

CRS Watershed Master Plan:

The Quest for Level 4

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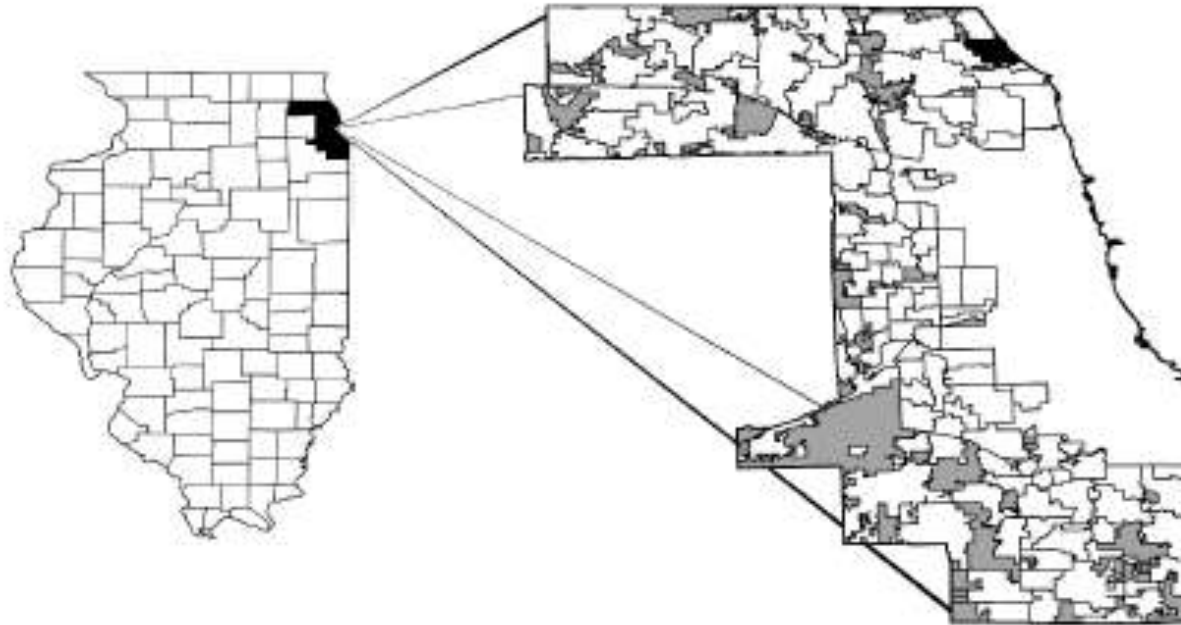
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Village of Winnetka



