

Vernon Hills Water System Resiliency Evaluation

July 30th, 2025

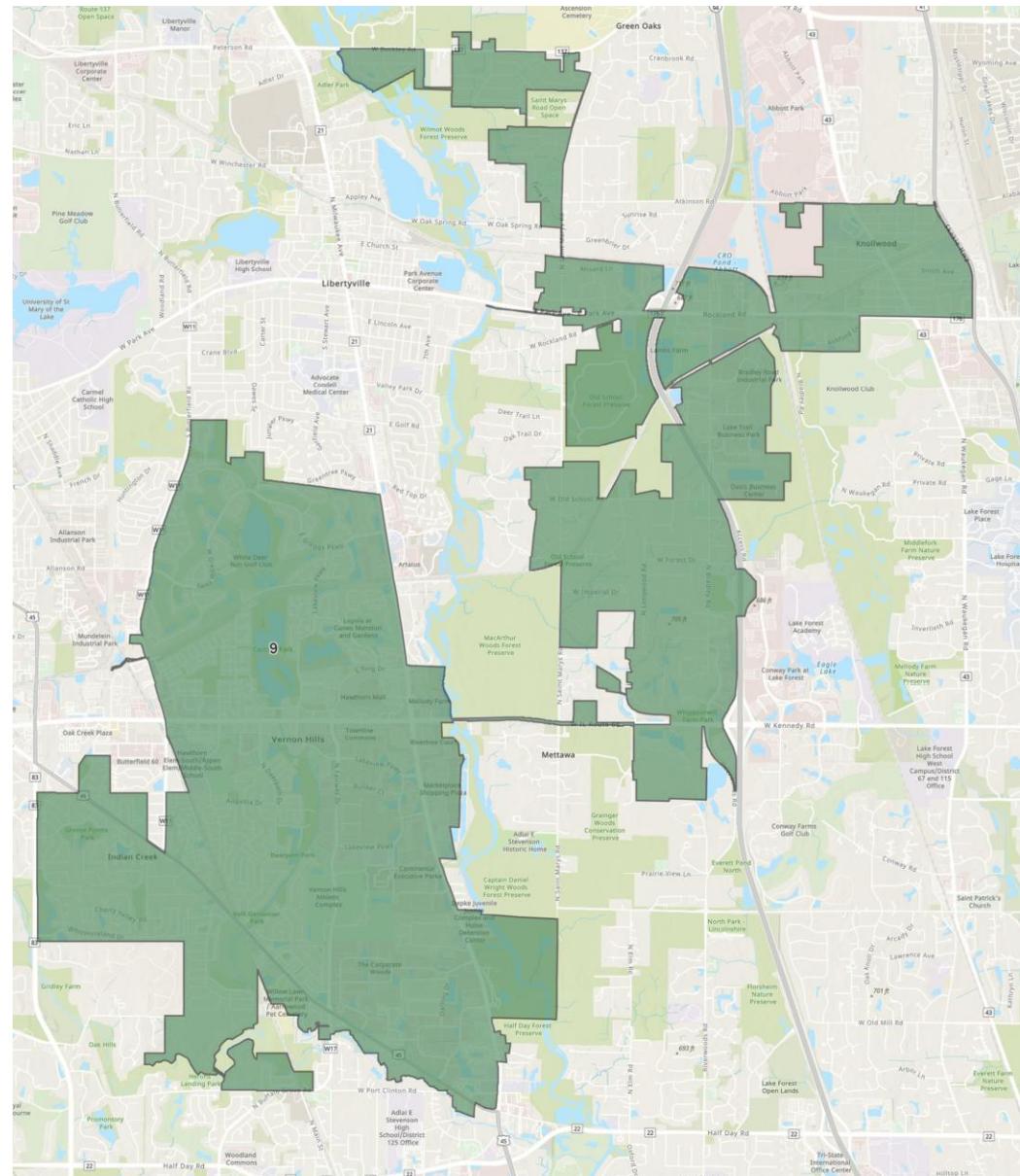


Agenda

- ▶ Project Purpose
- ▶ Project Approach
- ▶ System Background
- ▶ Existing Resiliency
- ▶ Water System Improvements
- ▶ Preliminary Costs
- ▶ Tentative Project Schedule
- ▶ Questions?

