



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



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# 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 21<sup>st</sup> 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

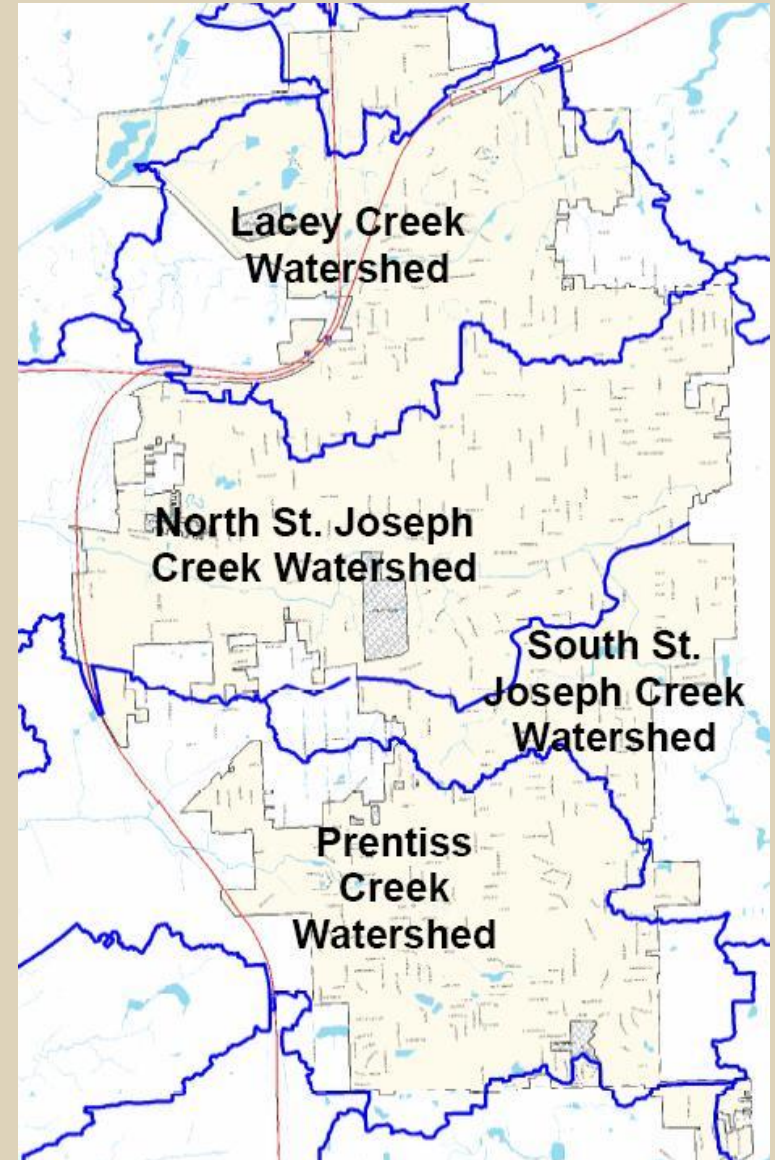
- September 2006: Presented to Village Council
- October 2, 2006: 3.77 inches of rain in 1 hour.
  - 1.1% Annual Chance Flood
  - Village-wide flooding
  - Total 2006 Rainfall: 47-inches (versus 33-in average)
- Council Authorized WIIP
- Four consultants began February 2007
- Completed July 2007





