

# Vernon Hills Water System Resiliency Evaluation

July 30<sup>th</sup>, 2025



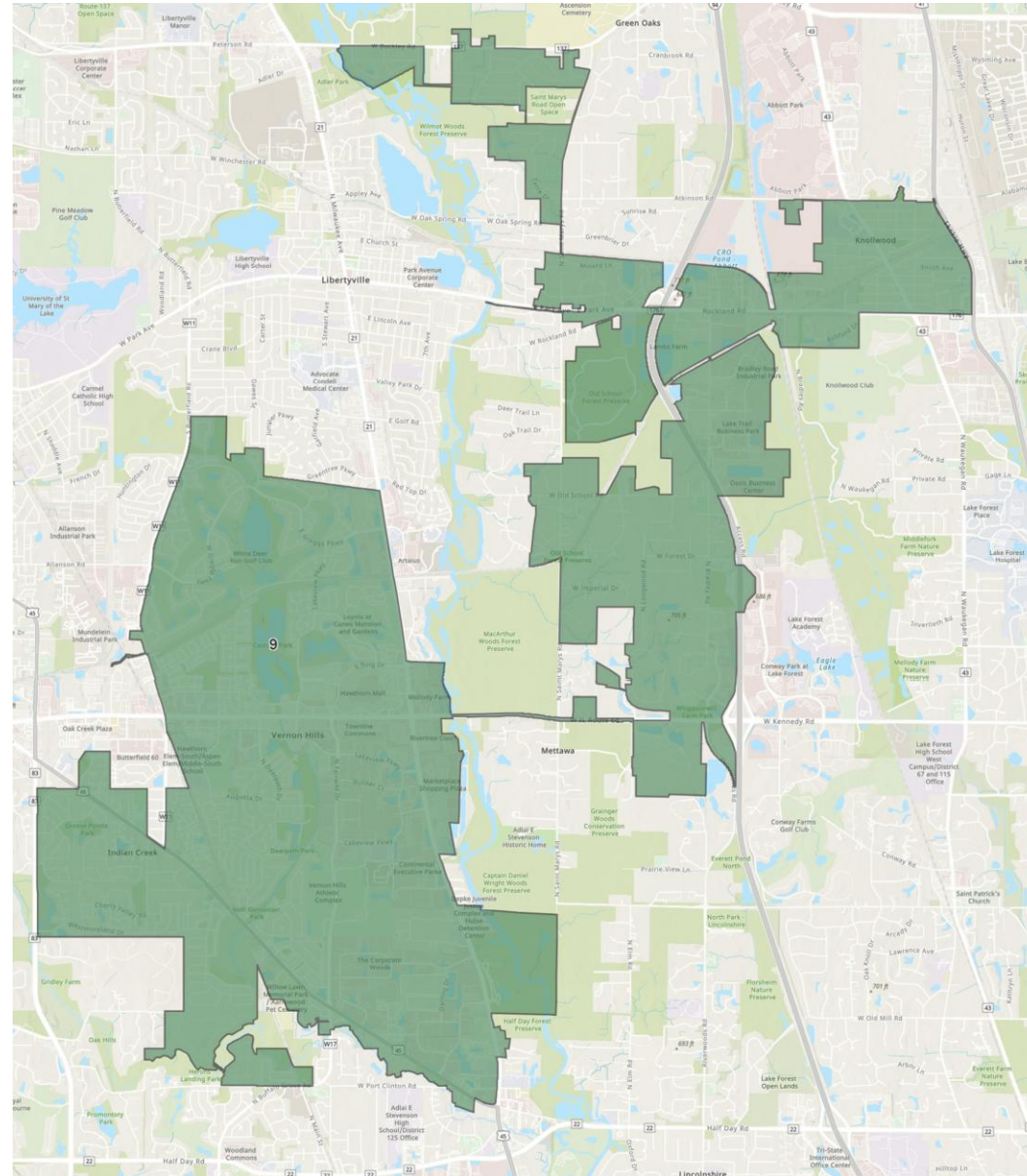
# Agenda

- ▶ 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	17	18
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	A,B,C	A,B,C
	North Chicago EI		A,B,C				A,B,C	A,B,C	A,B,C										
	Lincolnshire EI			A,B,C			A,B,C			A,B,C	A,B,C								
	Mundelein EI				A,B,C			A,B,C		A,B,C		A,B,C							
	Libertyville EI					A,B,C			A,B,C		A,B,C	A,B,C							