Project Purpose

- ▶ Vernon Hills - Largest Water System Operated by LCPW
- ▶ Water Sourced through CLCJAWA
- ▶ Investigate a Long-Term Interruption of Water Supply



Project Approach

- ▶ Reviewed 18 Supply Alternative Combinations
- ▶ Assessment Criteria
 - ▶ System Pressures Remain Above 20 PSI
 - ▶ Elevated Water Tank Levels are Stable or Rising
- ▶ Best Performing Alternatives Reviewed Further for Feasibility and Combinations

Interruption Supply Source		Alternatives															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
EXISTING	System Storage	A,B,C	A,B,C	A,B,C	A,B,C	A,B,C	A,B,C	A,B,C	A,B,C	A,B,C	A,B,C	A,B,C	A,B,C	A,B,C	A,B,C	A,B,C	A,B,C
	North Chicago El		A,B,C				A,B,C	A,B,C	A,B,C								
	Lincolnshire El			A,B,C			A,B,C			A,B,C	A,B,C						
	Mundelein El				A,B,C			A,B,C		A,B,C		A,B,C					
	Libertyville El					A,B,C			A,B,C		A,B,C	A,B,C					
PROPOSED	Green Oaks El															A,B,C	
	Lake Bluff El															A,B,C	
	Lake Forest El															A,B,C	
	Mettawa El															A,B,C	
	Buffalo Grove El															A,B,C	
	Long Grove El															A,B,C	
Wells																	

Key

El = Emergency Interconnection

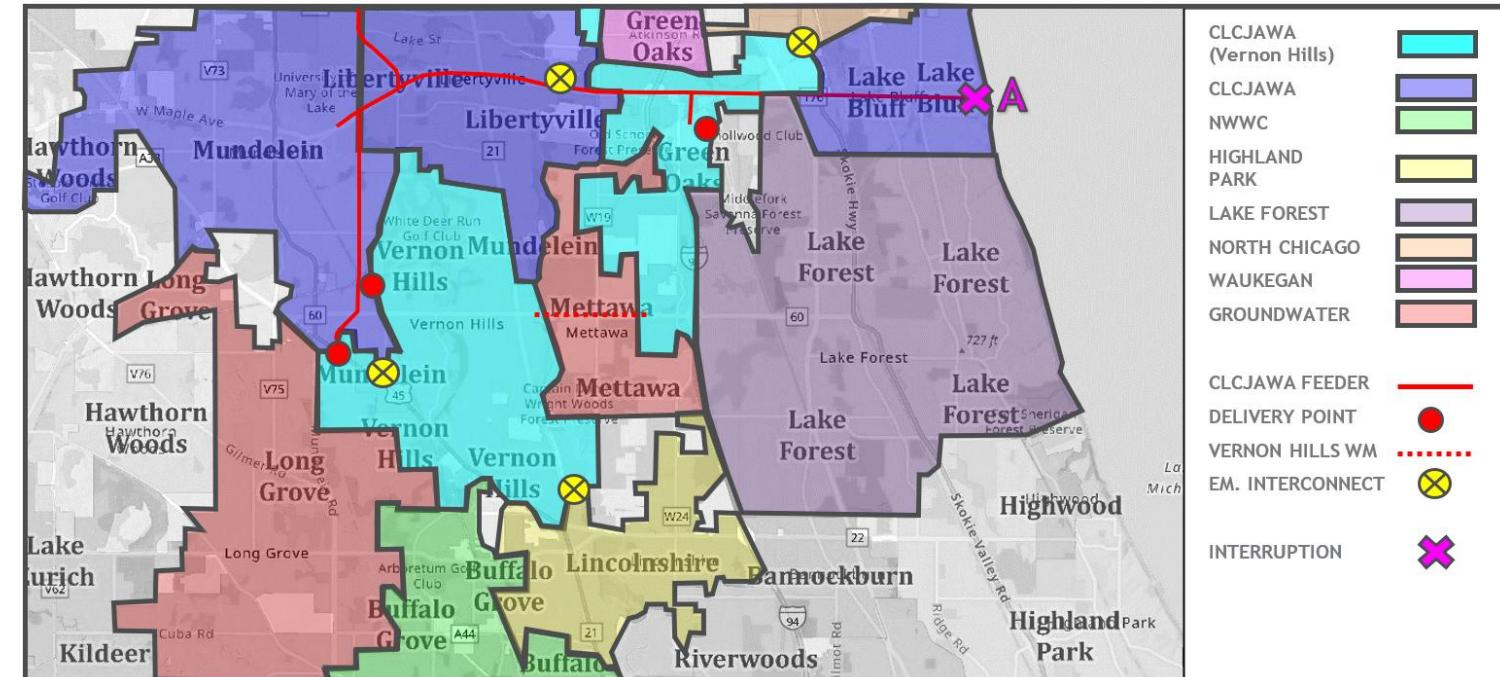
A, B, C = Alternative does not meet criteria. Analysis excluded from report.