# WIIP Development

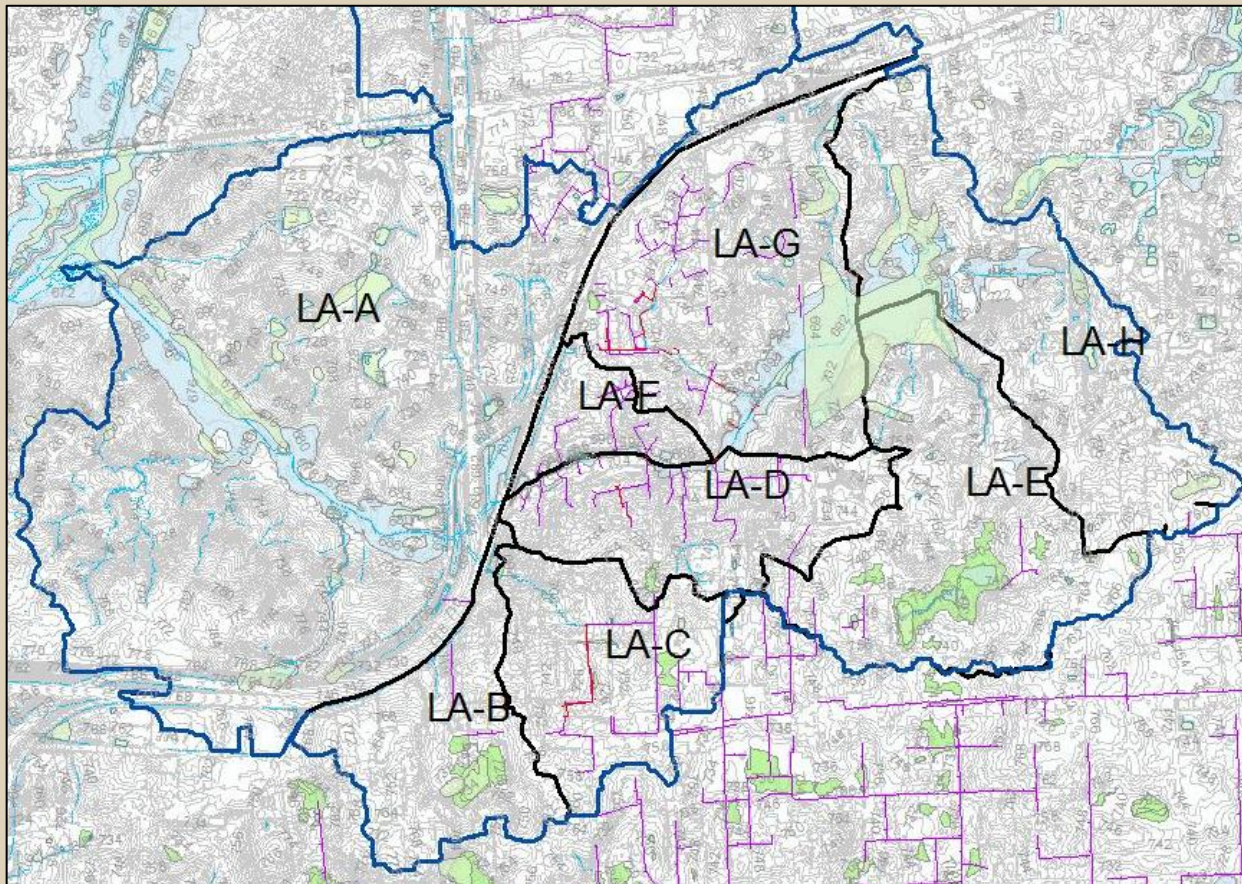
- Data Collection and Review
- Problem Area Identification
- Problem Area Assessment
- Proposed Alternatives
- Recommended Alternatives





