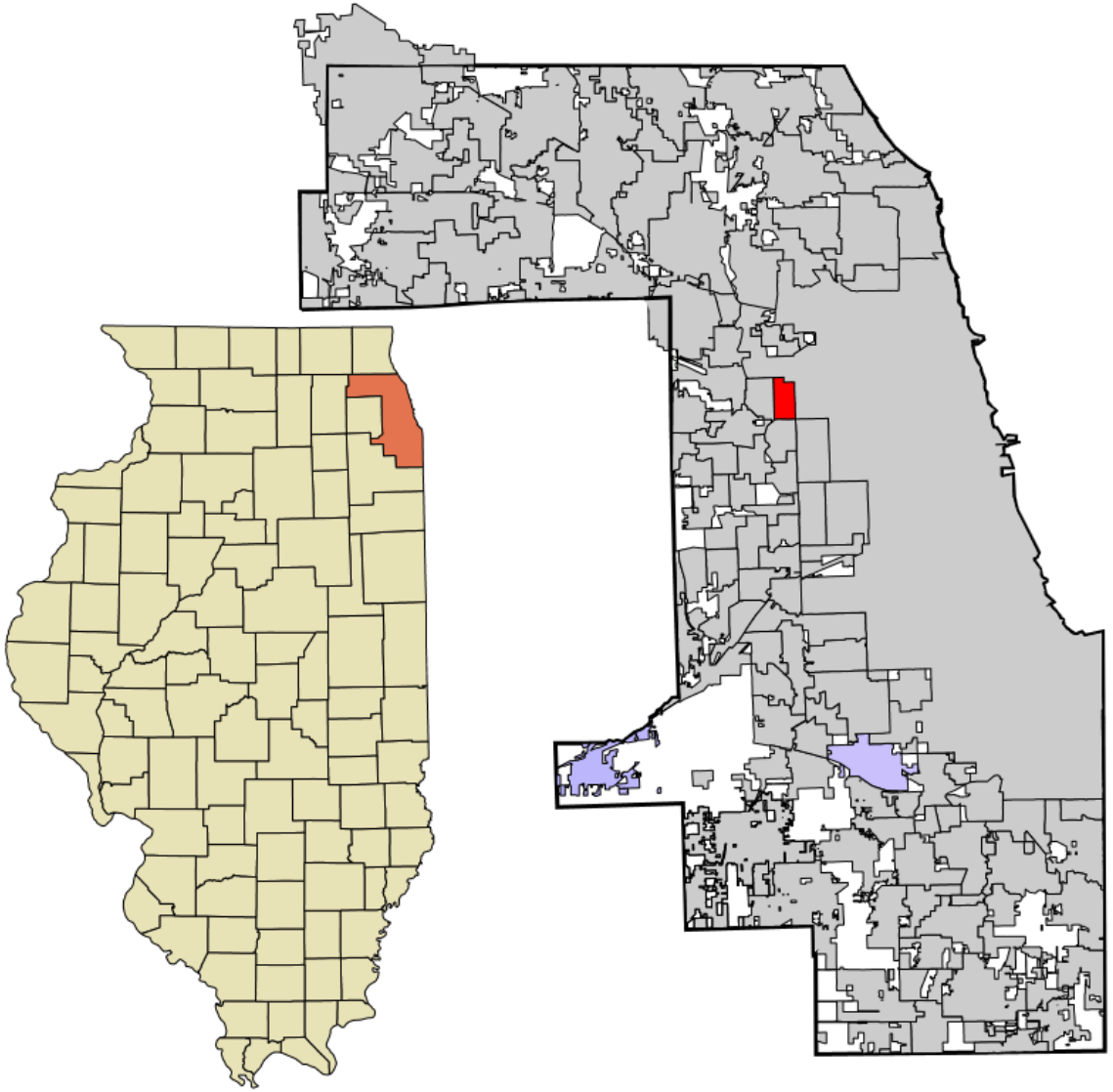
March 10, 2016

Flood Mitigation Plan

Presentation Overview

- **Project Objectives**
- **Village Drainage Overview**
- **Project Components**
  - Combined Sewer Separation
  - Oak Park Country Club (OPCC)
  - Floodwall