PROPOSED	Green Oaks EI												A,B,C						
	Lake Bluff EI													A,B,C					
	Lake Forest EI														A,B,C				
	Mettawa EI															A,B,C			
	Buffalo Grove EI																A,B,C		
	Long Grove EI																	A,B,C	
	Wells																		A,B,C

## Key

EI = 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.

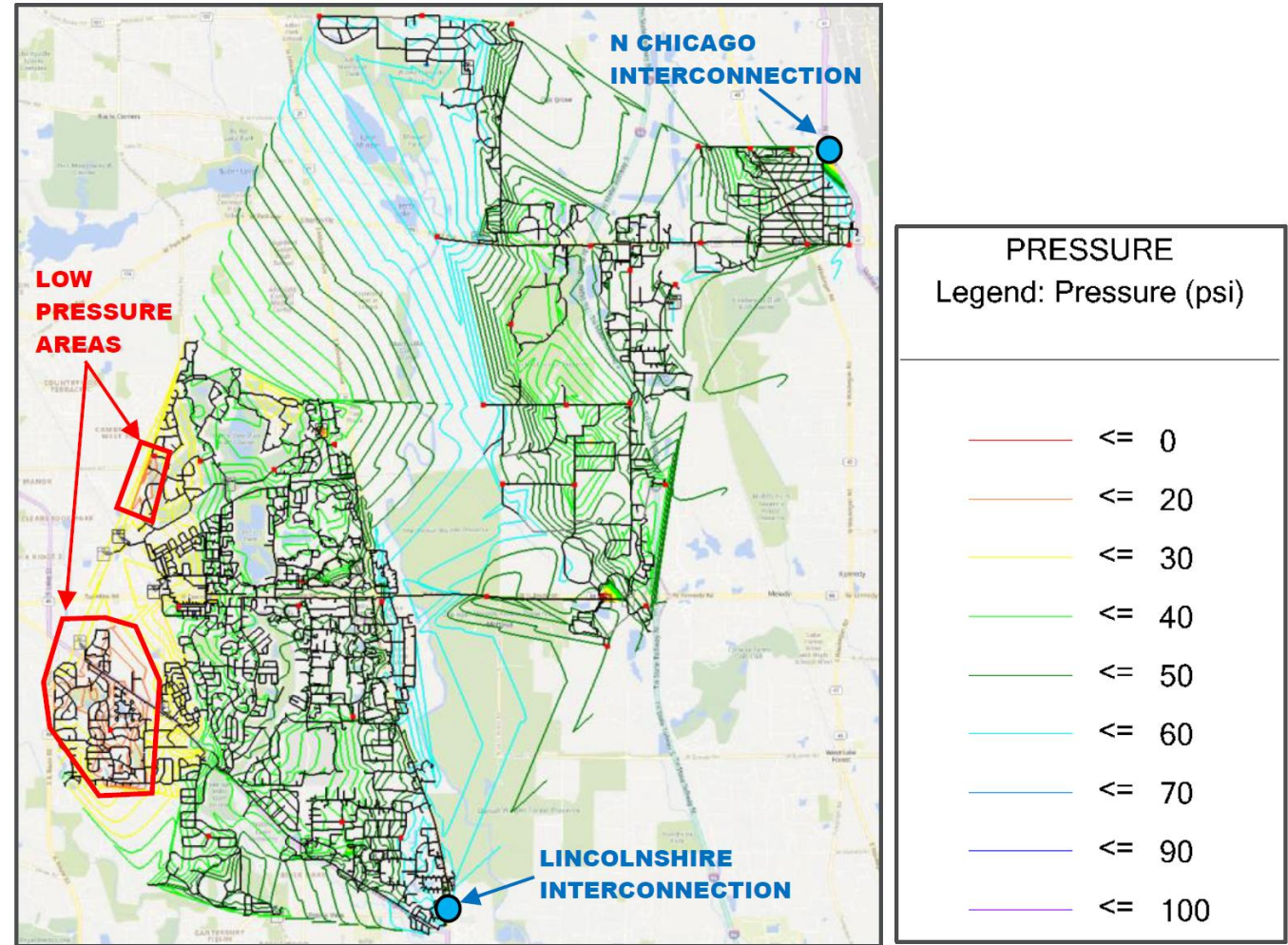
A, B, C = Meets criteria under Scenario A, B, or C.