A, B, C = Marginally misses criteria under Scenario A, B, or C.

A, B, C = Meets criteria under Scenario A, B, or C.

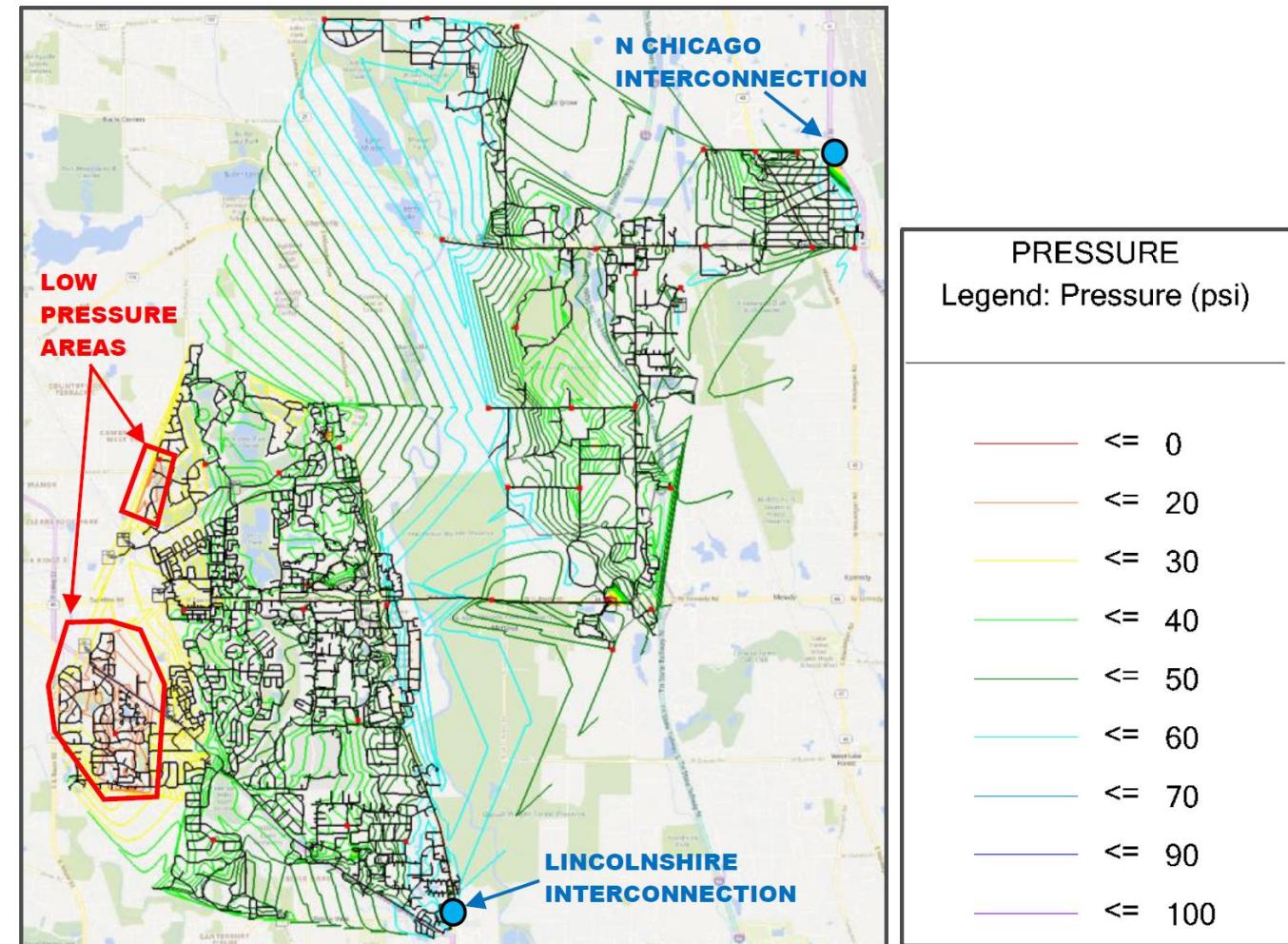
System Background

- ▶ SOURCE: CLCJAWA
- ▶ DEMAND: 2.94 MGD AVE
5.94 MGD MAX
- ▶ STORAGE: 6.95 MG at
9 Facilities
- ▶ EMERGENCY
INTERCONNECTIONS
 - ▶ 4 Locations
 - ▶ North Chicago, Mundelein,
