

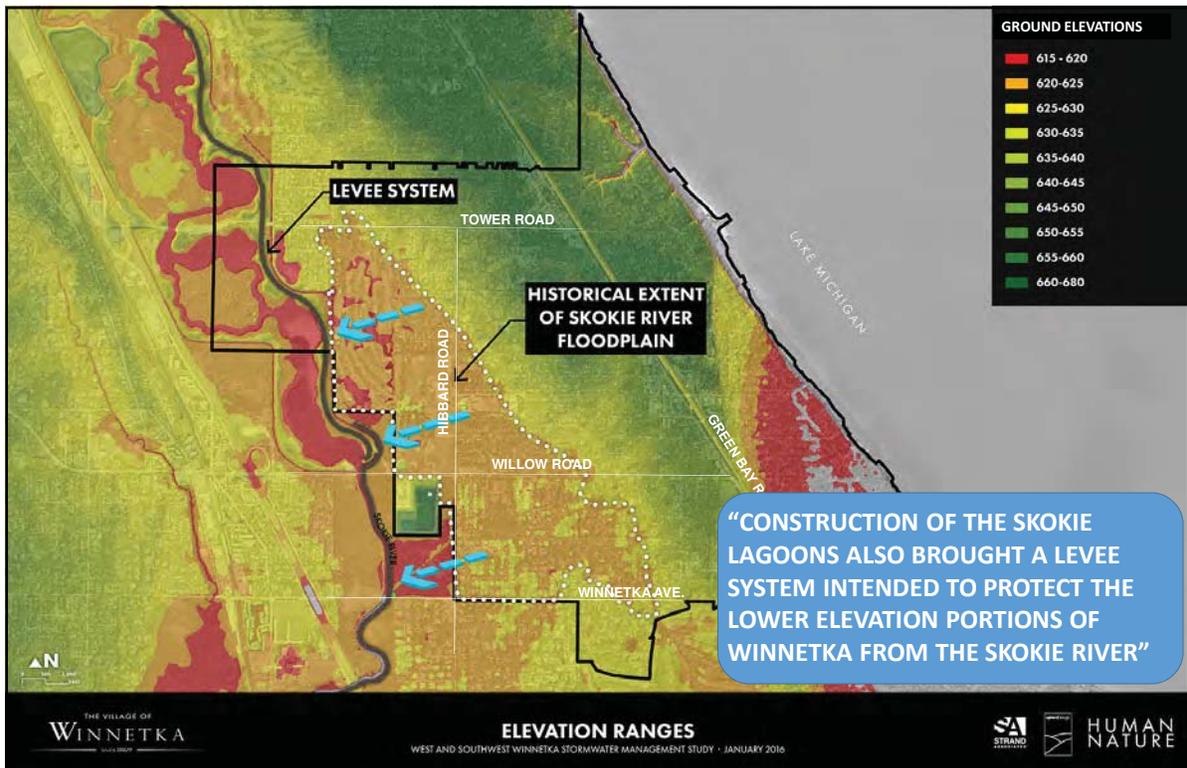
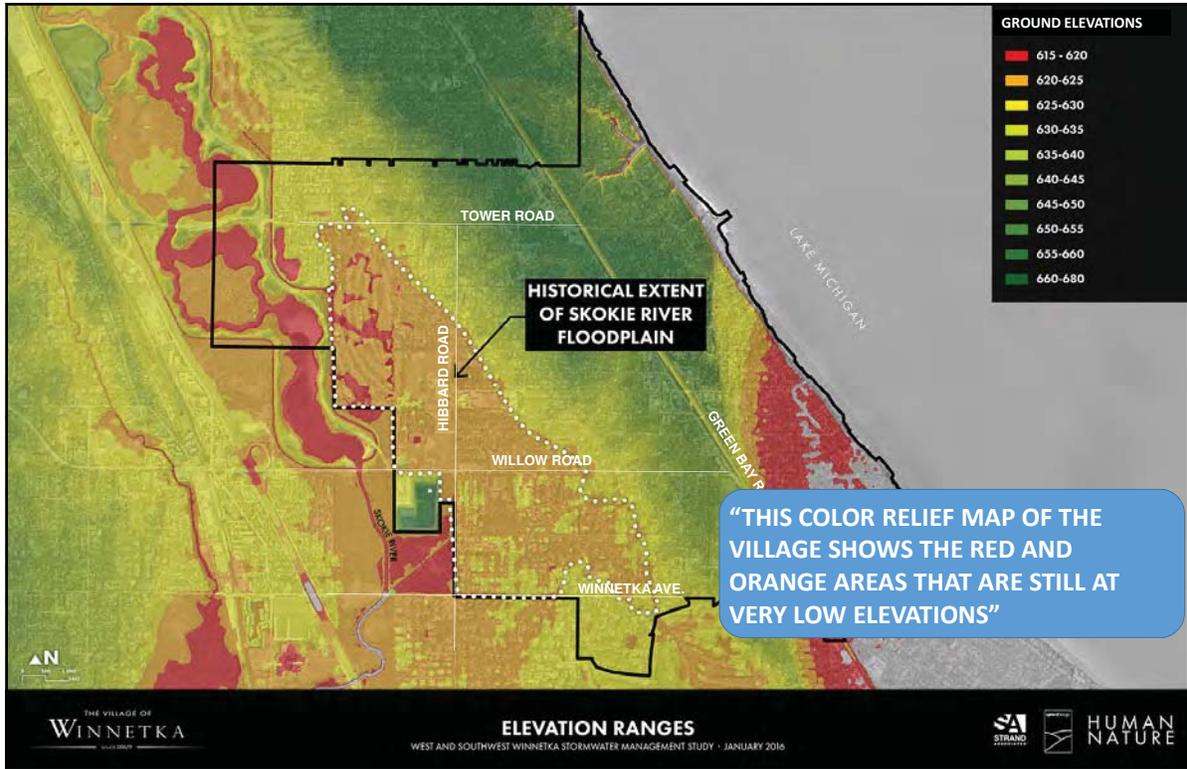


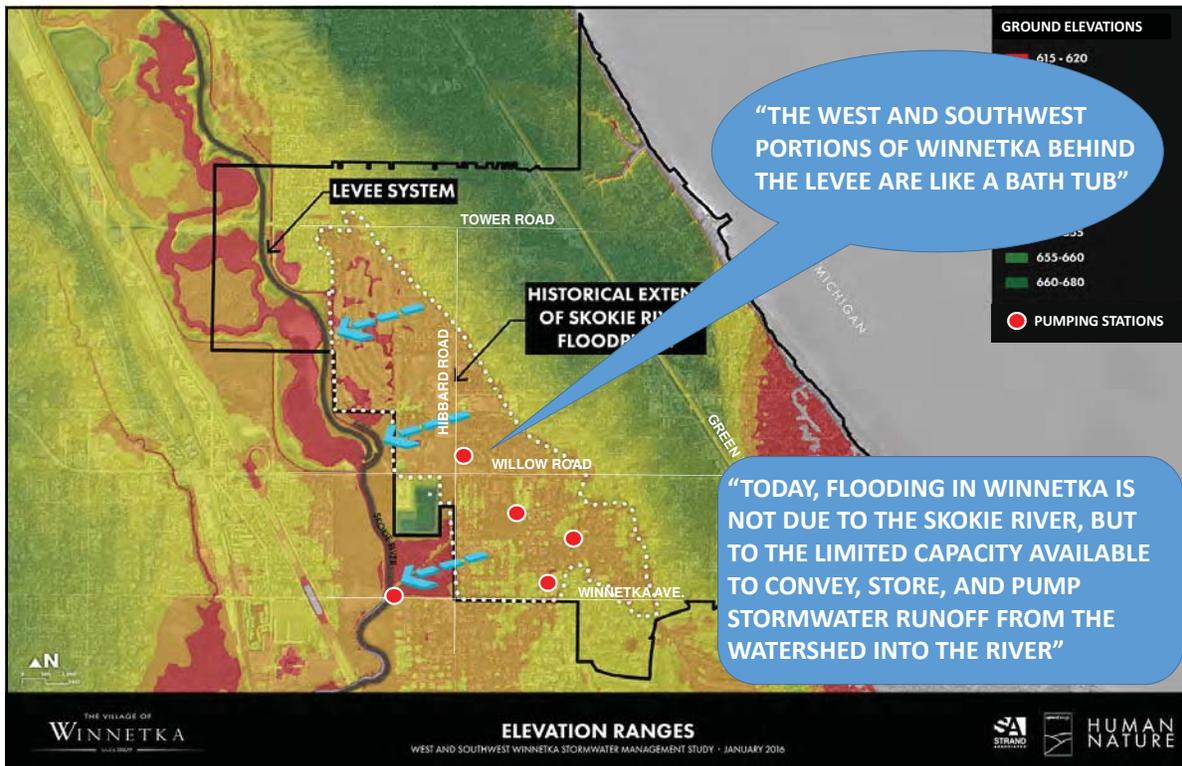
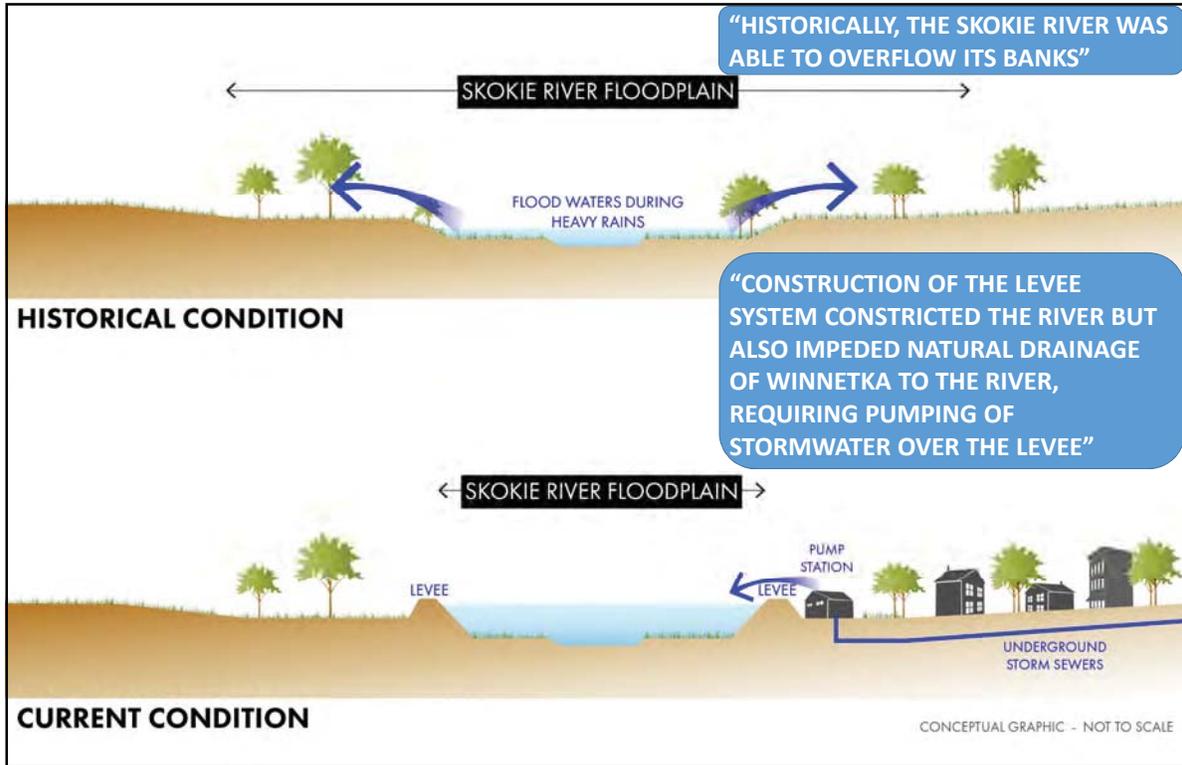
“The character of the marsh varied from season to season.

During the spring and summer, water levels in the marsh ranged from a few inches to several feet deep.”

“HIBBARD ROAD LOOKING WEST”









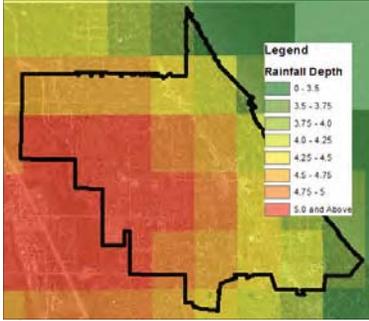
## Improved Stormwater Modeling

### XP-SWMM 2D Modeling

- Combined 6 independent models into 1 model
- Utilized LIDAR topographic data representing millions of individual ground elevation points
- Utilized Nexrad rainfall data that more accurately distributes rainfall over the study area

### XP-SWMM 2D Results

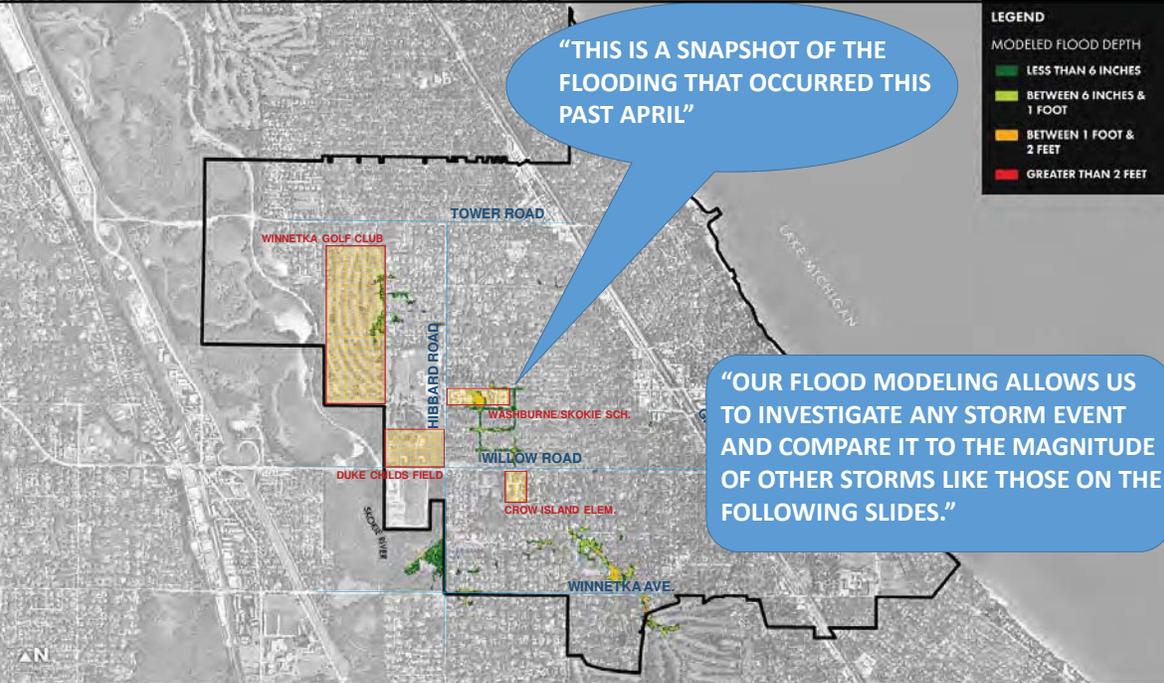
- Provides more accurate representation of flood storage areas and volumes
- Provides more accurate simulation of overland flood routes
- Provides dynamic, real-time visual flooding tool for improved understanding of actual flood event





**“THE STORMWATER MODELING BEING USED FOR THIS STUDY IS SIGNIFICANTLY MORE SOPHISTICATED AND POWERFUL”**

WEST AND SOUTHWEST WINNETKA STORMWATER MANAGEMENT STUDY • PUBLIC MEETING #1 • JANUARY 2016



**LEGEND**

MODELED FLOOD DEPTH

- LESS THAN 6 INCHES
- BETWEEN 6 INCHES & 1 FOOT
- BETWEEN 1 FOOT & 2 FEET
- GREATER THAN 2 FEET

**“THIS IS A SNAPSHOT OF THE FLOODING THAT OCCURRED THIS PAST APRIL”**

**“OUR FLOOD MODELING ALLOWS US TO INVESTIGATE ANY STORM EVENT AND COMPARE IT TO THE MAGNITUDE OF OTHER STORMS LIKE THOSE ON THE FOLLOWING SLIDES.”**

**MODELED FLOOD DEPTHS: APRIL 2015 EVENT**

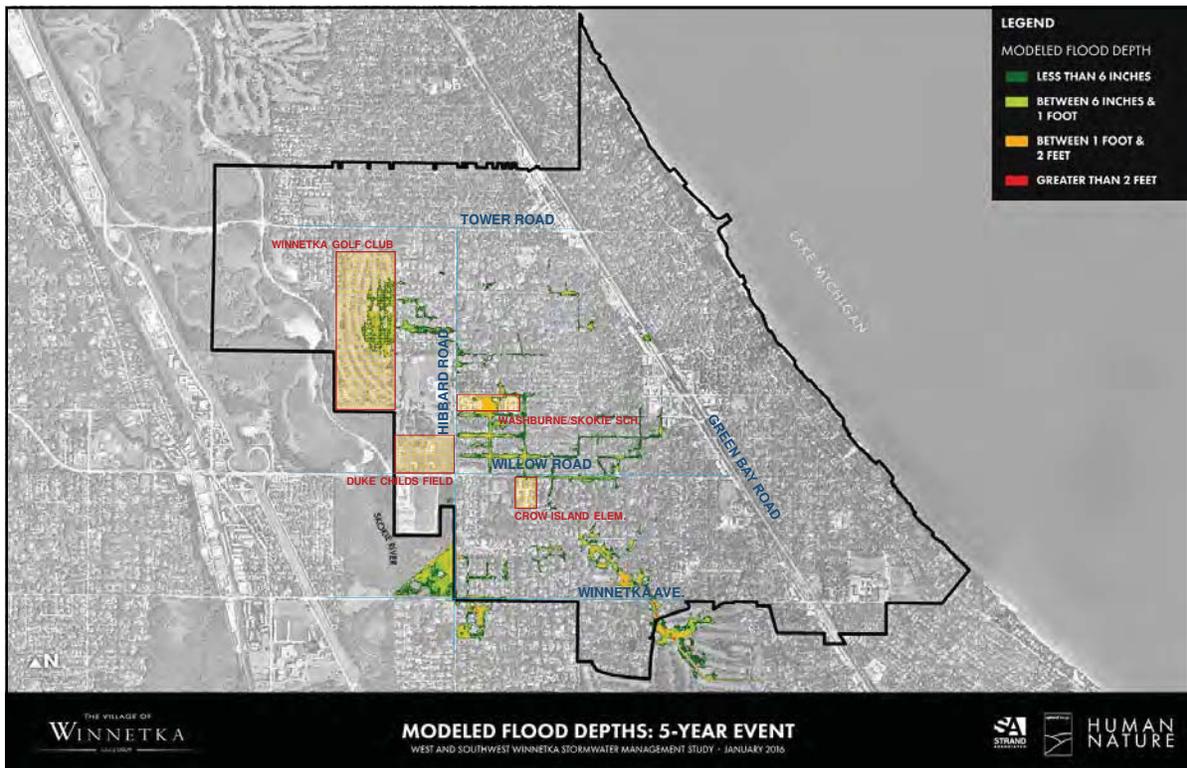
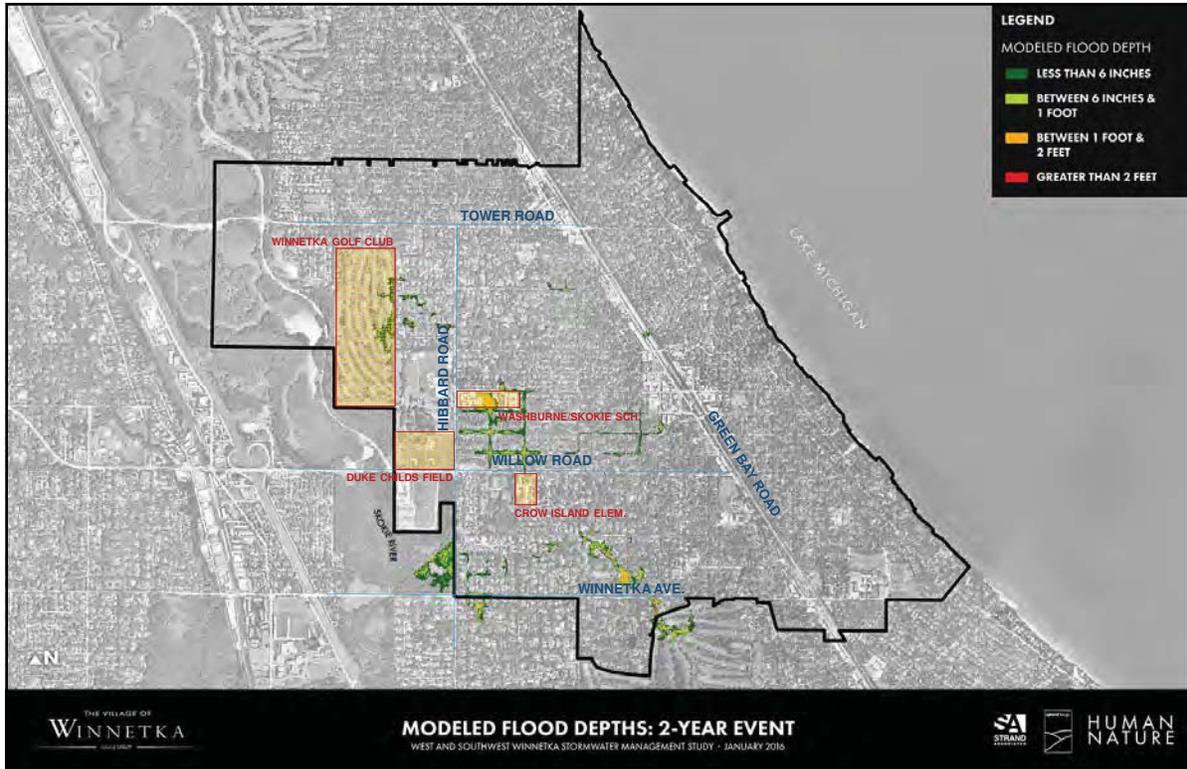
WEST AND SOUTHWEST WINNETKA STORMWATER MANAGEMENT STUDY - JANUARY 2016