# WIIP: Data Collection & Review

- Topographic Mapping:
  - Sub-watershed Delineation

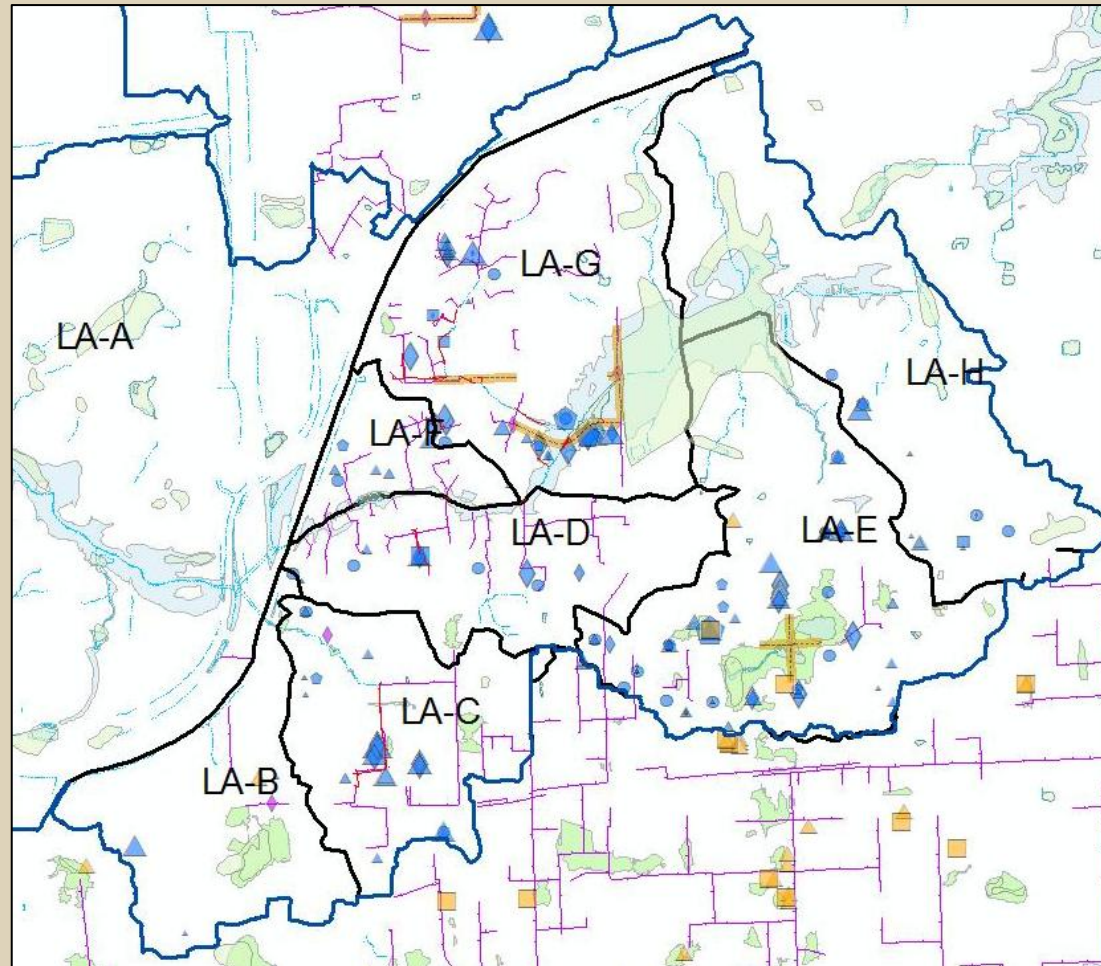






# WIIP: Data Collection & Review

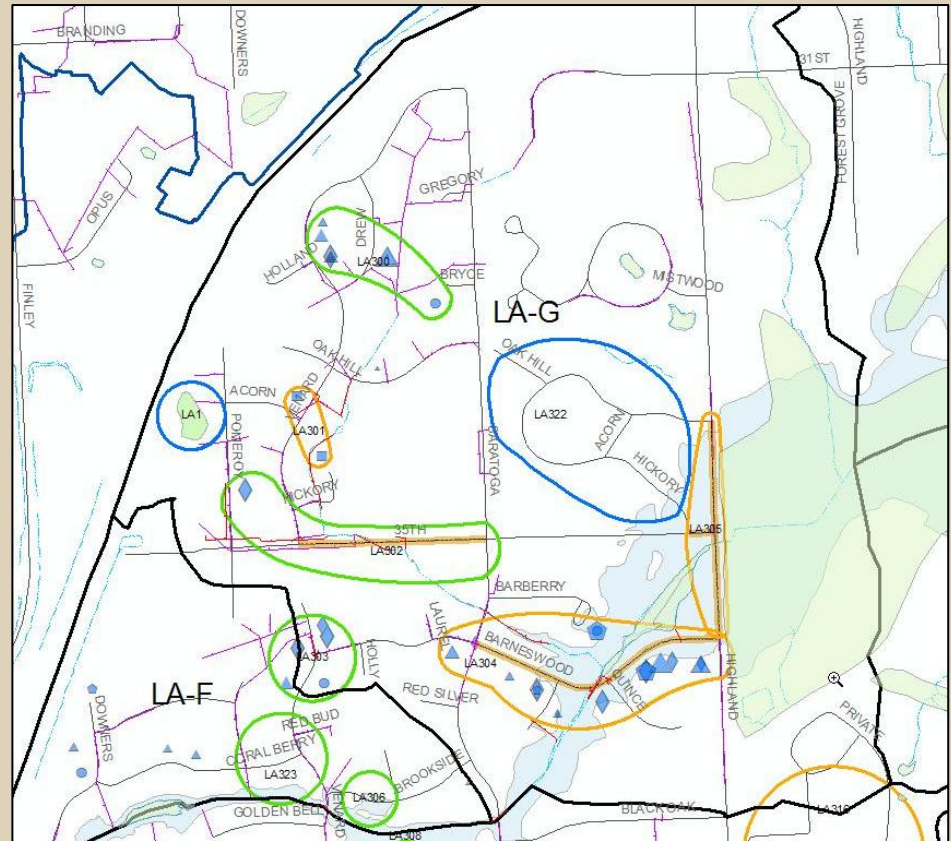
