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Life After the Implementation of Storage

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Branden Rose, Hayden Lake Irrigation District - System Administrator

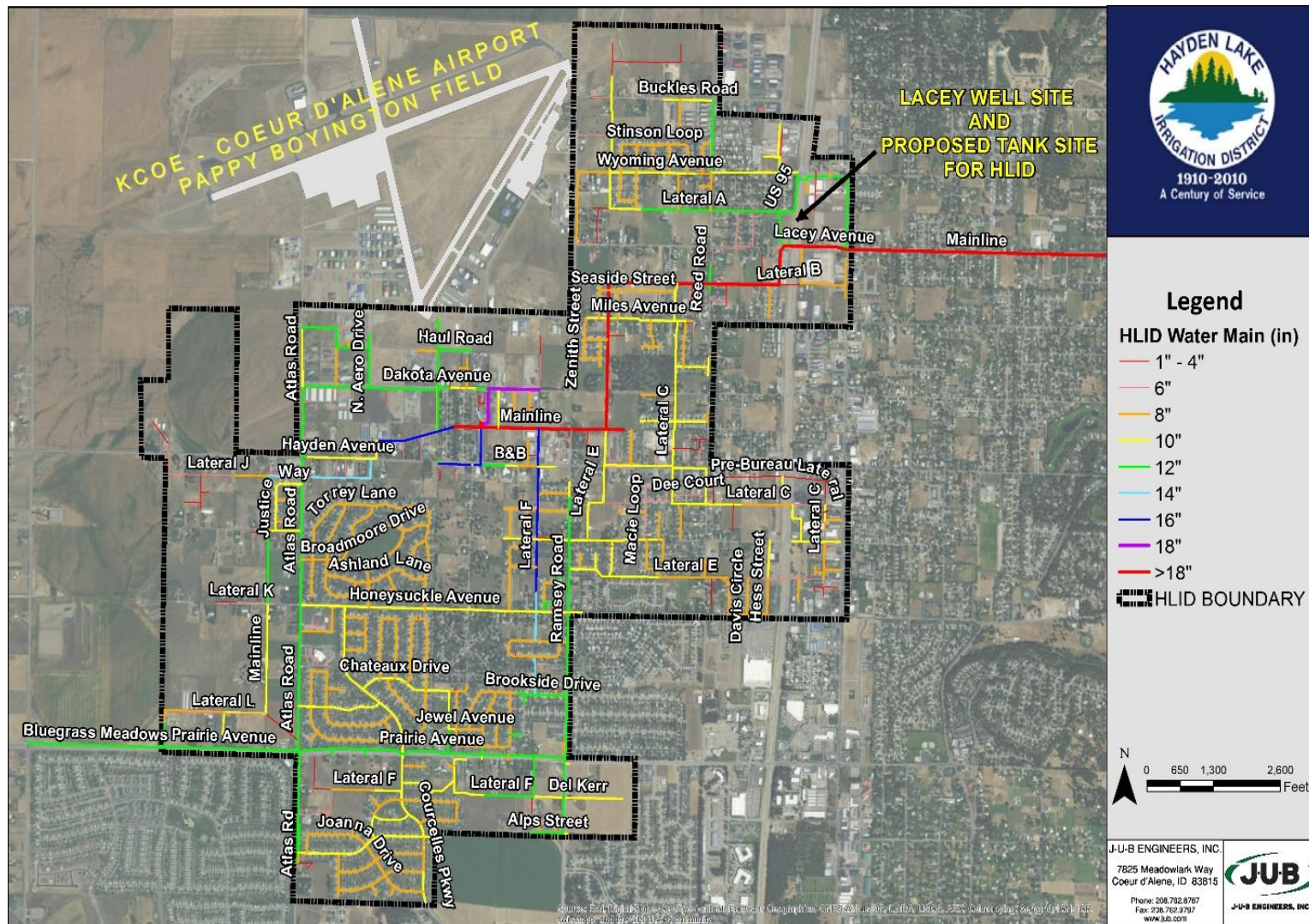
2025 AWWA Conference

The background of the slide is a green-tinted aerial map showing a city grid, streets, and some green spaces. The word "Outline" is written in white in the top left corner.

Outline

- District Background
- Management & Operation Before Storage
- Planning Effort
- Tank Construction
- Management & Operation after Storage
- Lessons Learned & Project Highlights

District Service Area



Hayden Lake Irrigation District provides service within the incorporated cities of Hayden and Coeur d'Alene, as well as parts of Kootenai County.