Cook County, Illinois

Village of Winnetka Overview

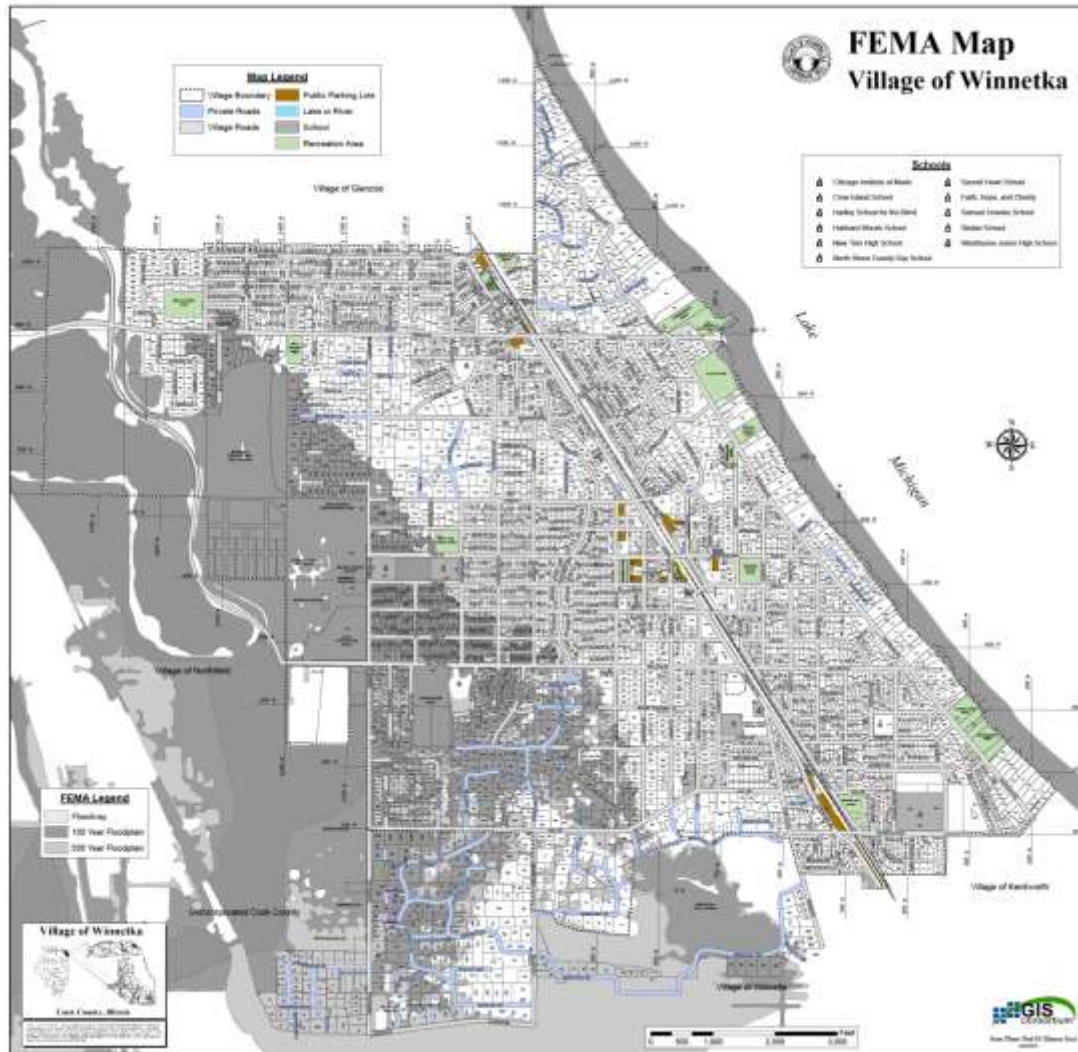
- Located in Northeastern Illinois
- Incorporated 1869
- Population: 12,490 residents
- Area: 3.81 Square miles
- Built out Community – Mostly residential
- Critical Infrastructure:
 - Water Plant
 - Electrical Plant



Village of Winnetka Overview

- Waterways within Winnetka
 - Lake Michigan located along the eastern border.
 - Skokie Lagoons – Western border.
 - Skokie River – Western border.
 - East Diversion Ditch – Western border
 - Skokie Ditch – Southern border.

Winnetka Floodplain Map



Community Concerns

- Percentage of Community in Floodplain.
- Flat topography in western portion of Village.
- Severity of large storm events in 2008 & 2011.
 - Number of flooded homes.
 - Impassible public streets and sidewalks.
 - Basement back-ups.
 - Overall community damage.



Community Concerns

- Limited open space area for storage.
- Village's long term commitment to improve stormwater management.
 - Implementation of Stormwater utility fee.
 - Development of a Village wide stormwater management plan.
 - Public involvement and Coordination with key shareholders.

Historical Flooding Photos



Historical Flooding Photos



Historical Flooding Photos



Historical Flooding Photos



Why Develop a Watershed Master Plan

- Consistent with the Villages commitment to improve overall stormwater management.
- Allows for the evaluation of new regulatory standards for new developments.
 - Village is currently performing a stormwater regulation update analysis to evaluate changes in MWRD WMO and other regulations.
- Protection of natural channels.
- Dedicated funding source.



