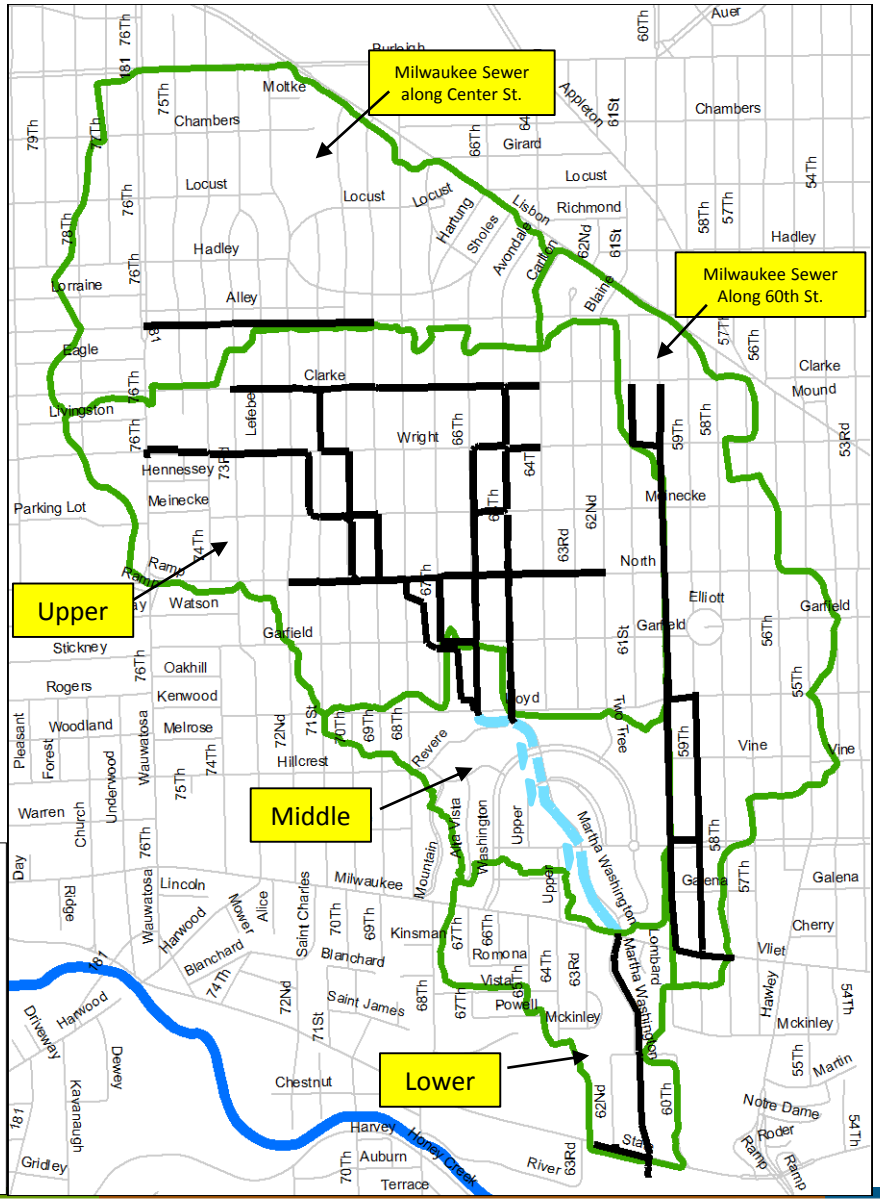
# Watershed Overview




## Legend

- Existing Storm Sewers
- Watershed Boundaries
- Menomonee River
- Existing Open Channel
- Streets

This looping presentation contains 11 slides and runs for approximately 8 minutes.