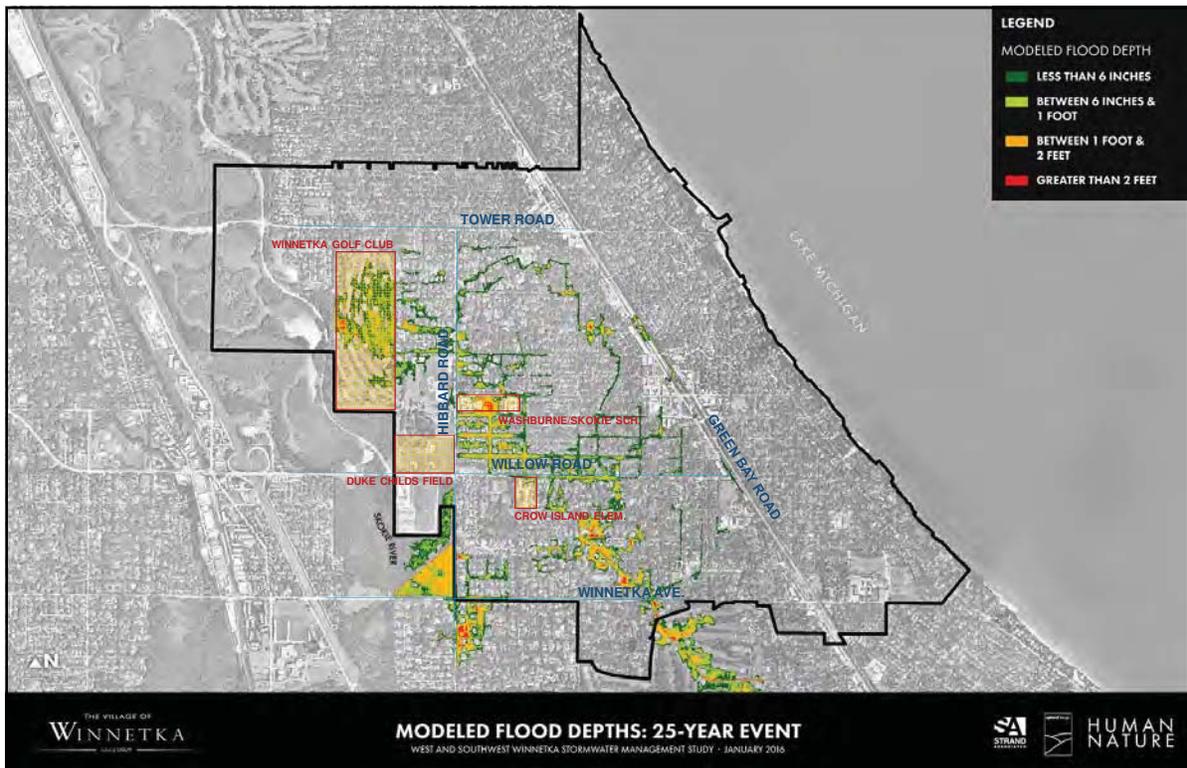
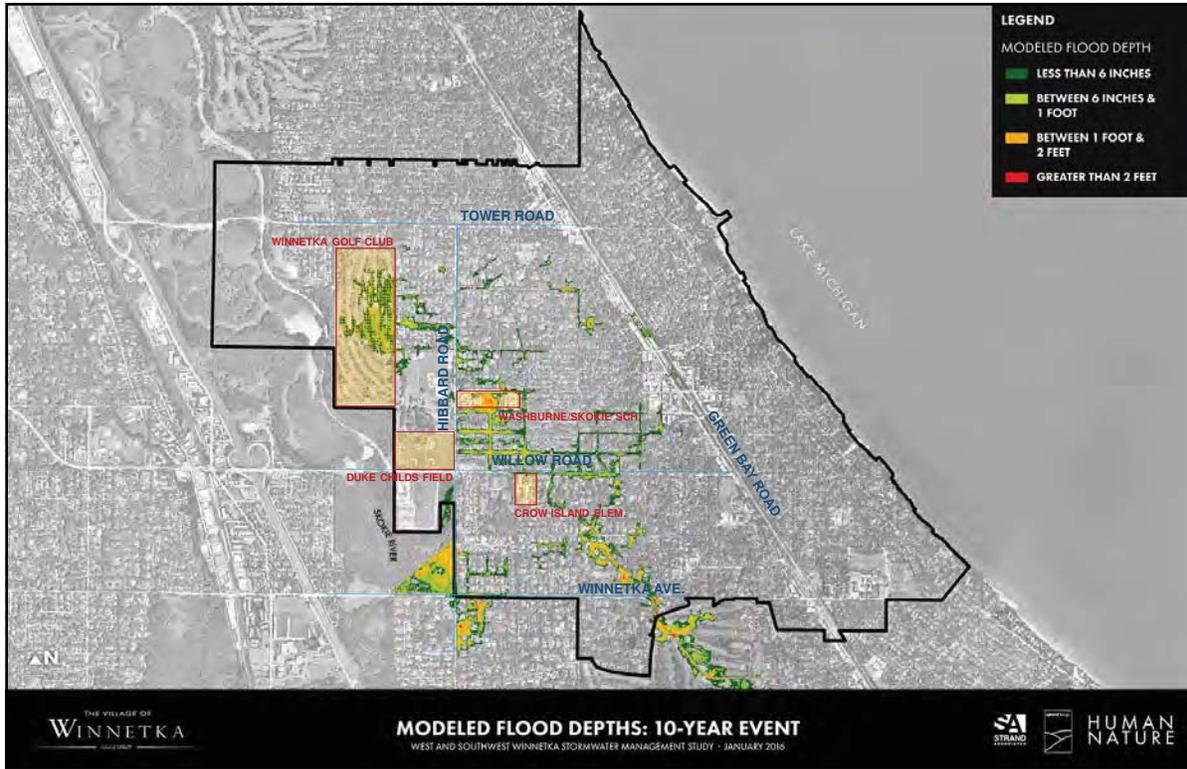
THE VILLAGE OF  
**WINNETKA**  
ILLINOIS

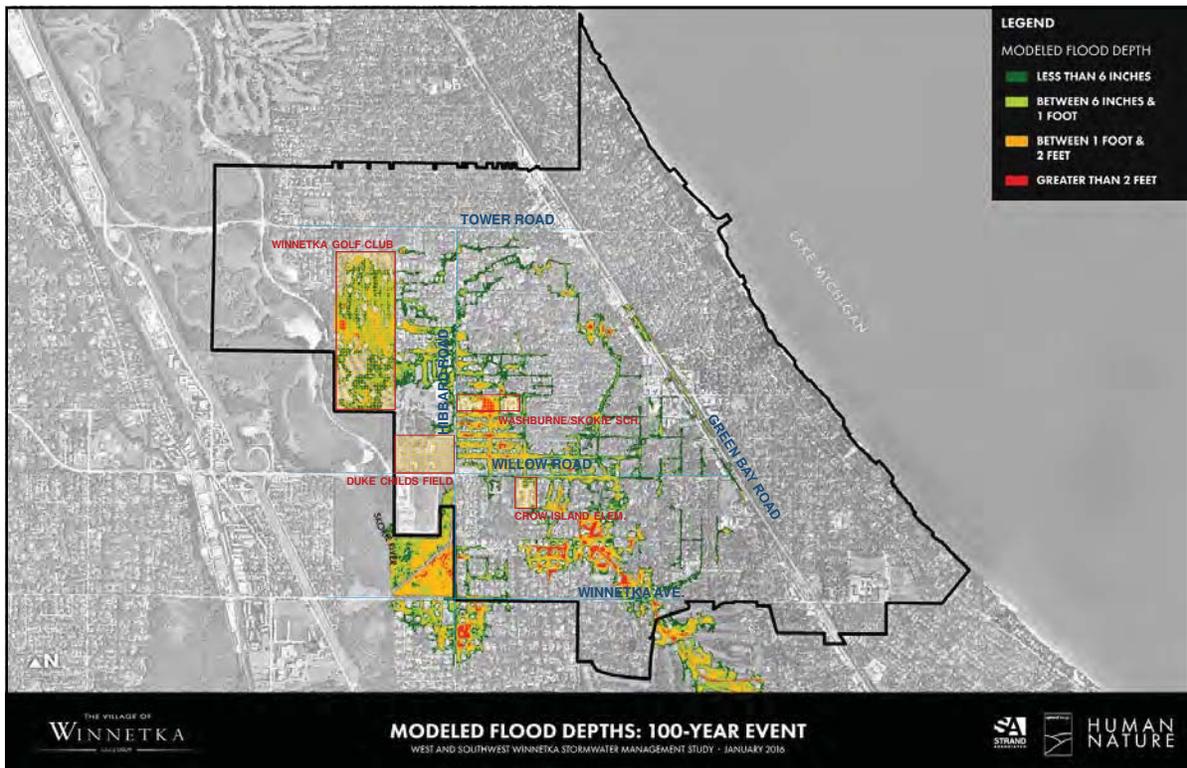
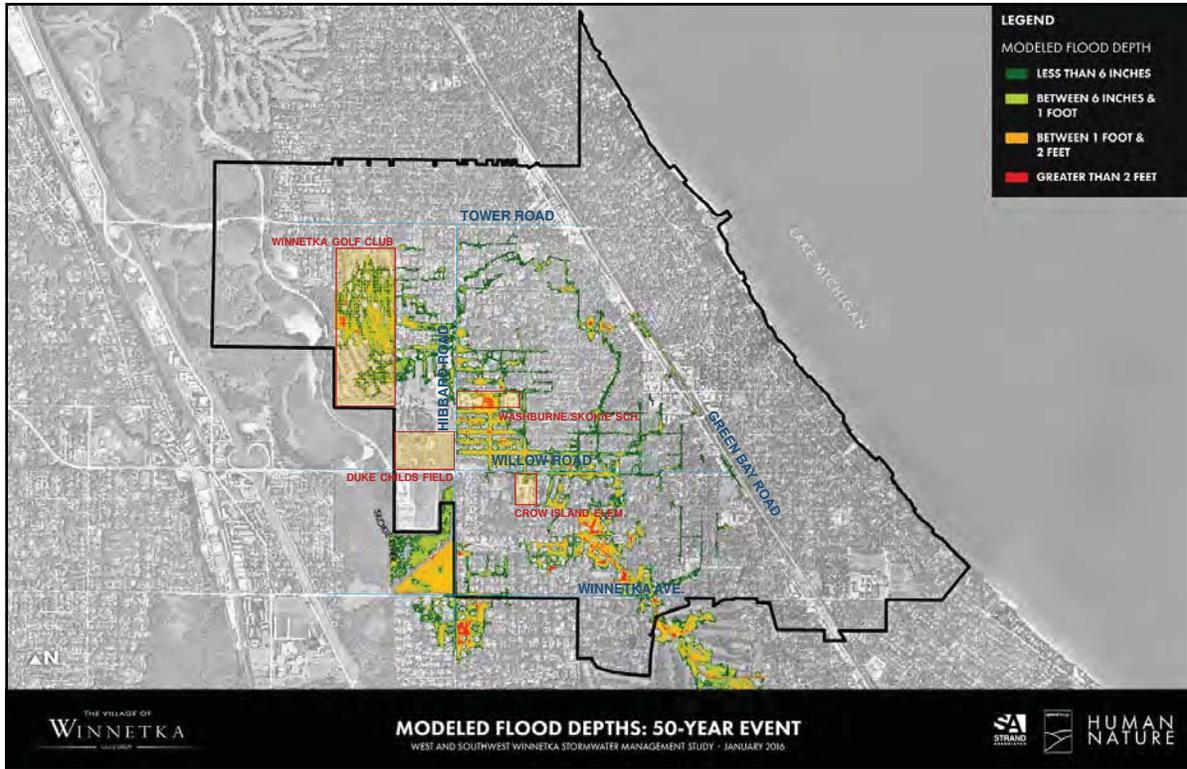
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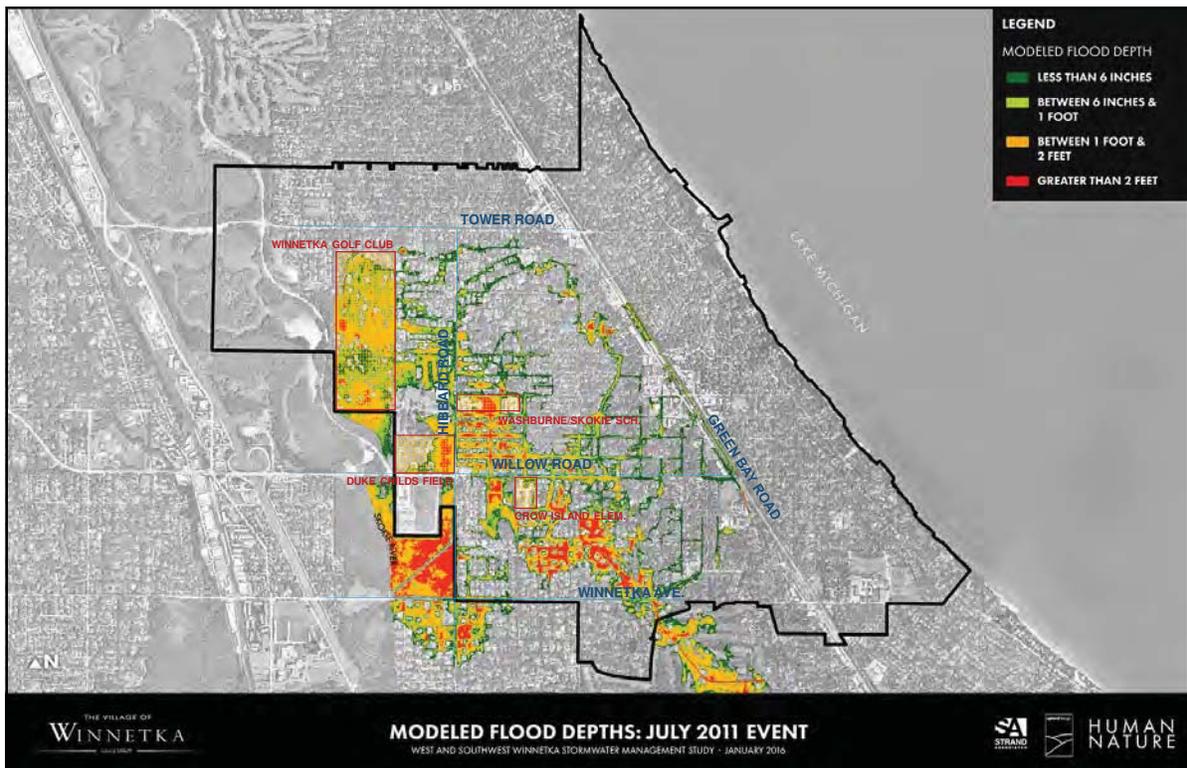
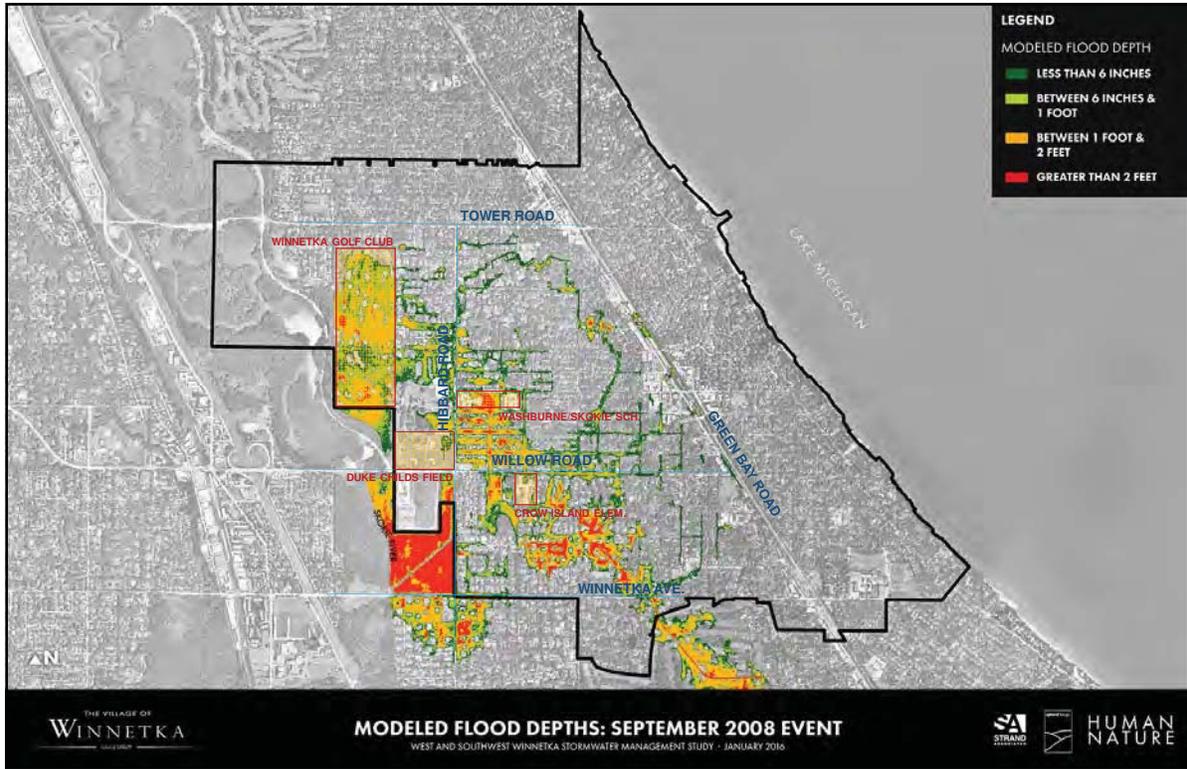
HUMAN NATURE

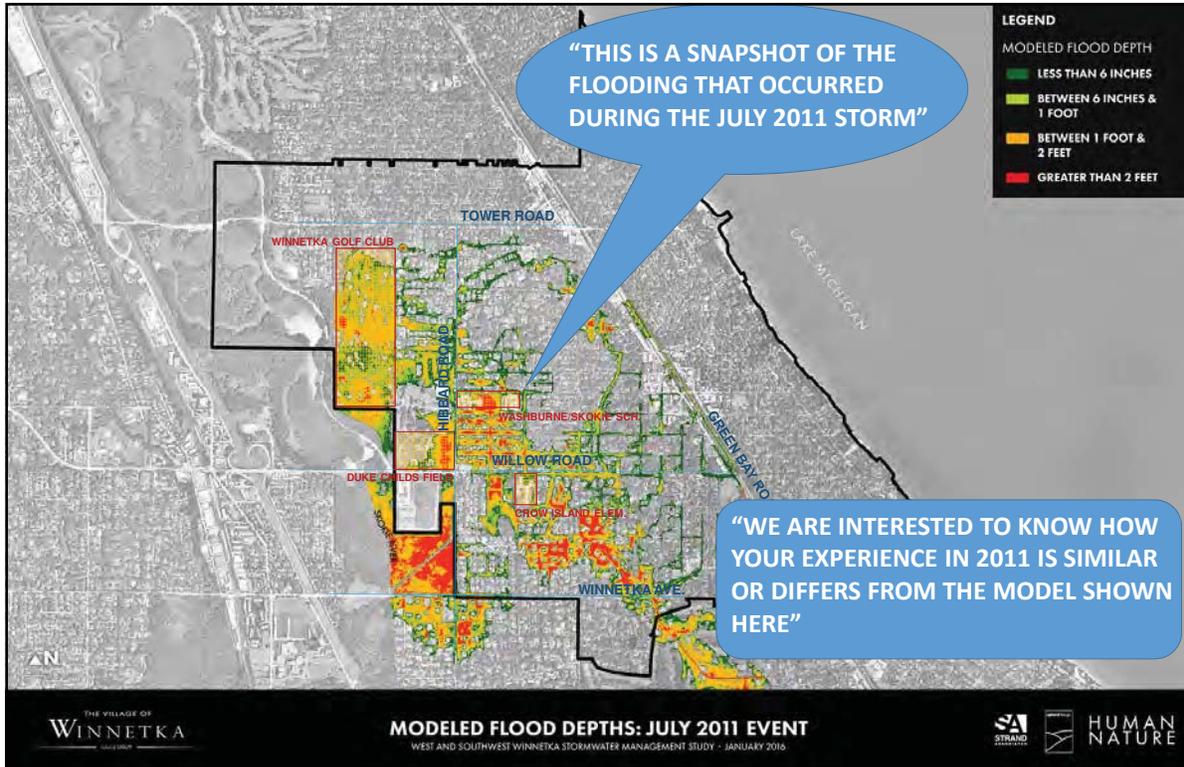








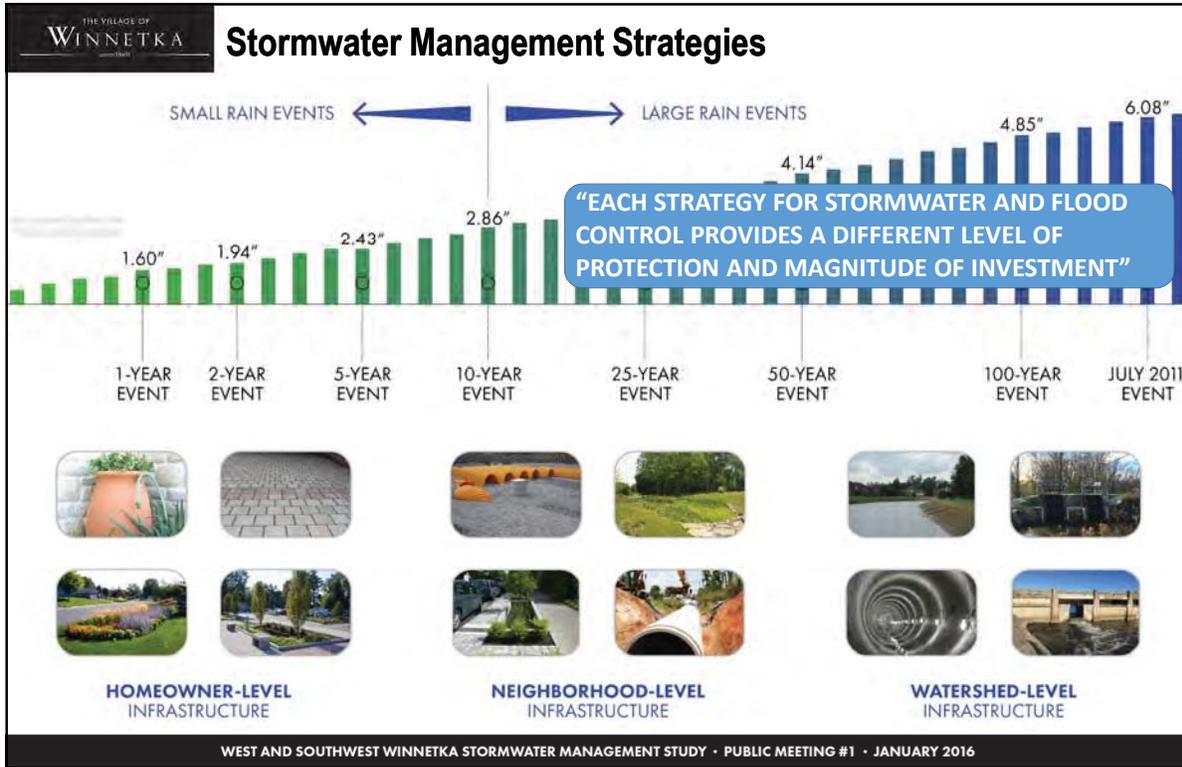




**Stormwater Management Strategies**

**“ARMED WITH THE ADDITIONAL INFORMATION GATHERED FROM THIS MEETING, OUR TEAM WILL BEGIN TO EVALUATE VARIOUS STRATEGIES FOR STORMWATER AND FLOOD CONTROL”**

WEST AND SOUTHWEST WINNETKA STORMWATER MANAGEMENT STUDY • PUBLIC MEETING #1 • JANUARY 2016



## WEST AND SOUTHWEST WINNETKA STORMWATER MANAGEMENT STUDY

AWARENESS PHASE PUBLIC MEETING • JANUARY 2016

“PLEASE TAKE A MOMENT TO PROVIDE US WITH YOUR FEEDBACK. “

- SHARE YOUR COMMENTS BY EMAIL: [stormwatercomments@winnetka.org](mailto:stormwatercomments@winnetka.org)
- SHARE YOUR COMMENTS BY PHONE: 847-716-3549

THE VILLAGE OF  
**WINNETKA**  
SINCE 1869

# WEST AND SOUTHWEST STORMWATER MANAGEMENT STUDY

JANUARY 21 and 23, 2016

Name \_\_\_\_\_  
Address \_\_\_\_\_  
Email \_\_\_\_\_

## Neighborhood

- North of Pine       Provident  
 Tree Streets       South of Willow

## What has been your experience with stormwater flooding?

- Surface flooding on property  
 Water entering window well or low opening  
 Sump pump failure

Other \_\_\_\_\_

## When did you experience flooding?

April 2015       July 2011       September 2008       Other \_\_\_\_\_

Does the flooding model from July 2011 agree with your experience?    Yes     No

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Visit us on our website under the RESIDENTS tab:

**[www.villageofwinnetka.org](http://www.villageofwinnetka.org)**

Share your comments by email:

**[stormwatercomments@winnetka.org](mailto:stormwatercomments@winnetka.org)**

Share your comments by phone:

**847-716-3549**

Surface flooding into home

Foundation seepage

Sewer backup

# WEST AND SOUTHWEST STORMWATER MANAGEMENT STUDY

JANUARY 21 and 23, 2016

Name \_\_\_\_\_  
Address \_\_\_\_\_  
Email \_\_\_\_\_

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Other \_\_\_\_\_

## When did you experience flooding?

April 2015       July 2011       September 2008       Other \_\_\_\_\_

Does the flooding model from July 2011 agree with your experience?    Yes     No

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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## WEST AND SOUTHWEST WINNETKA STORMWATER MANAGEMENT STUDY

EXPLORATION PHASE PUBLIC MEETING • MARCH 2016

THE VILLAGE OF  
**WINNETKA**  
SINCE 1869

STRAND ASSOCIATES HUMAN NATURE

WEST AND SOUTHWEST WINNETKA STORMWATER MANAGEMENT STUDY • PUBLIC MEETING #2 • MARCH 2016

### Study Area Boundary

“THE STORMWATER AND FLOOD CONTROL STUDY AREA BOUNDARY IS SHOWN IN BLUE”

LAKE MICHIGAN

SKOKIE LAGOONS  
SKOKIE RIVER  
TOWER ROAD  
HIBBARD ROAD  
GREEN BAY ROAD  
WINNETKA GOLF CLUB  
WILLOW ROAD  
DUKE CHILDS FIELD  
WASHBURNE/SKOKIE SCH  
CROW ISLAND ELEM  
WINNETKA AVE

**Legend**

- Hydrology
- Study Boundary
- Previous Study Area
- Skokie River Watershed
- Municipal Limits

0 0.25 0.5 1 Miles

WEST AND SOUTHWEST WINNETKA STORMWATER MANAGEMENT STUDY • PUBLIC MEETING #2 • MARCH 2016

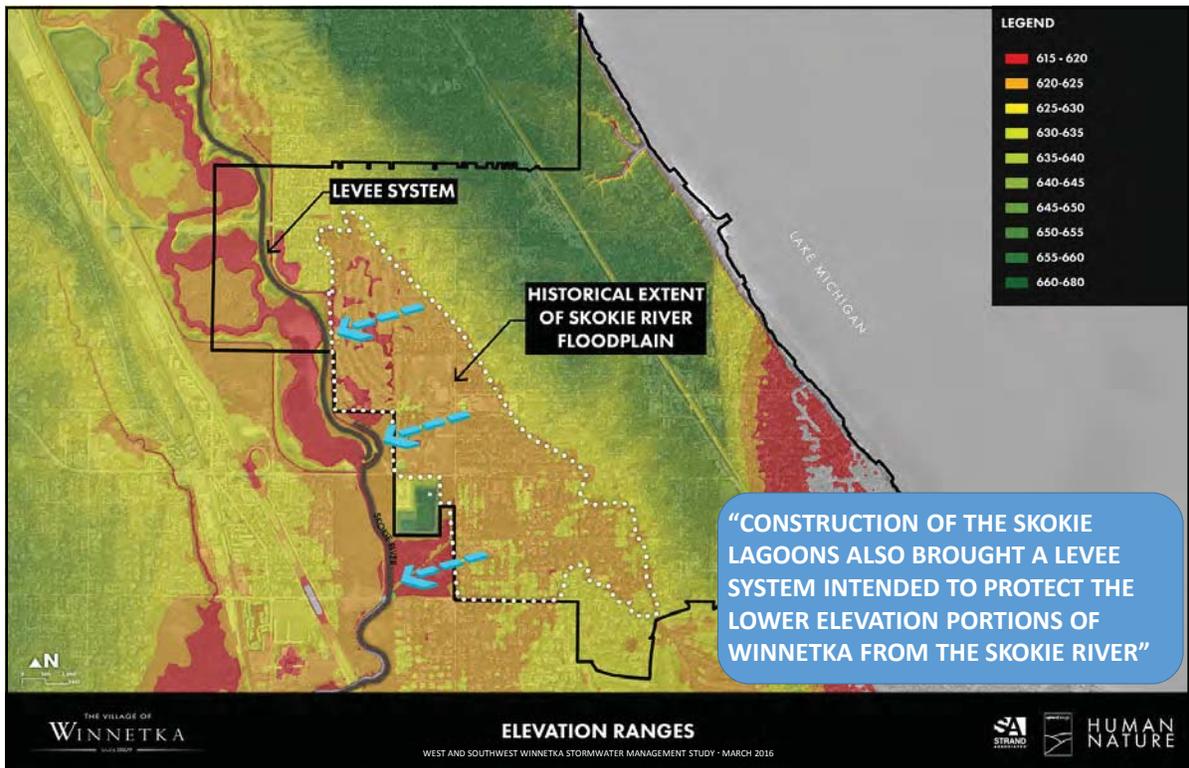
The character of the marsh varied from season to season. During the spring and summer, water levels in the marsh ranged from a few inches to several feet deep.”

