

Excellence in Engineering Since 1946

### Strand Associates, Inc.® (SA)

Leveraging Clean Water Act Compliance to Maximize Community Benefits

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# We often look at regulatory requirements as a check in the box.

MS4 Permit Requirements	
Public Education & Outreach	<b>✓</b>
Public Participation/Involvement	<b>✓</b>
Illicit Discharge Detection and Elimination	<b>/</b>
Construction Site Runoff Control	<b>/</b>
Post-Construction Runoff Control	<b>/</b>
Pollution Prevention/Good Housekeeping	<b>✓</b>

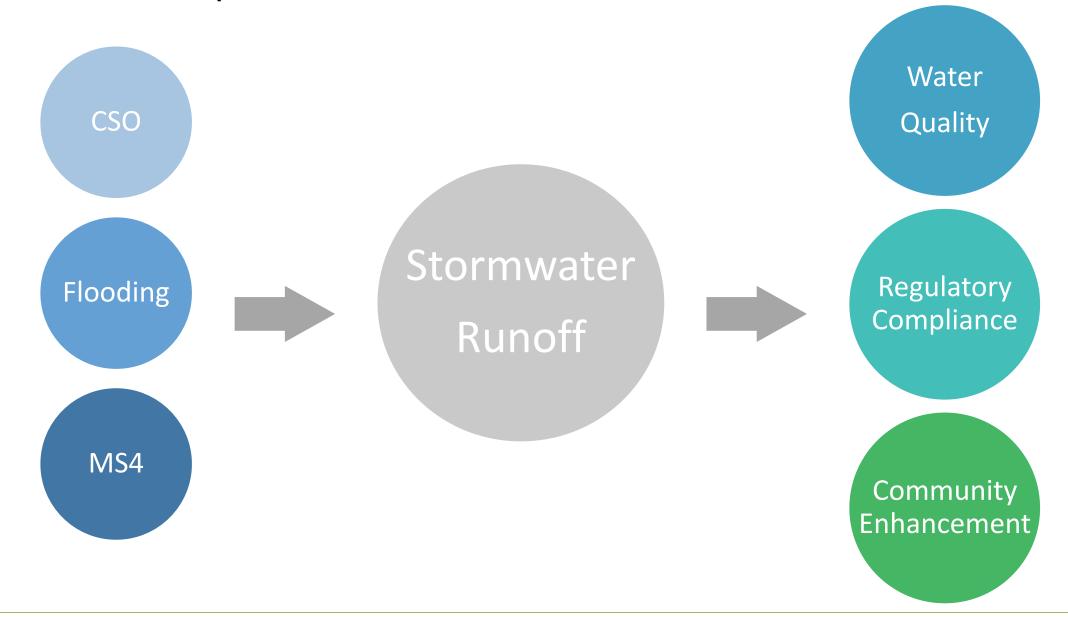


# We may be missing opportunities...





### Revised Perspective Can Maximizes Benefits





### Case Studies

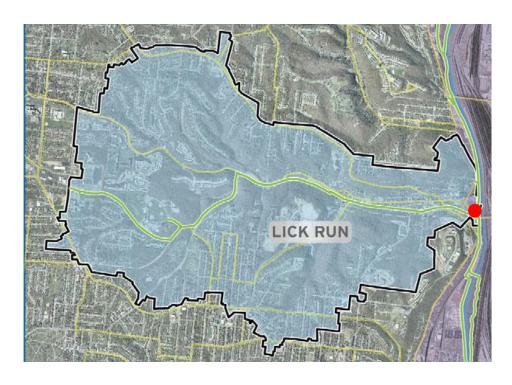
- Lick Run Watershed Metropolitan Sewer District of Greater Cincinnati
- Stormwater Master Plan Village of Winnetka, IL
- Secret Pond Madison, WI



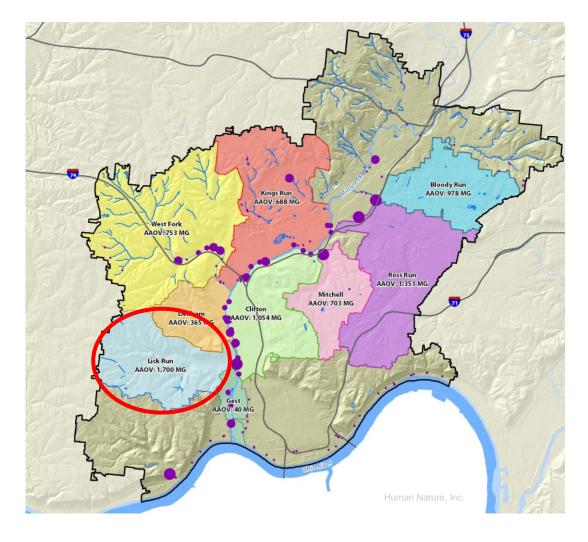




### Lick Run Watershed



CSO #5, in the Lick Run Watershed, is MSDGC's largest CSO within the system.





