



Village of Downers Grove McCollum Park Flood Control Facility Case Study



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Presentation Agenda

- Background
- Project Overview
- Hydraulic Design Considerations
- Park Design Considerations
- Challenges
- Results
- Questions?





Background

- Downers Grove
 - Western Chicago Suburb
 - Founded 1832
 - 175 years of development
 - Only 30 years “regulated”
- 2005 Stormwater Master Plan
 - Recommended developing a Watershed Infrastructure Improvement Plan
 - Study and identify stormwater system deficiencies
 - Guide future infrastructure improvements
 - WIIP completed in 2007





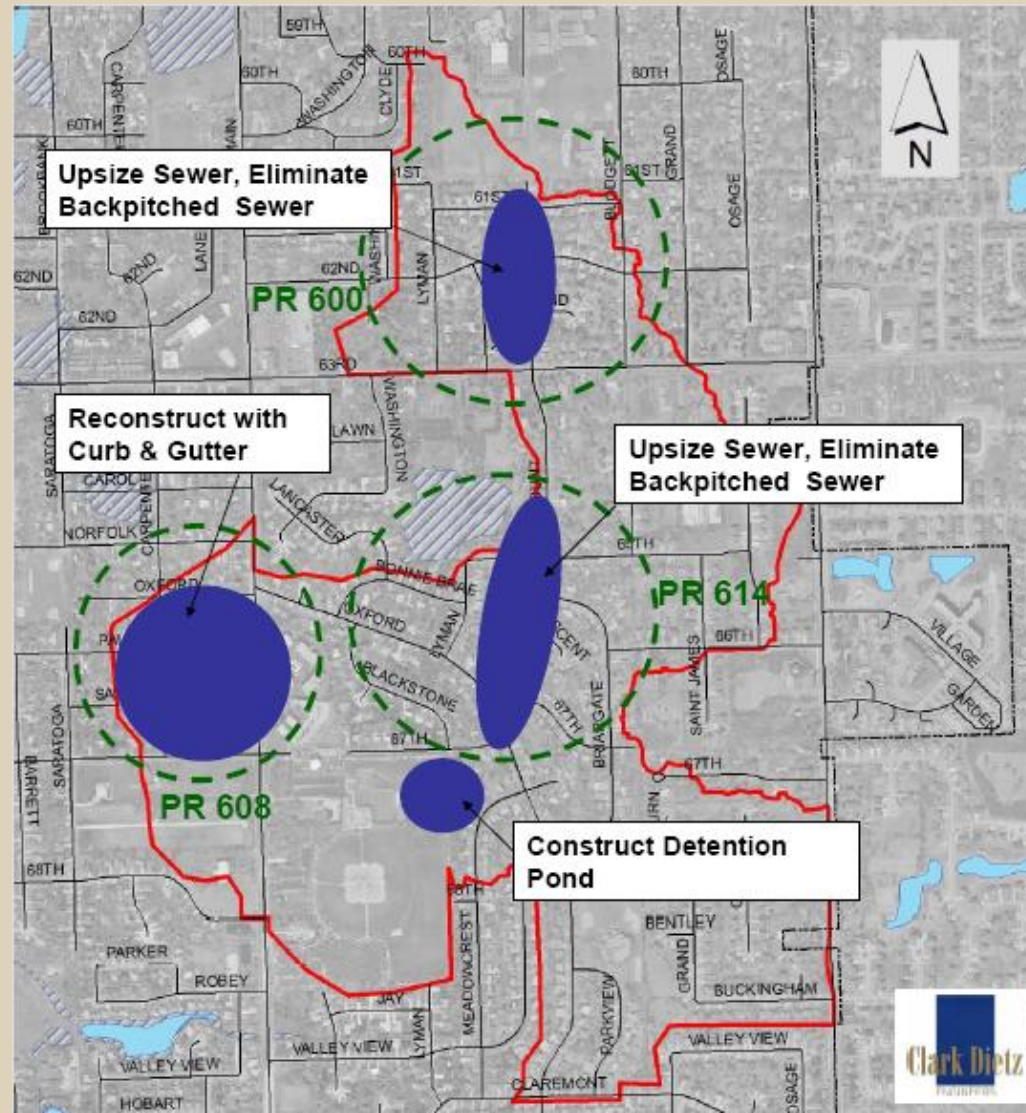
Background

- WIIP identified flooding problems Village-wide
- Several problems identified in “subbasin PR B” of Prentiss Creek Watershed
- Street & yard flooding in PR B resulting from:
 - Undersized Sewers
 - Backpitched Sewers
 - Sedimentation
 - Lack of Drainage System