- Flood complaints mapped and managed with GIS





# WIIP: Problem Areas

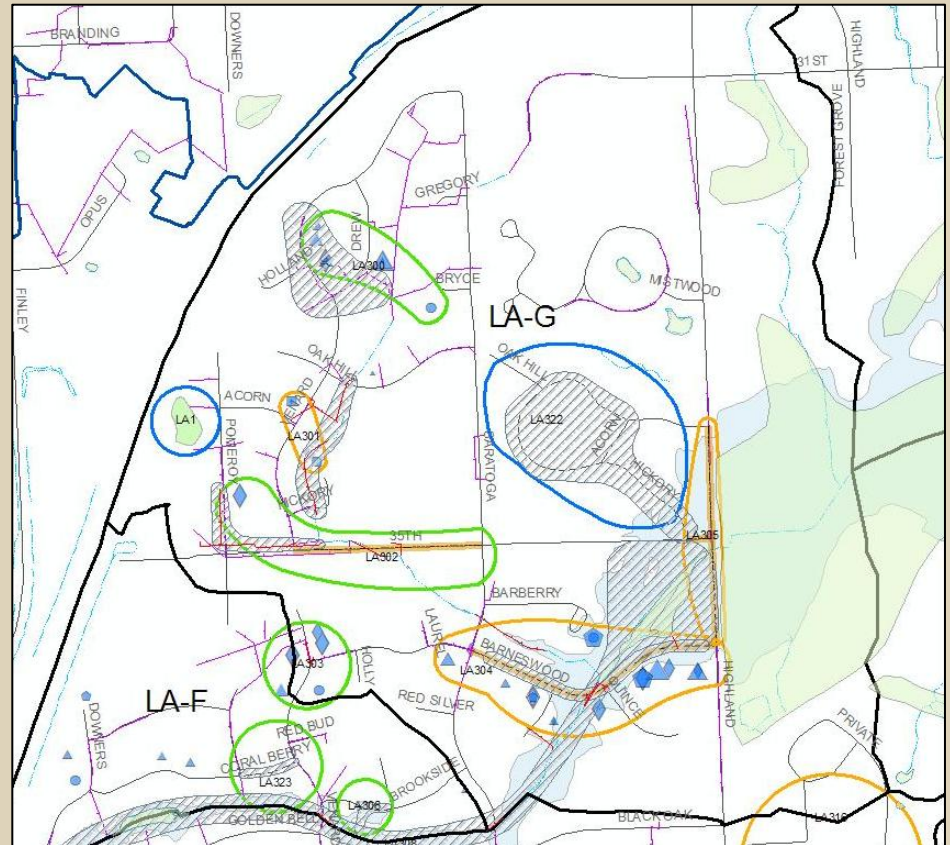
- Identification: Grouped by Geography, Problem Source
- Classification: Critical, Chronic, Nuisance