Libertyville, Lincolnshire
- ▶ WELLS: None



Existing Resiliency

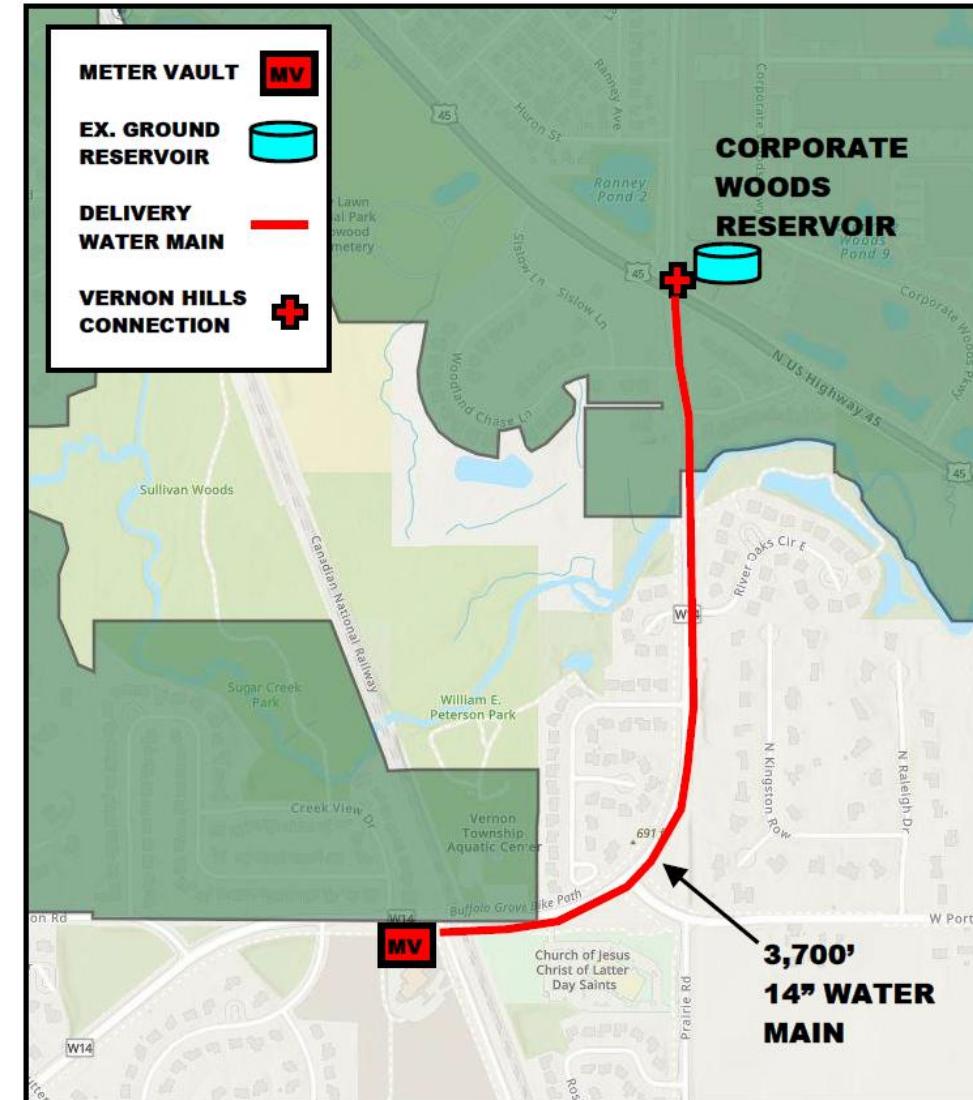
- ▶ North Chicago Interconnection and Lincolnshire Interconnection
- ▶ Non-CLCJAWA Water Sources
- ▶ Marginally Misses Criteria
 - ▶ Western System Falls to 20 PSI
 - ▶ Countryside Manor and Butterfield Elevated Tanks Drain