Background

- WIIIP recommendations for PR B:





Background

- Needed to find location for new flood storage basin in highly developed (suburban) area
- McCollum Park selected
- Intergovernmental Agreement formed between Village and Park District
 - Village's Goal: Flood Storage
 - Park District's Goal: Park Improvements and Amenities



Project Overview

- Multi-Purpose Basin
 - Flood control
 - Stormwater detention of PD's future improvements
 - Full size regulation soccer field
- Storm sewer modifications





Project Overview

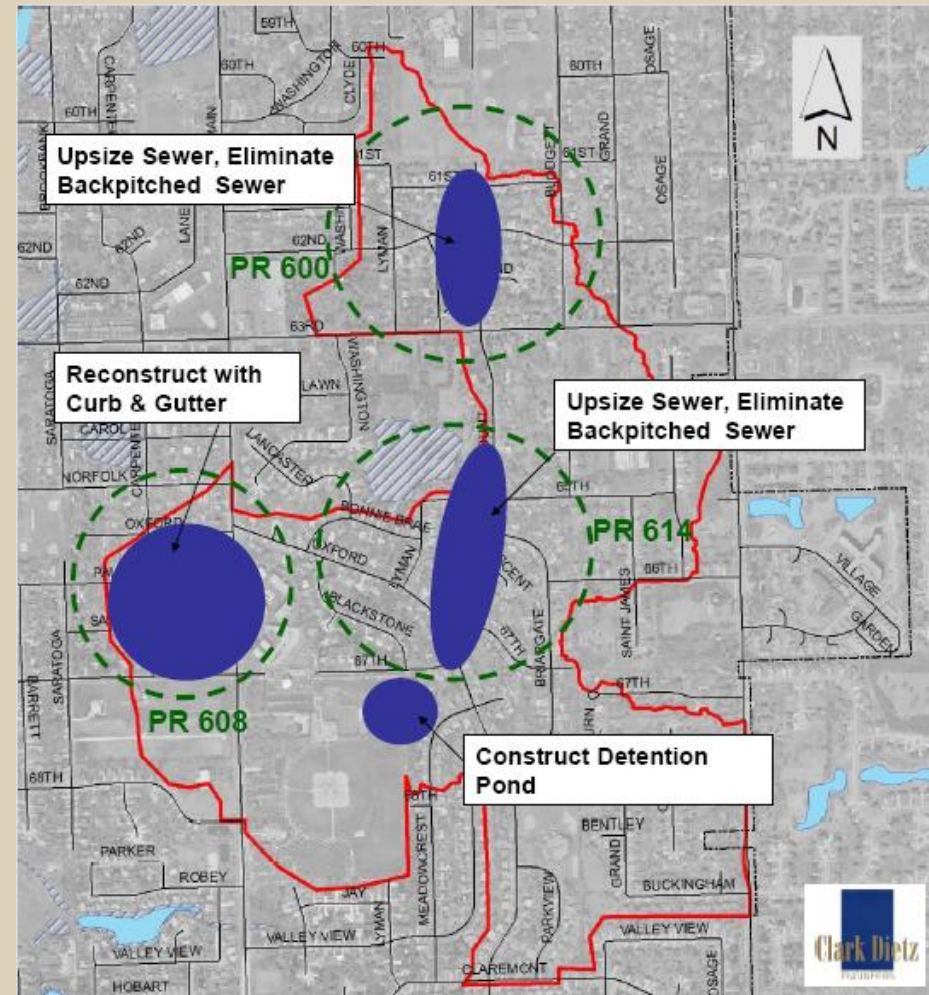
- Park amenities
 - Pedestrian path modifications
 - Relocation of basketball and sand volleyball courts
 - Soccer Field
 - Underdrain
 - Irrigation
 - Lighting
- No “Special Management Areas”