Winnetka - CRS Overview

- Joined in 2015
- Currently a Class 6
- Goal is to reach a Class 4
 - A watershed master plan is a prerequisite to reach level four

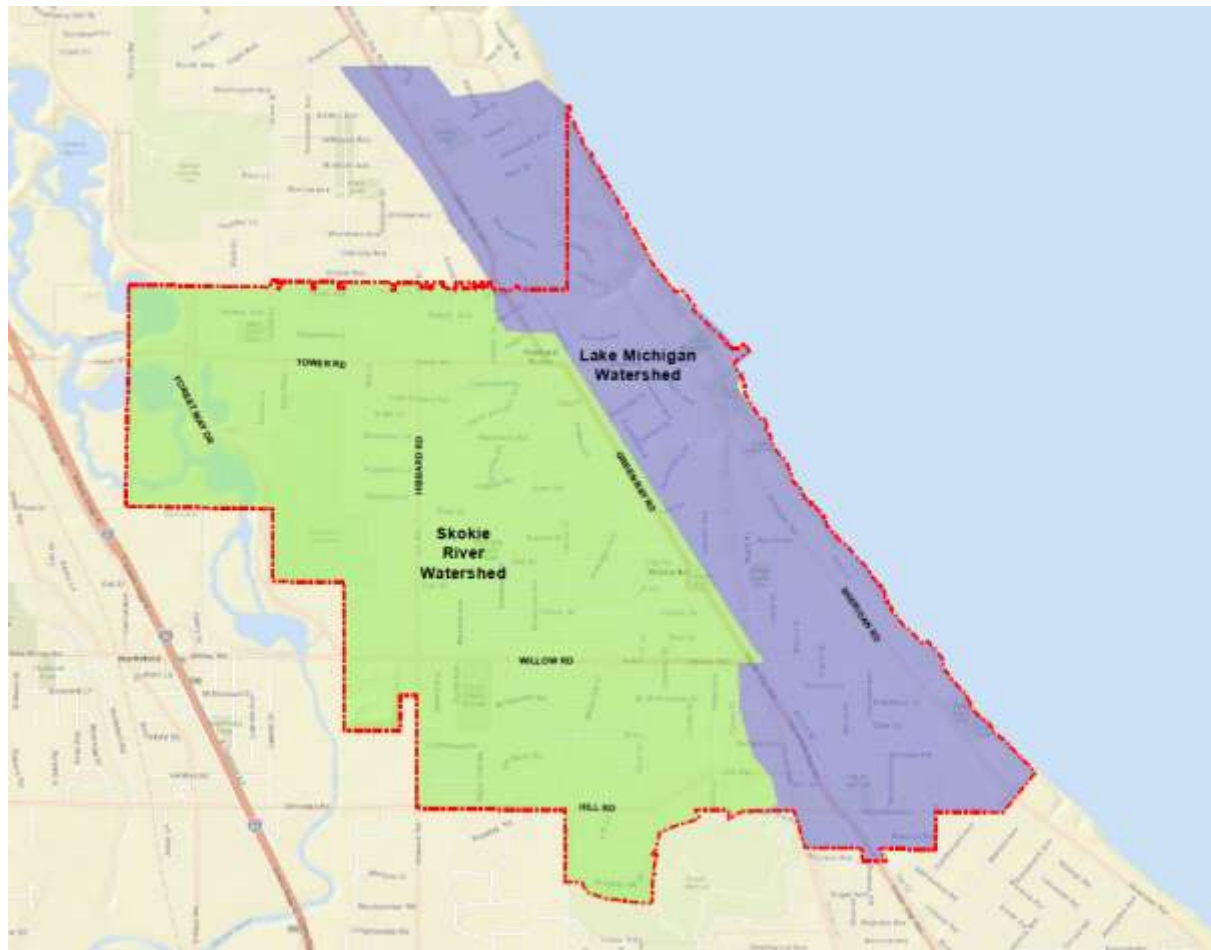


Watershed Master Plan Requirements

- Under Activity 450 (stormwater management)
- 315 Maximum Points
- Has a total of 8 sub-elements (WMP1-8)
- Must analyze existing and expected development, and a plan of action for current and future problems
 - In Winnetka, future conditions = max buildout