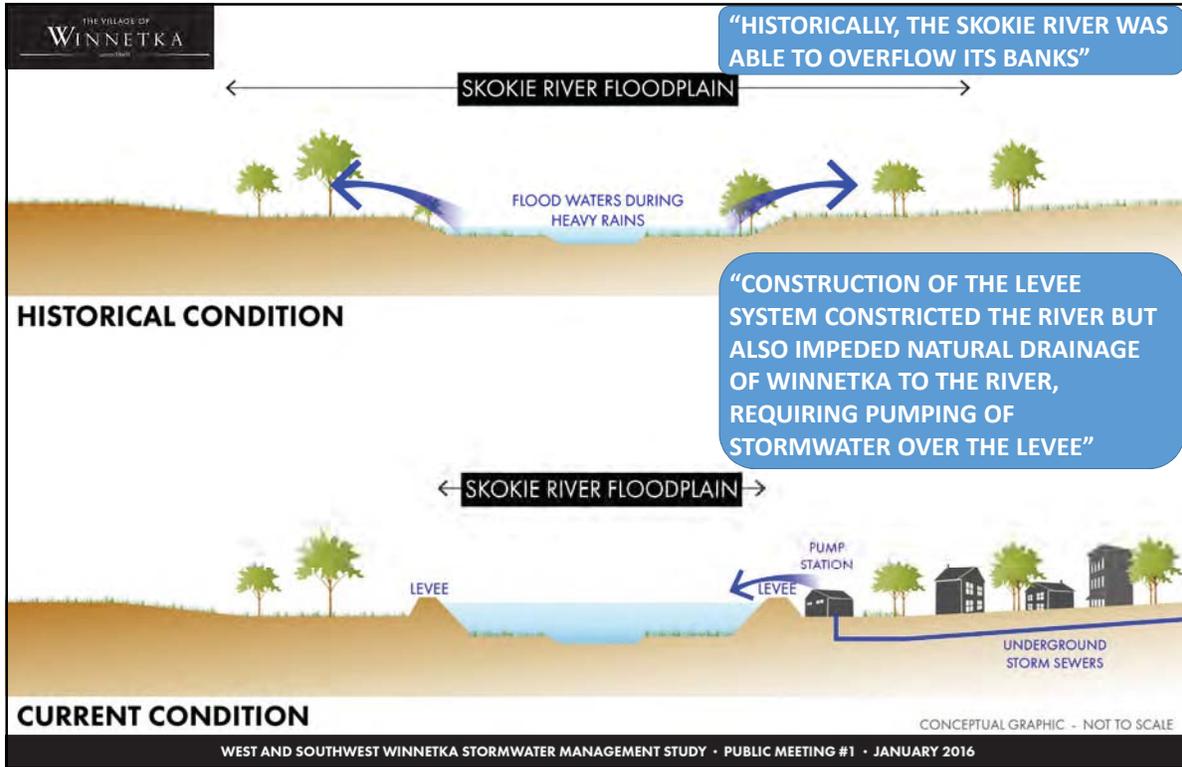
“HIBBARD ROAD LOOKING WEST”



SOURCE: <http://skokie Lagoons.omeka.net>

WEST AND SOUTHWEST WINNETKA STORMWATER MANAGEMENT STUDY • PUBLIC MEETING #2 • MARCH 2016





**Project Progress Update**

**Updated XP-SWMM 2D Modeling**

- Combined 6 independent models into 1 model
- Converted to an overland flow model
- Utilized LIDAR topographic data representing millions of individual ground elevations
- Used actual rain gauge data in Winnetka, Evanston, Northbrook, Highland Park, and Wheeling (Chicago Executive Airport)
- Used historical rainfall input through Nexrad data to accurately distribute rainfall over the study area

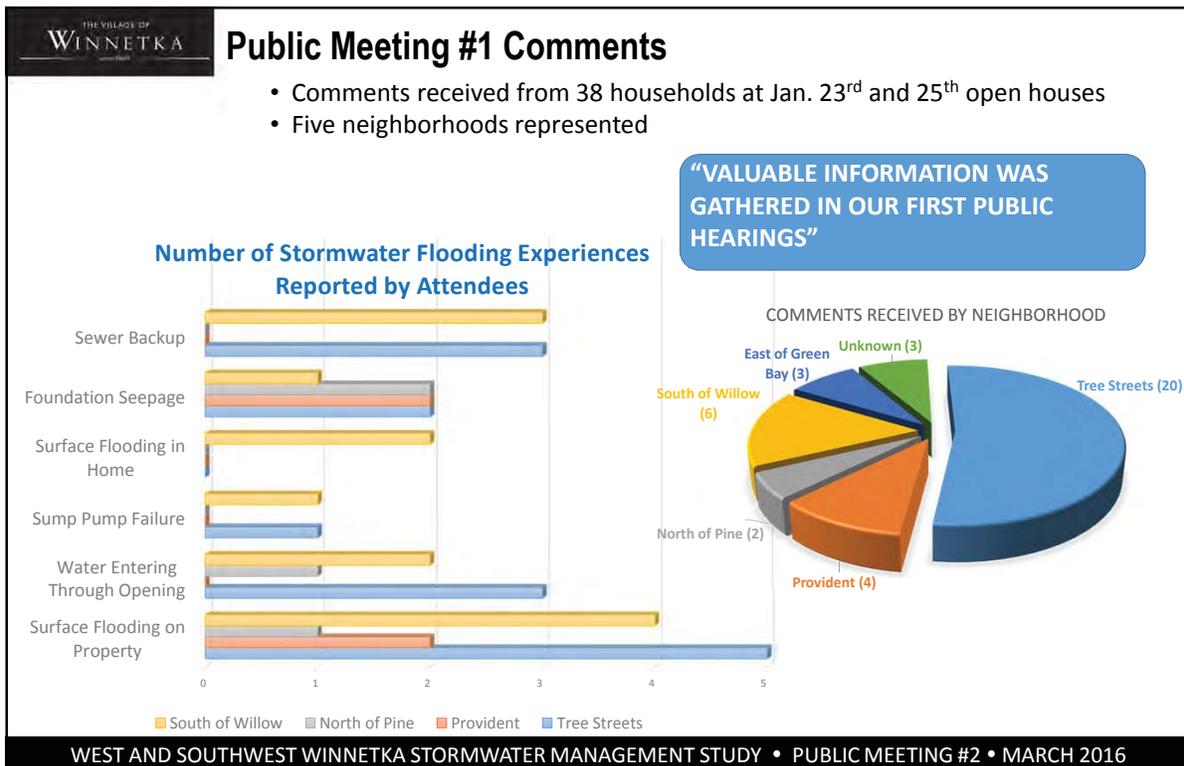
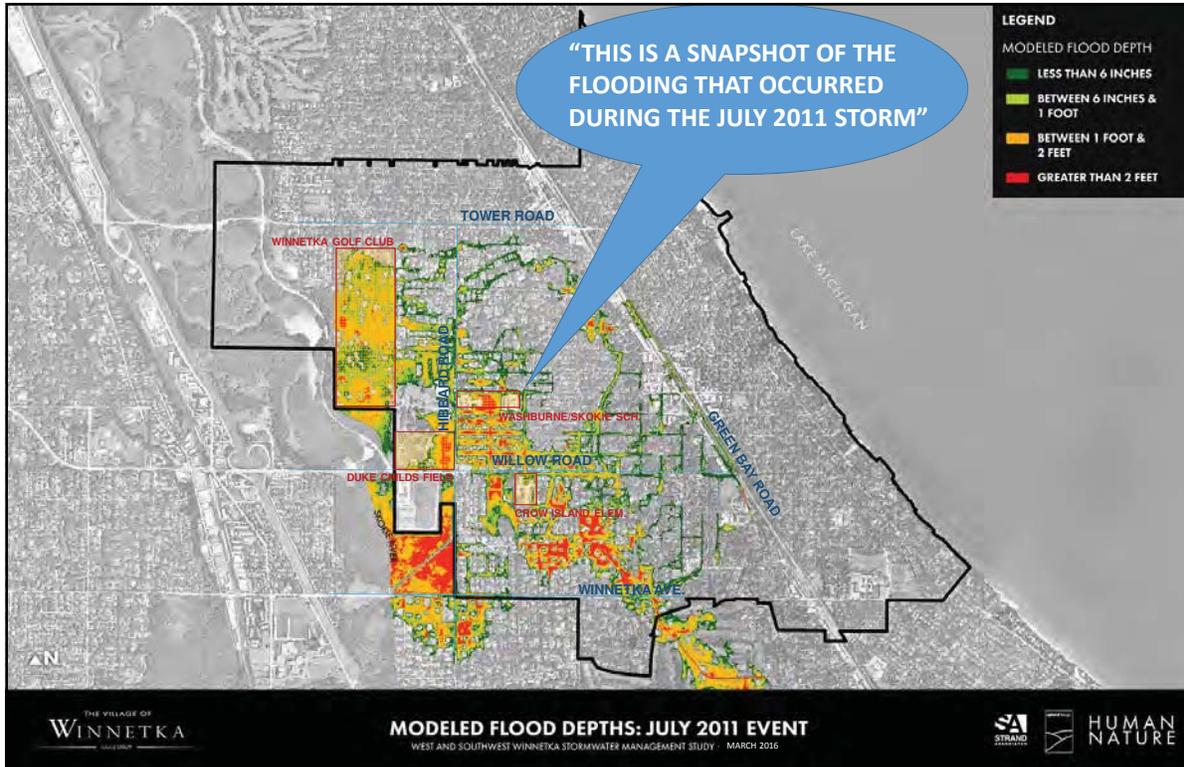
“THE STORMWATER MODELING BEING USED FOR THIS STUDY IS SIGNIFICANTLY MORE SOPHISTICATED AND POWERFUL”

Legend

Rainfall Depth

- 0 - 3.5
- 3.5 - 4.0
- 4.0 - 4.25
- 4.25 - 4.5
- 4.5 - 4.75
- 4.75 - 5
- 5.0 and Above

WEST AND SOUTHWEST WINNETKA STORMWATER MANAGEMENT STUDY • PUBLIC MEETING #2 • MARCH 2016



## Project Progress Update

### Developed Opportunities Matrix

- “No Stone Unturned” approach

### Evaluated and Modeled Opportunities

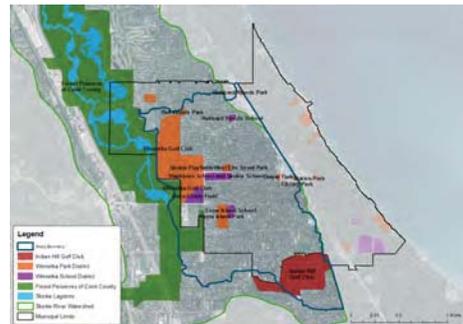
- Identified major issues and roadblocks
- Assessed feasibility
- Determined effectiveness and level of service

### Stakeholder Engagement

- Meetings with other government agencies
- Resident input meetings and web site

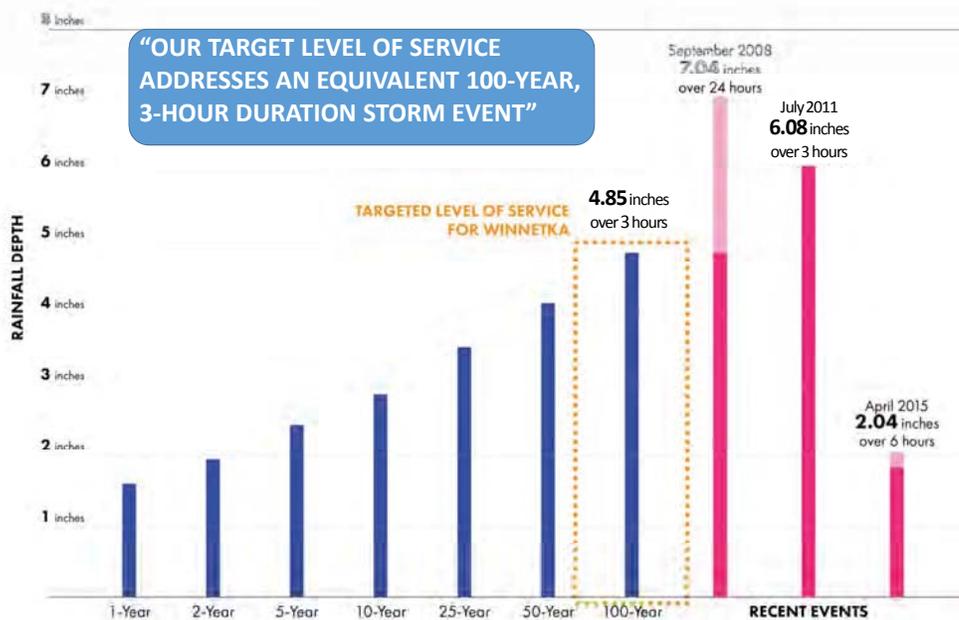


“SINCE OUR MEETINGS IN JANUARY WE HAVE BEEN IDENTIFYING OPPORTUNITIES AND CONTINUING OUR DISCUSSIONS WITH STAKEHOLDERS”



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## Target Level of Service



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**THE VILLAGE OF WINNETKA**

## Target Level of Service

**“OUR TARGET LEVEL OF SERVICE IS TO REDUCE FLOODING ON PRIVATE PROPERTY”**

**CURRENT LEVEL OF SERVICE**

**TARGET LEVEL OF SERVICE**

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**THE VILLAGE OF WINNETKA**

## Target Level of Service

**“TO ACHIEVE OUR LEVEL OF SERVICE WE NEED TO REMOVE 150 ACRE-FEET OF STORMWATER FROM STREETS AND HOMES”**

**1 ACRE**

1-foot depth of water

**1 ACRE-FOOT**

**1 ACRE-FOOT = 325,851 gallons**

Source: precision Aerial Photo (www.4aerial.com)

**150** ACRE-FEET STORAGE NEEDED TO MEET THE TARGETED LEVEL OF SERVICE IN WINNETKA

**35** FEET DEPTH OF WATER IN SOLDIER FIELD (ALL OF SECTION 100)

# Stormwater Management Opportunities

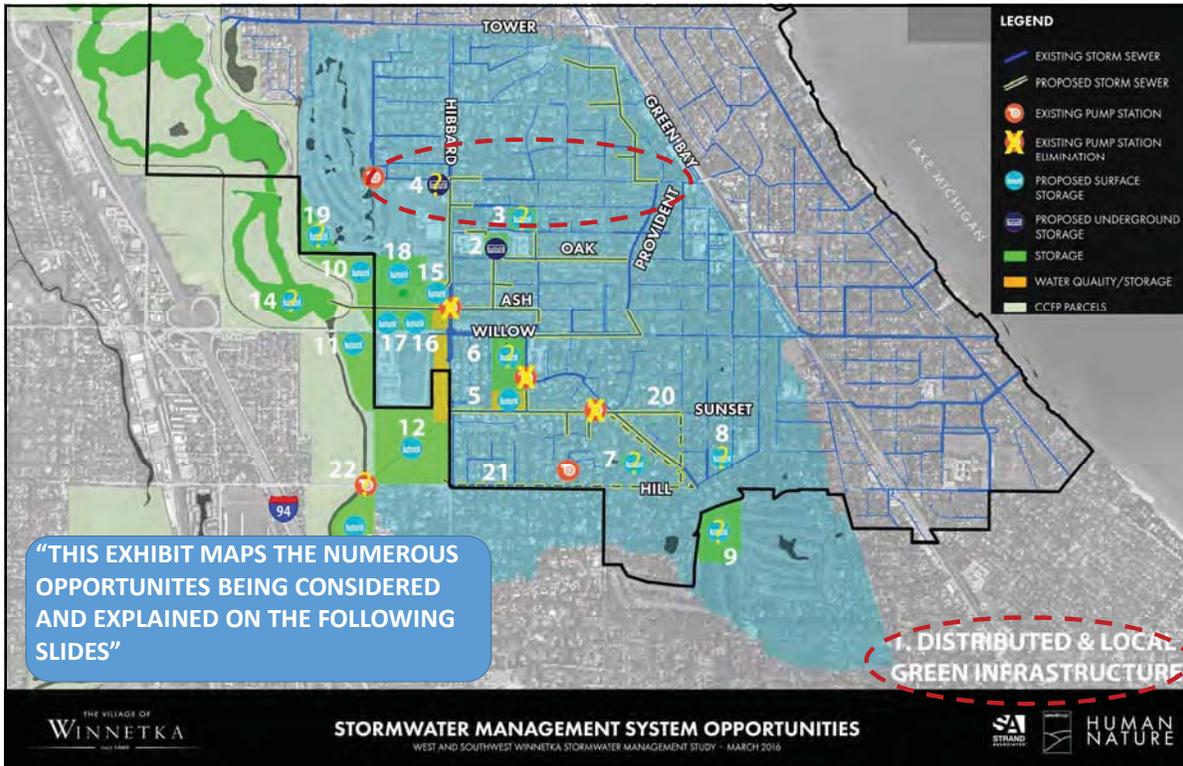
**“EVERY OPPORTUNITY IS BEING CONSIDERED AND A SHORTLIST IDENTIFIED”**

## “No Stone Unturned” Approach

- Identifying numerous opportunity types and variations
- Identifying the pros/cons/challenges
- Modeling the opportunities to determine potential benefits
- Evaluating technical feasibility
- Identifying the less-effective and technically infeasible options to narrow the list



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## Stormwater Management Opportunities – Homeowner Level

### 1. Distributed Green Infrastructure

- 3,095 residential parcels in the study area
- Approximately 33% impervious

“THE VOLUME OF STORMWATER FROM A TYPICAL RESIDENTIAL PARCEL POSES A CHALLENGE FOR GREEN INFRASTRUCTURE”

Residential Parcels	Total Area (SF)	Impervious Area (SF)	2-Yr 3-Hr Storm (Gal)	10-Yr 3-Hr Storm (Gal)	50-Yr 3-Hr Storm (Gal)	100-Yr 3-Hr Storm (Gal)
Average Parcel	14,500	4,900	7,080	10,400	15,100	17,700

## Stormwater Management Opportunities – Homeowner Level

### 1. Distributed Green Infrastructure

- Rain Barrels
  - 20 to 40% participation (600 to 1200 homes)
  - 2 barrels per property implemented over time
  - 0.2 to 0.4 Ac-Ft of total storage in the watershed

“GREEN INFRASTRUCTURE PROVIDES LIMITED OPPORTUNITIES”



- Rain Gardens
  - 10 to 20% participation (310 to 620 homes)
  - 300 SF garden per home implemented over time
  - 3 to 6 Ac-Ft of total storage in the watershed



- Pervious Driveways
  - 3 to 8% participation (100 to 250 homes)
  - 1,200 SF driveway per home implemented over time
  - 2 to 5 Ac-Ft of total storage in the watershed



## Stormwater Management Opportunities – Local Level

### 1. Local Green Infrastructure

- Street Curb Bump Outs
  - 15 to 20 intersections
  - 4 per intersection
  - 0.4 to 0.6 Ac-Ft of total storage in the watershed
  
- Green Parkways with Storage Chambers
  - Adjacent to 20 to 30% of new storm sewer
  - Tree removal in parkways
  - 3 to 5 Ac-Ft of total storage in the watershed
  
- Green Intersections
  - Closing an intersection to traffic
  - 0.5 to 0.8 acre feet of total storage per intersection

**“GREEN INFRASTRUCTURE PROVIDES LIMITED OPPORTUNITIES”**

GREEN STREETS  
A-4

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## Stormwater Management Opportunities – Storage

**LEGEND**

- EXISTING STORM SEWER
- PROPOSED STORM SEWER
- EXISTING PUMP STATION
- EXISTING PUMP STATION ELIMINATION
- PROPOSED SURFACE STORAGE
- PROPOSED UNDERGROUND STORAGE
- STORAGE
- WATER QUALITY/STORAGE
- CCFP PARCELS

**“THERE ARE A NUMBER OF STORMWATER STORAGE OPPORTUNITIES IN THE TREE STREETS NEIGHBORHOOD”**

**STORMWATER MANAGEMENT SYSTEM OPPORTUNITIES**

WEST AND SOUTHWEST WINNETKA STORMWATER MANAGEMENT STUDY - MARCH 2016



## Stormwater Management Opportunities - Storage

### 2. Washburne-Skokie Play Field

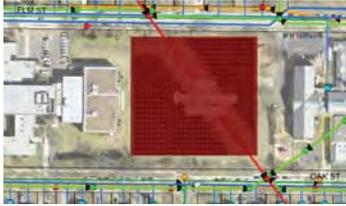
- Underground storage with grass or turf field above
- Provides direct relief to the Tree Streets
- **4 to 6 Ac-Ft of storage**

### 3. West Elm Street Park

- Above ground wet or wetland storage
- Mature, high quality tree removal
- Provides direct relief to the Trees Streets
- **8 to 12 Ac-Ft of storage**

### 4. Park District Maintenance Facility

- Underground storage with turf field/parking lot
- Not significantly effective
- **2 to 3 Ac-Ft of storage**