Water System Improvements (Short Term)

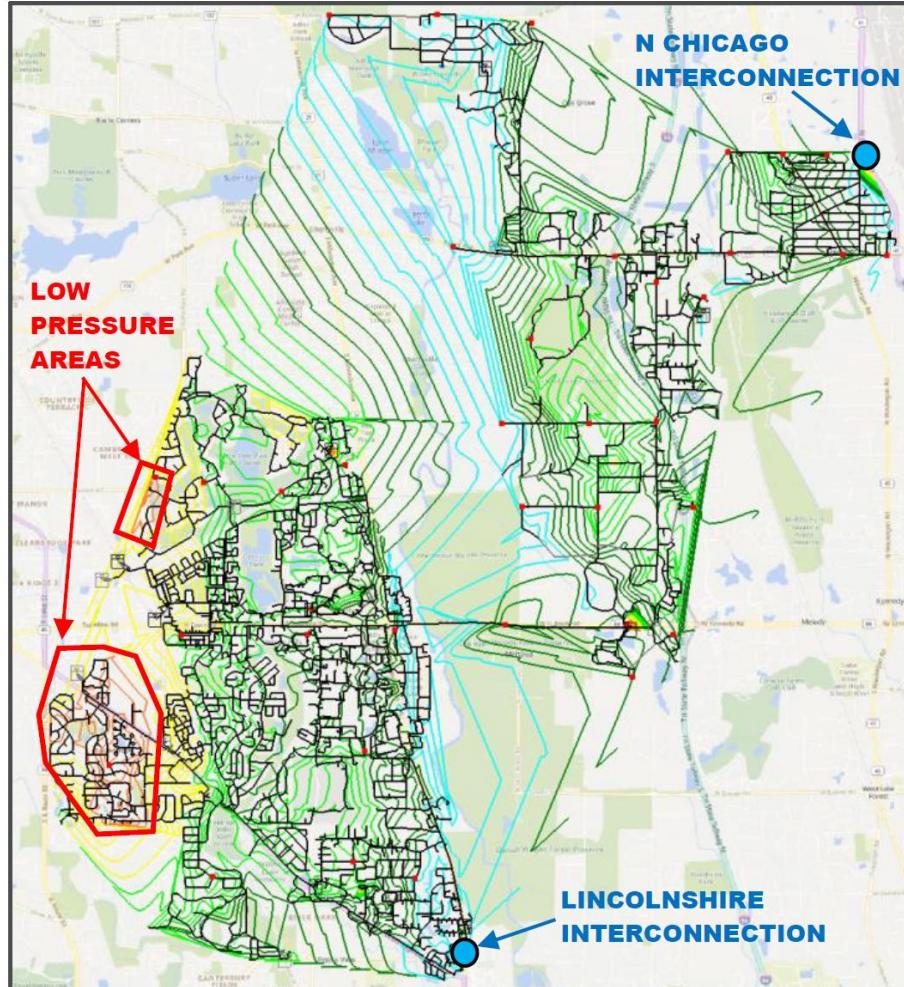
- ▶ Recommended Short Term Improvements

- ▶ New Interconnection with Village of Buffalo Grove
- ▶ 3,700-feet of 14" Water Main
- ▶ Delivery to Corporate Woods Reservoir
- ▶ Upgrades to Corporate Woods Reservoir Pump Station