### Lick Run Watershed

- MSD's largest CSO by volume
- Forested hillsides
- Urban core
- High vacancy/foreclosure
- High crime
- Declining population
- High unemployment
- 35%+/- impervious
- Busy transportation corridor







### Lick Run Watershed



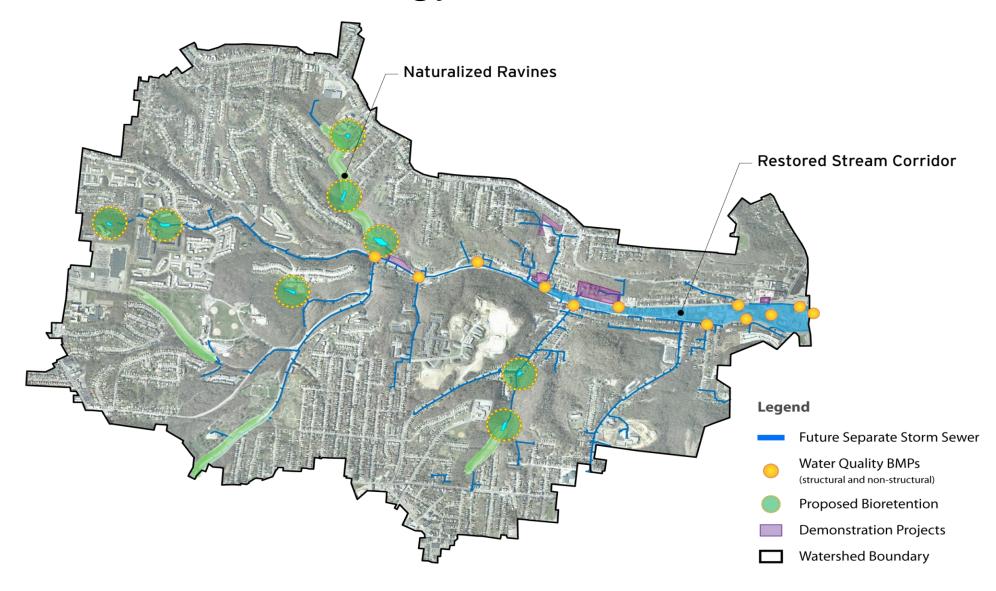


# Strategic Separation





### Watershed Wide Strategy





### VCS Vision













Image courtesy of project partner Human Nature, Inc.

## Lick Run Greenway





Images courtesy of project partner Human Nature, Inc.



### Village of Winnetka, IL

#### Winnetka's Flooding Bouts are Legendary

A look back at the village's damp legacy and what the powers that be have done to correct it.

Winnetka-Glencoe, IL

By MATT KLINKERT (Open Post) September 13, 2011 Winnetka-Glencoe Patch



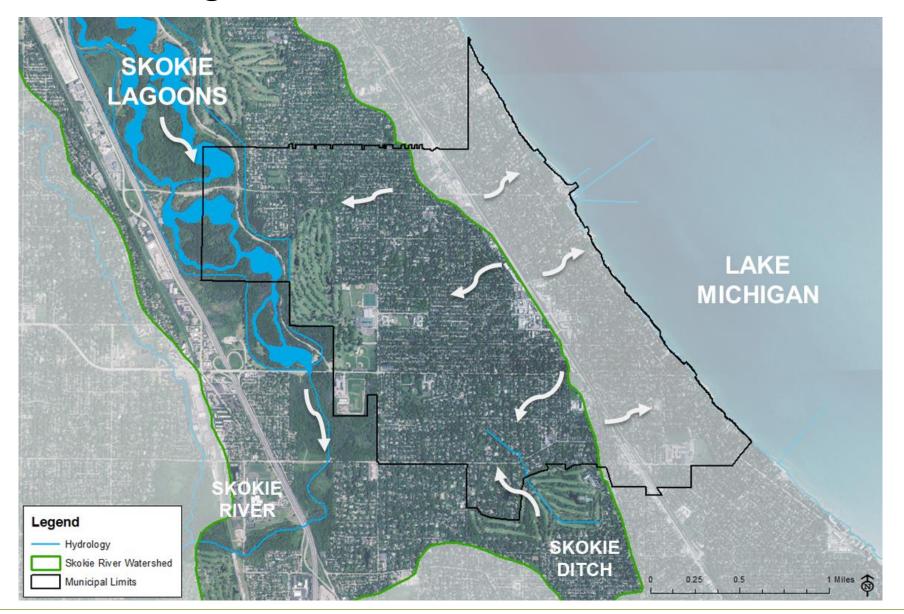
It's no secret, Winnetka, there is an age-old problem.