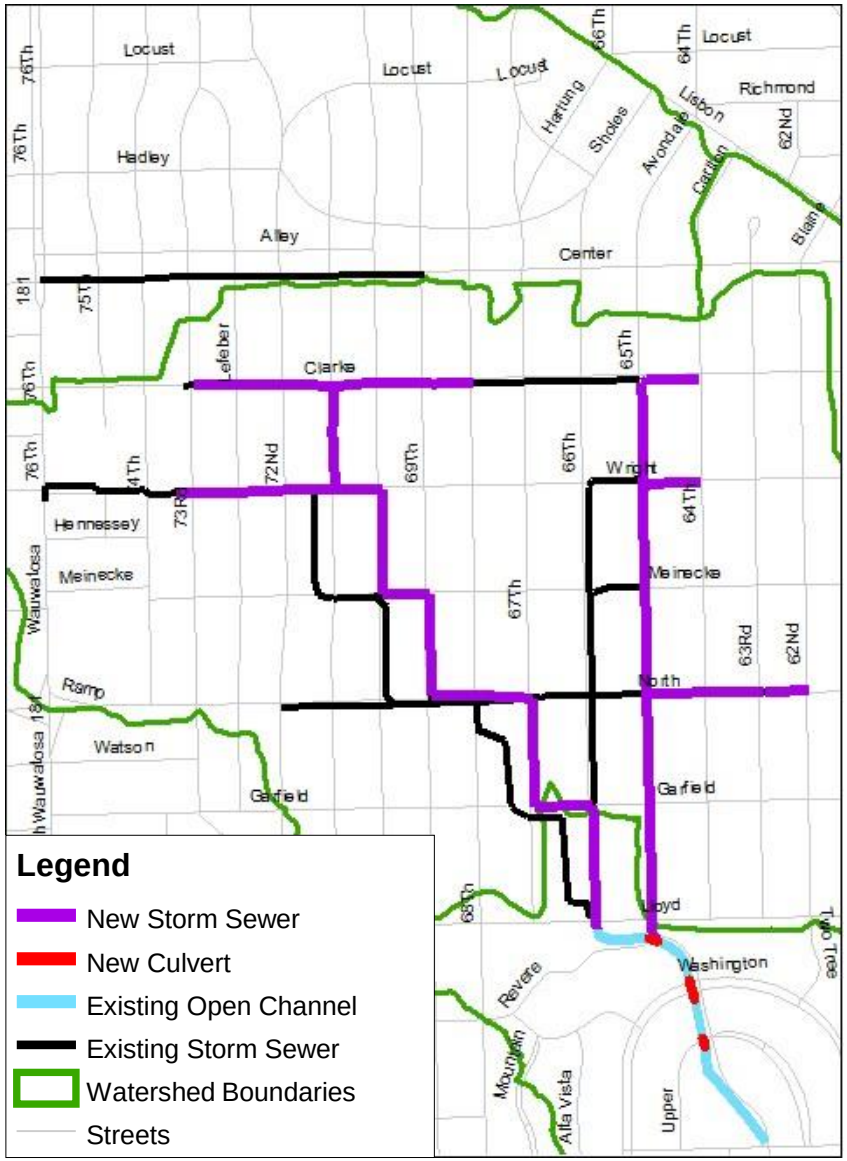
Information in this presentation can also be found in the handout packets.

# Alternative 1 – Piped Conveyance

## Features

- Add new pipes in the Upper Area
  - Upsize along 65th St. (~3,800 ft of 2-3' diameter to 3-5' diameter reinforced concrete pipe)
  - Add ~1,400 ft of 2' diameter pipes to eastern side of 65th St.
  - Upsize along low area sewer route 72th and Clarke to open channel (~7,700 ft of 2.25 – 5' diameter to 4-8' diameter reinforced concrete pipe)

- Middle Area – additional culverts
  - Revere Ave. – add a 5' x 5' reinforced concrete box culvert
  - Washington Circle and Upper Parkway – add a 5' x 6' reinforced concrete box culvert to each



# Alternative 1 – Piped Conveyance

Features (continued)

