Agenda

- Project Area
- Scope of Problem
- Copper Slough Watershed Master Plan
- Study Summary/Public Involvement
- Project Phases
- Implementation Phases
  - Phase 1 Design & Impacts
  - Phase 2 Design & Impacts
  - Phase 3 Planning & Impacts
Project Area

- Area = 408 ac
- 36” Drain Tile
- Rural Drainage
Scope of Problem

- West Washington Street Watershed Drainage Issues
  - Limited Sewer Capacity in Trunk Storm Sewers
  - No Detention Ponds
  - No Defined Overland Flow Path within Watershed
  - Pipe Slope Issues in North Edwin Street Trunk Sewer
  - Inlet Capacity Issues along University Avenue
  - Inlet Connectivity Issues Church Street
  - Surface Ponding Allows Inflow into Sanitary Sewers
Scope of Problem
Scope of Problem

1997-98 Flooding - W Washington St. looking east towards North Russell

21 inch accumulation after 20 minute rainfall
Near Washington & Russell Sts., Champaign, IL
5/19/09 8:00 p.m.

View of North Russell Street and Washington Intersection 5/13 and 5/15 08
Scope of Problem
Copper Slough Watershed Master Plan

- Developed in 2007
- Evaluated Existing Infrastructure in West Washington Street Watershed
- Recommended Improvements = $15M:
  - Larger Storm Sewers (72” and 84”)
  - Regional Detention Pond
  - Channel Improvements along the Copper Slough
Project Steps

**Step 1**
- **System Evaluation**
  - Based on previously generated Copper Slough Model
  - Used model to identify hydraulic restrictions and ponding extents

**Step 2**
- **Generation of Alternatives**
  - Developed potential conveyance and detention improvements
  - Combined improvements to determine most beneficial grouping

**Step 3**
- **Alternatives Assessment**
  - Considered stakeholder feedback, economics, flood impact reduction, integration, implementation, etc.

**Step 4**
- **Design & Implementation**
  - Selected multi-phase alternative with storm sewer improvements, storm water basins and pavement restoration
West Washington Study Summary

- **Goals:**
  - Identify Problem Areas
  - Develop a List of Alternatives
  - Analyze Alternatives
  - Determine Implementation Strategies
  - Identify Levels of Protection
    - 40-year Protection

- **Collaboration With:**
  - Steering Committee
  - Council Members
  - City Staff
  - Residents
West Washington Study Summary

- Evaluation of Alternatives...
West Washington Study Summary

- ...using Copper Slough Model
West Washington Study

• Community Outreach Meeting

Scenario 3
Alloy Casting Ponds, Railroad Pond, and Edwin Street Storm Sewer

Advantages
- Ponds are strategically located at or near flood problem areas
- New sewer could be relocated to City right-of-way
- Does not increase flows downstream and provides detention
- Utilizes existing infrastructure

Disadvantages
- Homes would need to be removed
- Detention ponds located in residential areas
- Relies on West Washington storm sewer
- Hydraulic restrictions remain

Cost: $8,200,000
West Washington Study Summary

• Steering Committee
  – Benefits
    • Expedited Local Resident Feedback
    • Brings Local Perspective to Design Discussion
    • Aesthetics are Included Early in Design
    • Organized Residents
  – Drawbacks
    • No Control Over Flow of Information
    • Opinion of Steering Committee vs. Watershed
    • Timeline Appears Accelerated to Residents
    • Operation vs. Aesthetic Debate
    • Organized Residents

• Steering Committee doesn’t Replace Public Meetings
West Washington Study Findings

- Proposed Improvements
  - At Least 40 ac-ft Needed
    - Place Near Problem Areas
    - Connect Ponds

- Edwin St Trunk Storm Sewer
  - Replace vs. Parallel
  - Extend Trunk Sewer
    - Flora Court Neighborhood

![Map Diagram]

- Phase 1
- Phase 2
- Phase 3

- Proposed Storm Sewer
- Glenn Park Pond
- Preservation Pond
Phase 1 Design Summary

- Goal = Improve Flood Protection Levels
- 11 ac-ft Detention Basin at Robinson Court (Preservation Pond)
- New Storm Sewer
- Street Reconstruction
- Green Infrastructure/Landscaping
- Cost = $2.0M (plus Land Acquisition)
Phase 1 - Design
Phase 1 - Design

Schematic Plan - Option A
Washington Street Phase I, Drainage
Champaign, Illinois

Schematic Plan - Option B
Washington Street Phase I, Drainage
Champaign, Illinois

Schematic Plan - Option C
Washington Street Phase I, Drainage
Champaign, Illinois
Phase 1 - Design
Phase 1 - Design
Phase 1 - Design
Phase 1 Impacts

- Provide Detention
- Direct Surface Flooding to Pond
- Provide Hydraulic Relief to Interceptor Sewers
- Reduce Surface Ponding
Phase 1 - Completed
Phase 1 - Completed
Phase 2 Design Summary

- Goal = Improve Flood Protection Levels
- Two Detention Basins at WIRCO/Glenn Park Drive (17 ac-ft)
- New Storm Sewer
- Street Reconstruction
- Landscaping
- Cost Estimate = $14M
Phase 2 - Design
Phase 2 - Design

This alternative would eliminate the existing westbound Glenn Park Dr. at Mattis Ave. A new plant entrance would be constructed north of the existing Glenn Park Dr. The new entrance would be a plant entrance/exit only. No pass through traffic from Washington St. would be allowed on the new plant entrance.

Plant Traffic:
- Employee traffic (passenger vehicles): 83 total in two shifts
  - Shift 1: 3:00 a.m. to 1:30 a.m. (72 vehicles)
  - Shift 2: 4:30 a.m. to 3:00 a.m. (10 vehicles)
- Small delivery trucks: 25 to 30 throughout the day
- WB-65 trucks: 10-15 throughout the day

Conceptual Plan - Option 1
West Washington St. Drainage Improvements, Phase II

Alternative 1

Alternative 2
Phase 2 - Design
Phase 2 - Design

Basin Alternate 1
West Washington St Drainage Improvements, Phase II

Basin Alternate 2
West Washington St Drainage Improvements, Phase II
Phase 2 Impacts

- Provide Detention and Connect Ponds
- Increase Conveyance Capacity
- Reduce Flooding
Phase 2 Impacts

Existing Flooding

Proposed Flooding
Phase 3 Planning/Impacts

- Extend Trunk Storm Sewer to Flora Court Neighborhood
- Replace North Edwin Street Trunk Sewer — 18-in → 42-in
- Add Inlets along University Avenue
- Get Flow to Ponds
- Still Need Some Storage — 12 ac-ft
Questions?

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