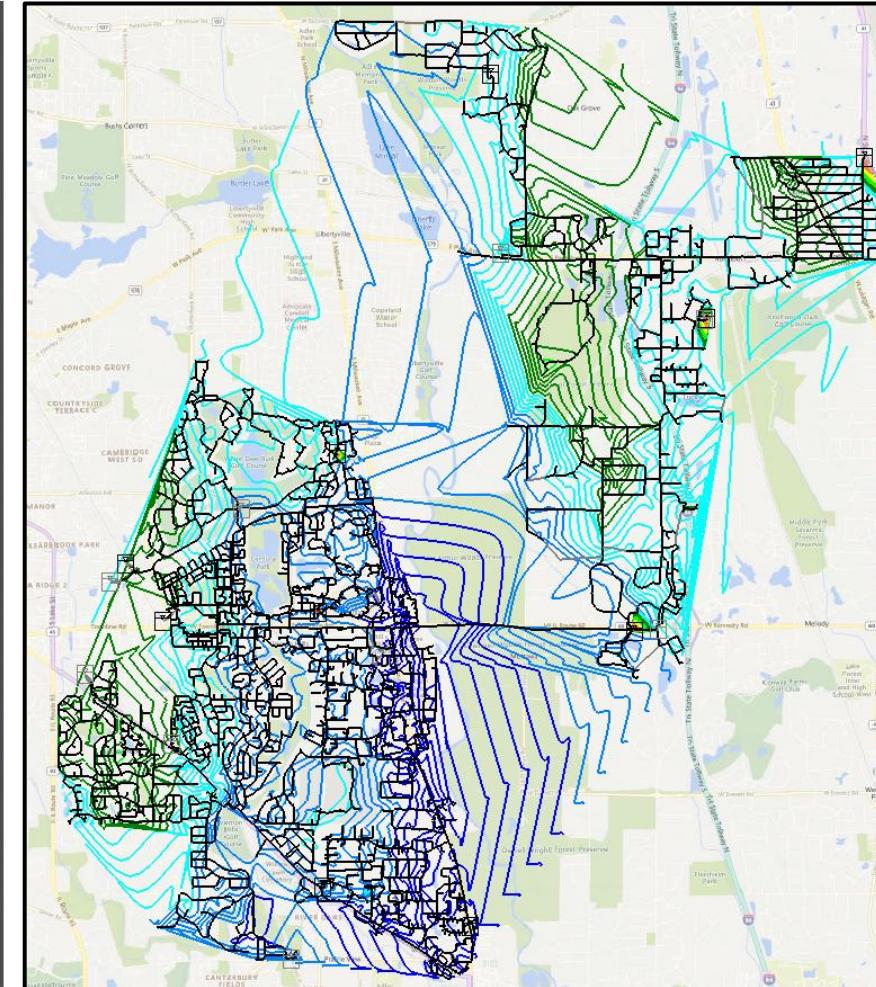


Water System Improvements (Short Term)