# 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



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# 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



1939





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

<b>Market Value home/business</b>	\$389,000	\$600,000	\$10,000,000
<b>Annual Village Property Taxes</b>	\$492.73	\$760.00	\$12,333.33
<b>Monthly Village Property Taxes</b>	\$41.06	\$63.33	\$1,027.78
<b>Daily Village Property Taxes</b>	\$1.35	\$2.08	\$33.79



# 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



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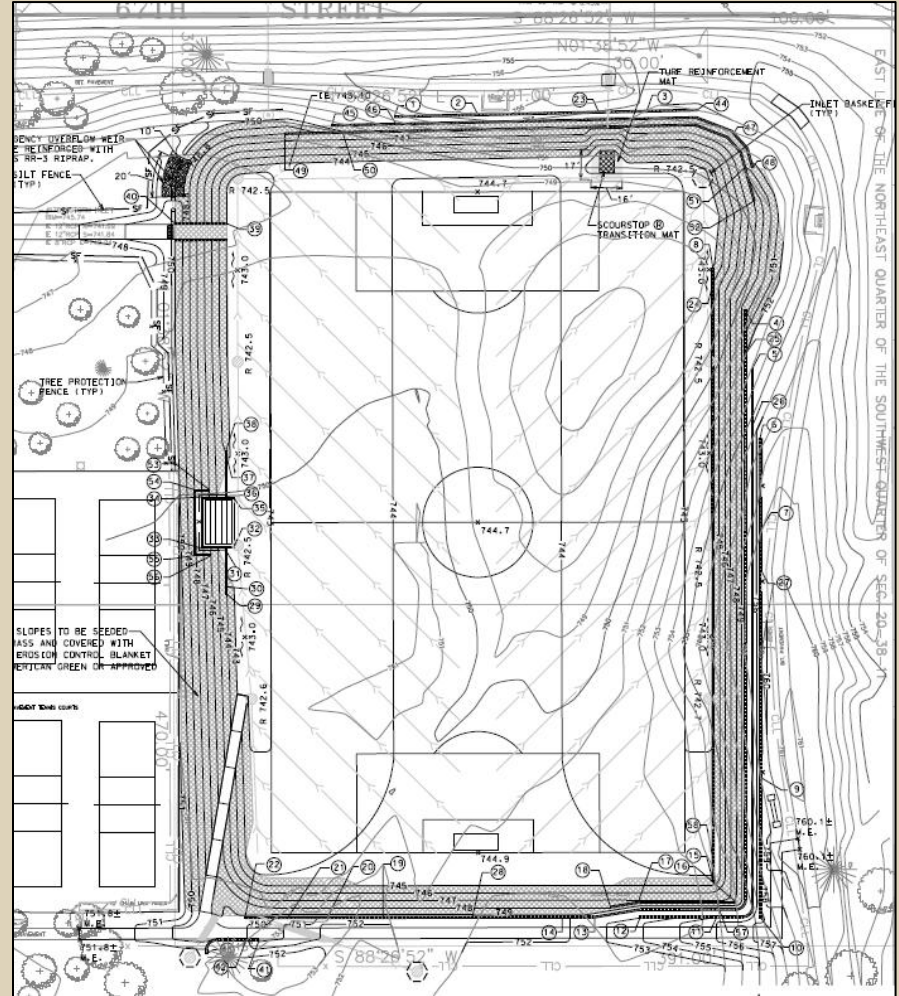
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# Implementation of WIIP

- 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







# Questions?

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## The Village of Downers Grove



Watershed  
Infrastructure  
Improvement Plan  
August 2007