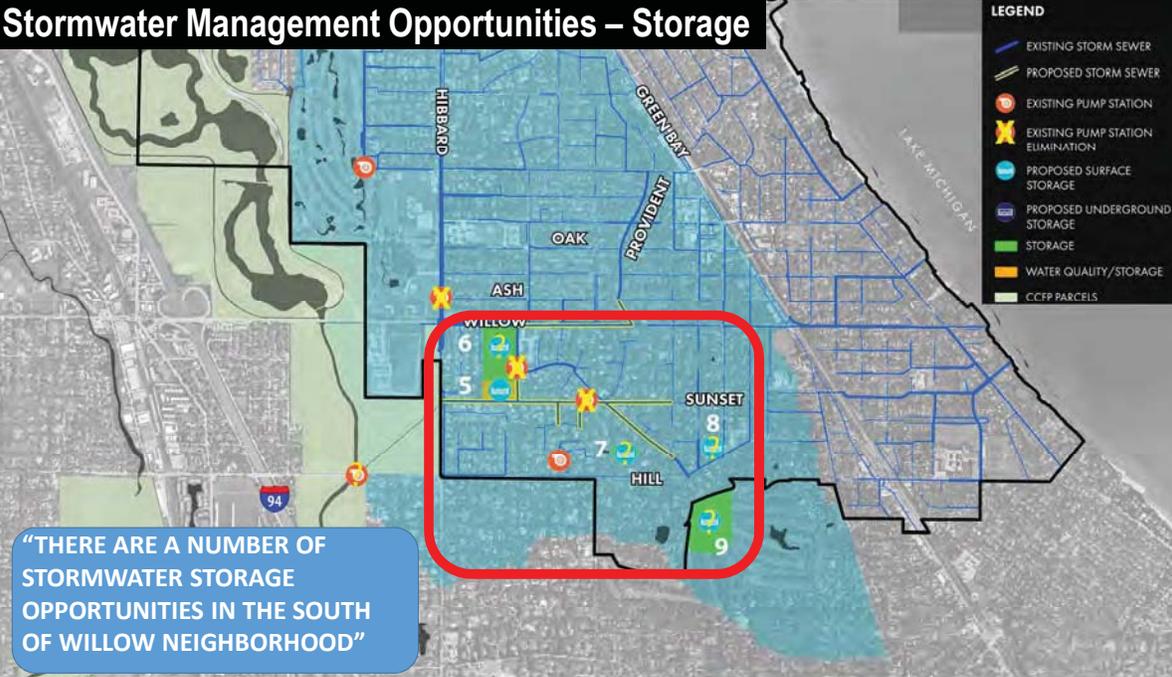


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## Stormwater Management Opportunities – Storage

**LEGEND**

- EXISTING STORM SEWER
- PROPOSED STORM SEWER
- EXISTING PUMP STATION
- ✱ EXISTING PUMP STATION ELIMINATION
- PROPOSED SURFACE STORAGE
- PROPOSED UNDERGROUND STORAGE
- STORAGE
- WATER QUALITY/STORAGE
- CCFP PARCELS



“THERE ARE A NUMBER OF STORMWATER STORAGE OPPORTUNITIES IN THE SOUTH OF WILLOW NEIGHBORHOOD”



**STORMWATER MANAGEMENT SYSTEM OPPORTUNITIES**  
WEST AND SOUTHWEST WINNETKA STORMWATER MANAGEMENT STUDY - MARCH 2016




## Stormwater Management Opportunities - Storage

### 5. Crow Island Park – South

- Above ground wet/wetland storage
- Provides critical water quality improvements
- Mature, high quality tree removal
- 20 to 35 Ac-Ft of storage

### 6. Crow Island Park – North

- Above ground wet/wetland storage
- Similar environment to current but loses park setting and historic structure
- 12 to 25 Ac-Ft of storage



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## Stormwater Management Opportunities - Storage

### 7. Vacant Parcels

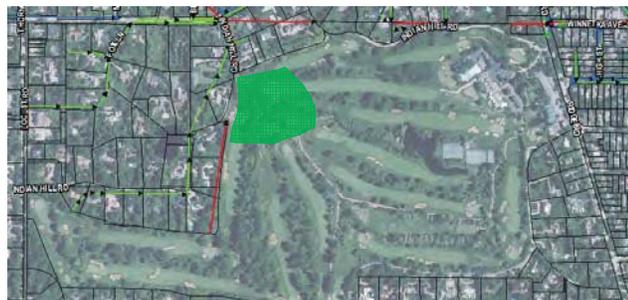
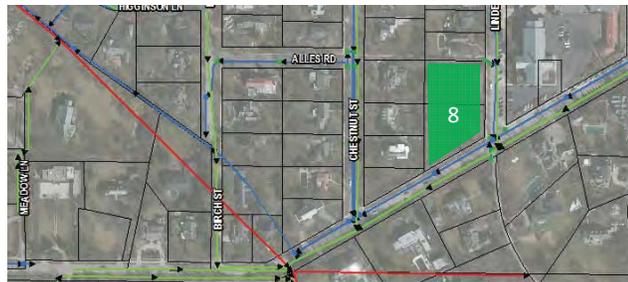
- Above ground wet or wetland storage
- Location may not be connected
- 1 to 3 Ac-Ft of storage (per parcel estimated)

### 8. Faith, Hope and Charity Church

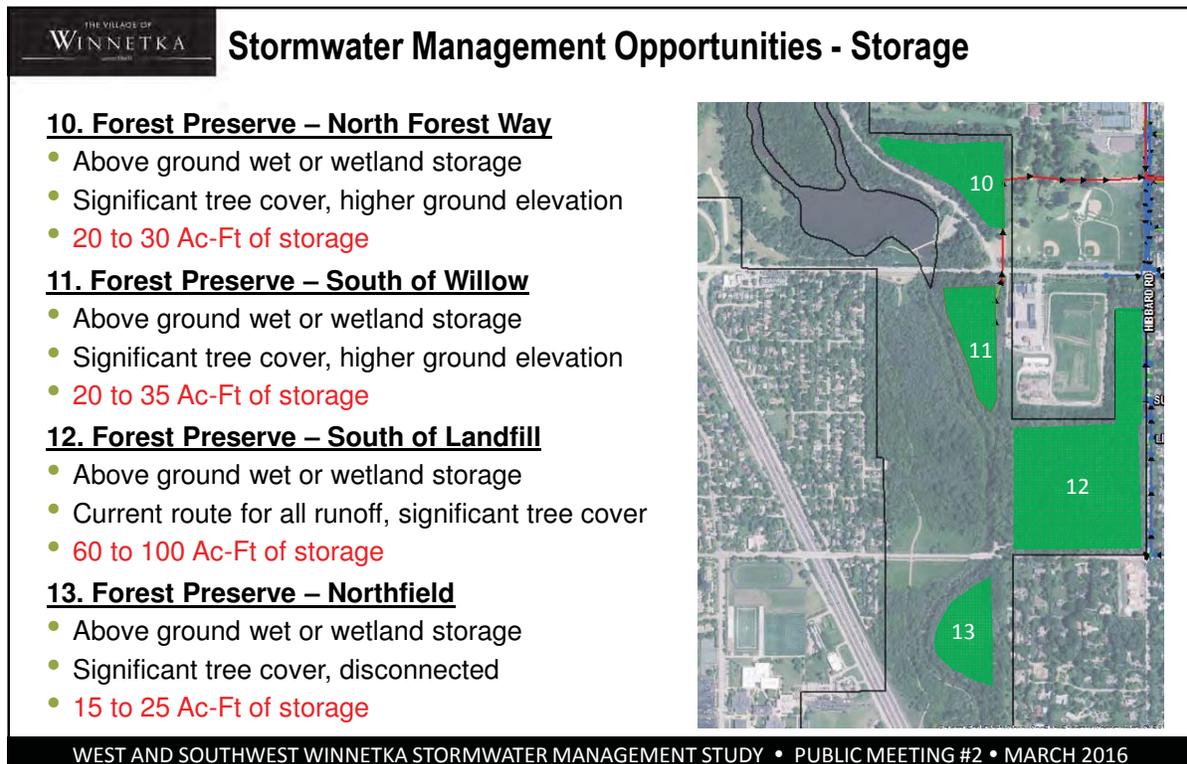
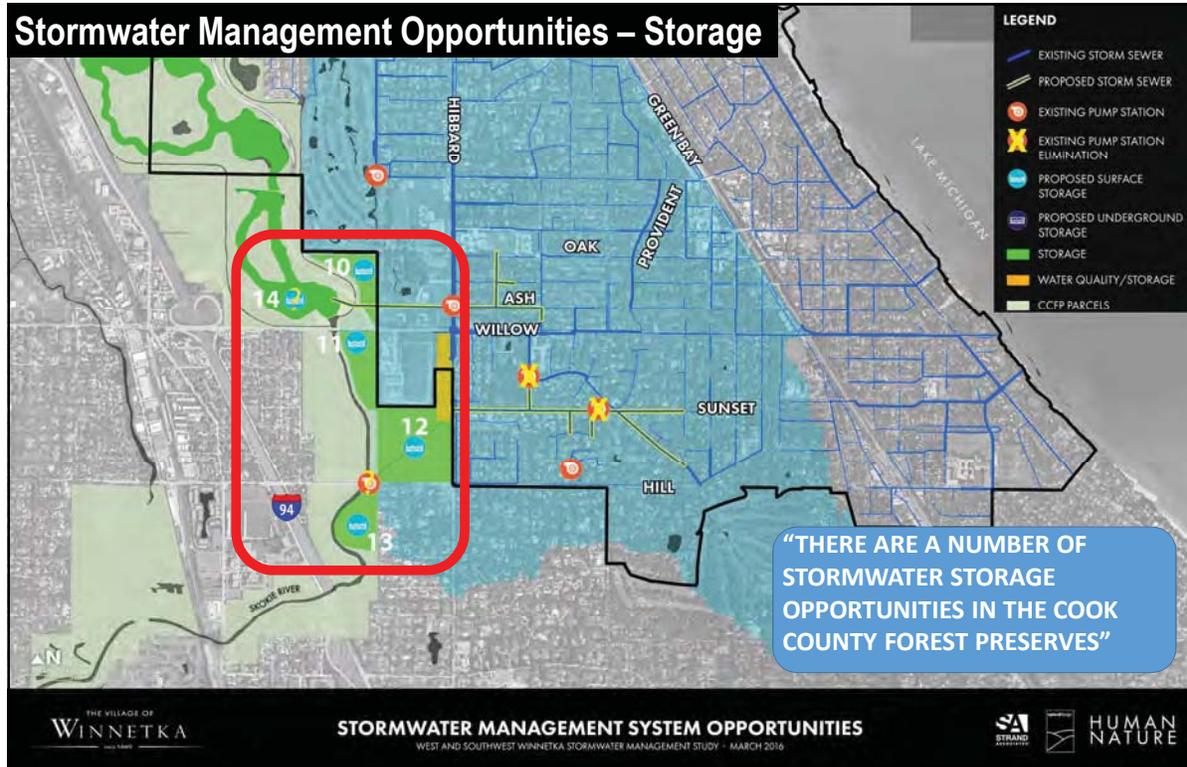
- Underground or surface storage
- Not significantly effective
- 2 to 3 Ac-Ft of storage

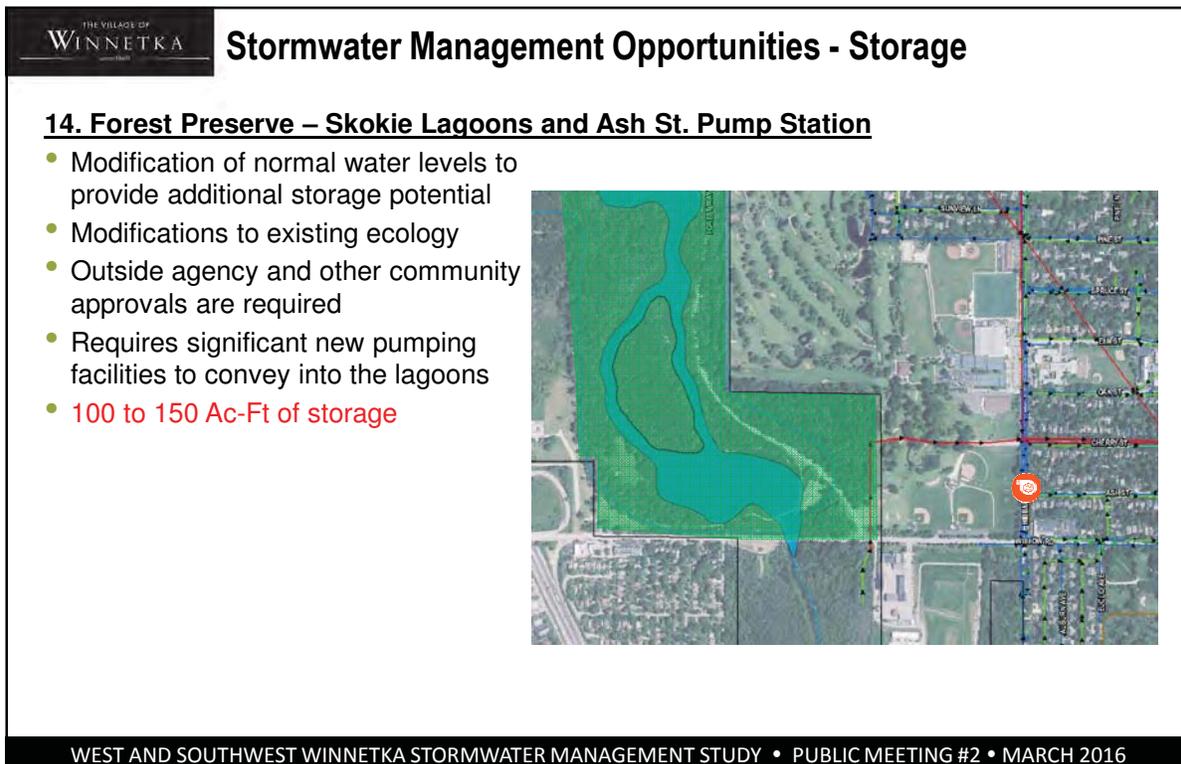
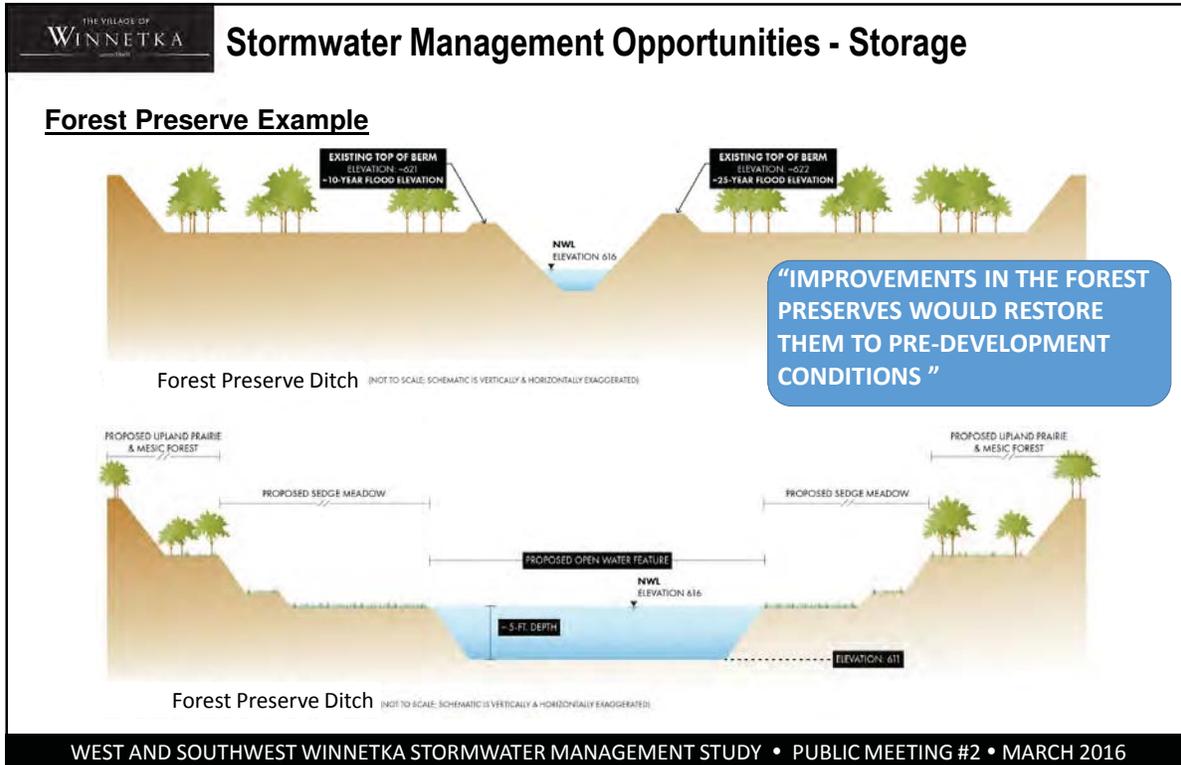
### 9. Indian Hill Golf Course

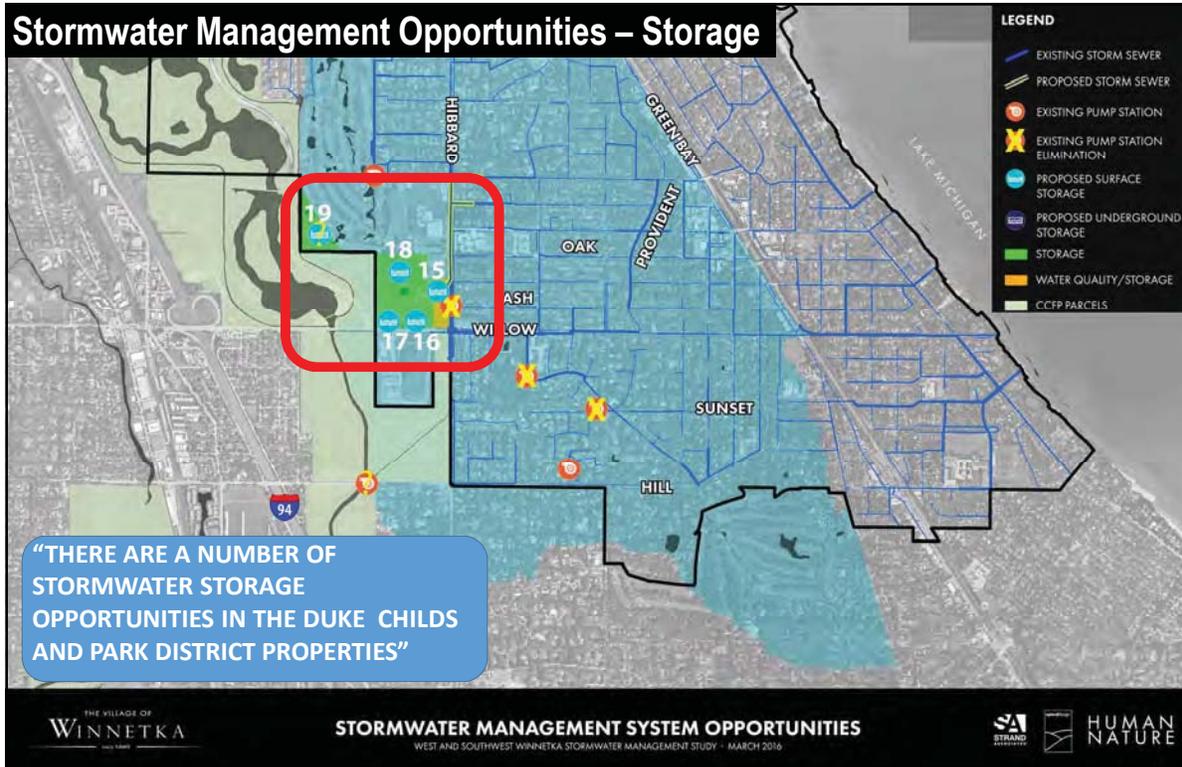
- Above ground wet or wetland storage
- Would be worked into existing course
- 4 to 6 Ac-Ft of storage



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THE VILLAGE OF  
**WINNETKA**  
1830-1980

## Stormwater Management Opportunities - Storage

**15. Duke Childs – Relocate Lacrosse Fields to Landfill**

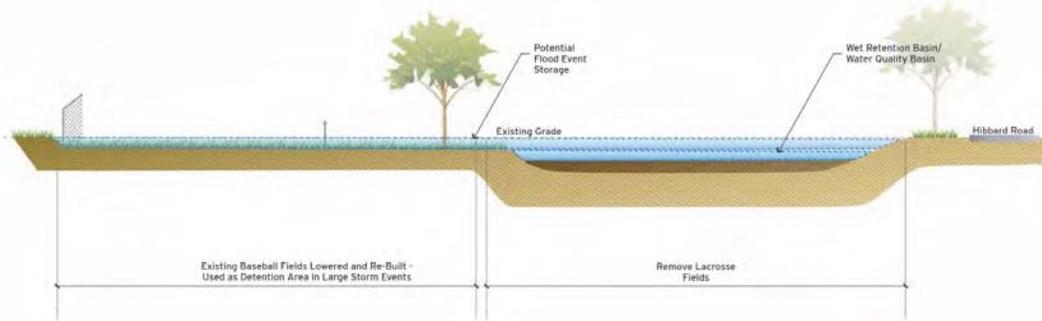
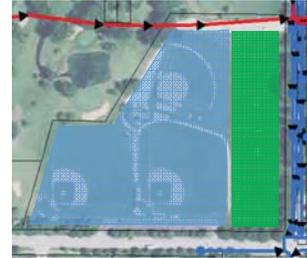
- Above ground wet or wetland storage
- Provides critical water quality improvements
- Existing use can be transferred to the top of the landfill
- Provides direct relief to the Tree Streets neighborhood
- **12 to 16 Ac-Ft of storage**

WEST AND SOUTHWEST WINNETKA STORMWATER MANAGEMENT STUDY • PUBLIC MEETING #2 • MARCH 2016

## Stormwater Management Opportunities - Storage

### 16. Duke Childs – Maintain Existing Ball Fields

- Above ground dry storage
- Maintains day-to-day use of ball fields
- Ball fields would be unusable following certain rainfalls
- Provides direct relief to the Tree Streets neighborhood
- 24 to 32 Ac-Ft of storage

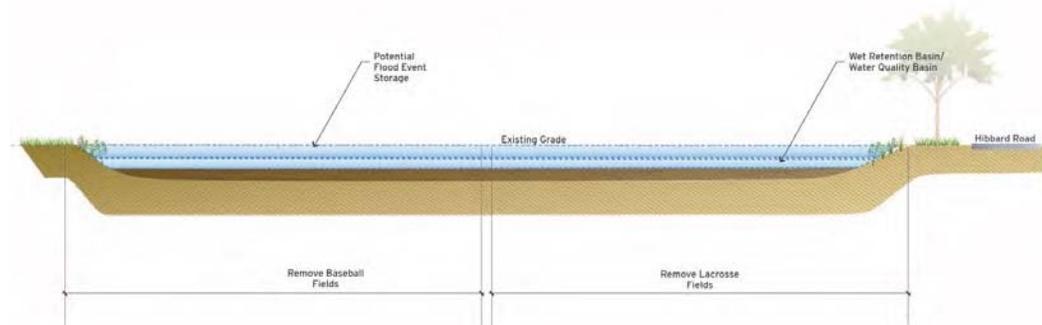
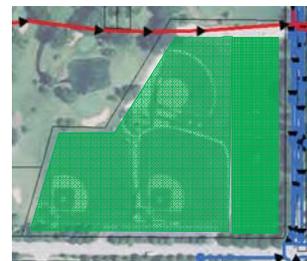


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## Stormwater Management Opportunities - Storage

### 17. Duke Childs – Relocate Ball Fields

- Above ground wet or wetland storage
- Eliminates current ball field use, ball fields would have to be relocated elsewhere
- 40 to 60 Ac-Ft of storage



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## Stormwater Management Opportunities - Storage