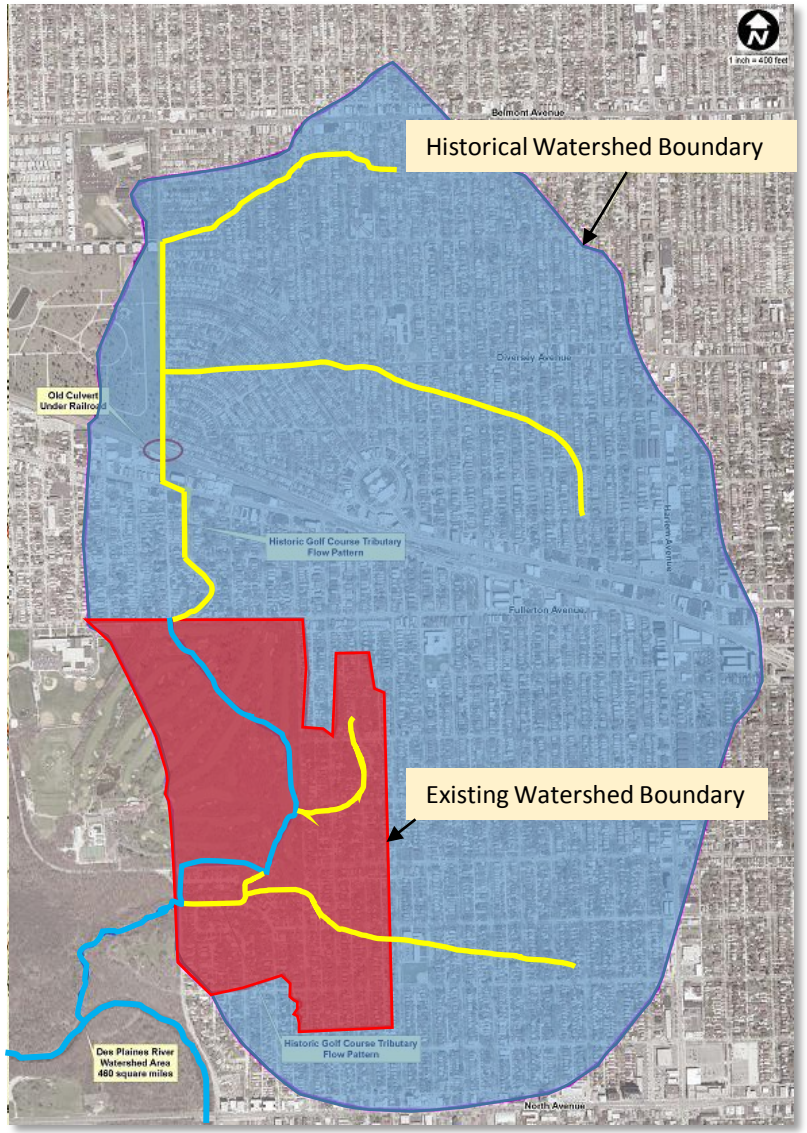



Elmwood Park is located in NE Illinois in Cook County

Village Drainage Overview

Village Area = 1,200 acres (ac)

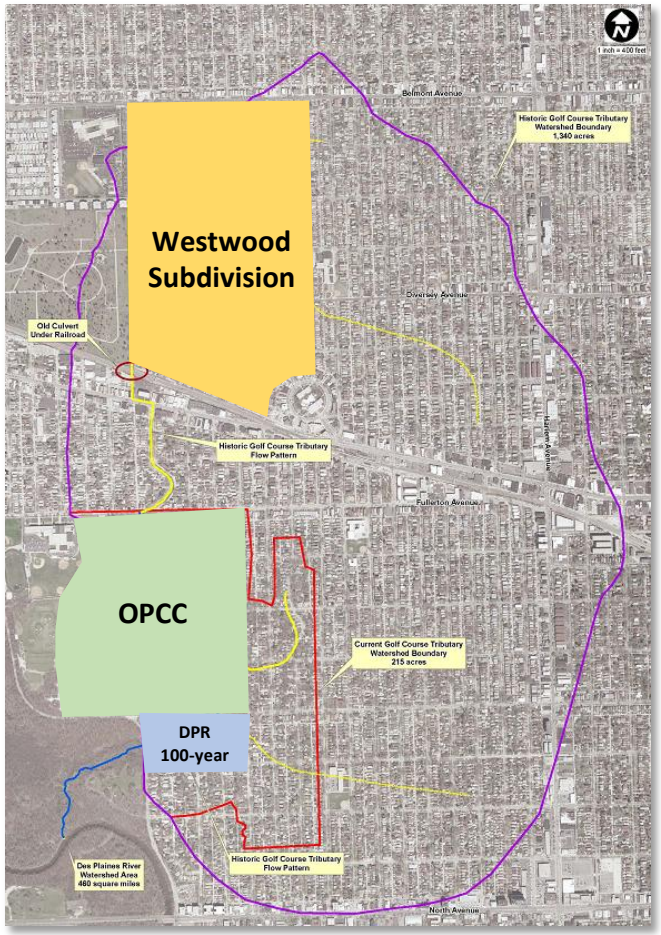
- Tributary to Des Plaines River and Golf Course Tributary
- Pre-1920, original Golf Course Tributary Watershed = 1,340 acres
- Post-development, original Golf Course Tributary Watershed = 215 acres
- Combined sewer system constructed