0.075 MG

Background

- 3,750 physical connections
- 6 supply wells
- 75,000 gallons of storage (prior to July 2023)
- 2001 – 1.6 MG of additional storage was recommended.
- Efforts to site & construct tank fell short
- Focus shifted to promoting water conservation, saving for future storage, fine tuning operations and adding supply

District Operations Before Storage

- SCADA programming
 - Complex, used to predict rate of fall in the tank
- Predictive Well Operation
- Special Lead Pump Operation

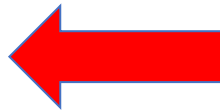
HLID Summer Operation Scheme	Lacey		Dakota 1		Dakota 2		Dakota 3		Larix		Start Time	
	Start (ft)	Stop (ft)	Start (ft)	Stop (ft)	Start (ft)	Stop (ft)	Start (ft)	Stop (ft)	Start (ft)	Stop (ft)	Hour	Min.
Recipe 1	10	19	1	2	9	18	12	19.5	9	17	3	0
Recipe 2	9	19	10	20	8	17	44	18	6.5	17	9	0
Recipe 3	9	18.5	13	19	14	20	10	18	6.5	17	2	30
Recipe 4	9	18.5	10	19	12	20	11	18	6.5	17	18	0
Recipe 5	12.5	20	5	6	14.5	20.5	0	0	13.5	19.3	2	30

District Operations Before Storage

- Variable frequency drives



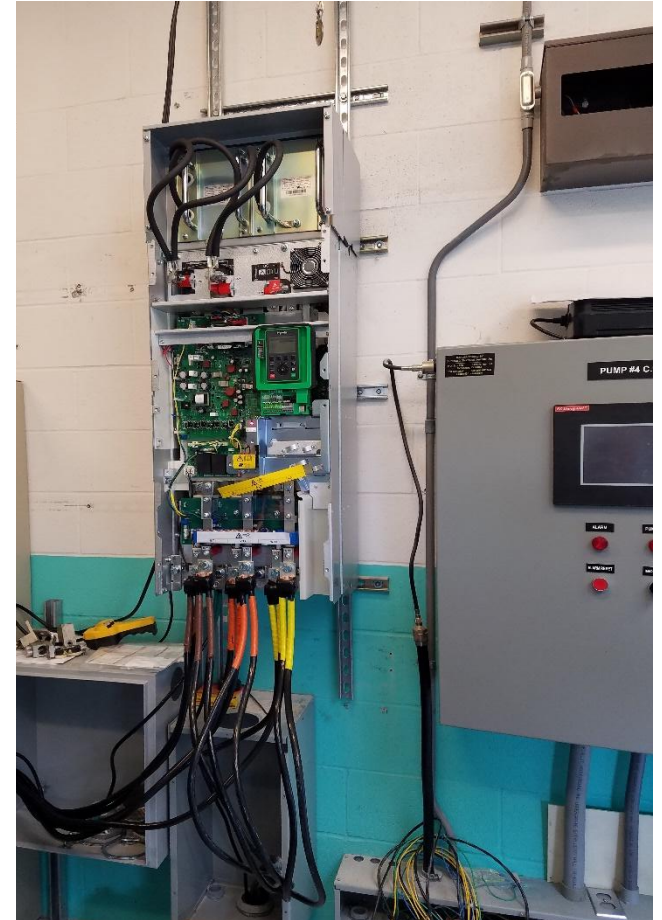
Burnt leads Motor



New 350hp VFD



Fast repairs or ??



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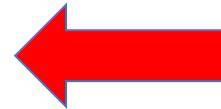
District Operations Before Storage