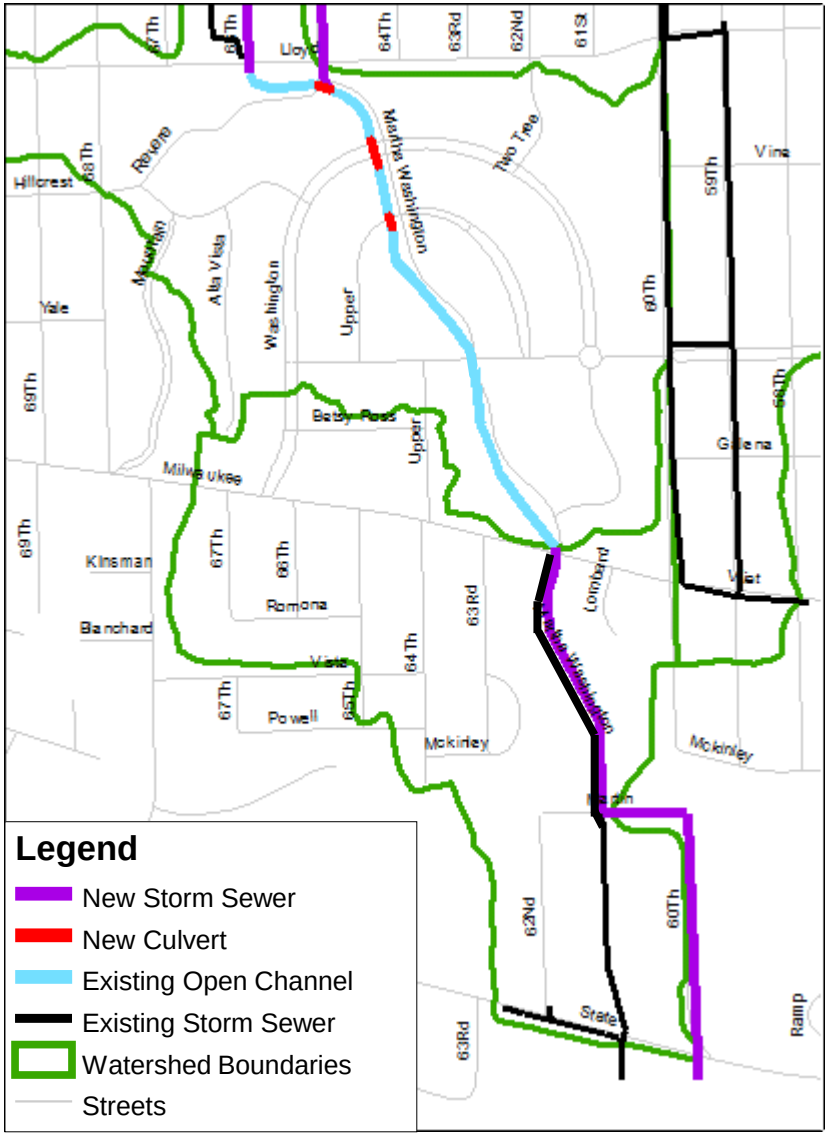
- Lower Area – additional pipe
  - ~3,550 ft of concrete box culvert from Milwaukee Ave. to State St.

Effects

- Would eliminate street flooding south of Milwaukee Ave., preventing structural damage to surrounding buildings during 100-year storm event
- Minimal street flooding in the Upper Area during a 100-year storm event

Cost (2017)