Project Objectives

- Side Street Drainage Improvements:
  - Reduce frequency and depth of street flooding in the Westwood Subdivision
  - Reduce CSOs within the Village

- Overbank Flood Improvements:
  - Reduce frequency and duration of overbank flooding within the OPCC
  - Provide protection to the homes located within the Des Plaines River 100-year floodplain



Westwood Subdivision Flooding

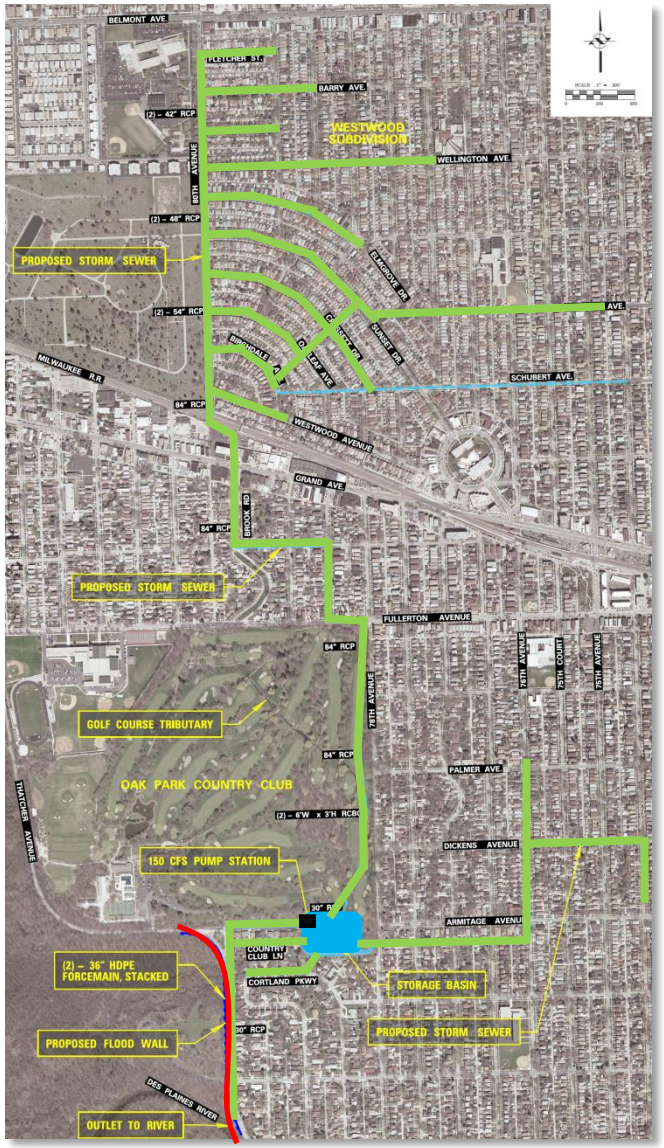
Golf Course Tributary Flooding in OPCC

Des Plaines River Overbank Flooding

Overview of Project Components

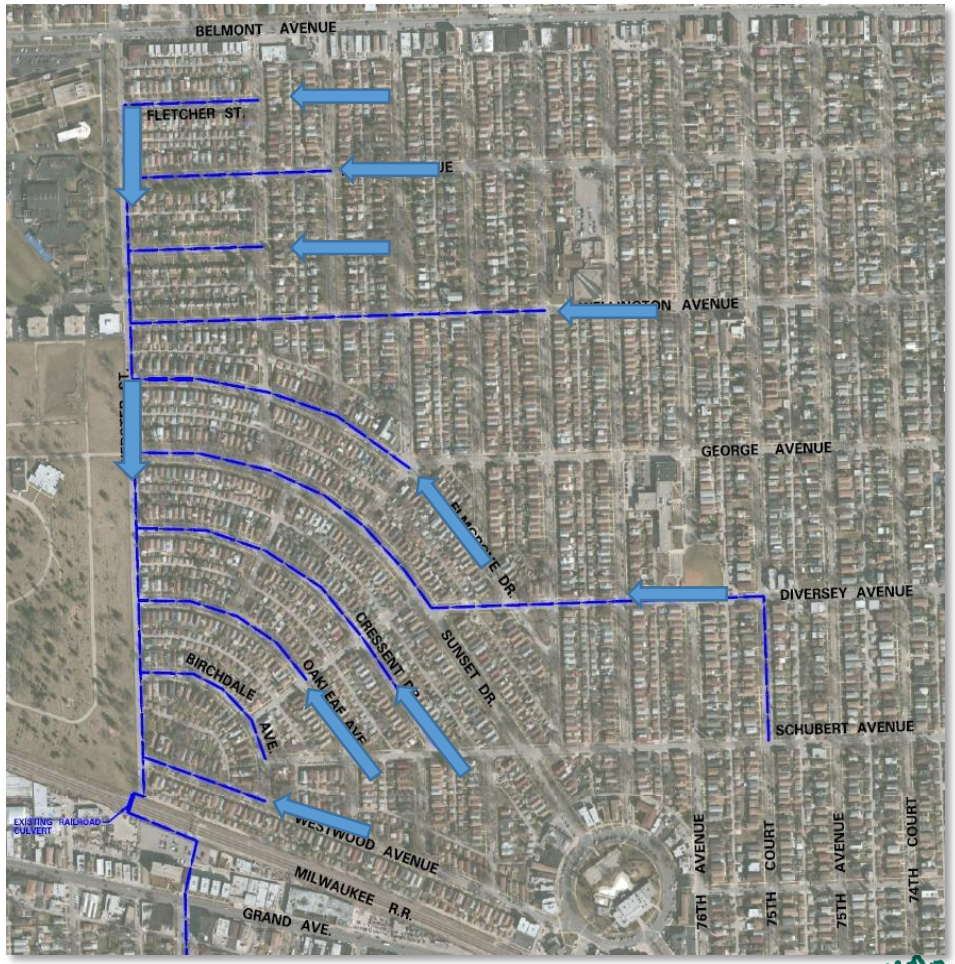
Hydrologic and hydraulic modeling was developed for the following:

1. Separate Storm Sewer System
2. Storage Basin
3. Pump Station
4. Floodwall



Westwood Subdivision Improvements

Over 24,000 lf of new storm sewer ranging in diameter from 24" to twin 54". Existing combined sewer used as sanitary sewer.



Oak Park Country Club Improvements

A 14 ac-ft storage basin and a 150 cfs pump station constructed at the southeast corner of OPCC.

Basin temporarily stores stormwater from Westwood Subdivision, OPCC, Country Club Lane and Cortland Parkway

Thatcher Avenue Improvements

Thatcher Avenue & Chicago Avenue

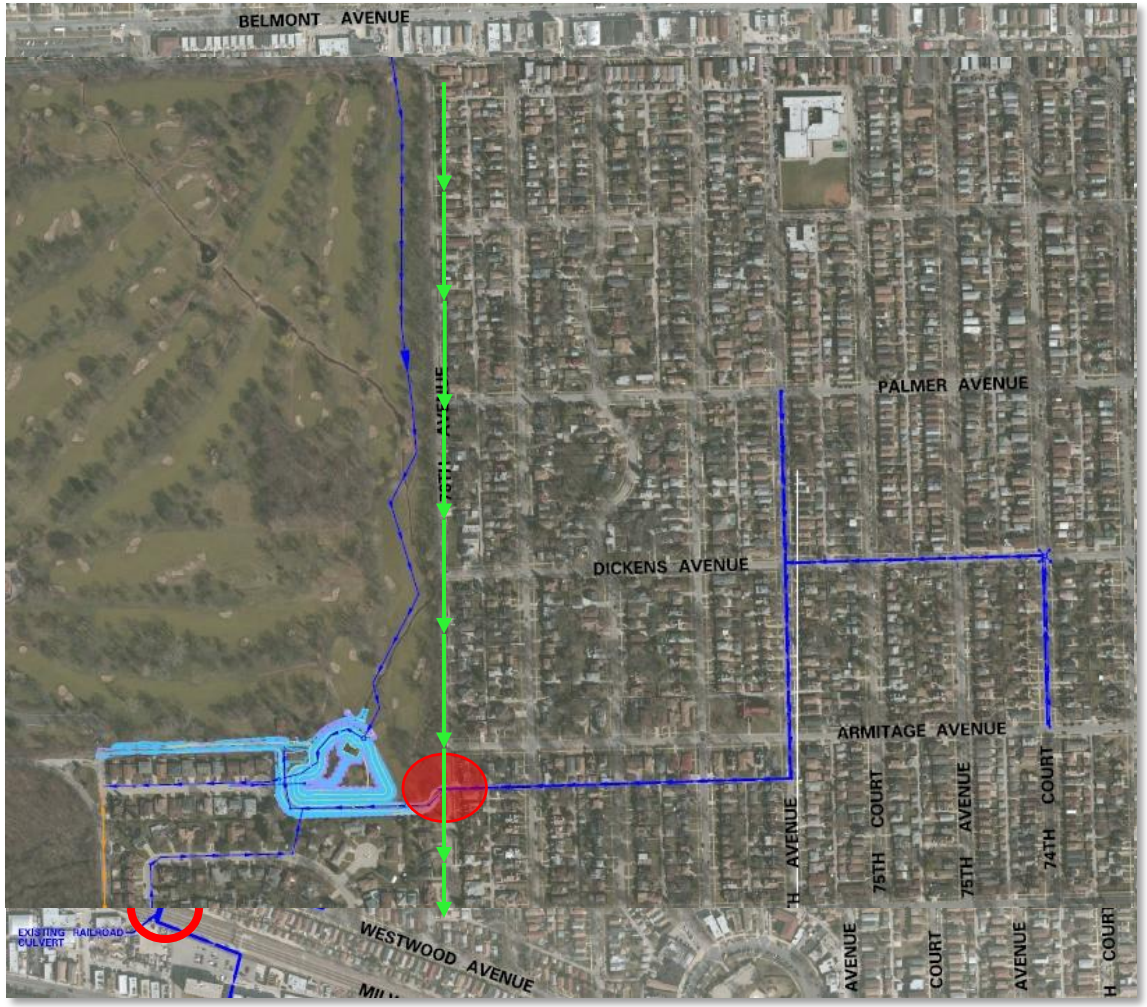
Artistic Rendering of Proposed Floodwall