Modeling

H&H modeling of the watershed is required



Watershed Master Plan Requirements (WMP1)

- 90 points
- Must evaluate future conditions based on multiple storm events, including 100 yr storm
- Must adopt regulatory standards that require onsite management for at least the 25-yr storm
- Must update and evaluate plan every 5 years



WMP2

- 30 points
- Must manage runoff for all storms up to the 100-yr storm
- Ensure that flows from new development do not increase due to development
- Must receive these first two credits to reach Class 4

Winnetka's Compliance with WMP1 And WMP2

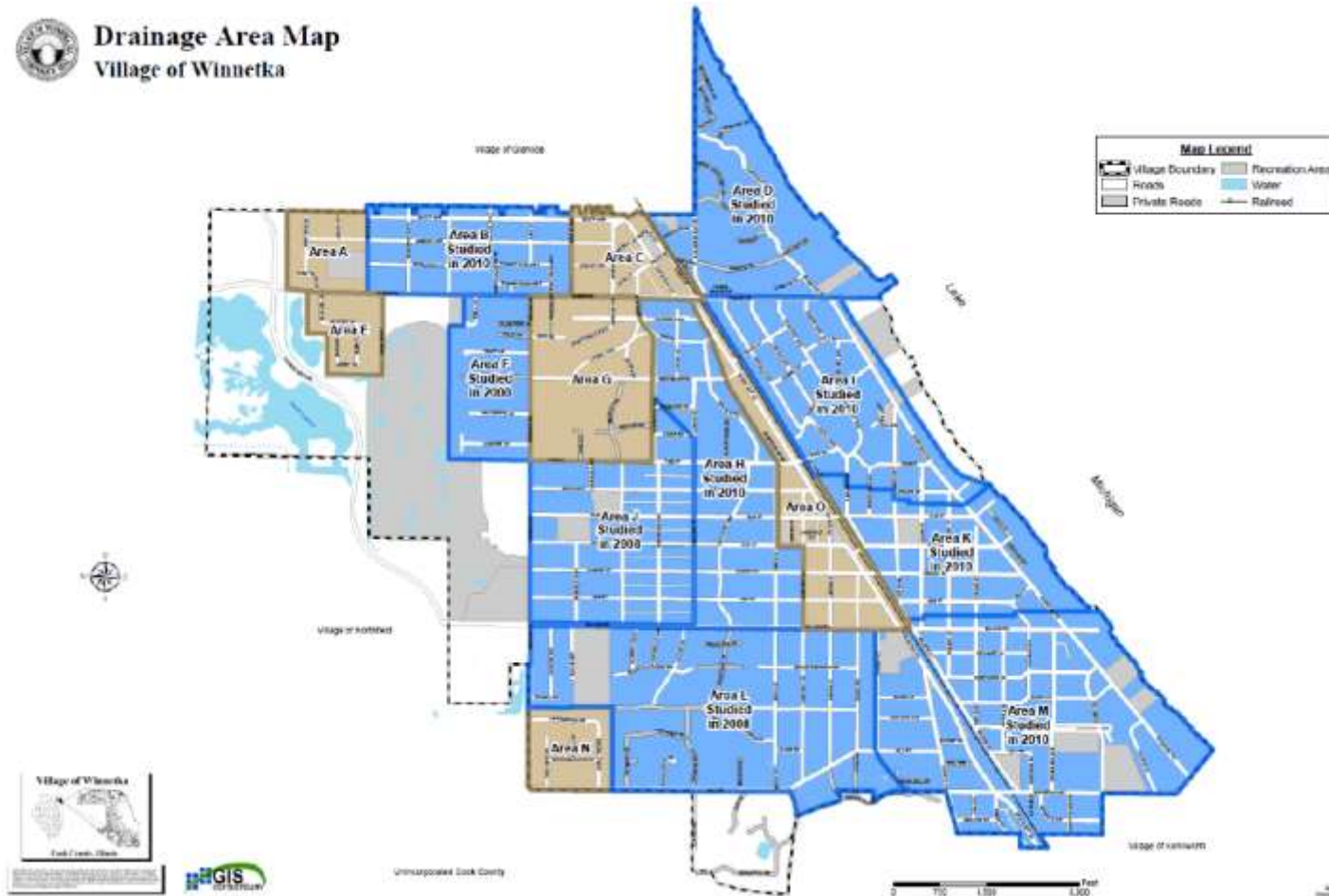
- Requires 100-yr detention for subdivisions, multi-family, commercial developments, as well as major single-family projects (including new homes and large additions)
- Allowable release rate is based on the pre-development, 3-yr storm.
- Use WMO requirements when they are more stringent



