# City of Oshkosh Stormwater Management Melvin Avenue Street Reconstruction



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## Overview

- Watershed Characteristics
- Design Standards
- Alternatives Analyzed
  - Conveyance Upgrades
  - Pump Station
  - Pump Station and Detention Basin
- Performance in Larger Storm Events
- Summary
- Discussion



#### Watershed Characteristics

- Approximately 106 Acres
- Roughly Bounded by:
  - North Main Street
  - Irving Avenue
  - Melvin Avenue
  - Lake Winnebago
- Primarily Residential Land Use (>95% of area)
- Unique features:
  - Railroad
  - Menominee Park
  - Webster Stanley Middle and Elementary Schools.



#### Watershed Characteristics





## **Design Standards**

- Eliminate Street Flooding for 10-year Design Storm.
  - For Melvin Avenue 1.3" of rain in 30 minutes.
- Reduce Street Flooding for Larger Storm Events to the Maximum Extent Practicable.
  - Look at 25-year Design Storm (1.65" in 30 minutes)
  - Look at 100-year Design Storm (2.35" in 30 minutes)



- Conveyance Upgrades
  - Can Design Standards be met?
    - Looked at numerous pipe system only upgrades to attempt to meet Design Standards.
    - Shallow depth created pavement design problems.
    - No pipe system only upgrades could meet design standards.
  - Look at upgrades in conjunction with other solutions.



- Pump Station
  - Can Design Standards be met?
    - 180 cfs pump station (81,000 gpm) with pipe system upgrades can meet Design Standards.
  - Other Impacts
    - Approximately 60'x60' pump station building footprint.
  - Cost Estimate
    - Estimated at approximately \$4 million
      - Includes pipe system upgrades in Melvin Avenue and pump station.











- Pump Station and Detention Basin
  - Can Design Standards be met?
    - 50 cfs pump station (22,000 gpm) with pipe system upgrades and detention basin can meet Design Standards.
  - Other Impacts
    - Approximately 35'x35' pump station building footprint.
    - Acquisition and Relocation of 6 residential properties
  - Cost Estimate
    - Estimated at approximately \$3 million
      - Includes pipe system upgrades in Melvin Avenue, pump station, acquisition and relocation and construction of detention basin.











# Summary

- 1. Large Pump Station
  - Meets Criteria of no street flooding in 10-year design storm
  - Approximately 60'x60' building in Park
  - Approximately \$4 million cost
  - No property acquisition
- 2. Detention Basin and Smaller Pump Station
  - Meets Criteria of no street flooding in 10-year design storm
  - Approximately 35'x35' building in Park
  - Approximately \$3 million cost
  - 6 residential properties must be acquired.





#### Discussion