Hydraulic Design Considerations

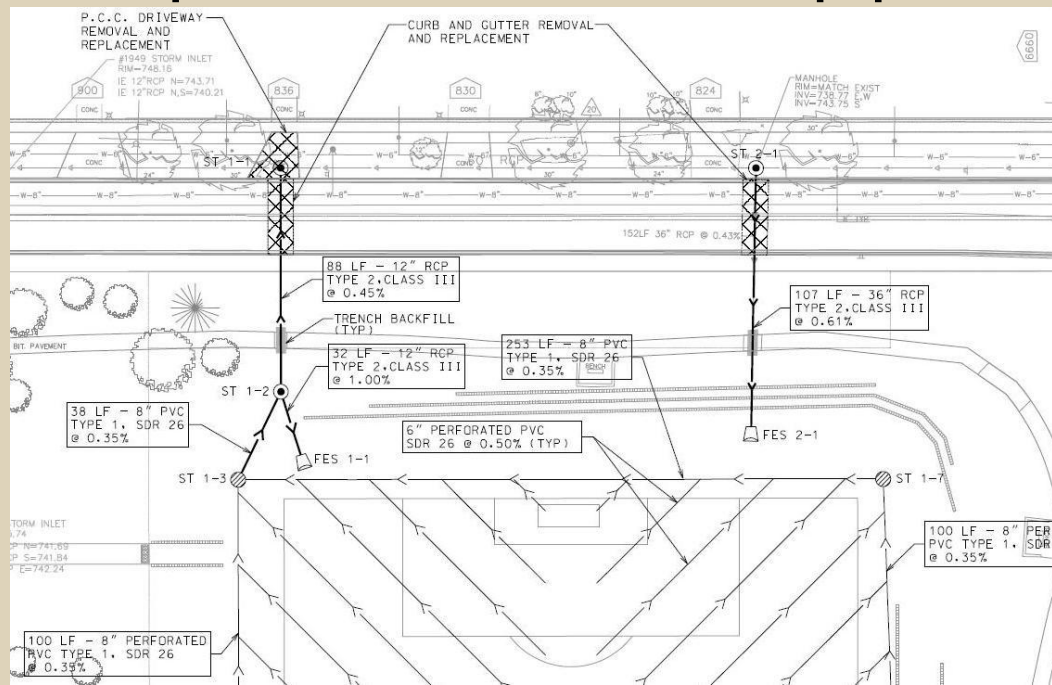
- Adjacent to 67th Street Trunk Sewer
 - 60-inch storm sewer
 - 10-year capacity
 - Surcharged sewer results in upstream flooding





Hydraulic Design Considerations

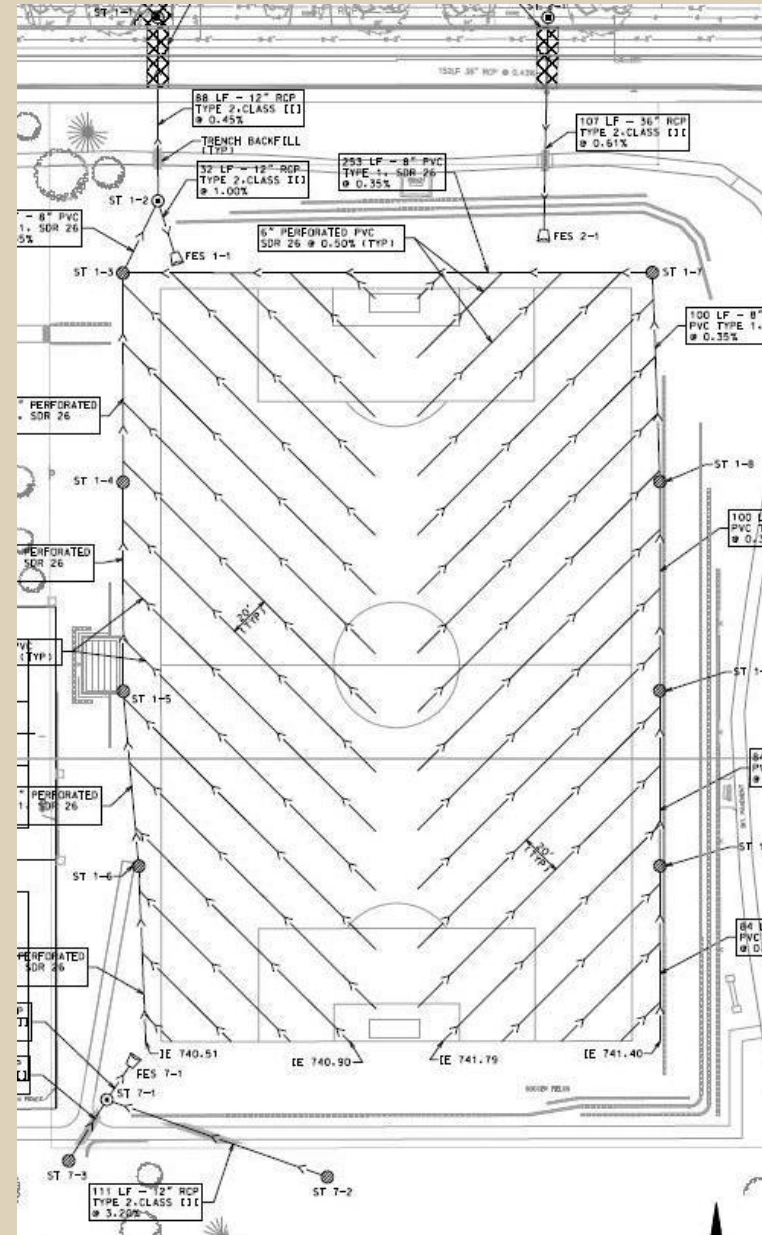
- 36-inch overflow pipe at trunk sewer crown
 - Delivers flow > 10-yr into basin
 - Reduces upstream flooding in moderate to large storm events
 - Keeps soccer field dry during small storms
- Backflow preventer on outlet pipe