### 18. Winnetka Park District Par 3 Golf Course

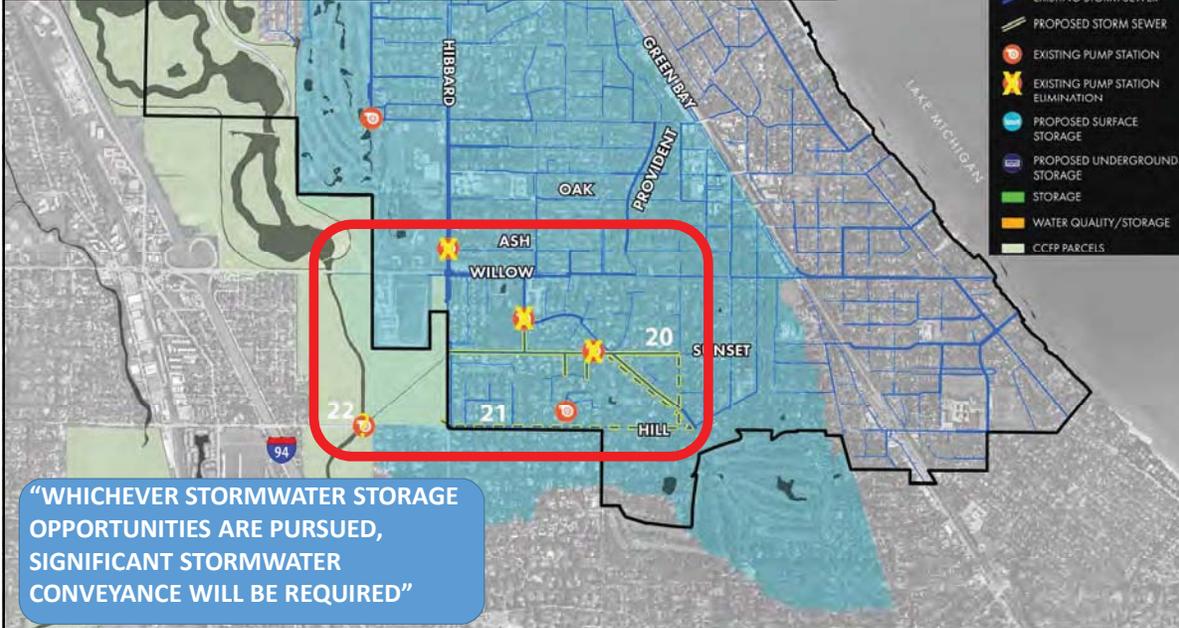
- Above ground wet or wetland storage
- Would lose the Par-3 golf course
- 15 to 35 Ac-Ft of storage

### 19. Winnetka Park District 18 Hole Golf Course

- Above ground wet or wetland storage
- Would be worked into existing golf course
- Higher ground elevation
- 4 to 6 Ac-Ft of storage



## Stormwater Management Opportunities – Conveyance



“WHICHEVER STORMWATER STORAGE OPPORTUNITIES ARE PURSUED, SIGNIFICANT STORMWATER CONVEYANCE WILL BE REQUIRED”

## Stormwater Management Opportunities - Conveyance

### 20. Sunset Road Conveyance

- Convey flows to storage opportunities
- Large diameter piping or box culverts
- Requires roadway removal and replacement
- Would allow for removal of existing pumping

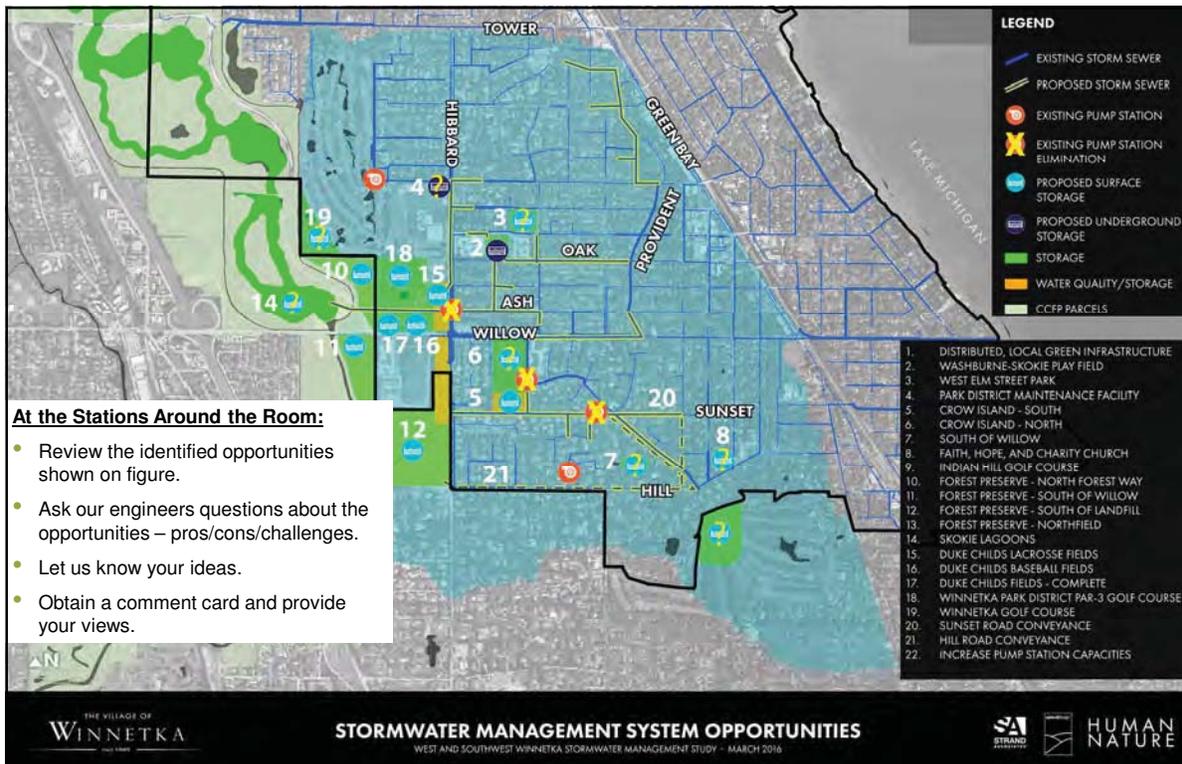
### 21. Hill Road Conveyance

- Convey flows to storage opportunities
- Large diameter piping or box culverts
- Requires roadway removal and replacement
- Requires additional local sewer
- May allow for removal of existing pumping



### 22. Increase Existing Pump Station Capacities

- Requires complete reconstruction of existing pumping stations
- Pumping increases in the range of 5 to 8 times current capacity
- Poses significant regulatory challenges
- Continues the Village's dependence on pumping





# EXPLORATION PHASE PUBLIC MEETING

**Name:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**Email:** \_\_\_\_\_

**Neighborhood:**

North of Pine       Provident

Tree Streets       South of Willow

### 1. Distributed, Local Green Infrastructure (indicate all you would be in favor of implementing)

- |                                       |  |  |
|---------------------------------------|--|--|
| <input type="checkbox"/> Rain Barrels | <input type="checkbox"/> Pervious Driveways    | <input type="checkbox"/> Green Parkways with Storage |
| <input type="checkbox"/> Rain Gardens | <input type="checkbox"/> Street Curb Bump Outs | <input type="checkbox"/> Green Intersections         |

Would you be willing to implement distributed green infrastructure opportunities on your property?    Yes     No

Would you be willing to lose parkway trees to implement the local green infrastructure opportunities?    Yes     No

**Comments/Feedback:**

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### STORAGE OPPORTUNITIES (CHECK ALL THAT ARE ACCEPTABLE, AND LINE OUT ANY THAT SHOULD NOT BE CONSIDERED)

- |   |  |   |
|---|--|---|
| <input type="checkbox"/> 2. Washburne - Skokie Play Field | <input type="checkbox"/> 8. Faith, Hope and Charity Church | <input type="checkbox"/> 14. CCFP Skokie Lagoons                |
| <input type="checkbox"/> 3. West Elm Street Park          | <input type="checkbox"/> 9. Indian Hill Golf Course        | <input type="checkbox"/> 15. Duke Childs - Lacrosse Fields      |
| <input type="checkbox"/> 4. Park Maintenance Facility     | <input type="checkbox"/> 10. CCFP North Forest Way         | <input type="checkbox"/> 16. Duke Childs - Maintain Ball Fields |
| <input type="checkbox"/> 5. Crow Island Park - South      | <input type="checkbox"/> 11. CCFP South of Willow          | <input type="checkbox"/> 17. Duke Childs - Relocate all Fields  |
| <input type="checkbox"/> 6. Crow Island Park - North      | <input type="checkbox"/> 12. CCFP - South of Landfill      | <input type="checkbox"/> 18. Par 3 Golf Course                  |
| <input type="checkbox"/> 7. Vacant Parcels                | <input type="checkbox"/> 13. CCFP - Northfield             | <input type="checkbox"/> 19. 18 Hole Golf Course                |

**Comments/Feedback:**

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### CONVEYANCE OPPORTUNITIES (CHECK THE ONE THAT YOU WOULD PREFER TO PURSUE)

20. Sunset Road Conveyance       21. Hill Road Conveyance       22. Increase Pump Stations

**Comments/Feedback:**

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### OTHER MITIGATION OPPORTUNITIES

Should the Village consider individual home flood protection measures for flood prone properties?    Yes     No

Should the Village consider home buy-outs to address flood prone properties?    Yes     No

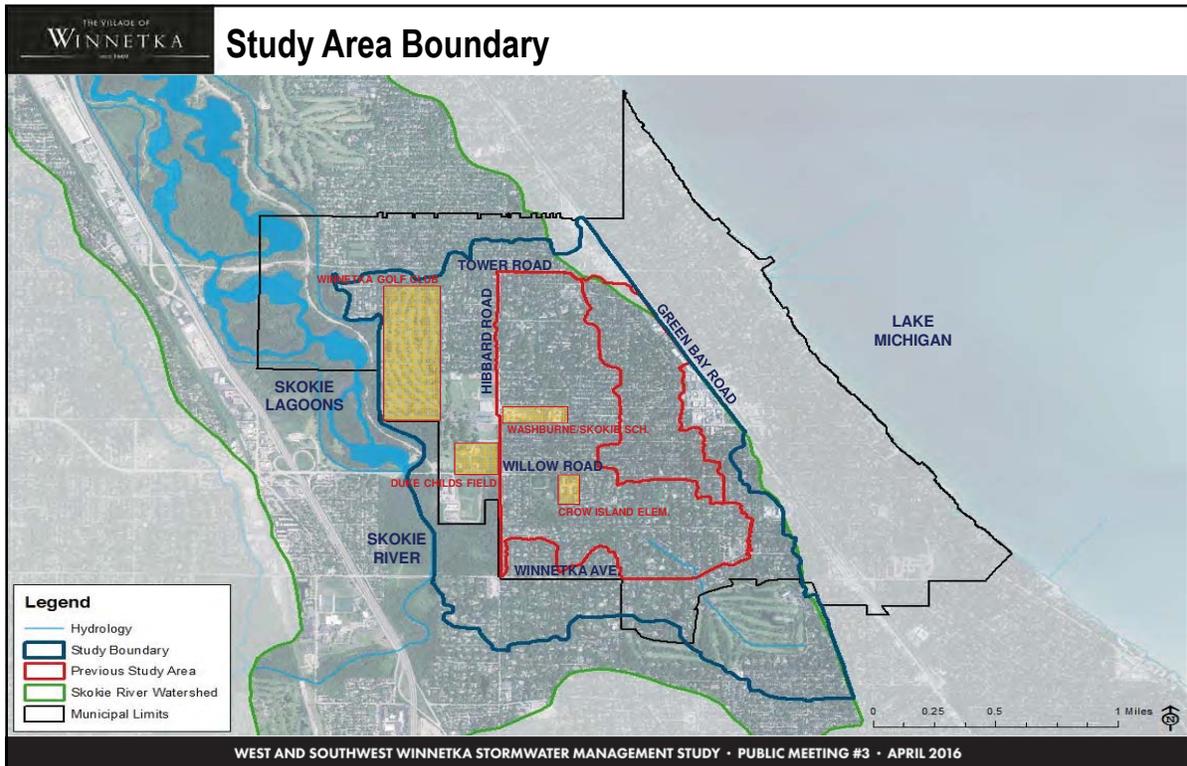
**Additional Comments/Feedback:**

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Visit us on our website under the RESIDENTS tab: [www.villageofwinnetka.org/residents/stormwater-alternatives-evaluation/](http://www.villageofwinnetka.org/residents/stormwater-alternatives-evaluation/)  
 Share your comments by email: [stormwatercomments@winnetka.org](mailto:stormwatercomments@winnetka.org)    Share your comments by phone: 847-716-3549

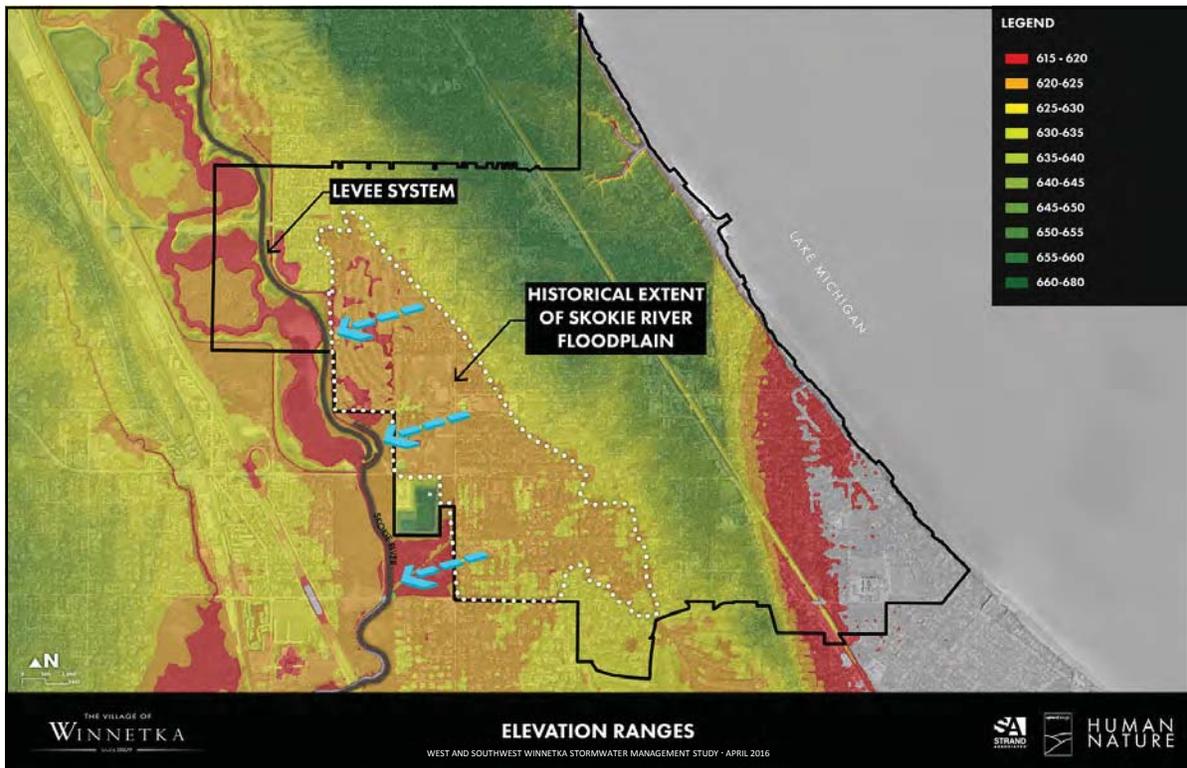


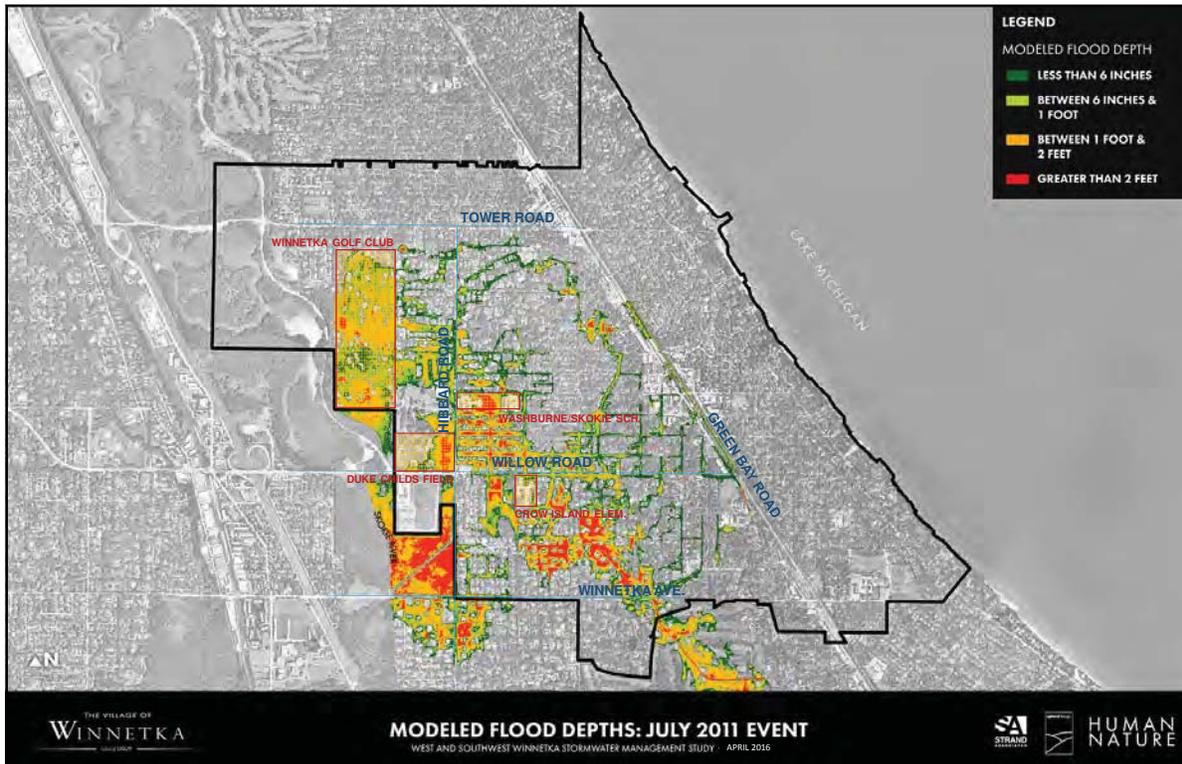
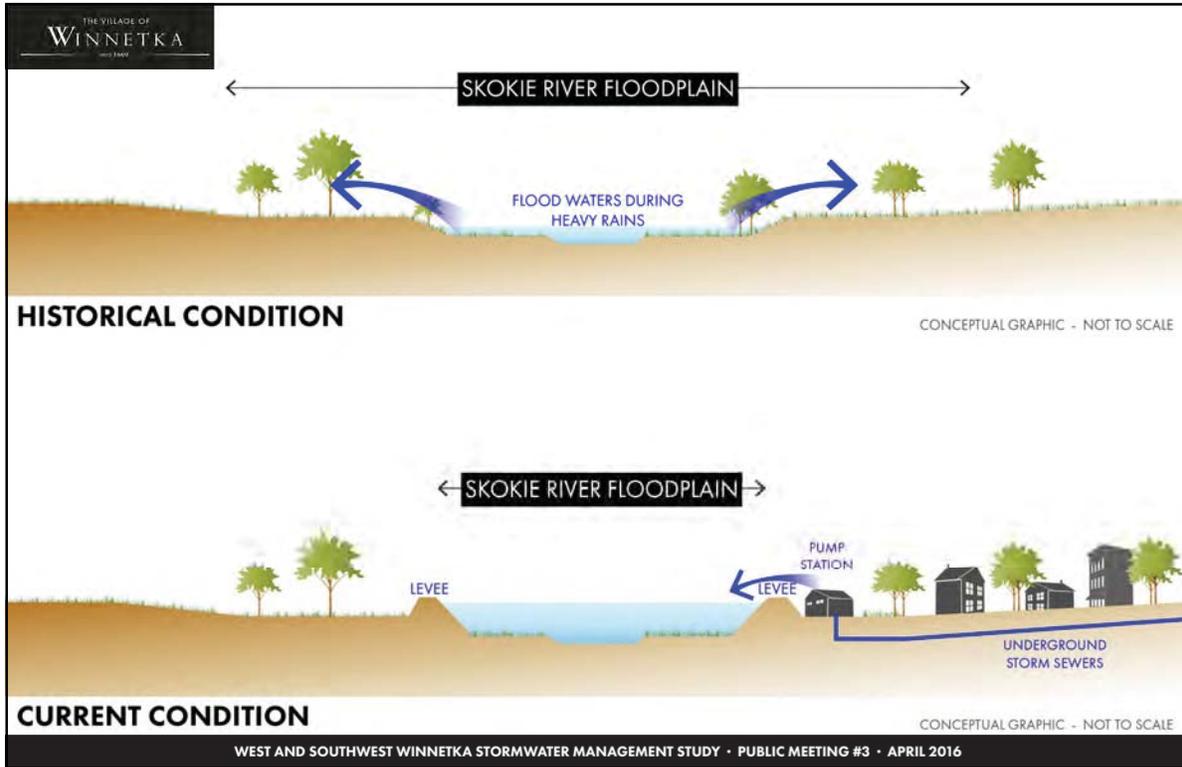
“The character of the marsh varied from season to season. During the spring and summer, water levels in the marsh ranged from a few inches to several feet deep.”