Modeling



Drainage Area Map Village of Winnetka



WMP3 – 55 points

Requirements:

- provide management of peak flows AND volumes so that they do not increase over present day values
- Must retain or detain long enough to discharge after peak flow in receiving body has subsided

Compliance:

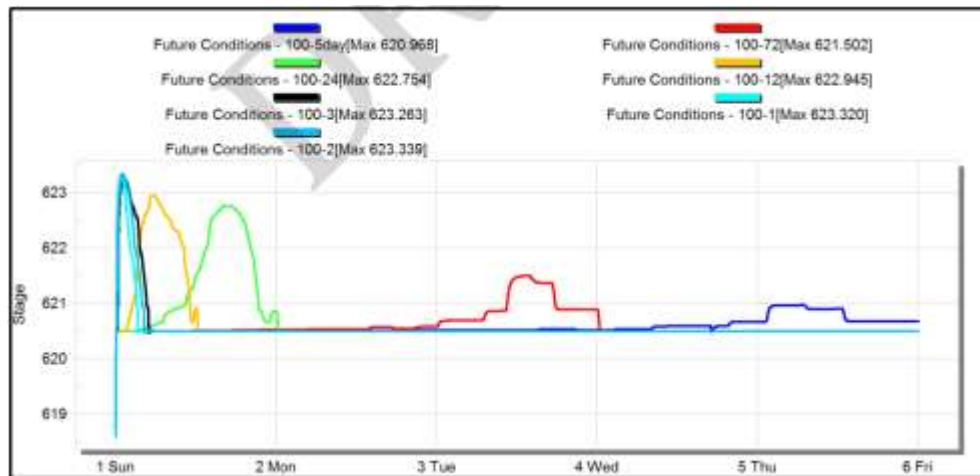
- Winnetka does not have volume control requirements, except for project that fall under the WMO
- Stormwater Master Plan encourages the use of best management practices to reduce runoff volumes and improve water quality



WMP4 – 35 points

Requirements:

- Plan must manage runoff of all storms up to the 5-day event



Compliance:

- Regulations require detention to be sized based on “worst-case” runoff event
- Critical durations for all watersheds fell between 1-3 hrs

WMP5, 6, and 7 – 30, 25, and 25 points

Requirements:

5. Plan must identify wetlands and open space to be preserved
6. Plan must recommend prohibiting development of natural channels and shorelines
7. Plan recommends “soft” channel improvement projects and design standards

Compliance:

5. Wetland and open space maps were included in the WMP, along with a recommendation for a protection ordinance
6. Report recommends the development of a natural shoreline protection (NSP) plan - an additional 120 points under section 420 of the CRS
7. Plan recommends adding ordinance or design standard prohibiting rip-rap, concrete, and gabions and requiring natural techniques for erosion control



WMP8 – 25 points

Requirements:

- Must have funding source dedicated to stormwater improvements

Compliance:

- The Village established a stormwater utility fee in 2014 that funds the Stormwater Management Program



Conclusions

- Analysis shows that Winnetka's stormwater management regulations are strong and will protect the Village from increased stormwater flows in the future
- Recommended regulation changes are low-hanging fruit that the Village can implement easily
- Challenge is Village-wide modeling and analysis
- Report still needs to be scored by CRS and updated for CIP that the Village has done in the last two years



Questions?

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