- Approximate cost: $23.3 million



# Alternative 2 – Tunneled Conveyance

## Features

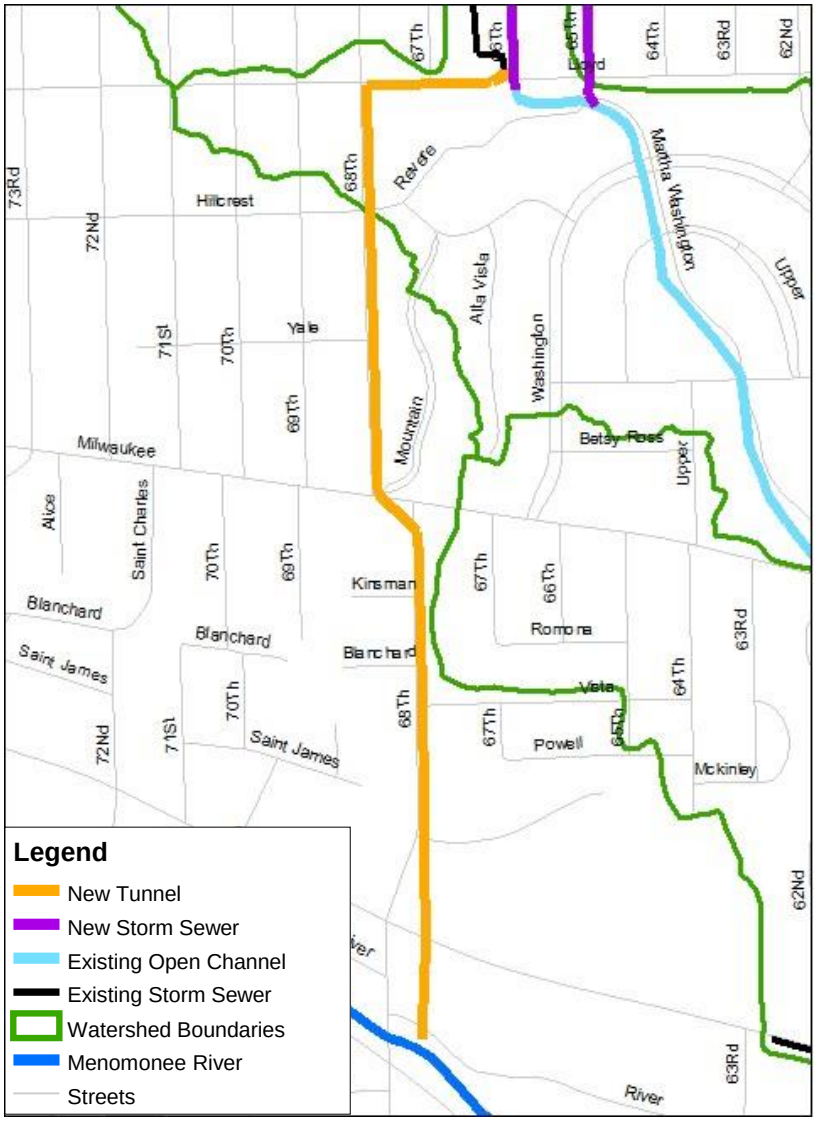
- Storm sewer upsizing north of Lloyd St. (see Alternative 1)
- Bypass Tunnel box culvert
  - ~5,300 ft of 8.5’ reinforced concrete pipe from 66th St. and Lloyd St. to the Menomonee River
  - Takes majority of flow from the Upper Area for 100-year event

## Effects

- Would eliminate street flooding in the Lower Area, preventing structural damage to surrounding buildings during a 100-year storm event
- Significantly reduces street flooding in the Upper Area during a 100-year storm event, primarily near the new and replaced pipe