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- The map displays the Vernon Hills Water Main project area, showing various communities and water main lines. The legend on the right side of the map defines the following symbols:
- CLCJAWA (Vernon Hills): Light blue rectangle
  - CLCJAWA: Purple rectangle
  - NWWC: Green rectangle
  - HIGHLAND PARK: Yellow rectangle
  - LAKE FOREST: Light purple rectangle
  - NORTH CHICAGO: Orange rectangle
  - WAUKEGAN: Pink rectangle
  - GROUNDWATER: Red rectangle
  - CLCJAWA FEEDER: Red line
  - DELIVERY POINT: Red circle
  - VERNON HILLS WM: Dotted red line
  - EM. INTERCONNECT: Yellow circle with an X
  - INTERRUPTION: Purple X



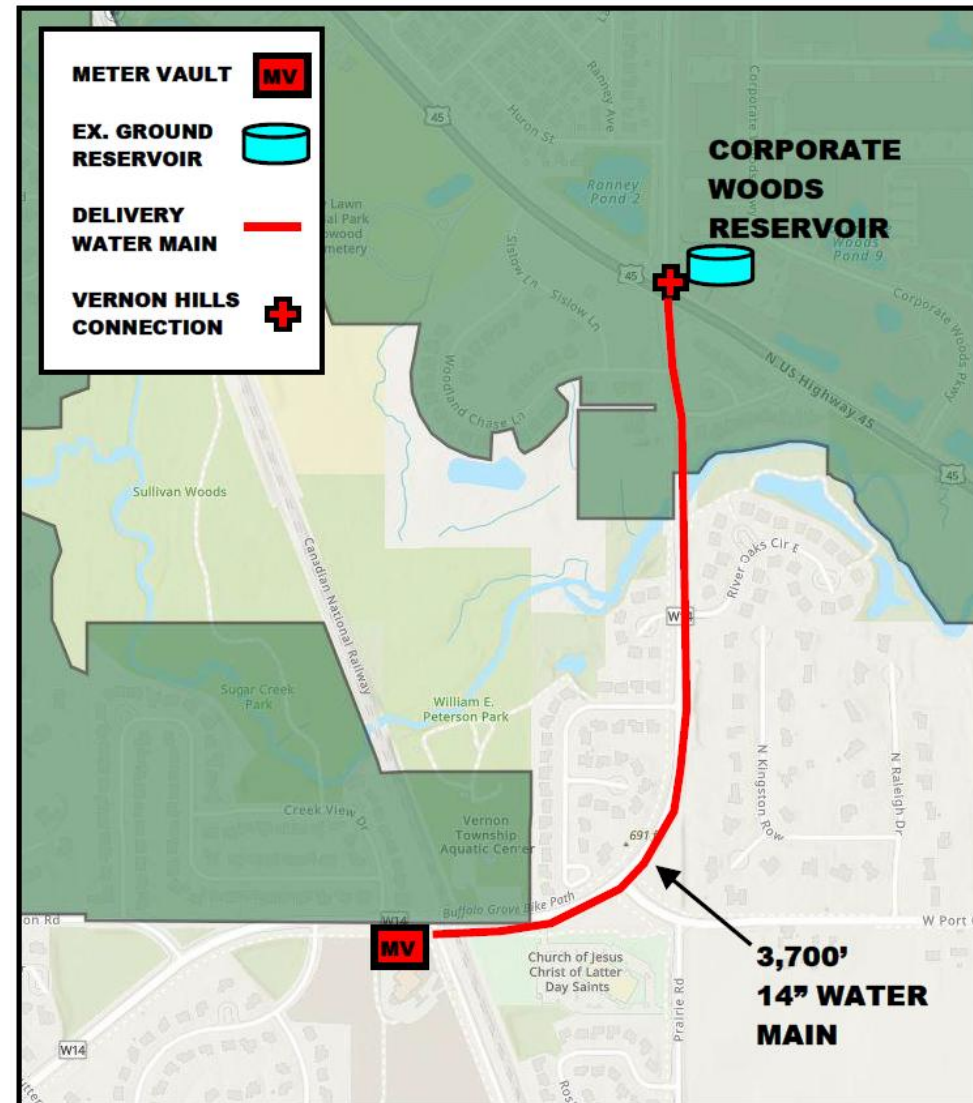
# Existing Resiliency

- ▶ 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

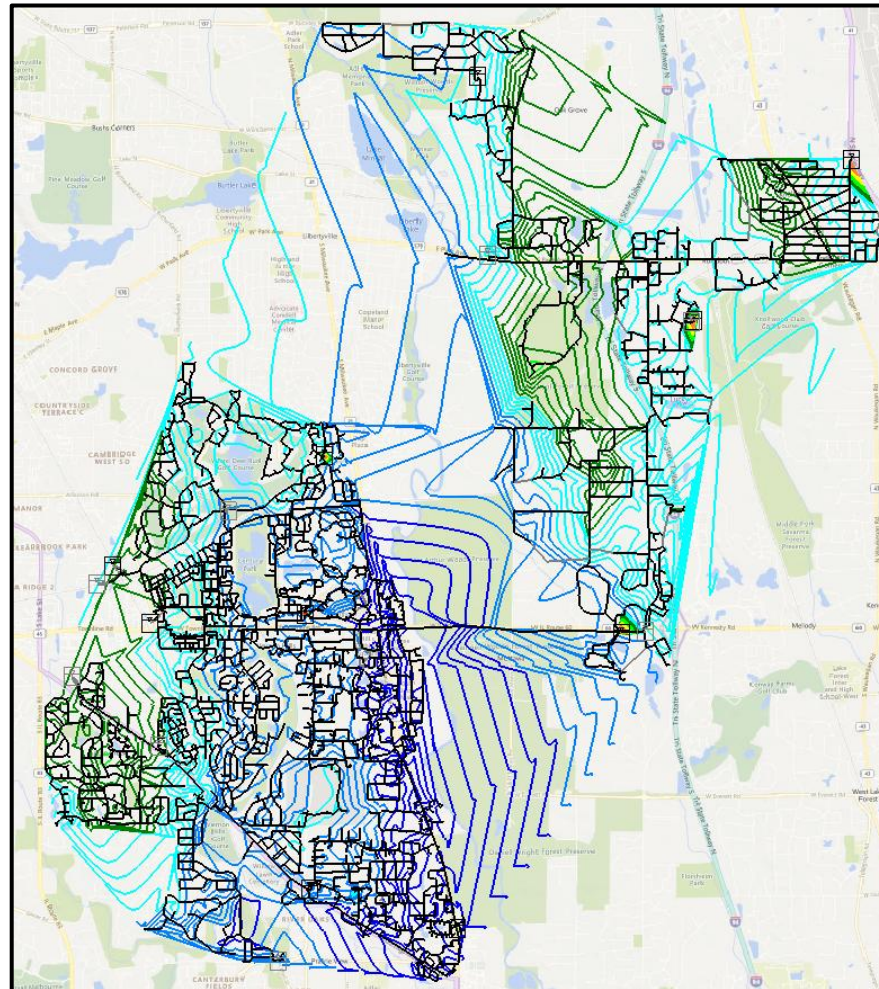
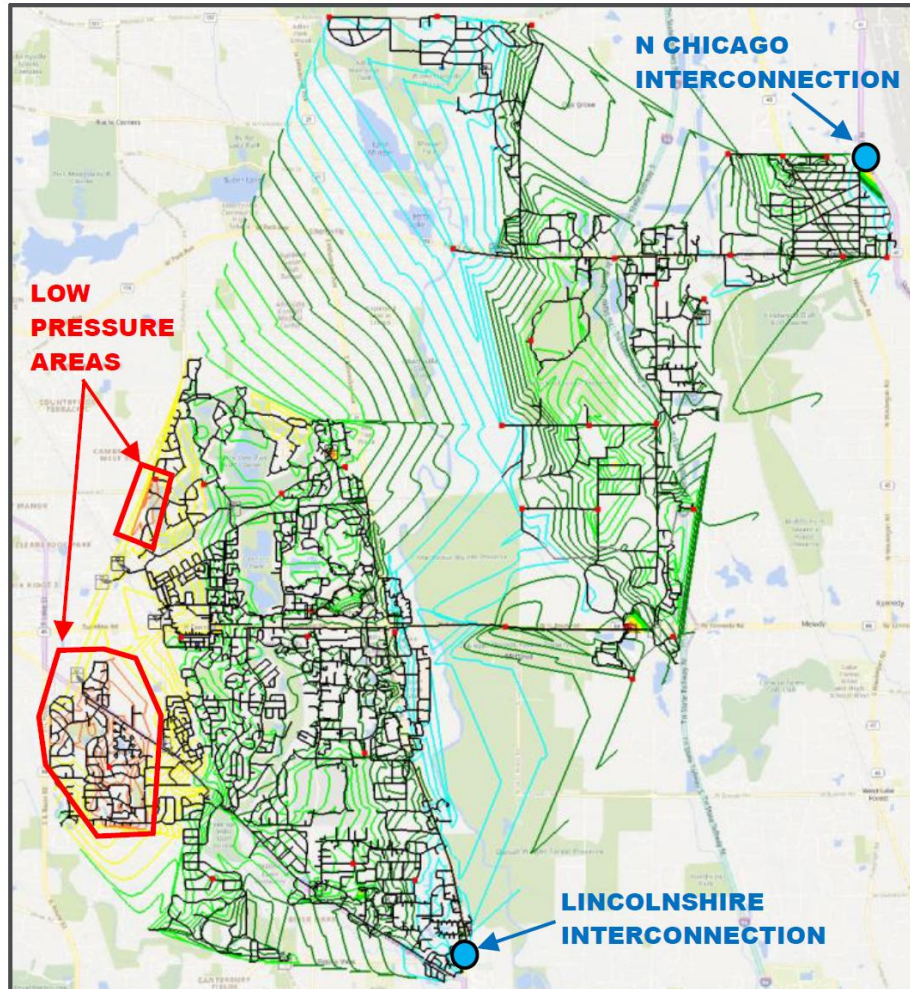