- Emergency back-up power generators for 5 of the 6 wells



Promote Conservation

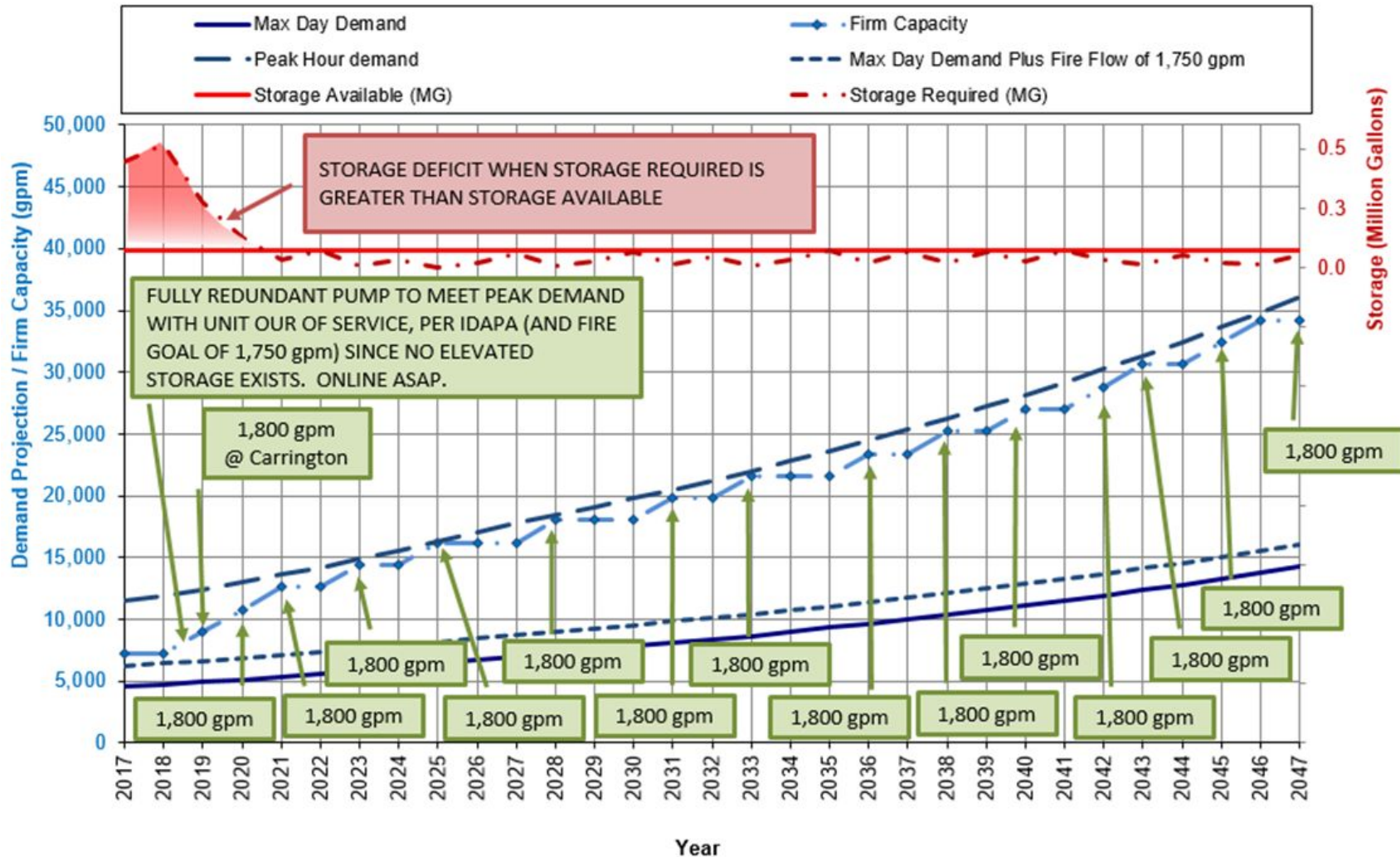
- Implemented Odd/Even Water Days
- Provided education on benefits of low water use landscapes
- Modified rates to a tiered rate structure.
 - Removed flat water use rate.
 - Customers paid for actual water usage
- Educated Customers on Broken Sprinklers