## Cost (2017)

- Approximate cost: $36.5 million

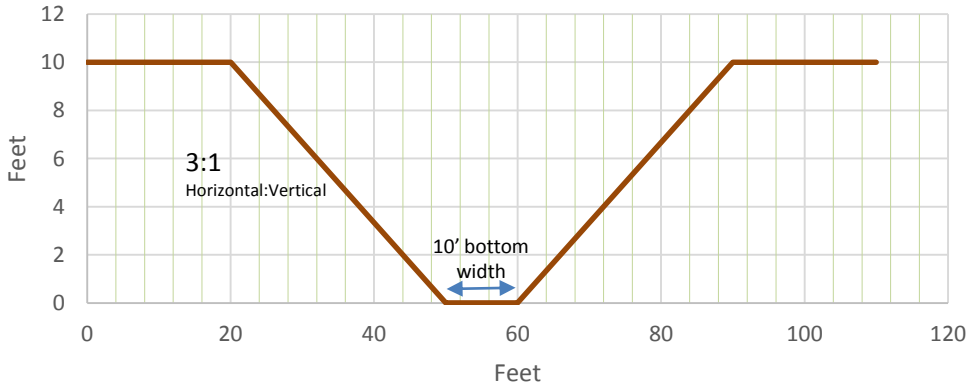


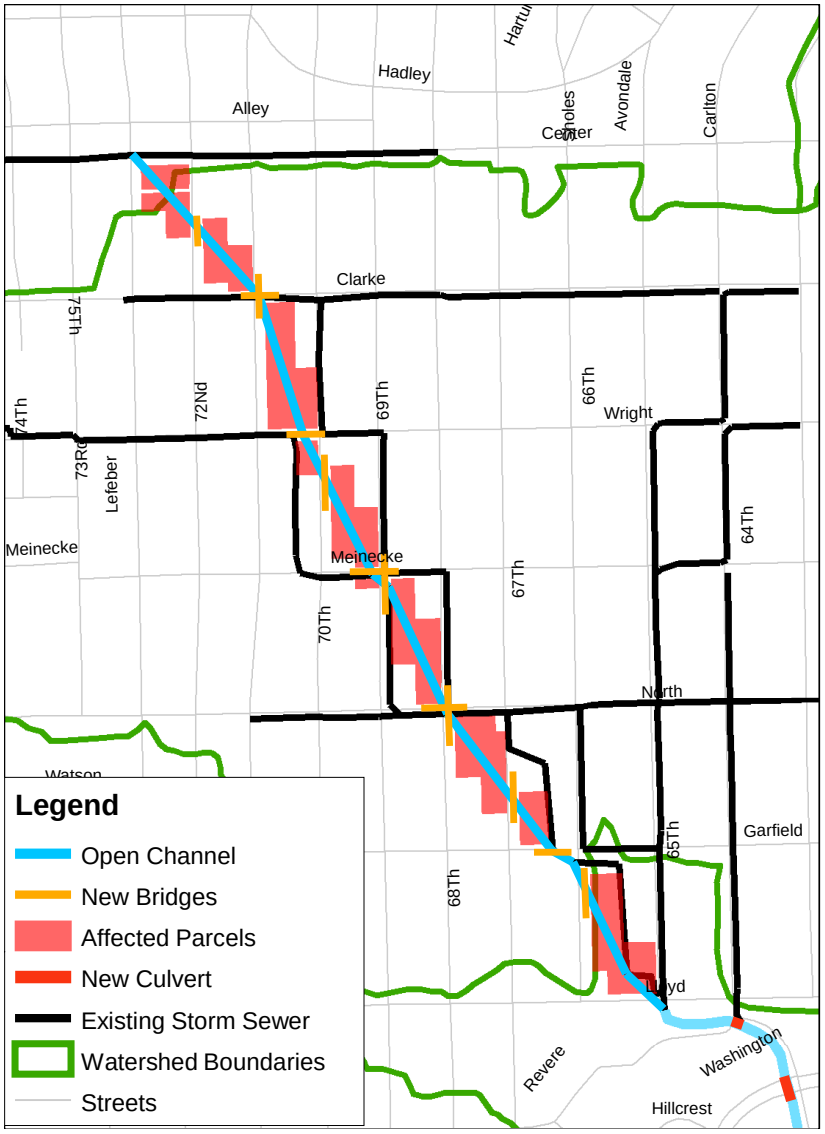
# Alternative 3 – Open Channel Extension

## Features

- New open channel in Upper Area
  - Trapezoidal shape channel with 10-ft wide bottom, 6-10’ depth and 3:1 side slopes
  - New channel length: ~4,910 ft
  - 9 new bridges across channel
  - 122 properties would be affected
- Middle Area – additional bridge openings at Revere Ave., Washington Cir., and Upper Pkwy.