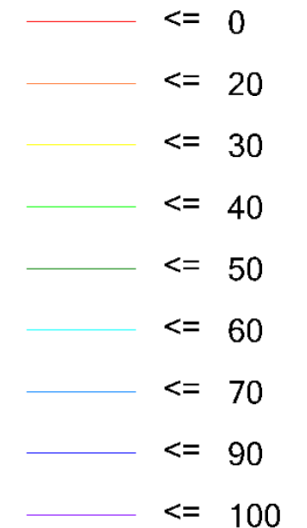
# Water System Improvements (Short Term)

WITHOUT BUFFALO GROVE INTERCONNECTION

WITH BUFFALO GROVE INTERCONNECTION



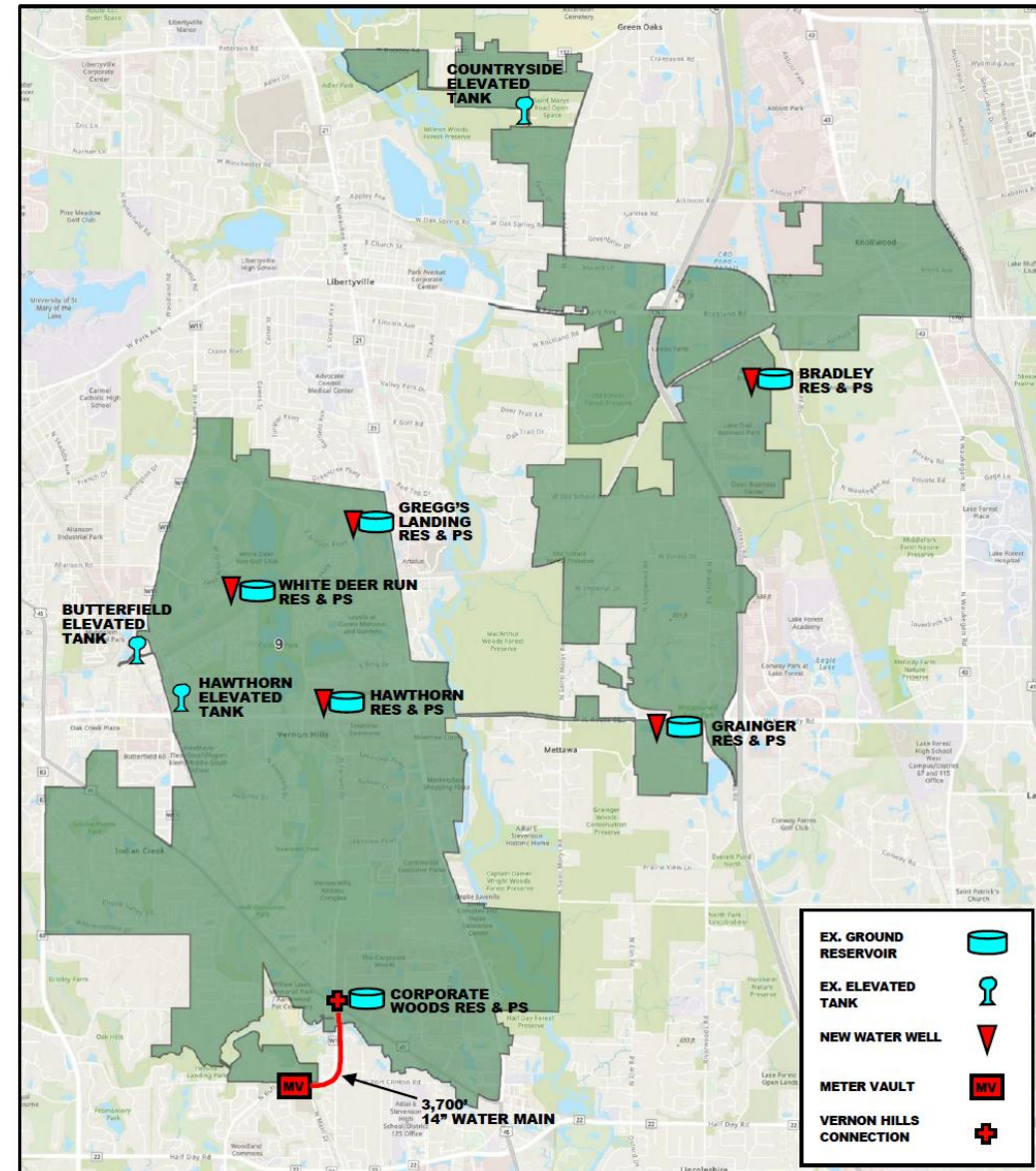
**PRESSURE**  
Legend: Pressure (psi)





# Water System Improvements (Long Term)

- ▶ Long Term Improvements (Wells)
  - ▶ 5 Average Capacity Wells ( $\pm 230$  gpm each)
  - ▶ Locate Wells at Existing Facilities
    - ▶ Grainger, Gregg's 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>	<i>\$10,665,000</i>
<i>25% Construction Contingency</i>	<i>\$2,665,000</i>
<i>15% Engineering</i>	<i>\$1,595,000</i>
<b>Budget Estimate Total</b>	<b>\$14,925,000</b>



# 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?