Project Challenges Included:

- Conveying flow from Westwood Subdivision to OPCC
- Storm sewer and reservoir on OPCC
- Construction Sequence
- Discharge to GCT and DPR
- Floodwall along Thatcher Ave
- Permitting & Coordination

Westwood Subdivision & Low Areas to OPCC

1. ComEd Line
2. New Crossing at Metra Line
3. Existing Combined Sewer



138 kV ComEd Transmission Line

Milwaukee Railroad Crossing

Milwaukee Railroad Crossing

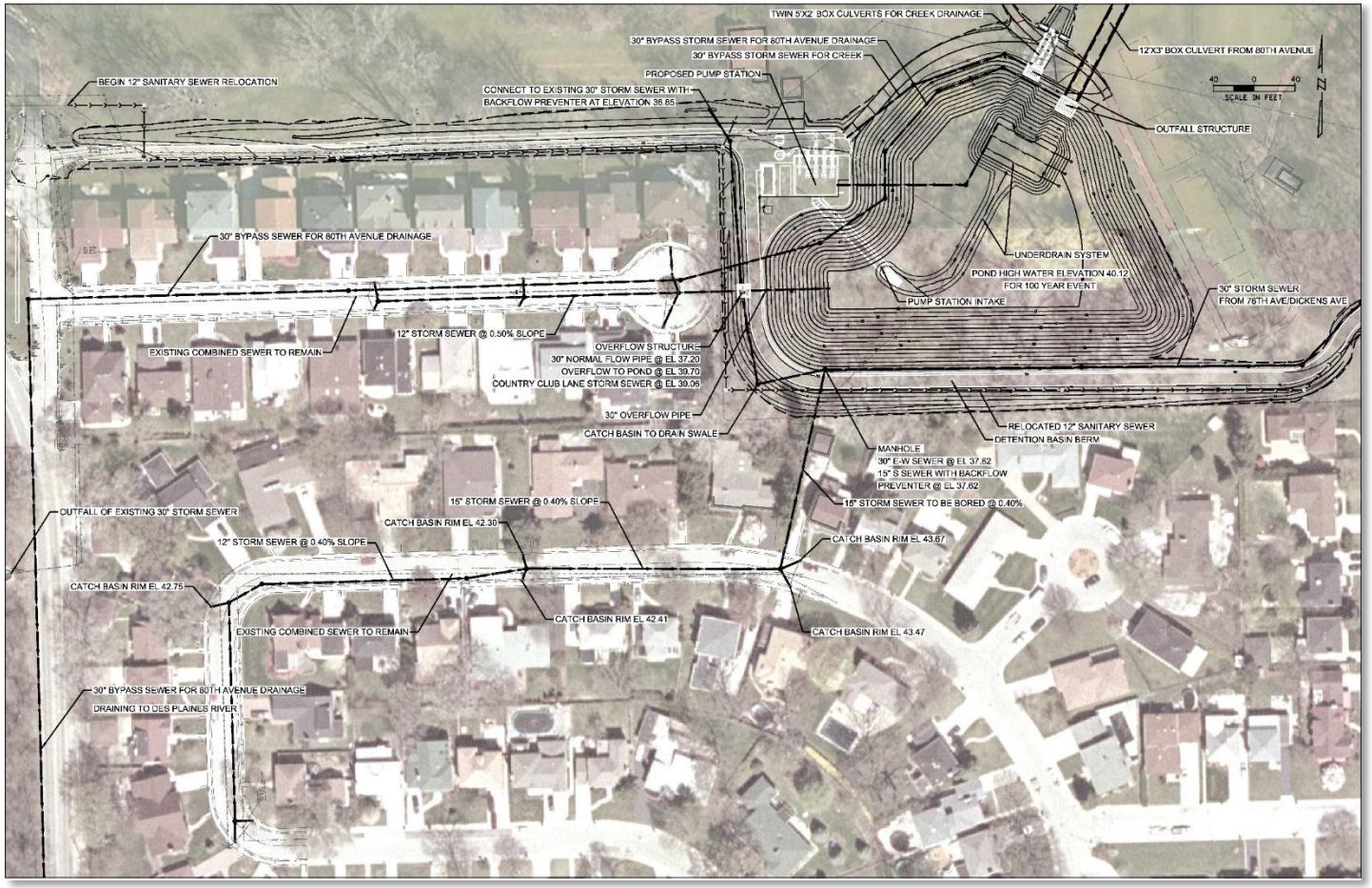
Crossing 66” Combined Sewer