Approximate Channel Dimensions



# Alternative 3 – Open Channel Extension

Features (continued)

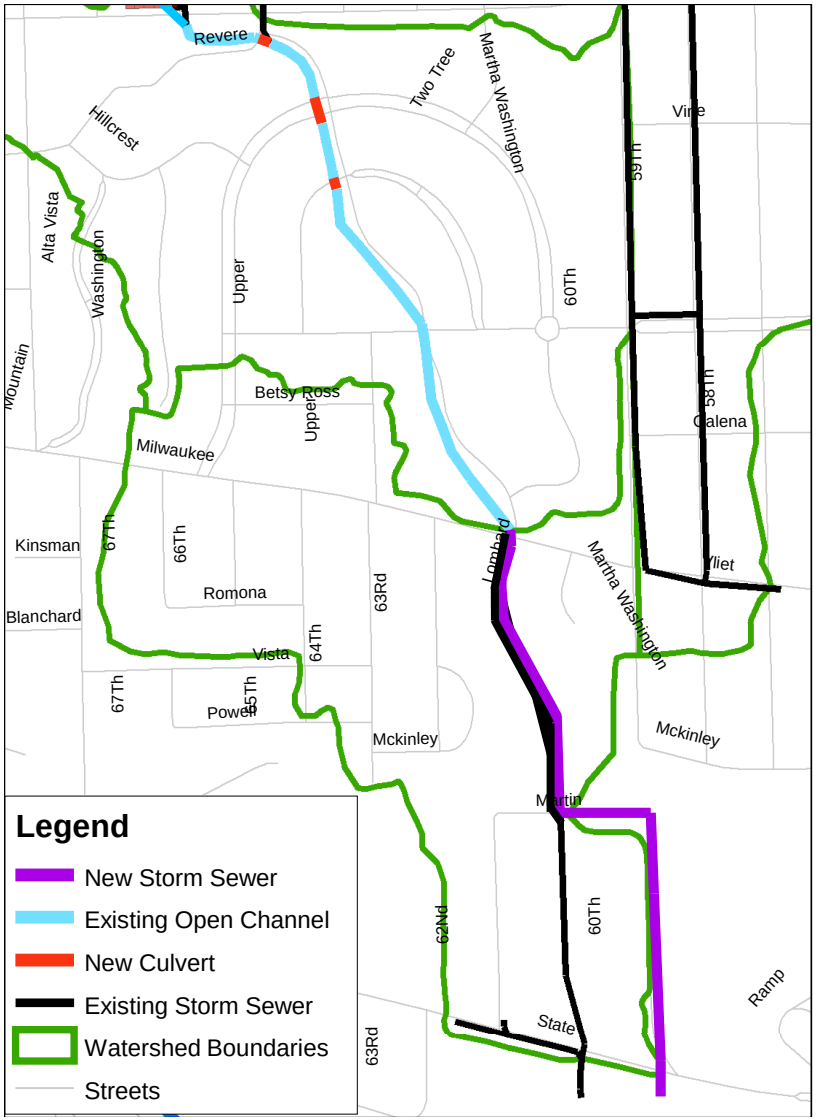
- Lower Area – additional pipe
  - ~3,550 ft of concrete box culvert from Milwaukee Ave. to State St.

Effects

- Would eliminate street flooding in the Lower Area, preventing structural damage to surrounding buildings during 100-year event
- Partially reduces street conveyance of stormwater compared to existing conditions in Upper Area.