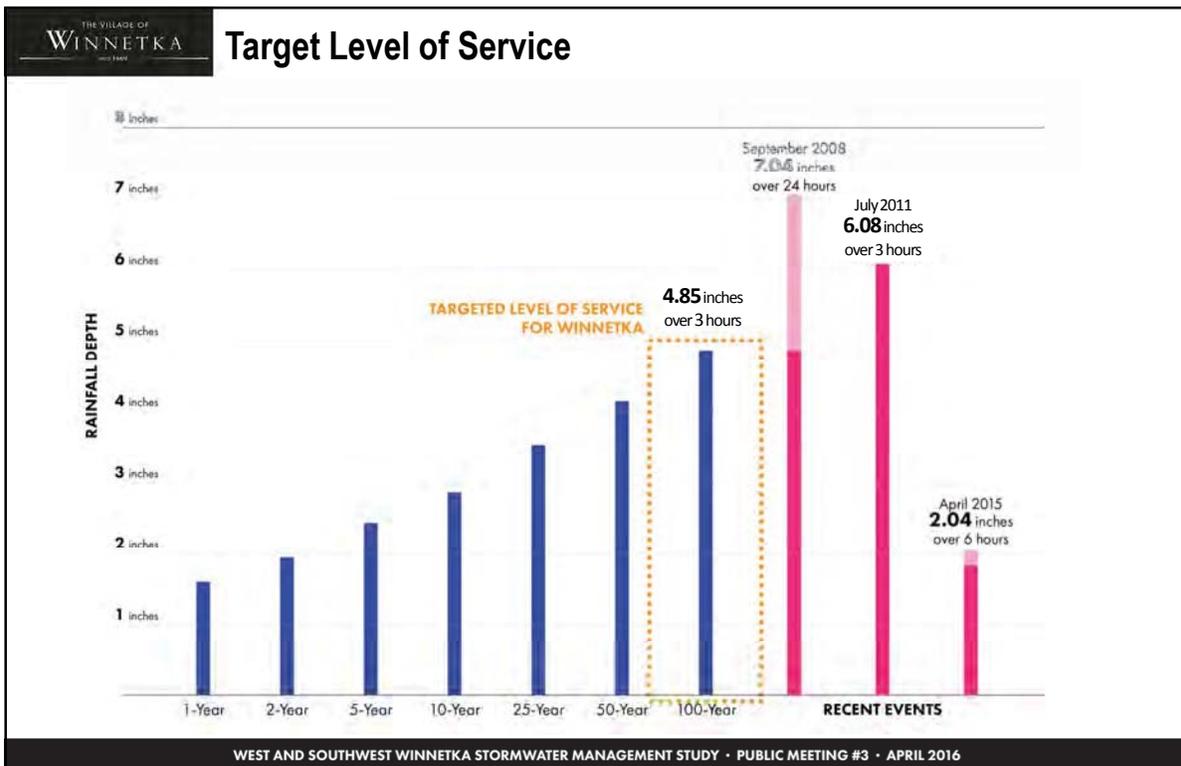
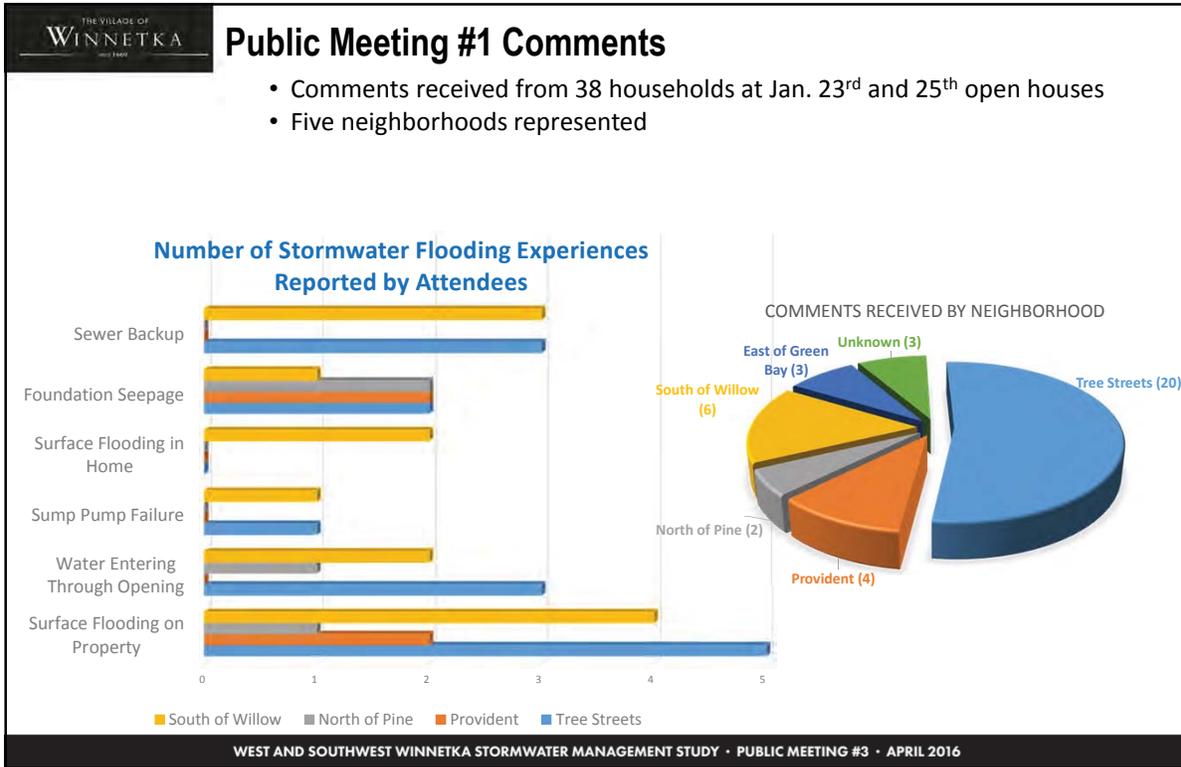


SOURCE: <http://skokie Lagoons.omeka.net>

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## Target Level of Service

**CURRENT LEVEL OF SERVICE**

YARD/PROPERTY FLOODING

PRIVATE SANITARY SEWER LATERAL TO WINNETKA SANITARY SEWER

**TARGET LEVEL OF SERVICE**

STREET/RIGHT-OF-WAY FLOODING

PRIVATE SANITARY SEWER LATERAL TO WINNETKA SANITARY SEWER

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## Target Level of Service

1 ACRE

1-foot depth of water

1 ACRE-FOOT

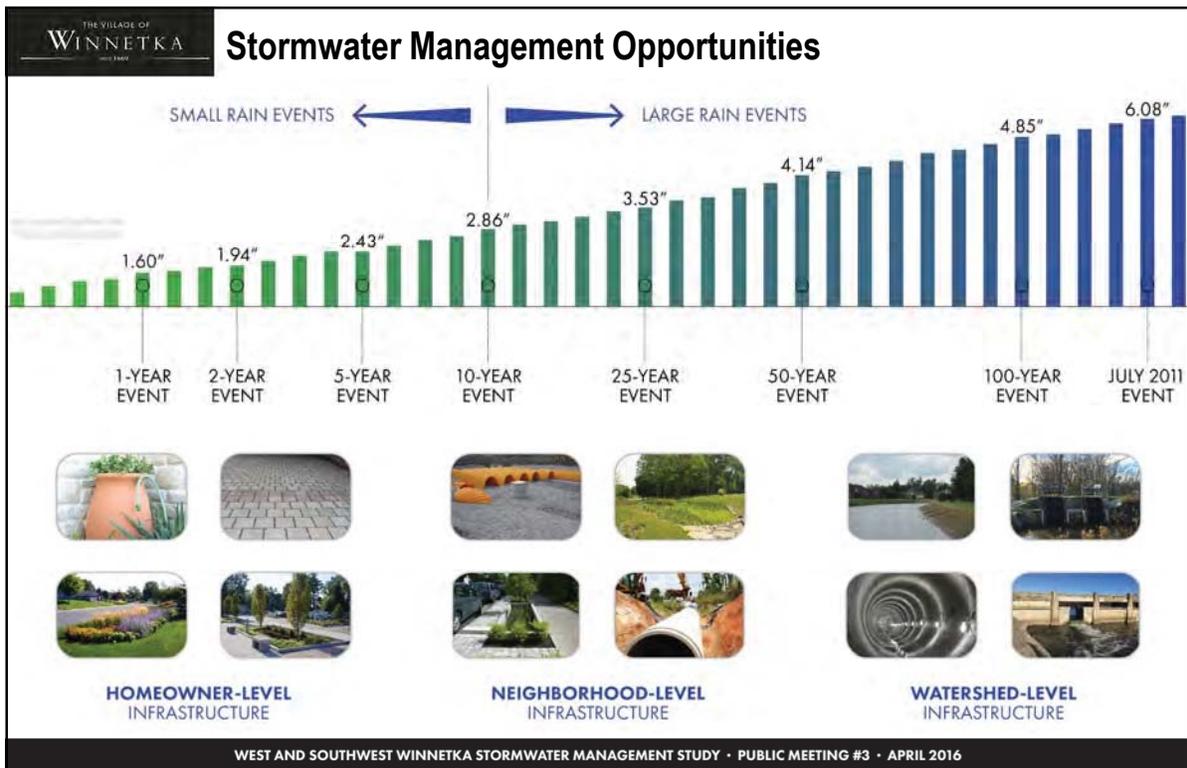
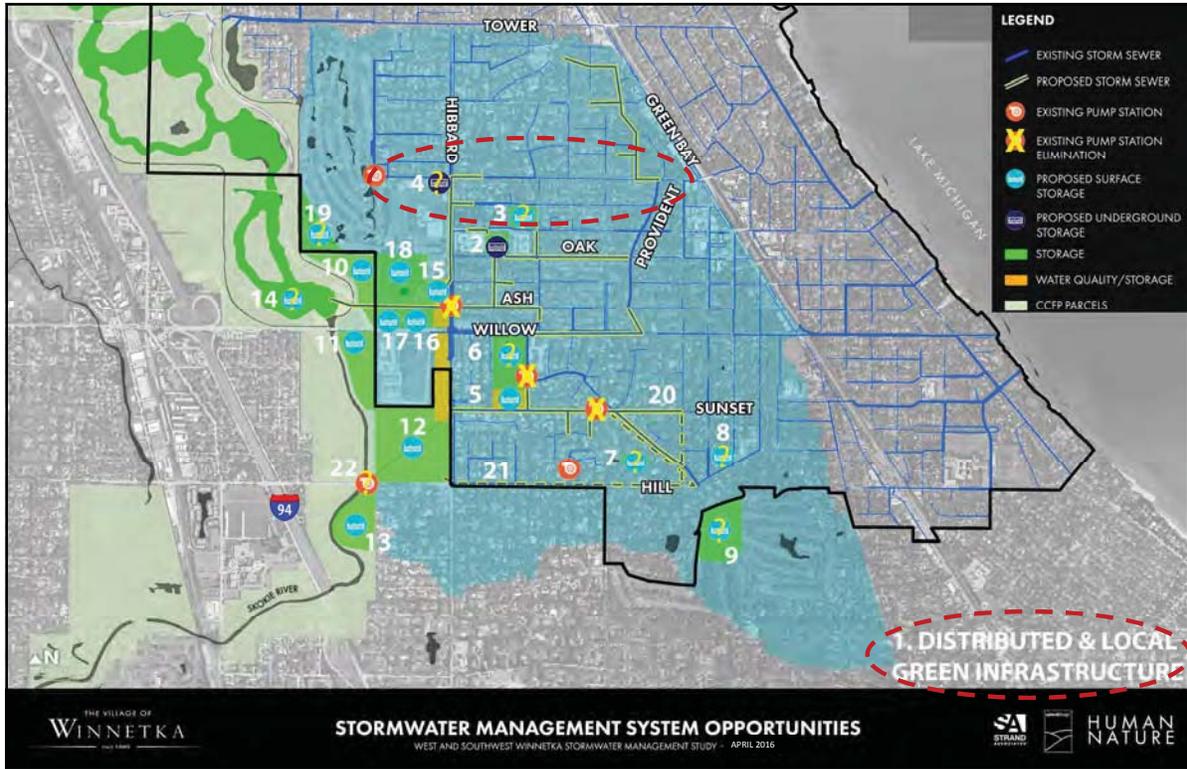
1 ACRE-FOOT = 325,851 gallons

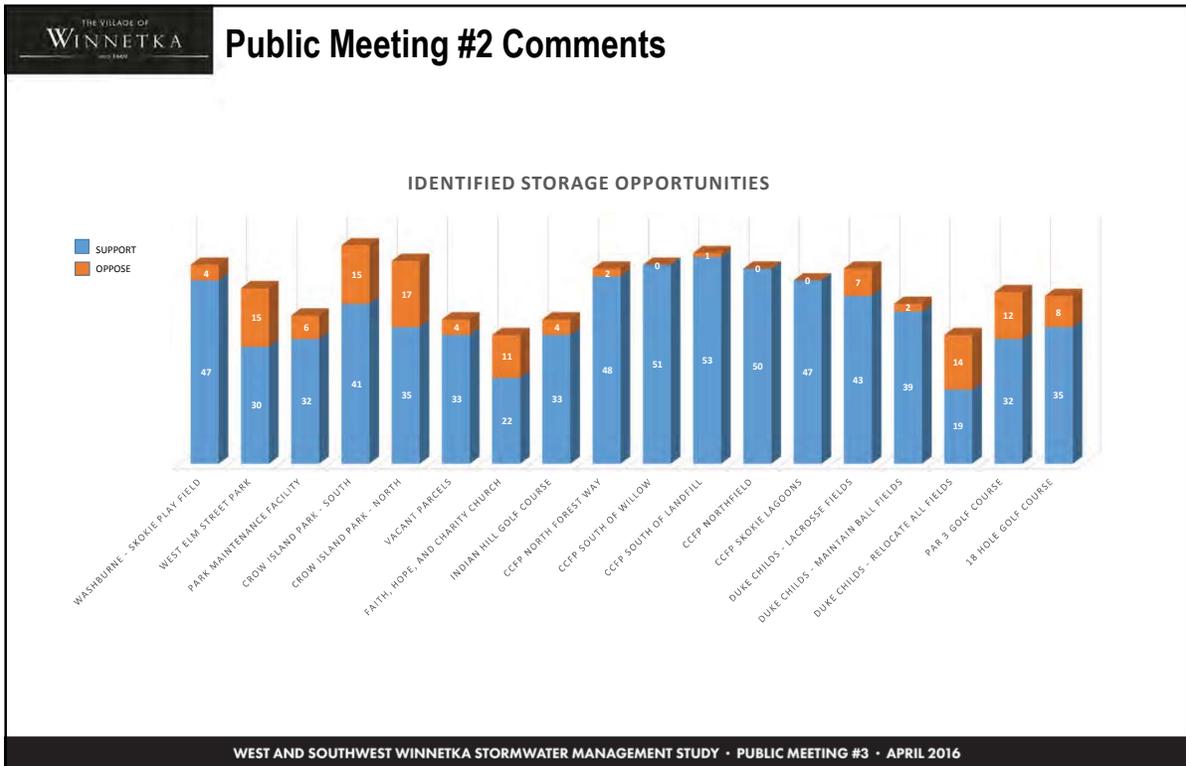
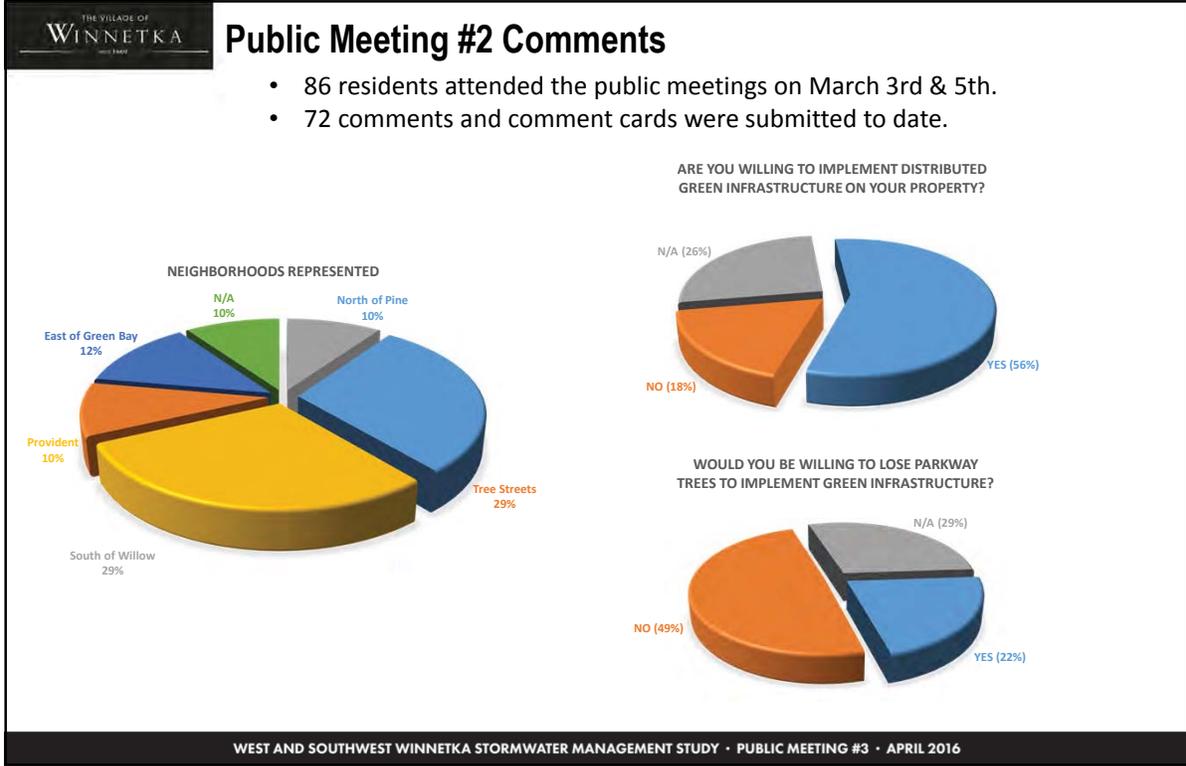
Source: precision Aerial Photo ([www.4aerial.com](http://www.4aerial.com))

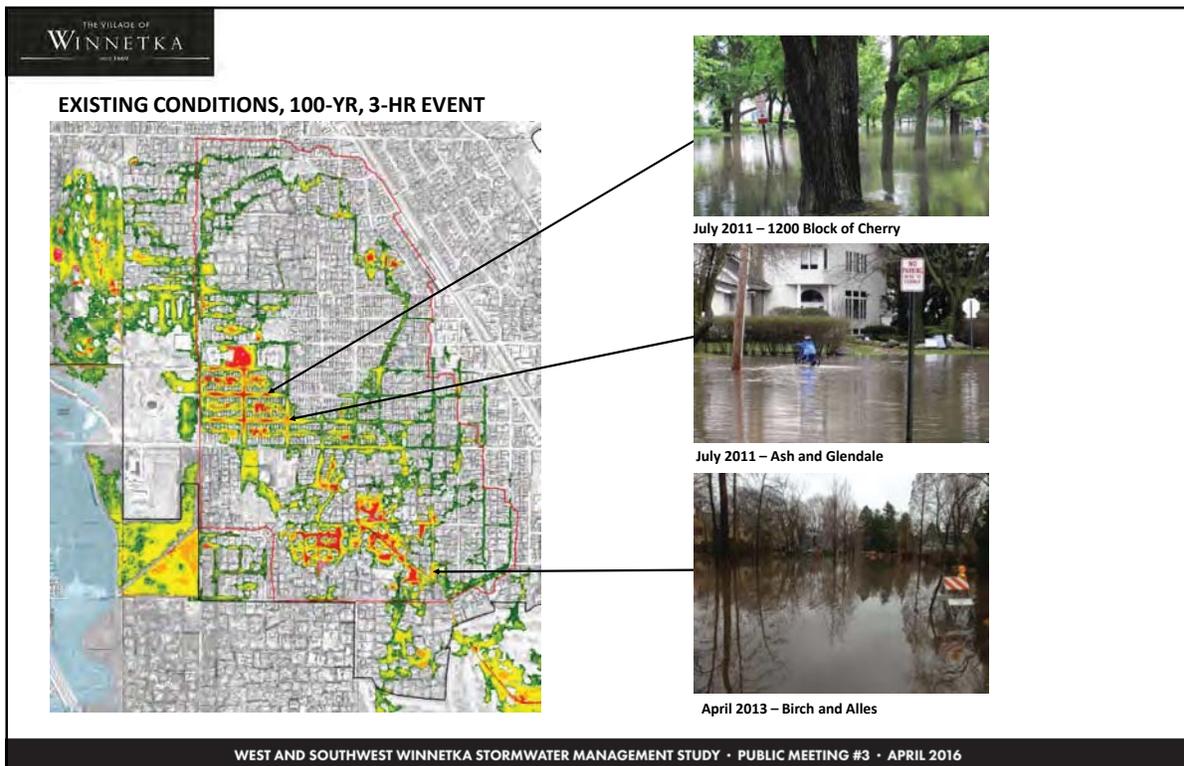
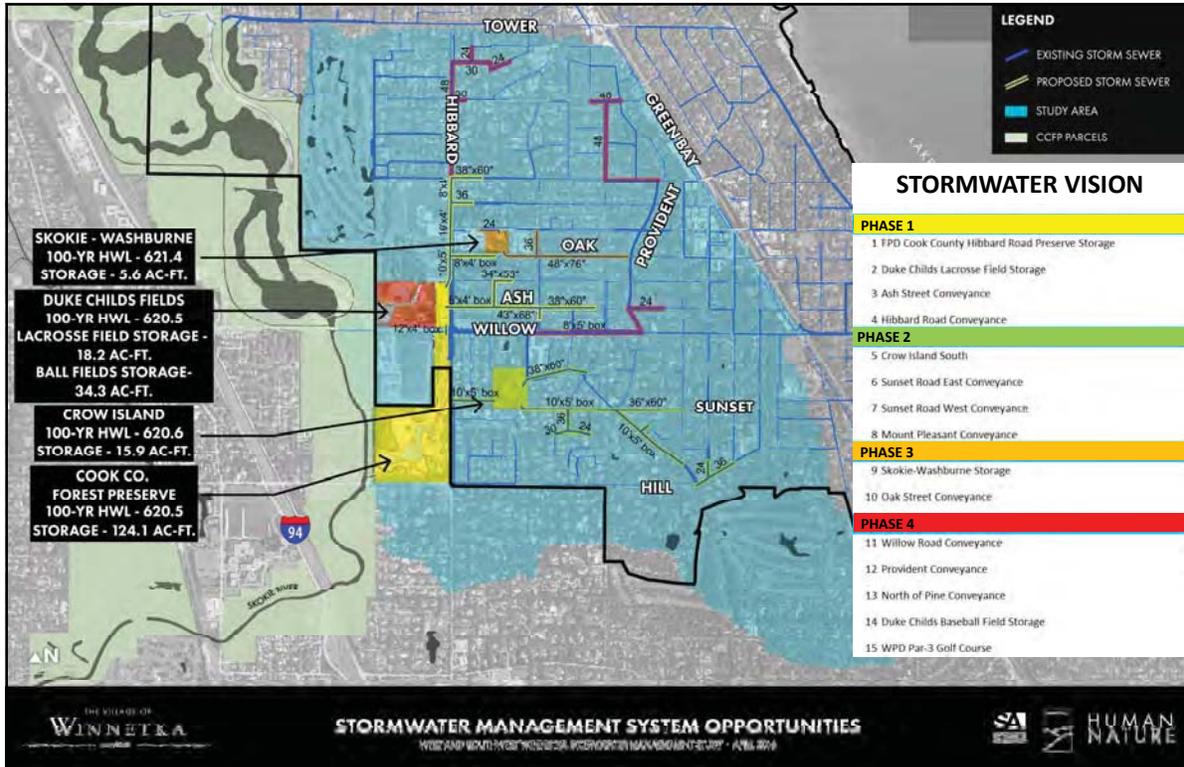
**150** ACRE-FEET STORAGE NEEDED TO MEET THE TARGETED LEVEL OF SERVICE IN WINNETKA

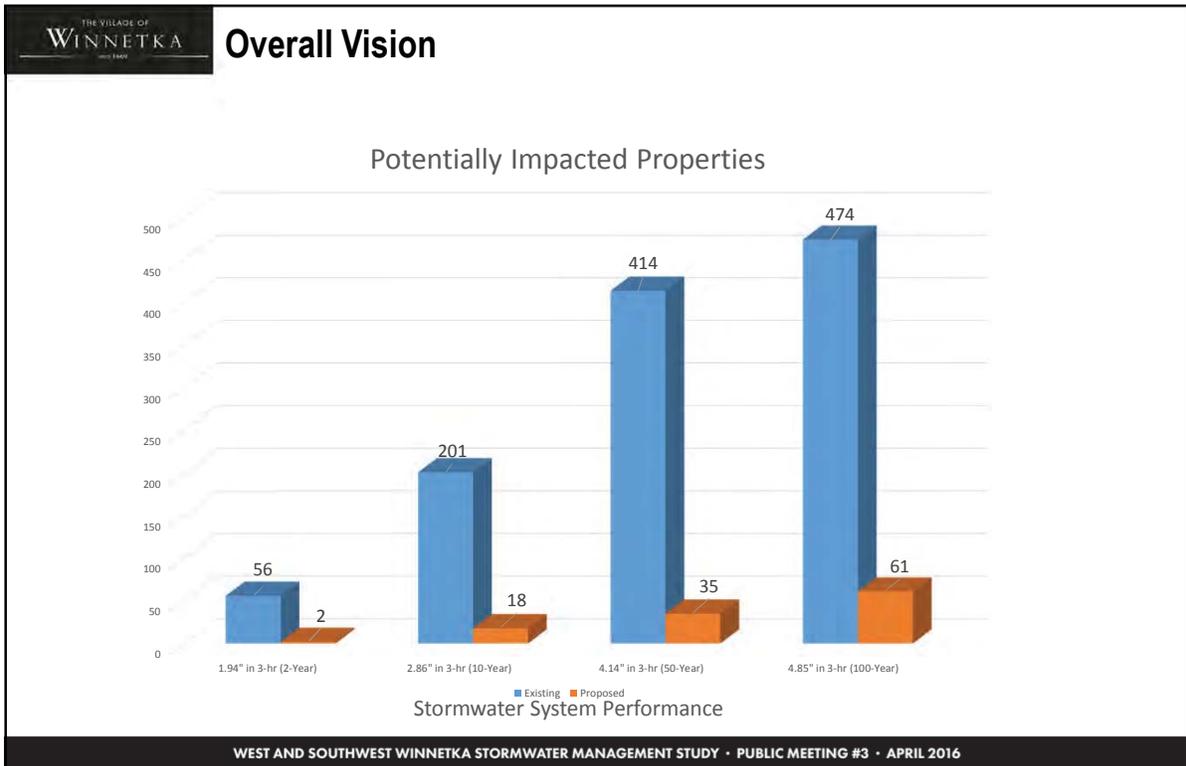
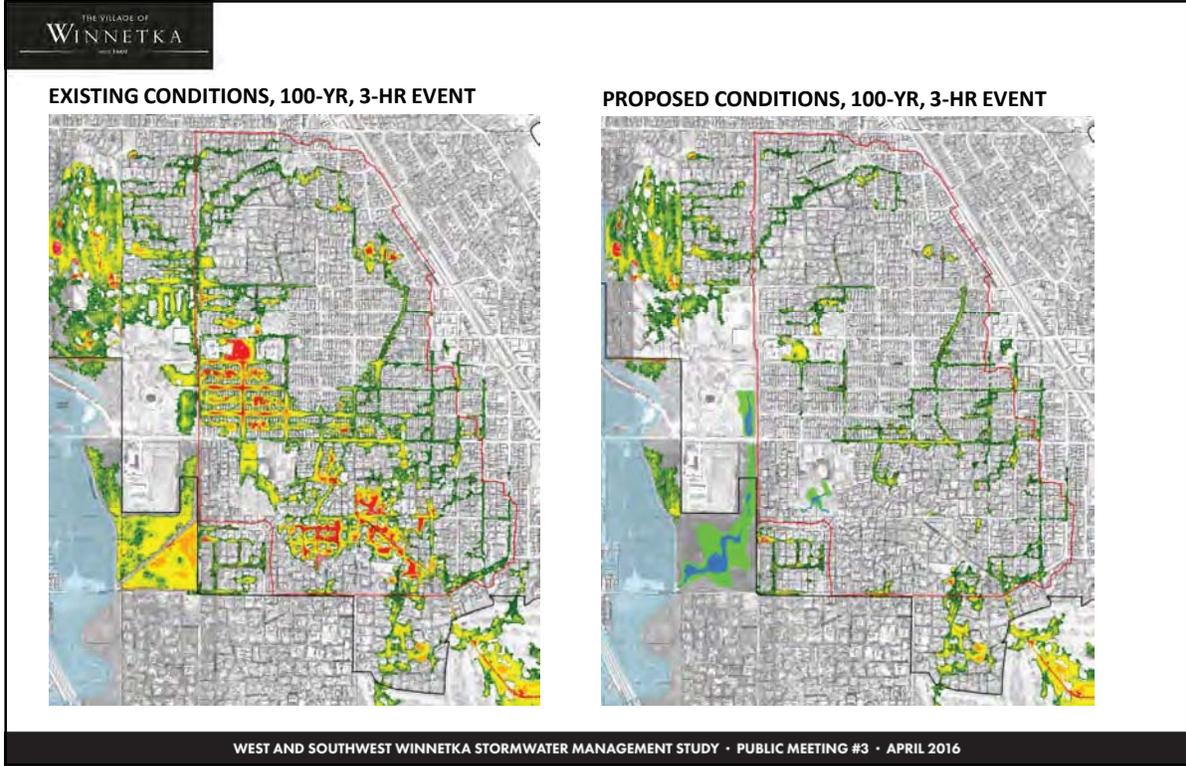
**35** FEET DEPTH OF WATER IN SOLDIER FIELD (ALL OF SECTION 100)

APRIL 2016









## Homeowner Level Green Infrastructure



**Incentivize Implementation Through Storm Water Program**



Typical Household:

- 2 Rain Barrels @ 50 gallons per barrel = 100 gallons
- 1 Rain Garden @ 12" deep and 20 feet by 20 feet (400 sq. ft.)