"The character of the marsh varied from season to season. During the spring and summer, water levels in the marsh ranged from a few inches to several feet deep."





### Unique Drainage Patterns Contribute to Flooding

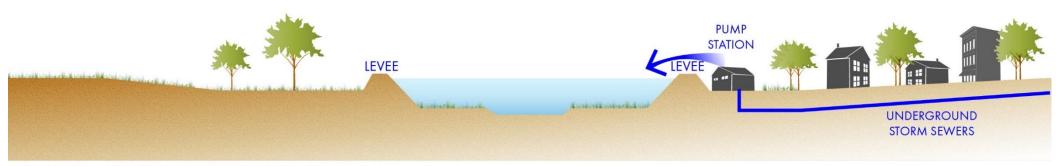




### Skokie River Drainage



#### $\leftarrow$ SKOKIE RIVER FLOODPLAIN $\rightarrow$

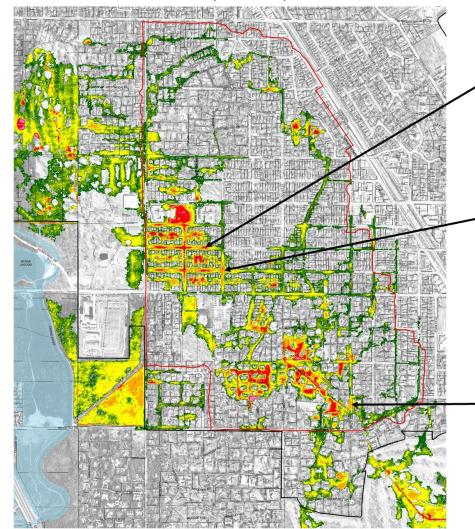




**CURRENT CONDITION** 

# **Existing Conditions**

#### **EXISTING CONDITIONS, 100-YR, 3-HR EVENT**





**July 2011 – 1200 Block of Cherry** 



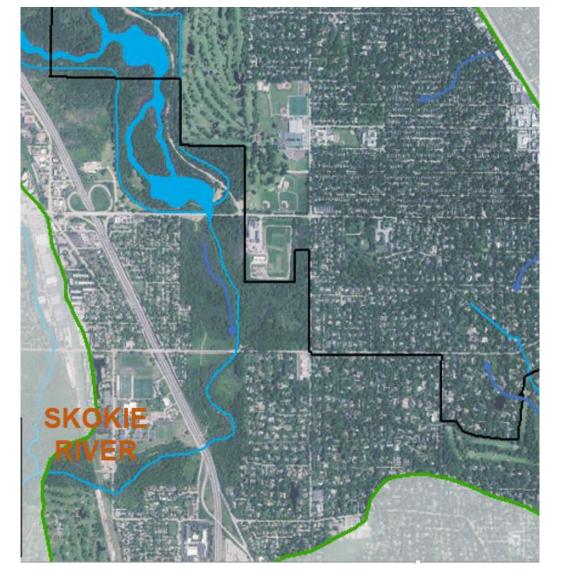
July 2011 - Ash and Glendale

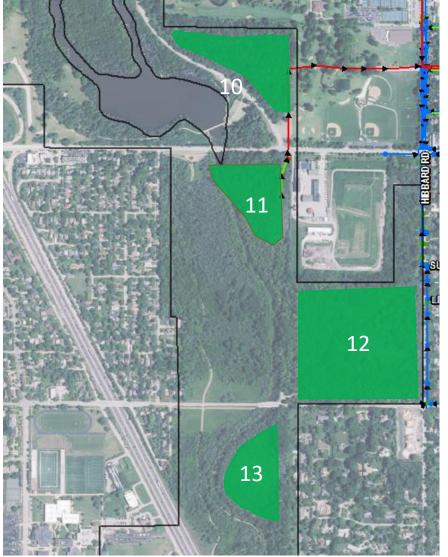


April 2013 – Birch and Alles



# Potential Storage Opportunities

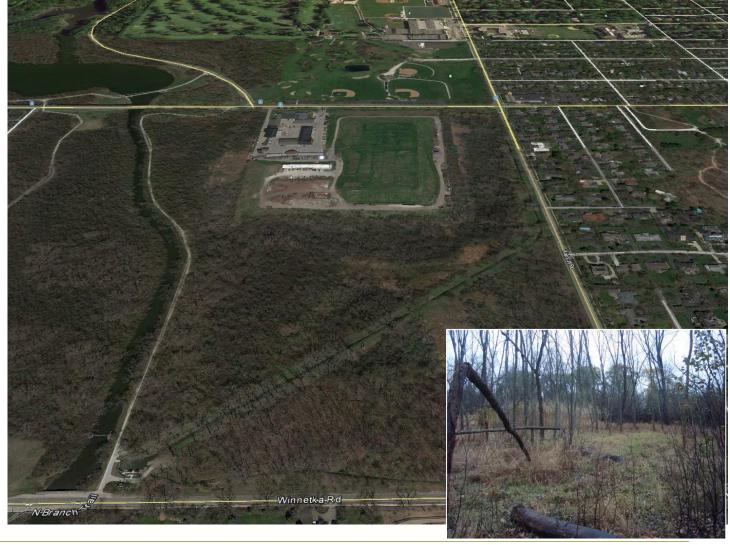






# Aligning Assets with Needs Can Create Mutually Beneficial Partnerships







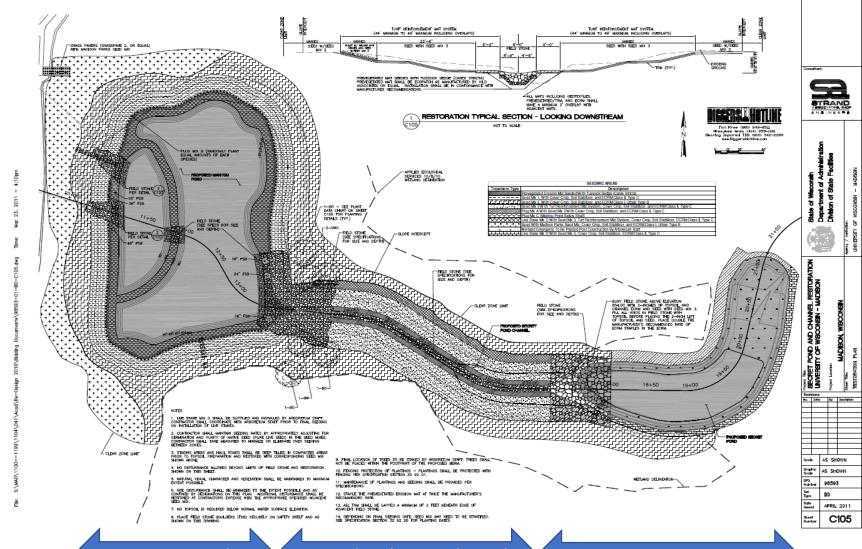