Park Design Considerations

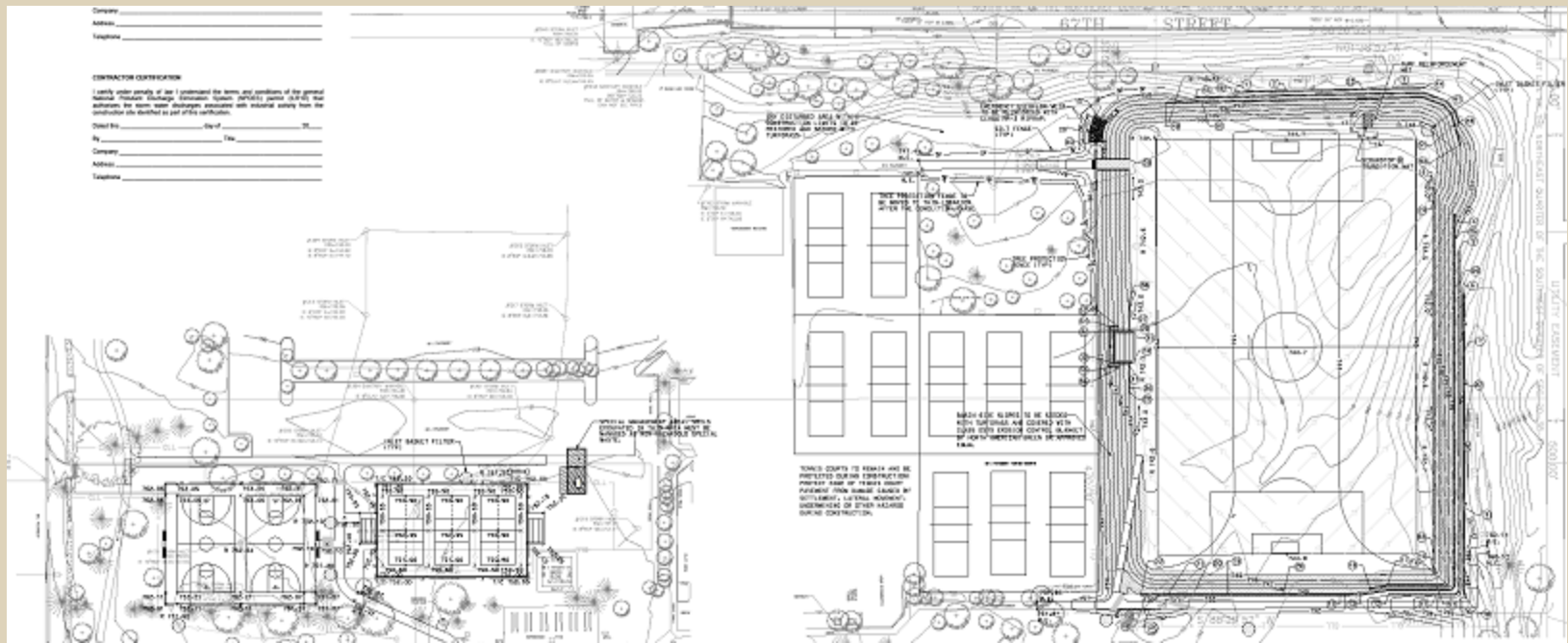
- Village / Park District Coordination
- Underdrain System
 - Facilitate drainage during storms (incl small events)
- Irrigation System
 - Moisture sensors for water conservation
- Full size regulation soccer field