Storm Sewer within OPCC

1. Active Privately Owned Golf Course
2. Deadline of Spring 2014 for completion of sewer construction
3. Sanitary Line from superintendent's house to combined sewer
4. Golf course bridges
5. Alignment of sewer (minimal cover)

OPCC Storage Basin

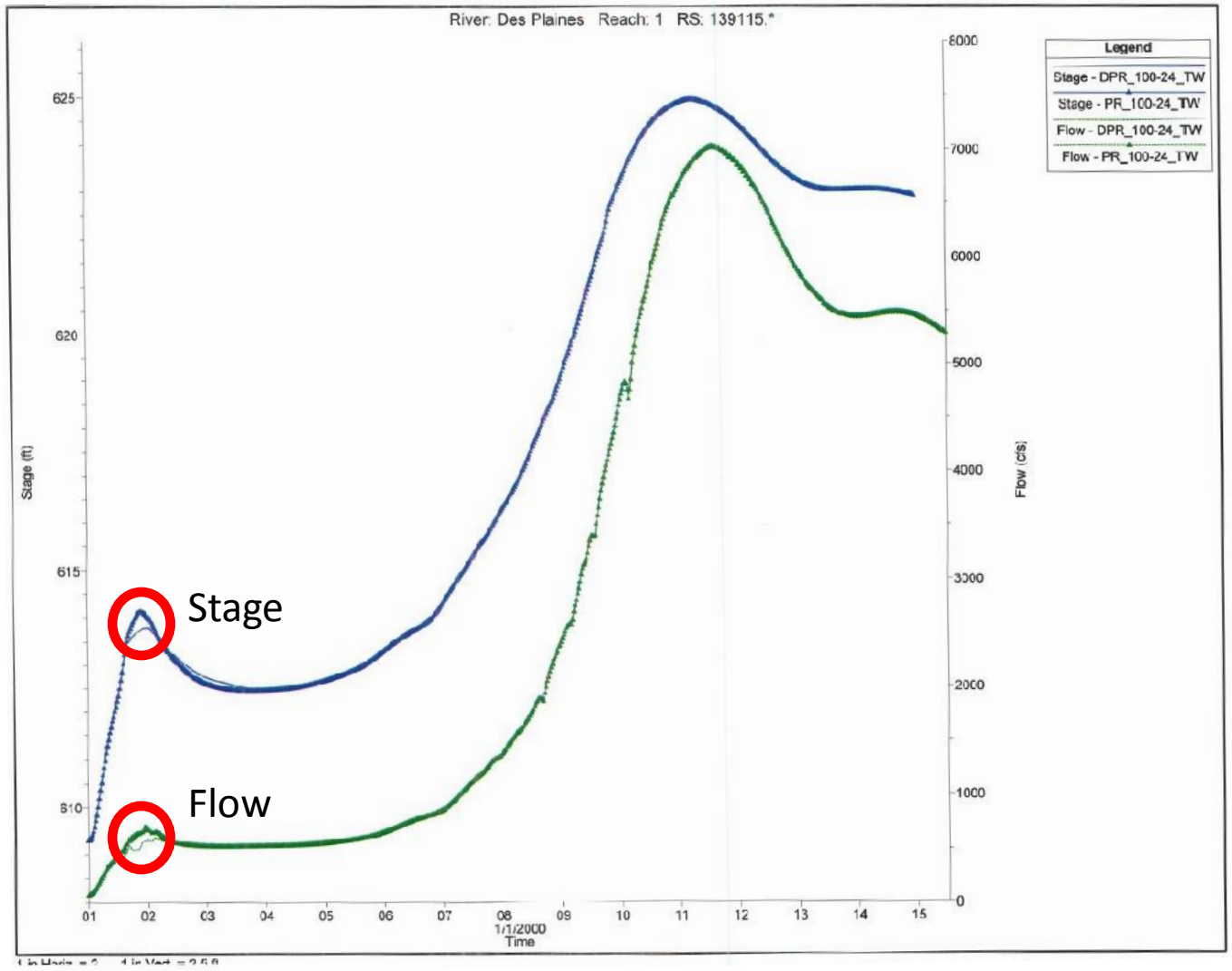
1. +/- 14 ac-ft of storage volume
2. 3 inflow locations
3. 3 Gravity bypass pipes
4. 150 cfs pump station with stacked 36" FM
5. Generator/pump house aesthetics and noise



