


Overview

- Background
- Work Plan
- Community Responsibilities
- Recommended Next Steps
- Discussion



Background

Melvina Ditch Reservoir:

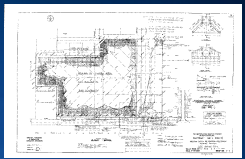

- Constructed 1968 by District
- Pump Station Operations and Grounds Maintained by District

August 22, 2014 Storm:

- 15-min - 1.64"
- 3-hour - 3.24"
- 24-hour - 5.52"

Other recent storm events:

- July 22, 2014
- April 18, 2013



Work Plan

Sediment Removal to restore volume to original design

- Over 500 tons of material excavated from reservoir
- Increased storage by over 1-million gallons
- Excavation work completed November 2014

Evaluation of Expansion Alternatives


- Preliminary Engineering initiated by V3 November 2014
- Scope includes analysis of expansion options at Melvina Ditch Reservoir and system-wide improvements in the watershed
- Final design of reservoir improvements and recommendations for local system improvements



Work Plan

Summary and Results of Alternative Analysis

- Reservoir Expansion
- Modifications to Pump Station
- Cost-Benefit Analysis
- Local Storm Sewer System is Limiting Factor



Work Plan

Sampling of Alternatives Considered

- Horizontal Expansion – Alternative 5C
 - 103 acre-foot Expansion
 - Estimated cost - \$15.6M
- Horizontal and Vertical Expansion – Alternative 9C
 - 270 AF Expansion
 - Estimated cost - \$27.1M
- Vertical Expansion – Alternative 8D
 - 300 acre-foot Expansion
 - 42 foot high vertical walls
 - Estimated cost - \$38.1M

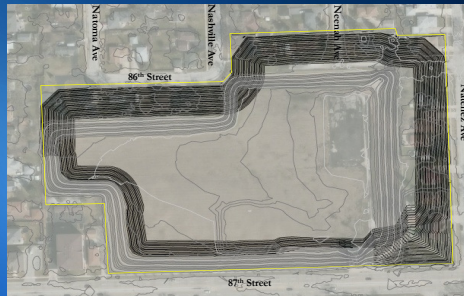


Work Plan – Recommended Alternative

- **Vertical and Horizontal Expansion – Alternative 11C**
 - 195 acre-feet new storage - more than doubles existing capacity
 - Improve Pump Station and Spillways
 - \$21.7M Estimate
 - 350 Benefitting Structures
 - Highest risk properties removed
 - Reduced water surface elevations at Reservoir and in Burbank
 - Reduced overflows to Oak Lawn

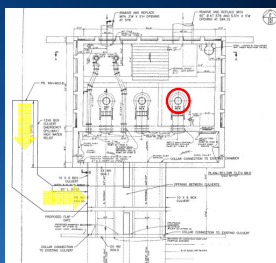


Work Plan – Recommended Alternative – Alternative 11C



Construction Sequencing - Alternative 11C

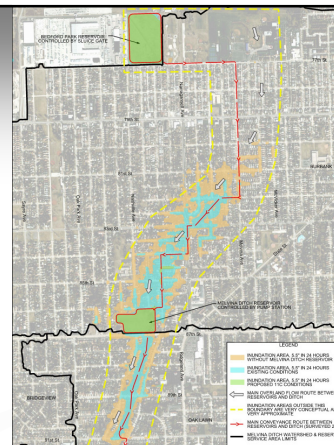
1. **Perform Pump Station Modifications**
 - Lower storm pump #3, extend impeller shaft, and reconfigure drive
 - Construct Emergency Spillway
2. **Demolition and Earthwork**



Benefits: 5.5" Rain in 24 hrs

Limits of Melvina Ditch Reservoir flooding, *Excluding locations of Local Storm Sewer flooding*

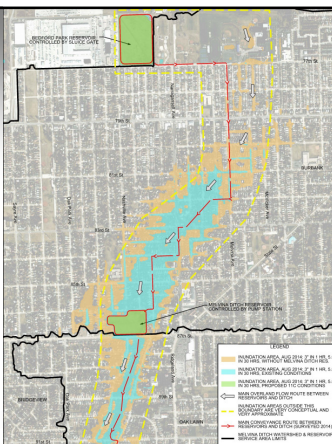
- Pre-1968, without Reservoir
- Today, with Reservoir
- Future, with proposed Reservoir expansion



Benefits: August 2014 Storm (3" in 1 hr, 5.5" in 30 hrs)

Limits of Melvina Ditch Reservoir flooding, *Excluding locations of Local Storm Sewer flooding*

- Pre-1968, without the Reservoir
- Today, with Reservoir
- Future, with proposed Reservoir expansion



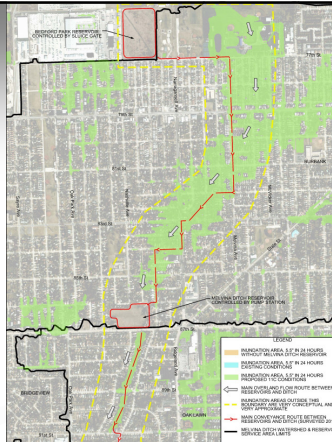
Community Responsibilities

- Municipalities fully built out over time
- Inadequate stormwater conveyance and storage systems
- Very few communities have stormwater plans
- MWRD alone cannot solve all flooding problems
- Encourage stormwater planning at local level
- Communities must participate in solutions
 - Develop differently
 - Incorporate stormwater improvements in road reconstruction
 - Community ownership

Residual Flooding: 5.5" Rain in 24 hrs

Limits of flooding within
the Melvina Ditch
Watershed attributed to
Local Storm Sewer
flooding

Future, with proposed
Reservoir expansion



Community Responsibilities

- Capital investments by MWRD should be supplemented with local improvements
- Intergovernmental Agreements
 - Define terms and conditions for community support
 - Communities to maintain new facilities
 - Participation/support for land acquisition
 - Assistance with utility relocations
 - Waive permit fees



Recommended Next Steps

- Presentation to Burbank and Oak Lawn
- Advance Final Design
 - Pump Station Improvements
 - Property Acquisition (present Right-of-Way Ordinance to Board for approval on May 7th)
- Negotiate IGAs
 - Local communities to make commitment for future Stormwater improvements



Discussion