IMPROVING RESILIENCE
at Loyola University Medical Center
Medical Center

- Level One Trauma Center
- 50,000 ER visits and 8,000 surgeries annually
- Originally Part of Edward J. Hines VA Hospital
- Lower Des Plaines River Watershed
CTRE / Center for Translational Research and Education
April 2013 Flooding

Cancer Center Mechanical Room

Radiology Patient Care

photos courtesy of LUC
April 2013 Flooding

First Avenue - Medical Center Access

photos courtesy of LUC
Des Plaines River Tailwater

Des Plaines River elevation during April 2013 storm event
Highest crest ever recorded at Riverside Gauge

April 16-19, 2013.
Stormwater Modeling

April 2013 Storm Simulation
April 2013 Storm Modeling

5.55 inches of rainfall over 48 hours

XP-SWMM analysis
Flood Mitigation Plan

Existing 36” Storm Sewer
Outfall to Des Plaines River

Pump Station with Outlet to 1st Ave. Relief Sewer

Vault ‘A’
Vault ‘B’
Vault ‘D’
Vault ‘E’

Relief Sewer
Relief Sewer for West Side Flooding

Detention Storage
- Ph 1: 5.9 ac-ft
- Ph 2: 2.7 ac-ft
- Ph 3: 0.3 ac-ft
- Total: 8.9 ac-ft

50 Year Storm
SWMM Analysis

Legend - Max.
Water Depth (Feet)
- 5.00
- 2.00
- 1.00
- 0.50
- 0.15

North
Flood Mitigation Plan

- Existing 36" Storm Sewer Outfall to Des Plaines River
- Pump Station with Outlet to 1st Ave. Relief Sewer
- Relief Sewer for West Side Flooding
- Vault ‘A’
- Vault ‘B’
- Vault ‘D’
- Vault ‘E’

Detention Storage:
- Phase 1: 5.9 ac-ft
- Phase 2: 2.7 ac-ft
- Phase 3: 0.3 ac-ft
- Total: 8.9 ac-ft

50 Year Storm SWMM Analysis

April 2013 Storm
Trunk Sewer | Existing Profile

Surface Ponding

STARTING TAILWATER ELEVATION = 613.0
Trunk Sewer | Proposed Profile

- Stormwater Vaults Added
- Surface Ponding Eliminated
<table>
<thead>
<tr>
<th>Scope of Work</th>
<th>Estimated Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage</td>
<td>$14,850,000</td>
</tr>
<tr>
<td>Conveyance</td>
<td>$8,650,000</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$23,500,000</strong></td>
</tr>
</tbody>
</table>
April 2015 Proposal

Funding Proposal: $15.9 million

Phase 1:
- Vault D and Pump Station $9.65 million

Phase 2:
- Vaults A, B & C $6.25 million
Revised Proposal:

$6.6 million

Scope of Work:
- Vaults A and B
- Relief Sewer
- at First Avenue
- Entries
- 3.0 ac-ft total

Easements:
- IDOT Traffic Signals
- Nicor Gas Service
- MWRD Temporary Access

Existing 36" Storm Sewer
Outfall to Des Plaines River
Phase 1 Final Engineering

2nd Ave to Remain Open

VAULT “A”

VAULT “B”

36” Relief Sewer

LEGEND

UNDERGROUND STORMWATER VAULT
PROPERTY LINE
EXISTING EASEMENT
EXISTING STORM SEWER TRUNK LINE
EXISTING WATER MAIN
EXISTING SANITARY SEWER
EXISTING GAS MAIN
PROPOSED STORM SEWER
Vaults provide a total of 2.62 ac-ft of storage.

Vault "A"
2.10 ac-ft

Vault "B"
0.52 ac-ft

Owner: Loyola University Chicago and Loyola University Health System
Civil Engineer: SmithGroup
General Contractor: Berger Excavating Contractors
Existing Parking Lots

View of South Parking Lot
Phase 1 Construction
Stakeholders
Loyola University Chicago
Loyola University Health System
Trinity Health

Endorsements
Six Cook County Commissioners
Members of Illinois General Assembly
Four Members of U.S. House of Representatives
Both U.S. Senators from Illinois

Collaborators
Cook County Bureau of Economic Development
Cook County Department of Homeland Security
Cook County Department of Transportation and Highways
Edward J. Hines VA Hospital
Forest Preserve District of Cook County
Illinois Department of Transportation
John H. Madden Mental Health Center
Metropolitan Water Reclamation District
Proviso Township
Village of Maywood
Bill Wood, PE
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