Thatcher Avenue Floodwall

1. +/- 1,900 lf of floodwall
2. Forest Preserve Entrance
3. Does not meet FEMA's 3' freeboard requirement, but has 2 feet of freeboard (FEMA approved)
4. In process of obtaining LOMR to remove homes within flood prone area (CLOMR received for this project)

Des Plaines River Impact Analysis



1. 2 discharge points to DPR
2. Minor increases
3. Pump station operation plan when DPR is high
    1. DPR gage at Riverside and Lake Street monitored
    2. 3 pumps turned off during high river

Golf Course Storm Sewer

Golf Course Storage Basin

Golf Course Pump House and Generator

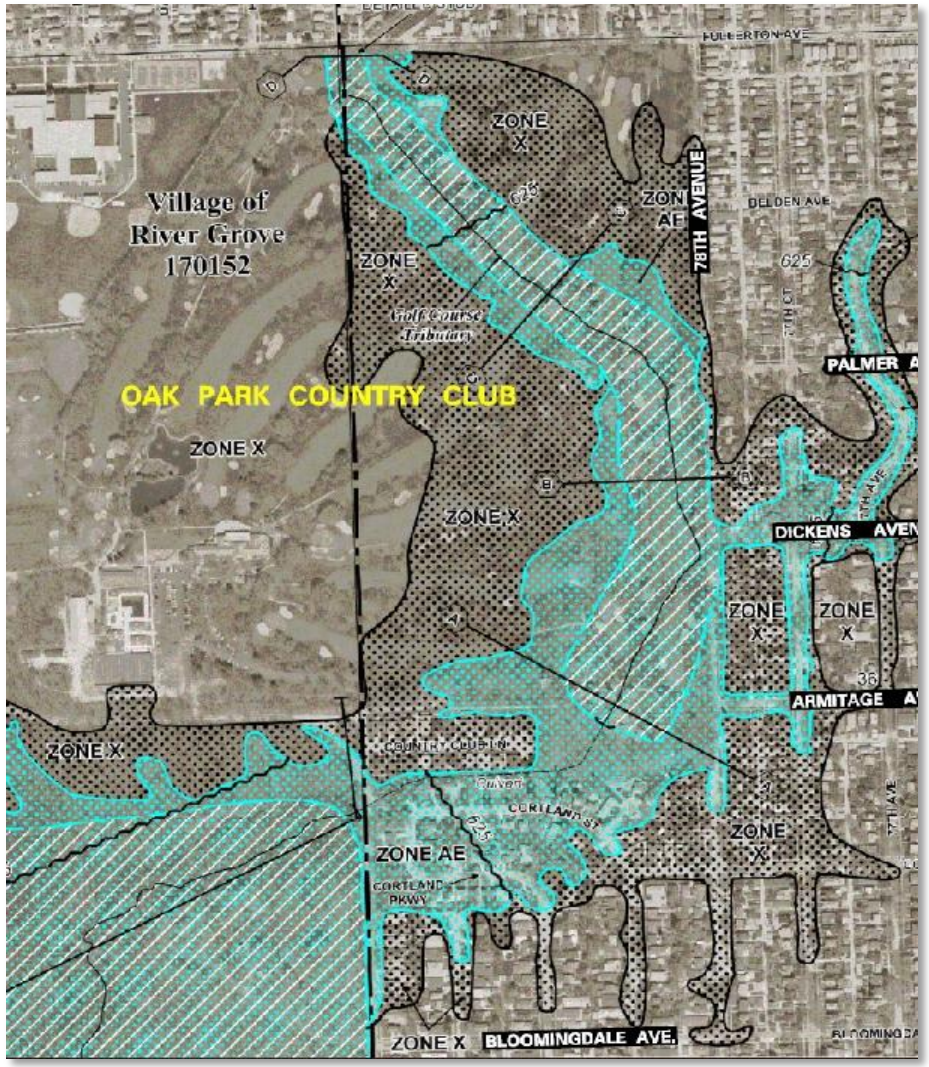
Construction Photos: Twin Stacked 36” FM & 30” Bypass