WITHOUT BUFFALO GROVE INTERCONNECTION



WITH BUFFALO GROVE INTERCONNECTION

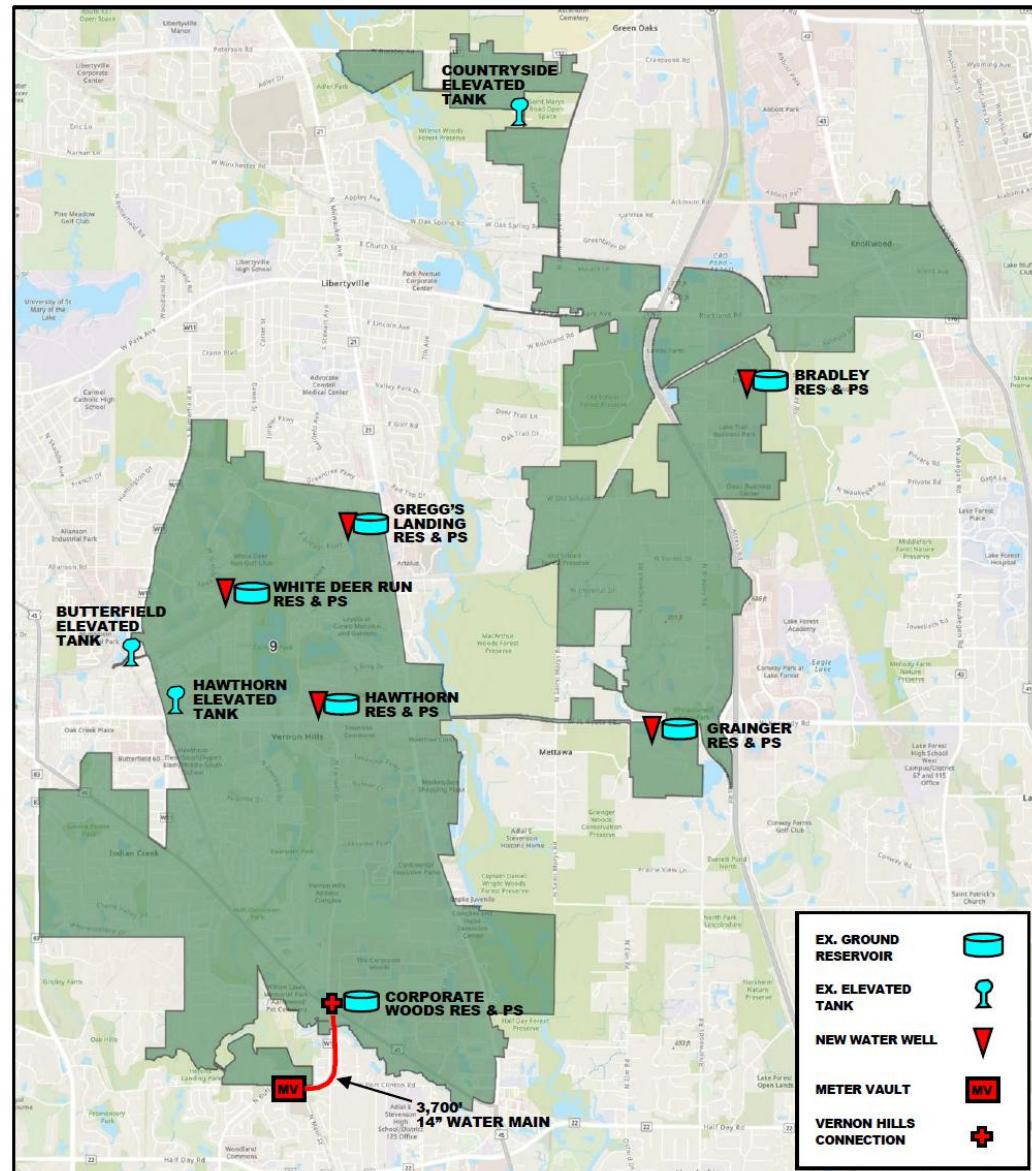


PRESSURE
Legend: Pressure (psi)

≤ 0
≤ 20
≤ 30
≤ 40
≤ 50
≤ 60
≤ 70
≤ 90
≤ 100

Water System Improvements (Long Term)

- ▶ Long Term Improvements (Wells)
 - ▶ 5 Average Capacity Wells (± 230 gpm each)
 - ▶ Locate Wells at Existing Facilities
 - ▶ Grainger, Greggs Landing, Hawthorn, Bradley, White Deer Run
 - ▶ Treatment Upgrades at 5 Reservoir / Pump Station Facilities



Water System Improvements - Preliminary Costs



- ▶ General Cost Share
 - ▶ Buffalo Grove: \$5M (34%)
 - ▶ Wells: \$10M (66%)
- ▶ Costs in 2025 Dollars
- ▶ Excluded Costs
 - ▶ Operational Costs
 - ▶ Land Acquisition Costs for Future Wells
- ▶ Additional System Modelling on Buffalo Grove System Required

Item	Cost
5 x Groundwater Wells with Connections to Existing Reservoirs	\$5,000,000
5 x Pump Station Facility Treatment Upgrades	\$1,000,000
8" Water Main at Well Sites	\$1,000,000
Meter Vault	\$570,000
Pump Station Upgrades	\$250,000
Connection Facilities Electrical Service	\$20,000
14" Water Main	\$2,775,000
Water Main Connections	\$50,000
<i>Subtotal</i>	\$10,665,000
<i>25% Construction Contingency</i>	\$2,665,000
<i>15% Engineering</i>	\$1,595,000
Budget Estimate Total	\$14,925,000

Tentative Project Schedule

- ▶ Finalize Engineering Study - July 2025
- ▶ Project Phasing - September 2025
- ▶ Project Design by Phase - January 2026
- ▶ Construction (per Phase to begin) - FY 2026

Questions?