Cost (2017)

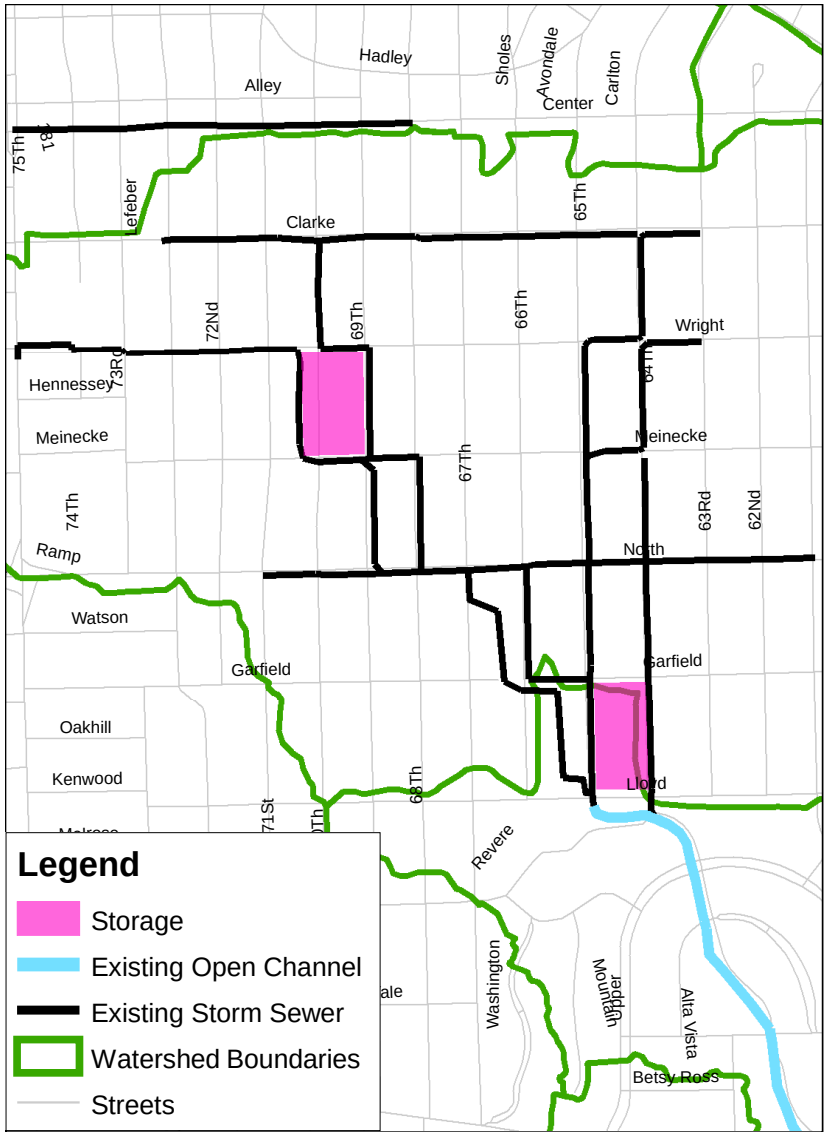
- Approximate cost: $62.4 million



# Alternative 4 - Storage

## Features

- North Storage
  - 71st St. and Wright St. (1.5 blocks)
  - 45 properties to acquire
  - 8 feet deep
- South Storage
  - 65th St. and Lloyd St. (1 block)
  - 31 properties to acquire
  - 9 feet deep
- Could be implemented separately or together
- Rectangular shape with 3:1 side slopes
- Together they can hold ~16.4 million gallons of water during a 100-year 3-hour storm, as much as 350,000 standard rain barrels (50 gal each)
- Additional 5'x10' reinforced concrete box culvert from Martin Dr. to Menomonee River



# Alternative 4 - Storage

## Effects

- Would eliminate street flooding in the Lower Area, preventing structural damage to surrounding buildings during a 100-year storm event
- When combined, street conveyance of stormwater is partially reduced during 100-year storm event

## Cost (2017)

- Approximate cost: $39.0 million