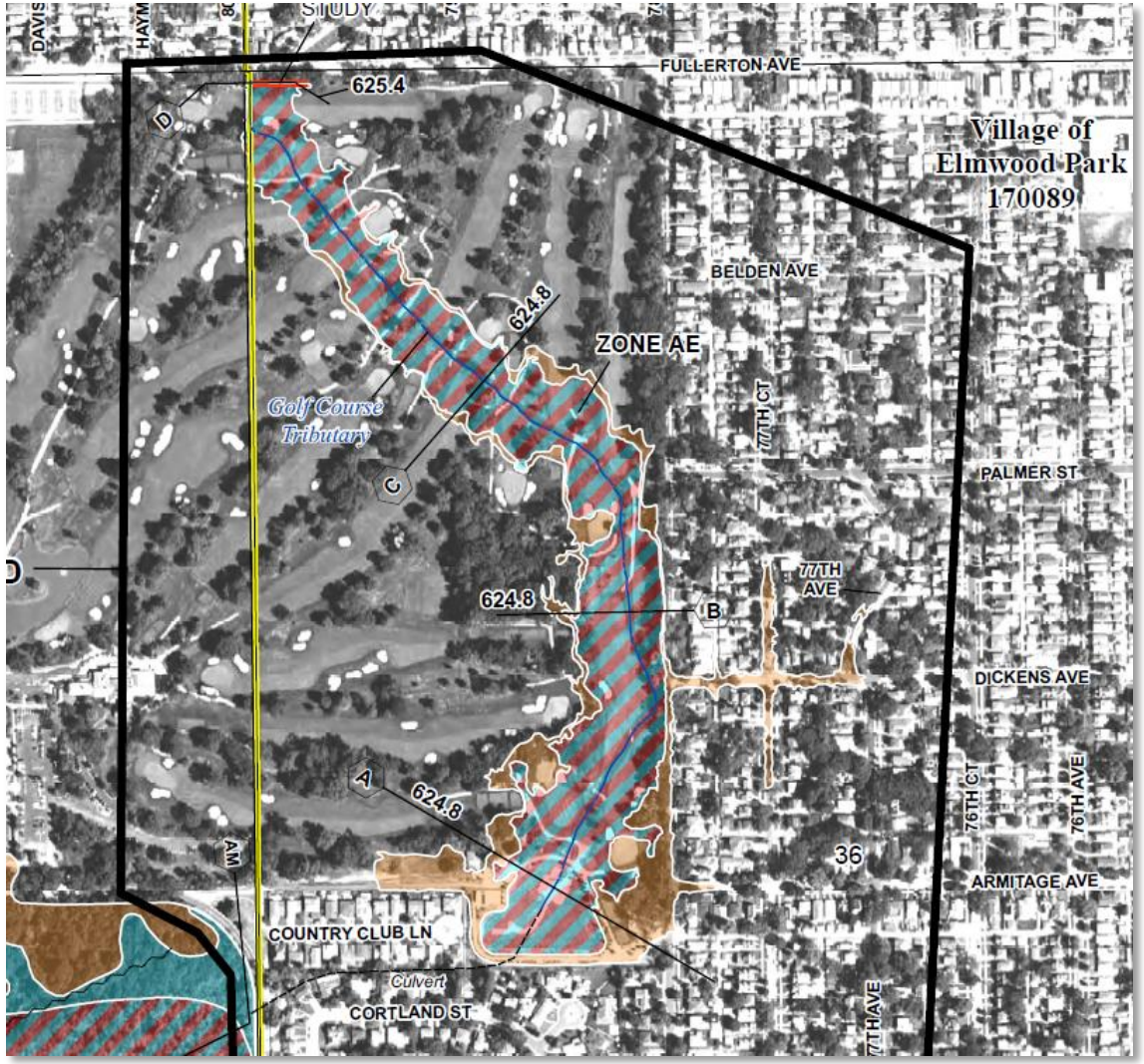
Post-Construction Photos – Outlet to Des Plaines River

Before and After – Thatcher Ave Floodwall

Post-Construction Photos – FPD Entrance

LOMR Removing 50 homes from 100-year Floodplain





Project Funding and Costs

Approximately $31 million project cost

- $5.1 million from MWRD for the floodwall
- $1.7 million from IDOT for the jurisdictional transfer of Thatcher Avenue
- Municipal Bonds
- IEPA low interest loans

Project Benefits

1. Reduced level of flooding and duration in the Westwood Subdivision and other locations within Village
2. Reduced risk of sanitary backup within the Westwood Subdivision
3. Increases available capacity of downstream combined sewer system
4. Reduced clear water to the MWRD interceptor
5. Reduced duration and level of overbank flooding in OPCC
6. Removed approximately 50 homes from the 100-year floodplain of the Des Plaines River