### Forest Preserve Property

















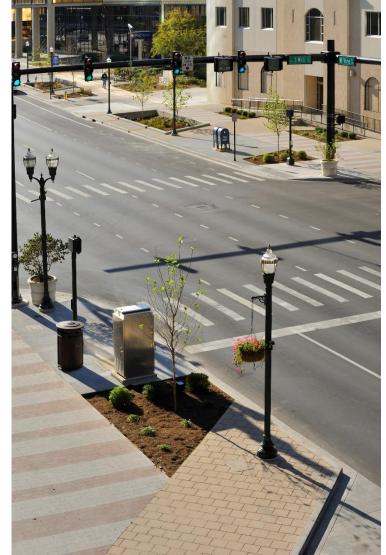
Pond partially filled with water prior to a large rain event that filled the pond completely.



Looking downstream at the natural channel and stilling pool/wetland restoration.



## Downtown Streetscape - Lexington, KY







# Prisoner's Lake – Covington, KY







# 12<sup>th</sup> Street – Covington, KY







### St. Francis Bioretention Basin - Cincinnati, OH





### Conclusion

Look for opportunities to enhance project benefits

- improved aesthetics
- Improved water quality
- rainwater re-use
- community revitalization
- reduced impervious surface
- grant opportunities

### Think holistically

- Avoid the "silo" trap (quantity, quality, stream erosion)
- Don't just "move" the problem
- Think long term



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Questions?

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