Park Design Considerations

- Sand Volleyball, Basketball Courts relocated
- Pedestrian Path improvements
- Lighting
- Bleachers
- Low retaining walls for spectator seating



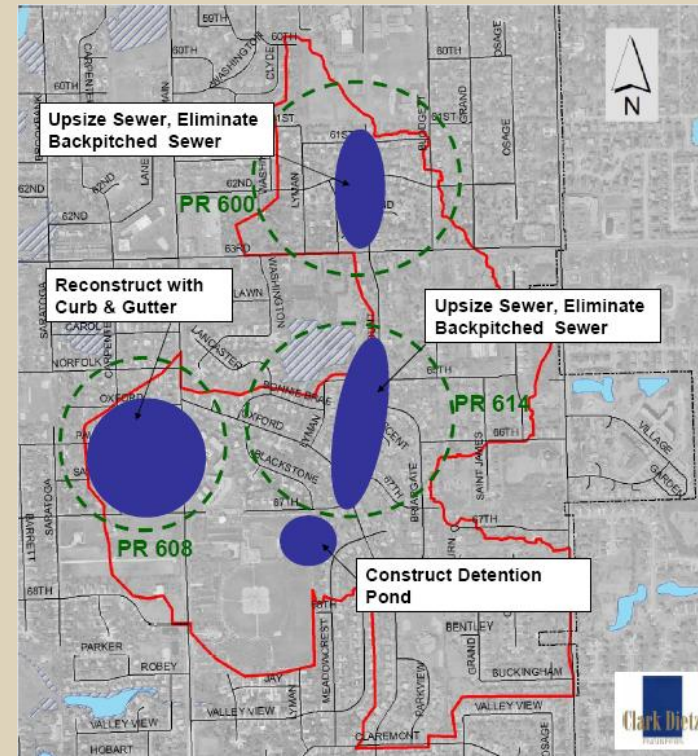


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- Topographic map of the Northwest Quarter of the South-West Quarter of Section 20, Township 36N, Range 12E. The map shows a proposed development area with a central circular feature, likely a pond or a large well. The development is bounded by a road on the north and east, and a road on the south. The map includes various annotations and features:
- Annotations:**
 - COUNTY DEVELOPMENT WITH REFINISHED WITH PAVED DRIVEWAY
 - SLOPE TO BE GRADED AND COVERED WITH CRUSHED CORN & WASTE
 - COUNTY TO CONSTRUCTION MIT
 - TWIN PUMP/STORMWATER JET
 - DRAIN BASIN
 - TREE PROTECTION (PARK 1700)
 - SLOPE TO BE GRADED AND COVERED WITH CRUSHED CORN & WASTE
 - Features:**
 - Central circular feature (Pond/Well)
 - Rectangular development area
 - Roads on the north, east, and south
 - Contour lines indicating elevation
 - North arrow
 - Scale bar



Results

- XP-SWMM Dynamic Modeling
- 15.8 ac-ft flood storage
- Expected flood reductions
 - Up to 1.7 ft in PR614
 - Up to 0.6 ft in PR600
- Improved park amenities





Questions?

SITE OWNER CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my review of the project and services which I managed or supervised, I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Dated this _____ day of _____, 20____
By _____ Title _____
Company _____
Address _____
Telephone _____

CONTRACTOR CERTIFICATION

I certify under penalty of law that I understand the terms and conditions of the general National Pollutant Discharge Elimination System (NPDES) permit (D001) that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification.

Dated this _____ day of _____, 20____
By _____ Title _____
Company _____
Address _____
Telephone _____