Totals 3,100 gallons = 0.01 ac-ft.

100 households could provide 1 ac-ft. of storage volume

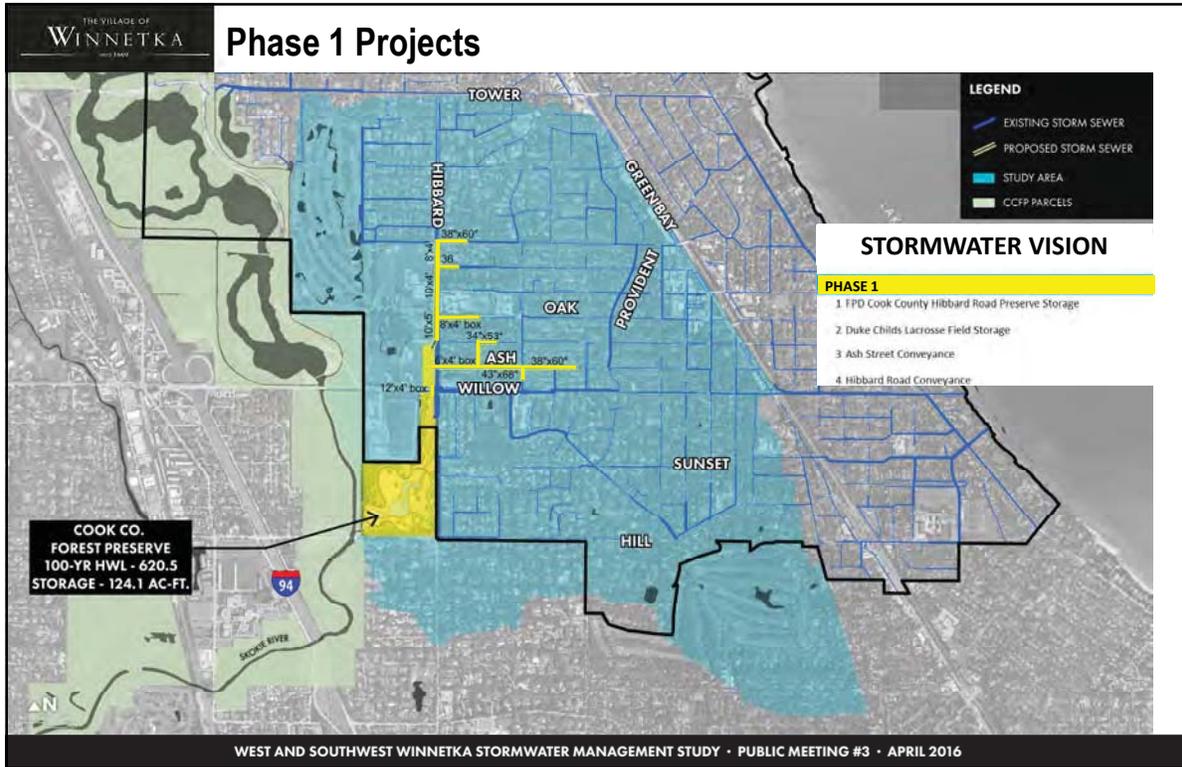
A typical household produces 7,000 gallons from a 1.60" rainfall (2-year storm)

## Neighborhood Level Green Infrastructure

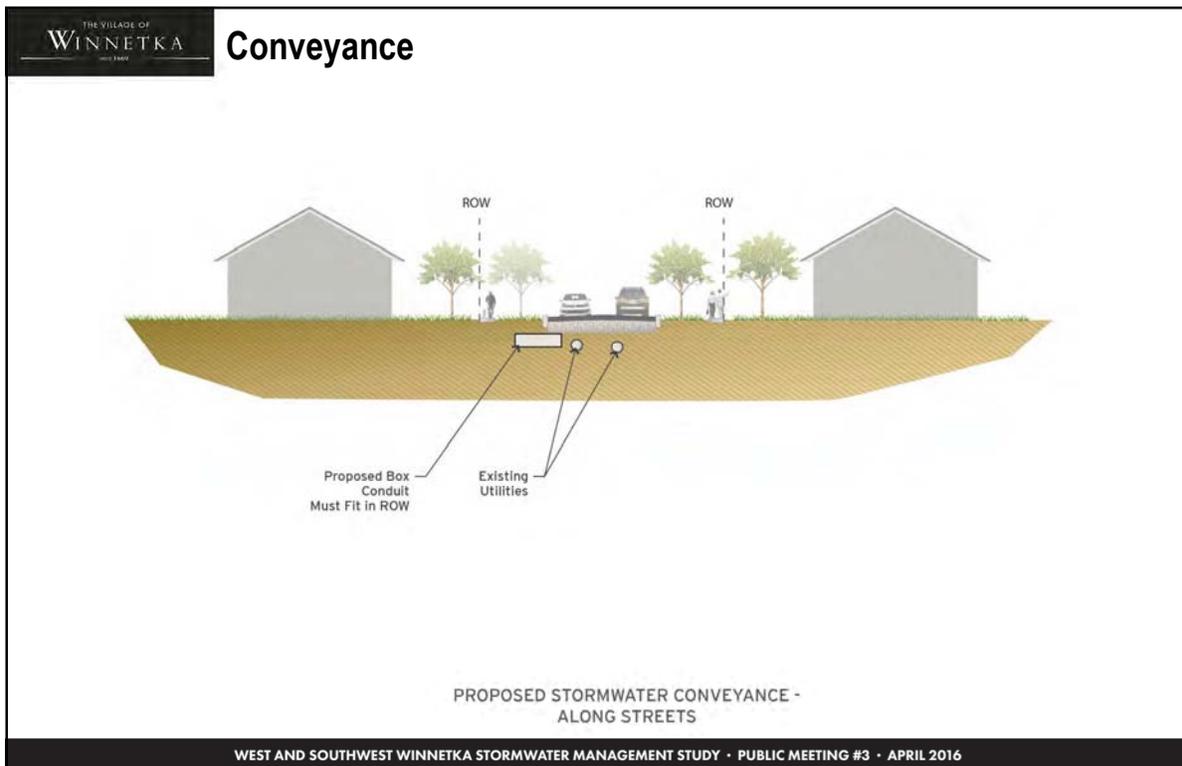
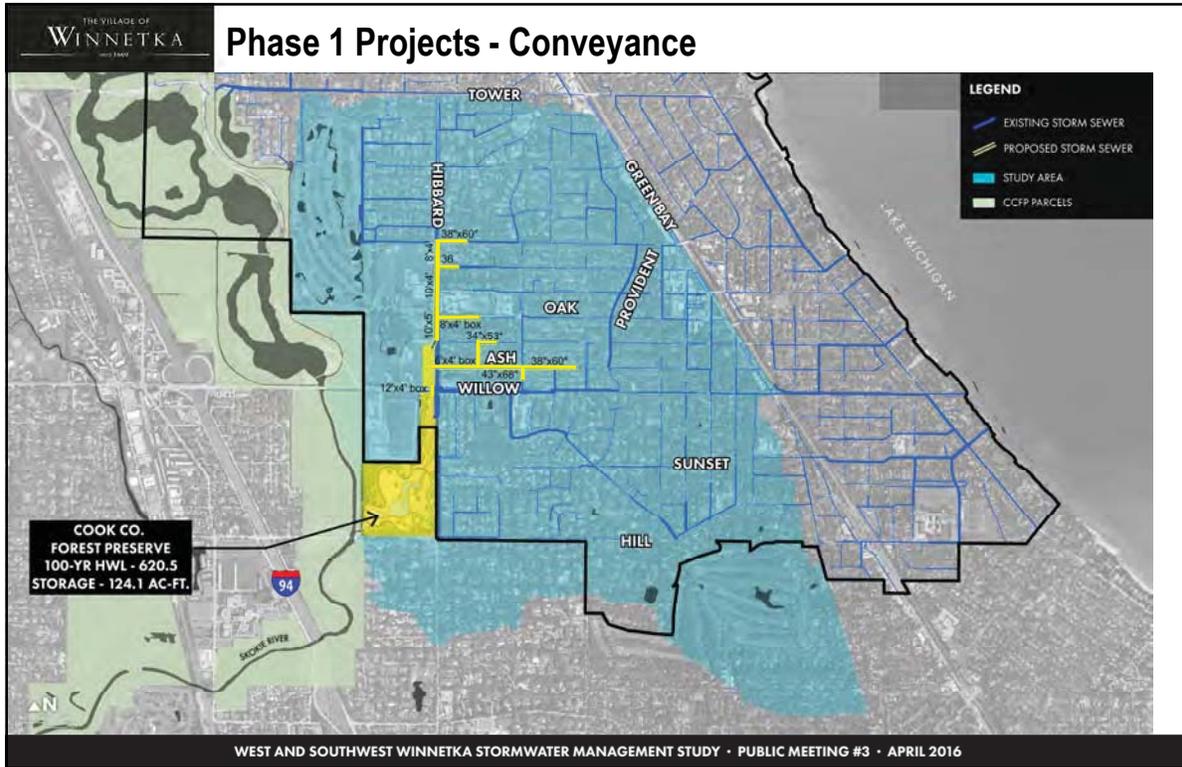


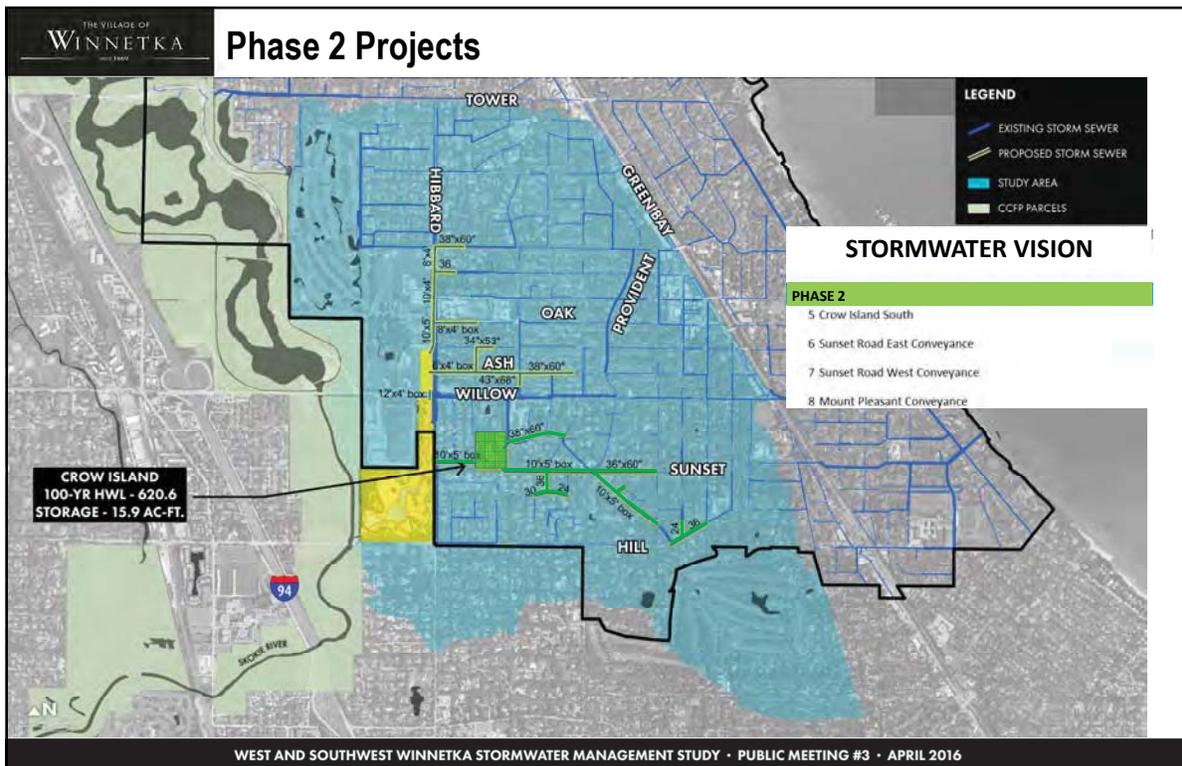
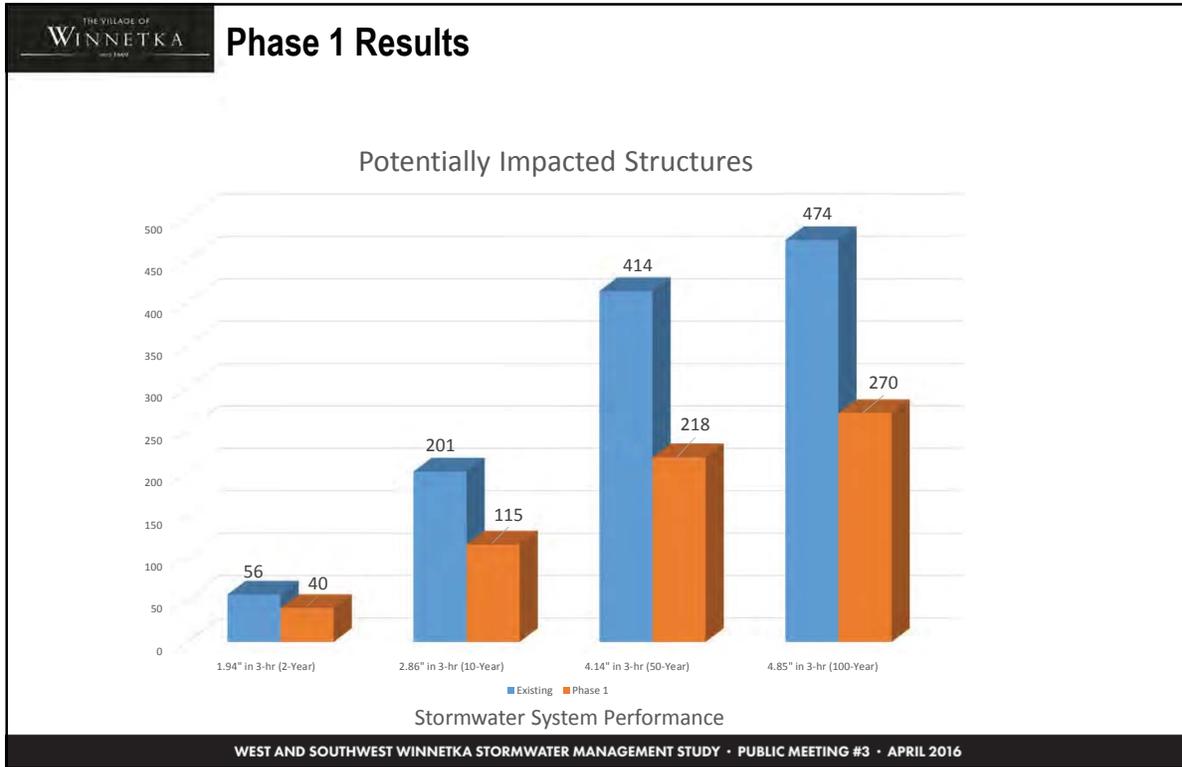
- Anticipate 15 to 20 intersections
- Anticipate 12 to 15 parkways (without tree removal)
- To be constructed along with other conveyance improvements

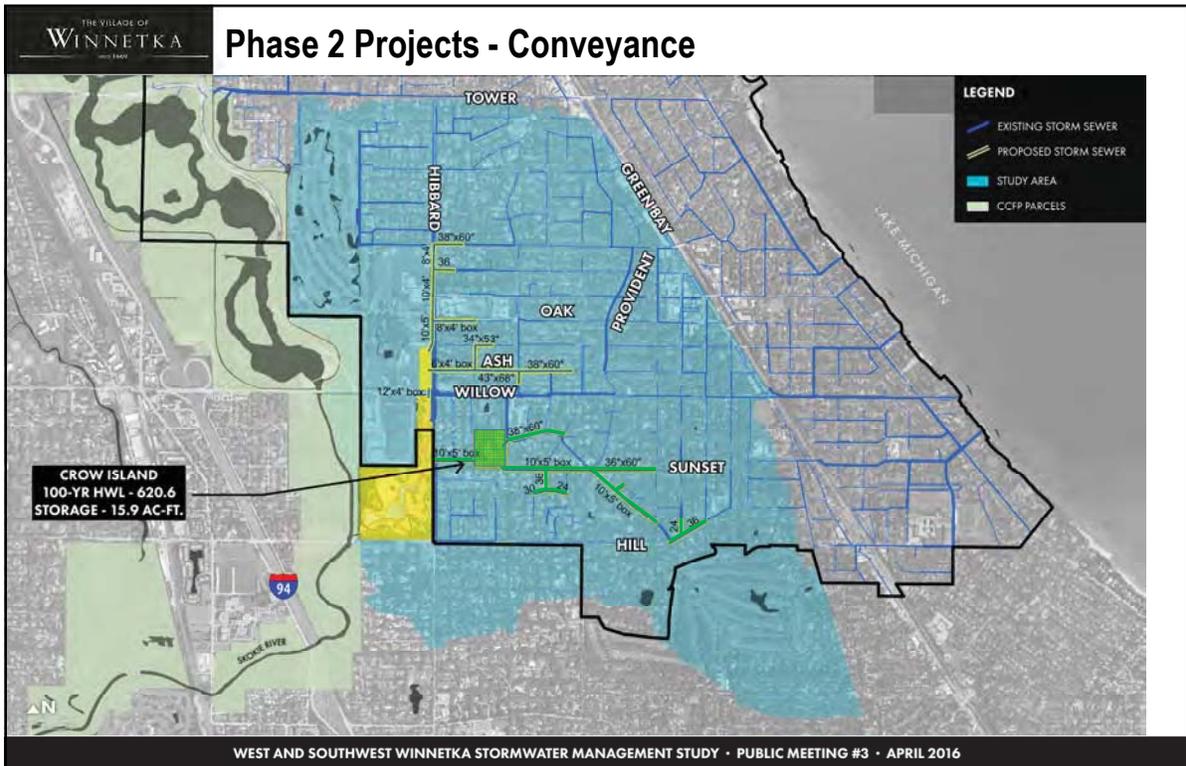
Provides 4 to 5 ac-ft. of storage volume  
Provides valuable water quality improvements











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## Conveyance

Proposed Box Conduit

Sunset Avenue

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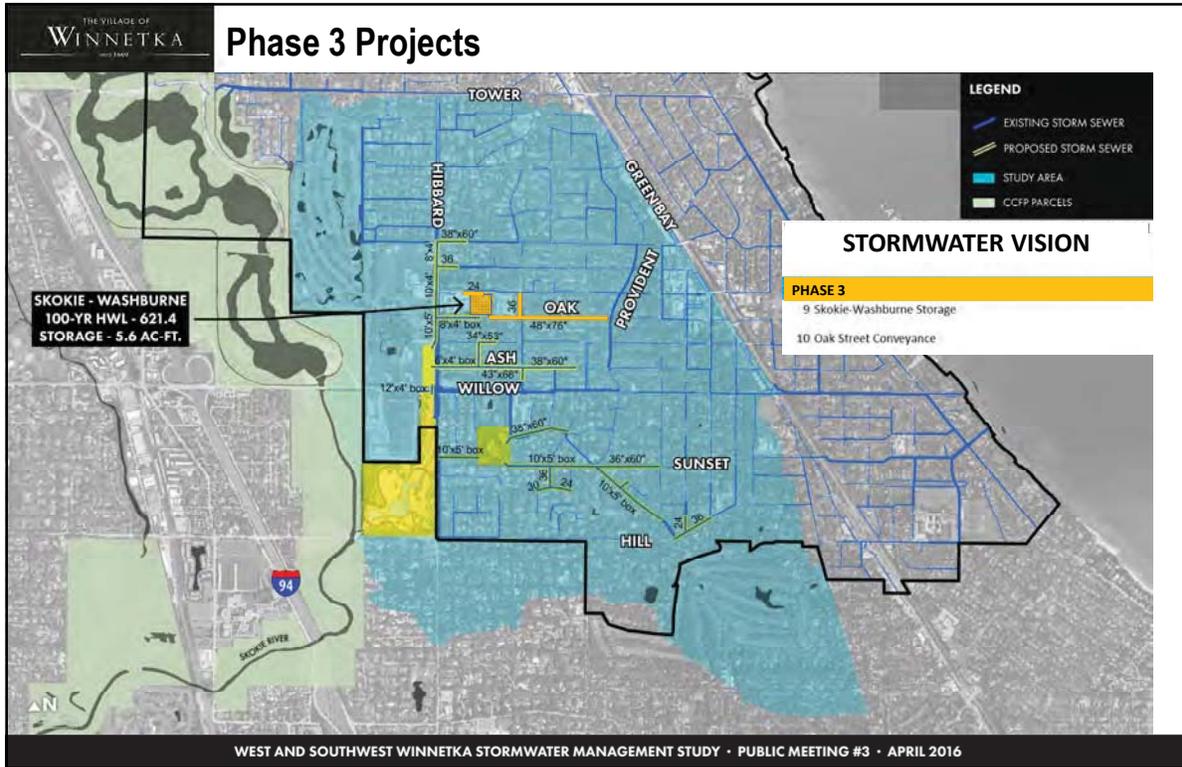
## Phase 2 Results

### Potentially Impacted Structures

Stormwater System Performance	Existing	Phase 2
1.94" in 3-hr (2-Year)	56	27
2.86" in 3-hr (10-Year)	201	88
4.14" in 3-hr (50-Year)	414	177
4.85" in 3-hr (100-Year)	474	235

