Four Consultants, Six Months, and $340M:
The Village of Downers Grove’s Watershed Infrastructure Improvement Plan

Presented by:
The Village of Downers Grove and V3 Companies
Introductions

• Michael Millette, P.E.
  Village Engineer
  Village of Downers Grove

• Jennifer Maercklein, P.E., CFM
  Water Resources Project Manager
  V3 Companies

• Darren Olsen, Christopher B. Burke Engineering, Ltd
• Marty Michalisko, Engineering Resource Associates
Presentation Agenda

- Introductions
- Village Background & Stormwater History
- Development of Watershed Infrastructure Improvement Plan (WIIP)
- Consultant Teamwork
- Selling WIIP Recommendations to Council
- Implementing WIIP Recommendations
Village Background & Stormwater History

• Chicago Suburb, Founded 1832
• 175 years of development
• Only 30 years “regulated”
  – Pre 1960s: Get it away quick
  – Into the 70s: Store it
  – Post ’86-’87: Don’t hurt downstream
  – The 21st Century: Clean it
• Insufficient maintenance
Village Background & Stormwater History

- First Stormwater Master Plan: c. 1960
  - Large pipes (11-ft dia. under downtown)

- Second Stormwater Master Plan: 1971
  - Sewers and Stream Improvements

- 2005 Stormwater Master Plan
  - Maintenance and Water Quality
  - Develop a Watershed Infrastructure Improvement Plan
    - Study and identify stormwater system deficiencies
    - Guide future infrastructure improvements
Village Background & Stormwater History

- September 2006: Presented to Village Council
- October 2, 2006: 3.77 inches of rain in 1 hour.
  - 1.1% Annual Chance Flood
  - Village-wide flooding
  - Total 2006 Rainfall: 47-inches (versus 33-in average)
- Council Authorized WIIP
- Four consultants began February 2007
- Completed July 2007
WIIP Development

- Data Collection and Review
- Problem Area Identification
- Problem Area Assessment
- Proposed Alternatives
- Recommended Alternatives
WIIP: Data Collection & Review

• Topographic Mapping:
  – Sub-watershed Delineation
Who Is V3?

WIIP: Data Collection & Review

- Flood complaints mapped and managed with GIS
WIIP: Problem Areas

• Identification: Grouped by Geography, Problem Source
• Classification: Critical, Chronic, Nuisance
WIIP: Problem Areas

- Assess Existing Condition to Identify Probable Cause(s) of Drainage Problems
  - Inadequate storm water storage
  - Inadequate storm water conveyance
  - Insufficient maintenance of both
- Alternatives to Reduce Problems
WIIP: Proposed Alternatives

- Alternatives to Mitigate Flood Problems
  Included:
  - Stormwater Storage
  - Storm Sewer Systems
  - Overland Flow Routes
  - Channel Conveyance
  - Bridge Openings
  - Programmatic Changes

- Permitting

- Estimated Cost

- Construction Schedule
WIIP: Recommended Alternatives

• Recommended Alternatives Selected

• Alternatives Prioritized: High, Medium, Low

• Village-wide:
  – 16 High Priority Projects, $158M
  – 24 Medium Priority Projects, $135M
  – 15 Low Priority Projects, $47M

• $340,000,000 Estimated Cost
WIIP: Consultant Teamwork

• How do you get four consultants to deliver one cohesive Plan?

• Communication

• Consistency
Who Is V3?

WIIP: Consultant Teamwork

• Worked as team to develop consistent set of:
  – Technical assumptions
  – Methods to assess and quantify problems
  – Modeling software and input parameters

• Divided “shared” work
  – Unit costs
  – Report outline
  – Standard details
Selling Recommendations to Council

- WIIP recommendations presented to Village Council

- Defined stormwater concepts for non-technical audience:
  - Watershed
  - 100-Year Storm

- Used maps and graphics to illustrate history of development in Village
1939
Selling Recommendations to Council

• Funding $340M of Improvements

• Financial Priorities:
  1. Create a Stormwater Capital Fund
  2. Identify sources of revenue for FY08
  3. Identify expenditures for FY08 (tied to CIP)
Selling Recommendations to Council

- **Property Taxes**

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<tr>
<th>Market Value home/business</th>
<th>$389,000</th>
<th>$600,000</th>
<th>$10,000,000</th>
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<tr>
<td>Annual Village Property Taxes</td>
<td>$492.73</td>
<td>$760.00</td>
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<td>Monthly Village Property Taxes</td>
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<td>Daily Village Property Taxes</td>
<td>$1.35</td>
<td>$2.08</td>
<td>$33.79</td>
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Selling Recommendations to Council

- Property Tax Increase of 10 cents (from $0.37 to $0.47)
  - Daily increase of 36 cents for a $389,000 home
  - Daily increase of 55 cents for a $600,000 home
  - Monthly $10.75 for a $389,000 home
  - Monthly $16.67 for a $600,000 home
  - Yearly $129 for a $389,000 home
  - Yearly $200 for a $600,000 home
Implementation of WIIP

- 9 projects built in 2008
- 10 currently being designed or constructed
- 6 scheduled for design or construction in 2009
  - Three will cumulatively provide 40 ac-ft new storage
The Village of Downers Grove

Watershed Infrastructure Improvement Plan
August 2007