Stormwater System Performance

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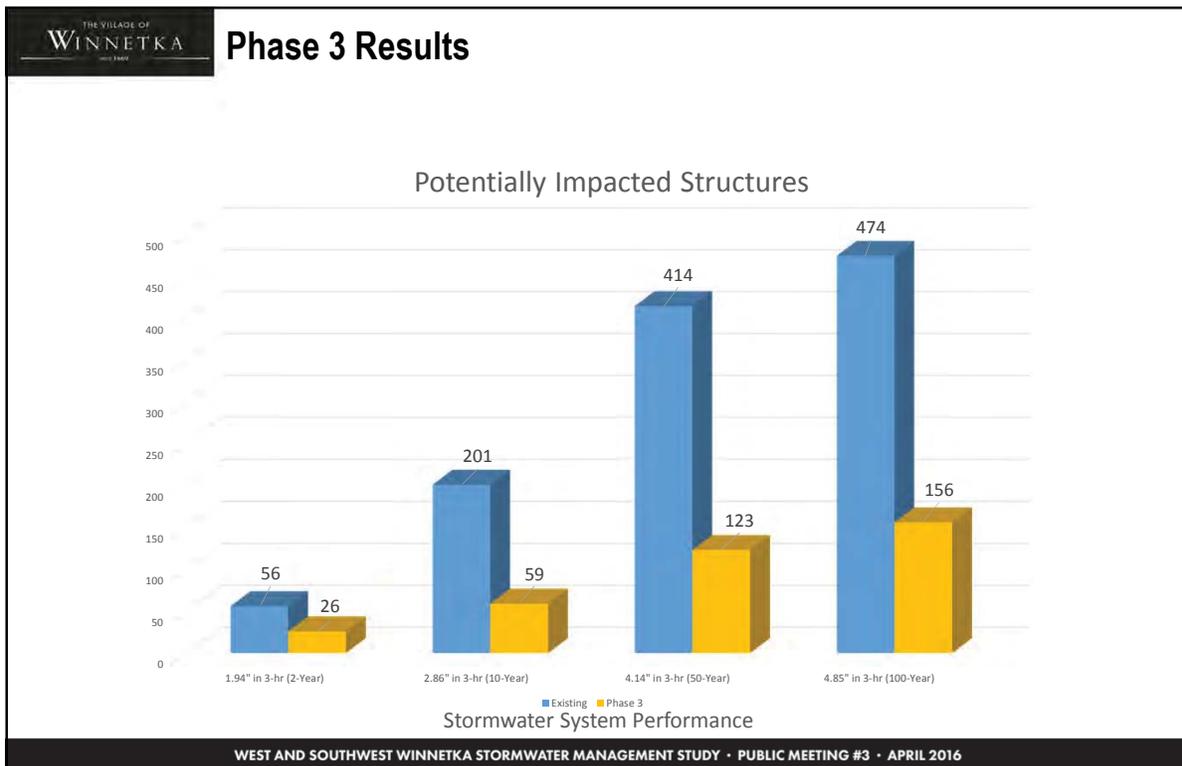
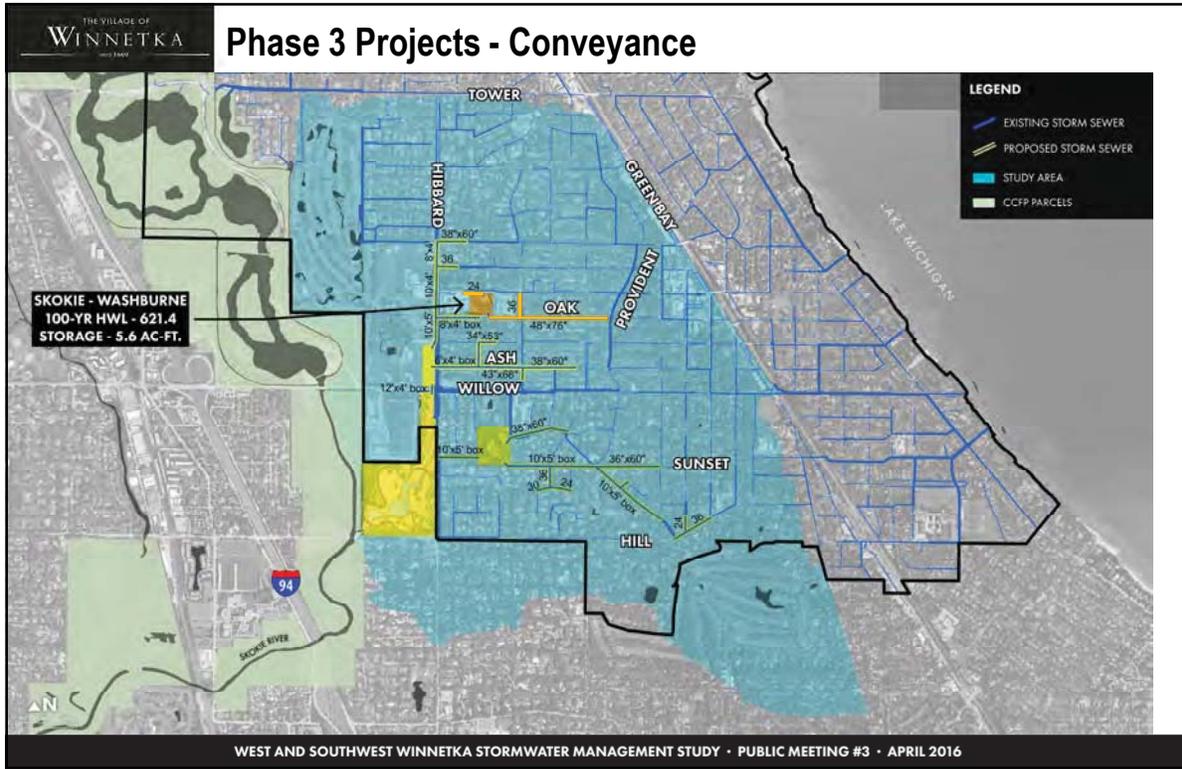


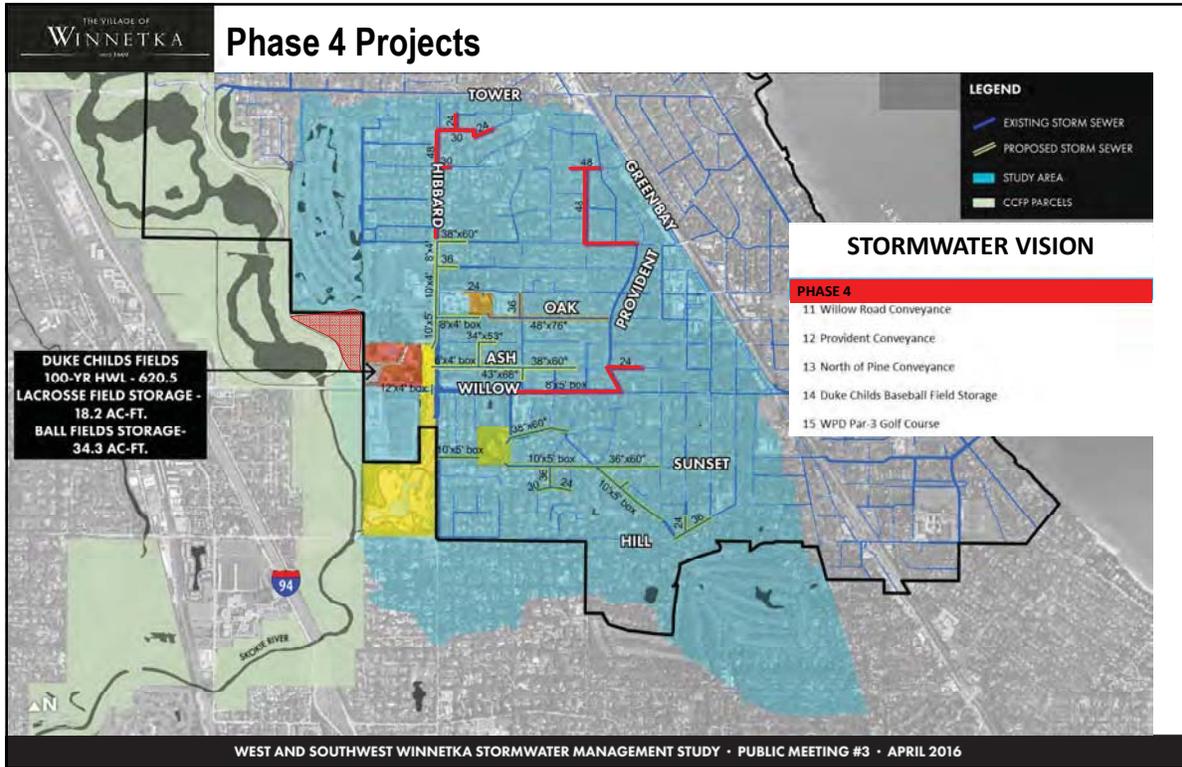
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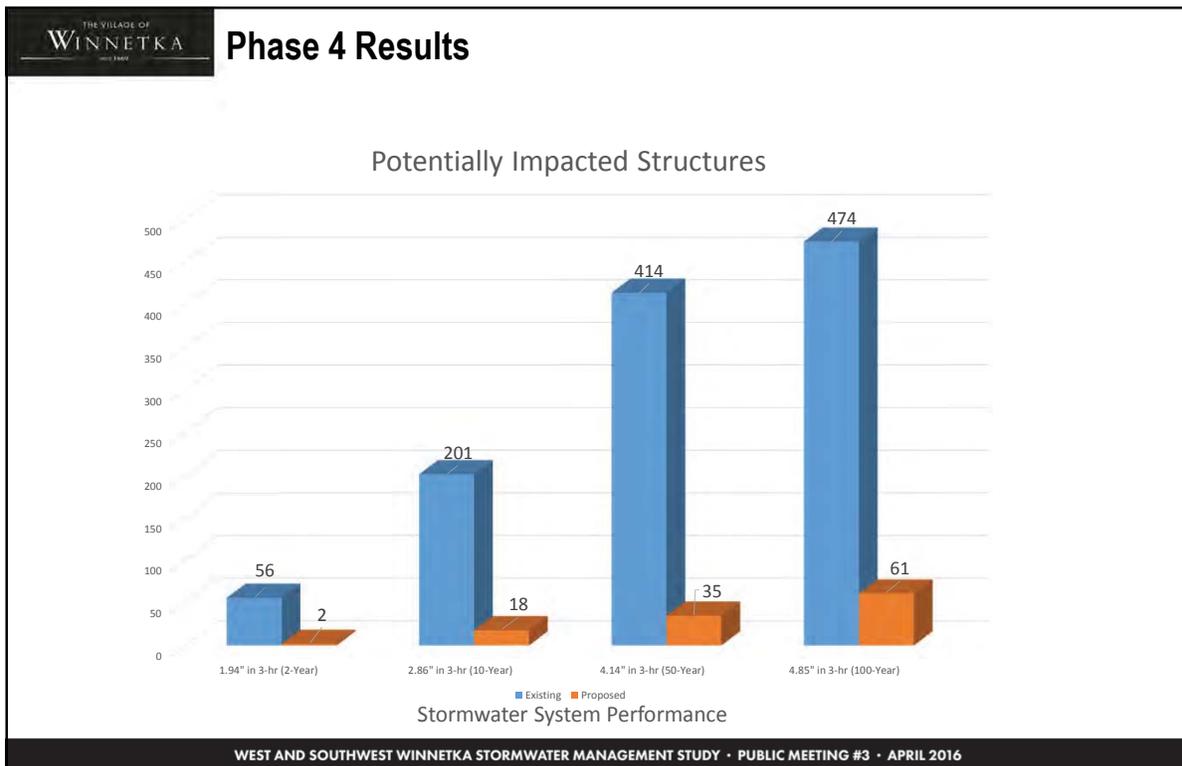
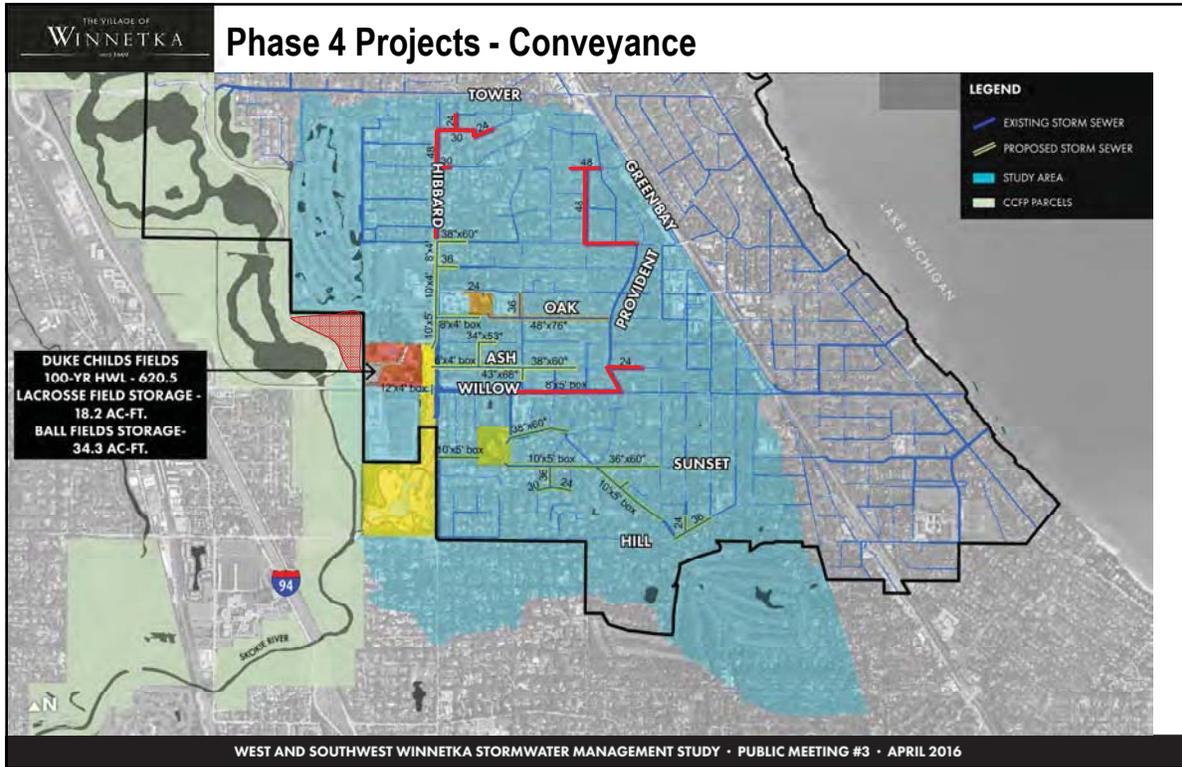
### Skokie-Washburne Storage Project

Underground Storage with Playfields Rebuilt on Top

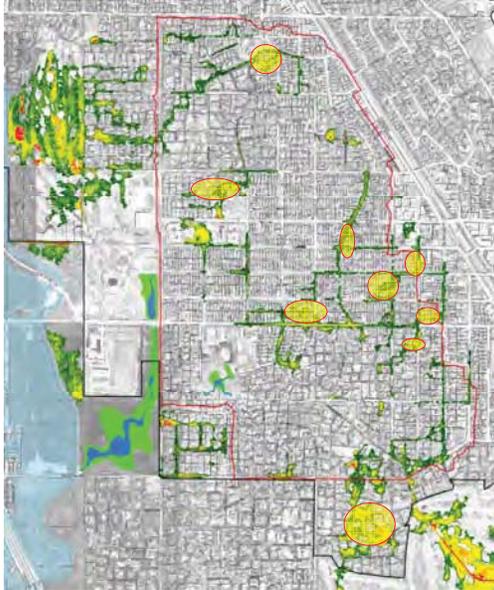
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## Mitigation Zones



## Preliminary Conceptual Cost Projection

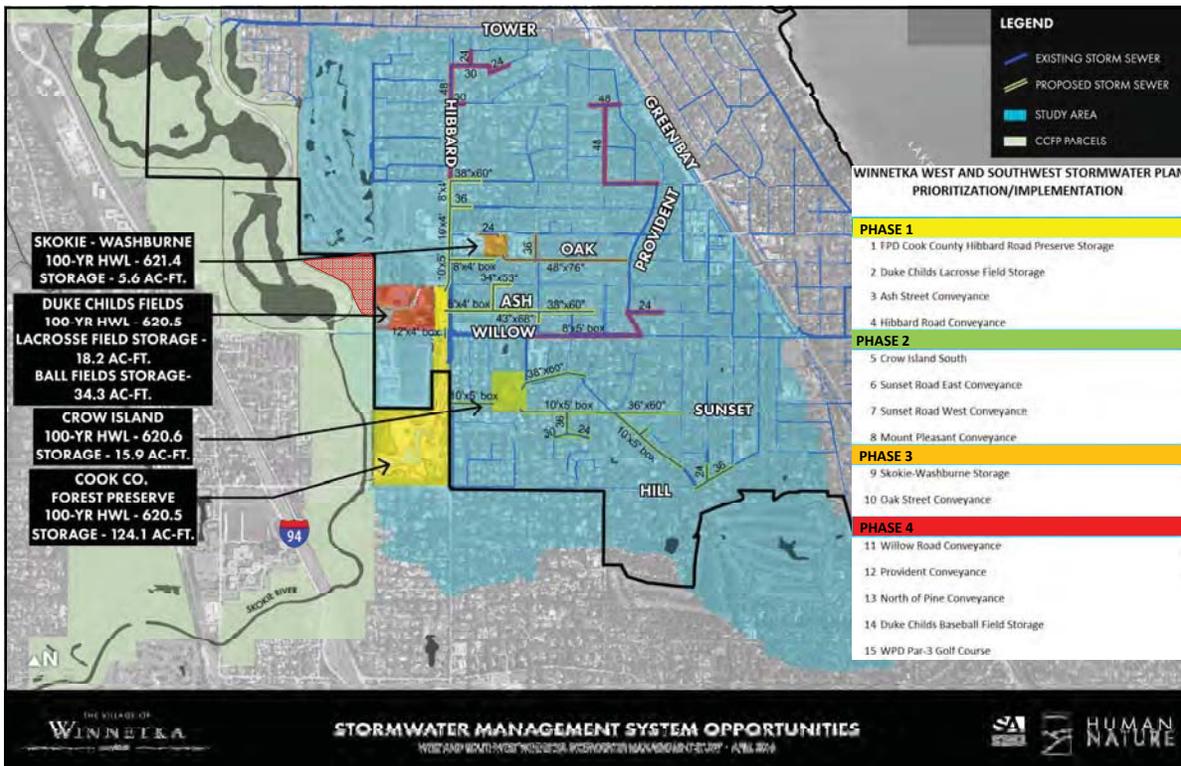
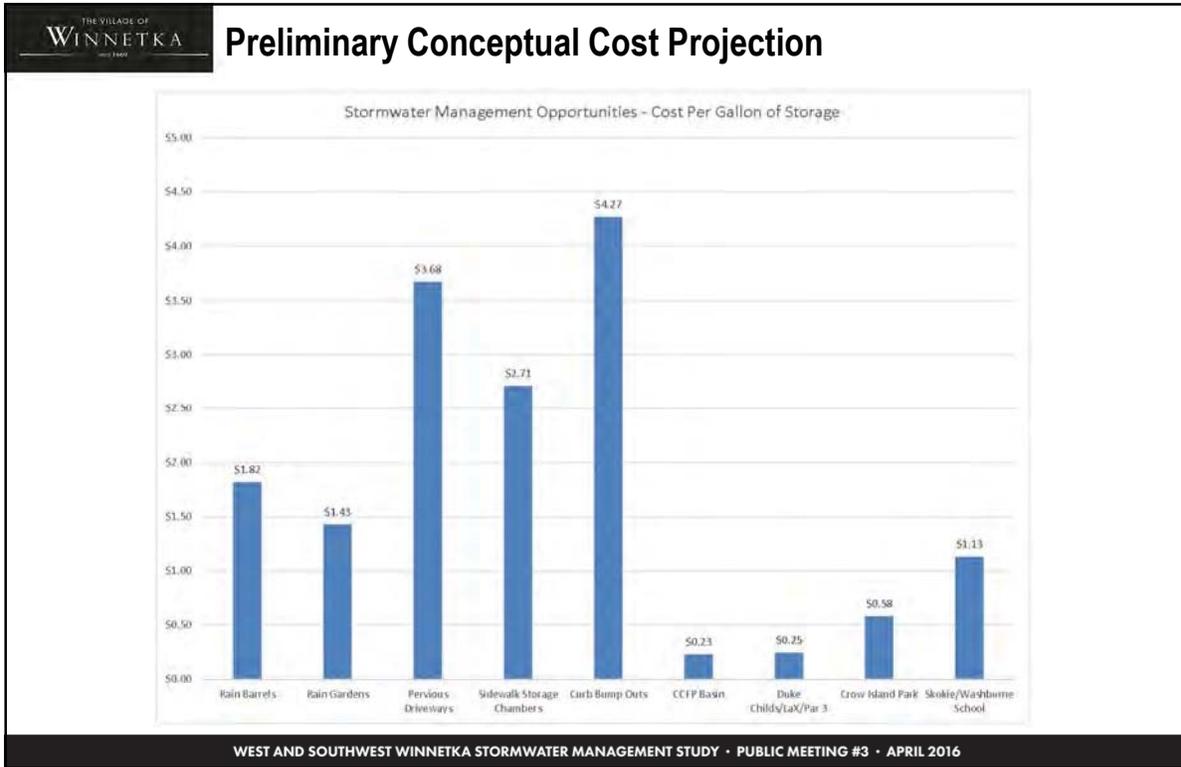
Phase 1	Cost
○ FPDCC Hibbard Road stormwater storage project	\$ 8,582,000
○ Duke Childs lacrosse field stormwater storage project	\$ 1,005,000
○ Winnetka landfill improvements - lacrosse field relocation	\$ 2,331,000
○ Ash Street conveyance project	\$ 5,107,000
○ Hibbard Road North conveyance project	\$ 6,553,000
<b>Total</b>	<b>\$ 23,578,000</b>
Phase 2	Cost
○ Crow Island South stormwater storage project	\$ 1,841,000
○ Sunset Drive East conveyance project	\$ 10,356,000
○ Sunset Drive West conveyance project	\$ 2,821,000
○ Mount Pleasant conveyance project	\$ 1,362,000
<b>Total</b>	<b>\$ 16,380,000</b>
Phase 3	Cost
○ Washburne-Skokie school underground stormwater storage project	\$ 1,381,000
○ Oak Street conveyance project	\$ 3,294,000
<b>Total</b>	<b>\$ 4,675,000</b>
Phase 4	Cost
○ Provident local storm sewer improvement project	\$ 2,930,000
○ Willow Road local storm sewer improvement project	\$ 5,284,000
○ North of Pine conveyance project	\$ 2,408,000
○ Duke Childs/WPD Par-3 Golf Course/FPDCC storage project	\$ 2,461,000
<b>Total</b>	<b>\$ 13,084,000</b>
<b>Project Total</b>	<b>\$ 57,717,000</b>

## Preliminary Conceptual Cost Projection

- Total Project Cost (in 2016 Dollars) = \$57.7 million
  - Conveyance Projects = \$40.1 million
  - Storage Projects = \$17.6 million
    - Green Infrastructure-Related Costs = \$4.0 million
    - ~7 percent of the total project cost
- Basis of Conceptual Cost
  - Bid Tabulation Review of Past Village and other Similar Projects
  - Review of V3/HMM 2015 Cost Evaluation (Conveyance Primarily)
  - Detailed Quantity Takeoffs Well Beyond Typical Planning Level Studies
  - Utility Conflict Resolution Considered
  - Re-use of Excess Soil Results in Significant Cost Savings

## Preliminary Conceptual Cost Projection

- Design Contingencies
  - 30% for Conveyance Projects
  - 20% for Storage Projects
  - 15% Design & Construction Engineering
- Wetland Mitigation Costs (CCFP Project)



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INCORPORATED 1889

## Project Perspective



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# VISION PHASE PUBLIC MEETING

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Email: \_\_\_\_\_

Neighborhood:

North of Pine

Provident

Tree Streets

South of Willow

## Type and Location of Proposed Stormwater Management Features

*Comments/Feedback:*

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## Phasing of Projects

*Comments/Feedback:*

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## Project Costs

*Additional Comments/Feedback:*

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## General Comments

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Visit us on our website under the RESIDENTS tab: [www.villageofwinnetka.org/residents/stormwater-alternatives-evaluation/](http://www.villageofwinnetka.org/residents/stormwater-alternatives-evaluation/)  
Share your comments by email: [stormwatercomments@winnetka.org](mailto:stormwatercomments@winnetka.org) Share your comments by phone: 847-716-3549