Future Without Storage

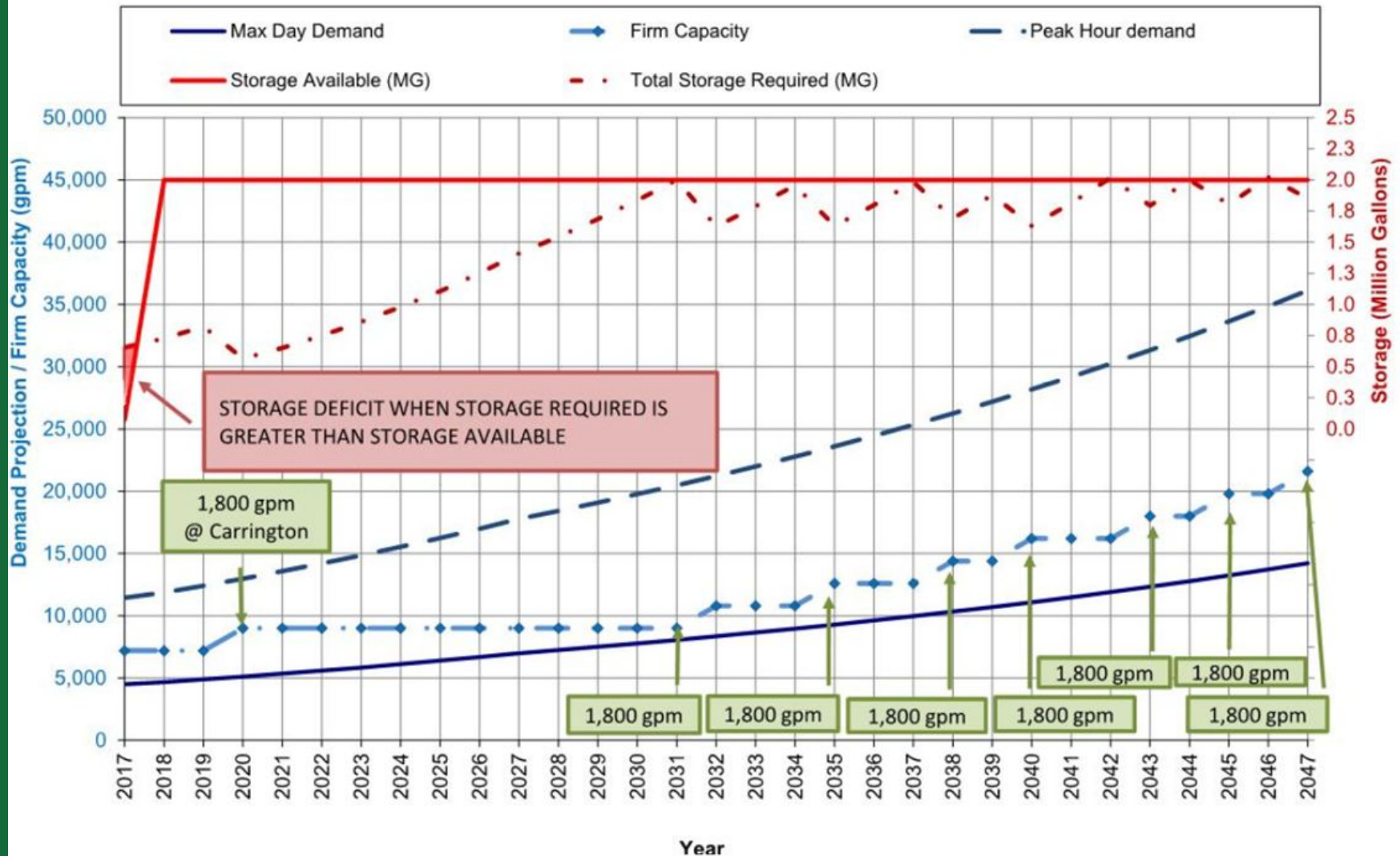


Alternative No. 2
Additional Supply, Rehabilitate Existing Tank, Distribution Improvements
System Demand and Capacity Comparison
(Assuming a 3.8% year over year peak day demand growth)



Future With Storage

Alternative No. 3
New Elevated Storage (2MG), Rehabilitate existing Tank, Additional Supply, Distribution Improvements
System Demand and Capacity Comparison
Assuming a 3.8% year over year peak day demand growth)



Planning Efforts

- Able to provide continuous water service.
- Improve the long-term storage needs for the system.

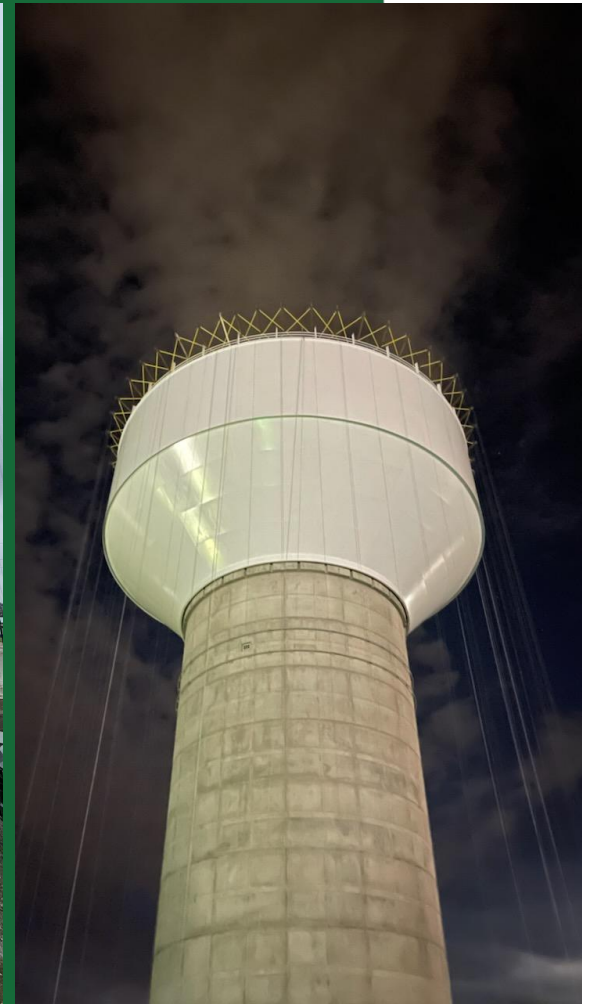


Storage Construction

- Tank was approved in 2019 & began construction in 2020



Construction Completed in 2022



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Present Day



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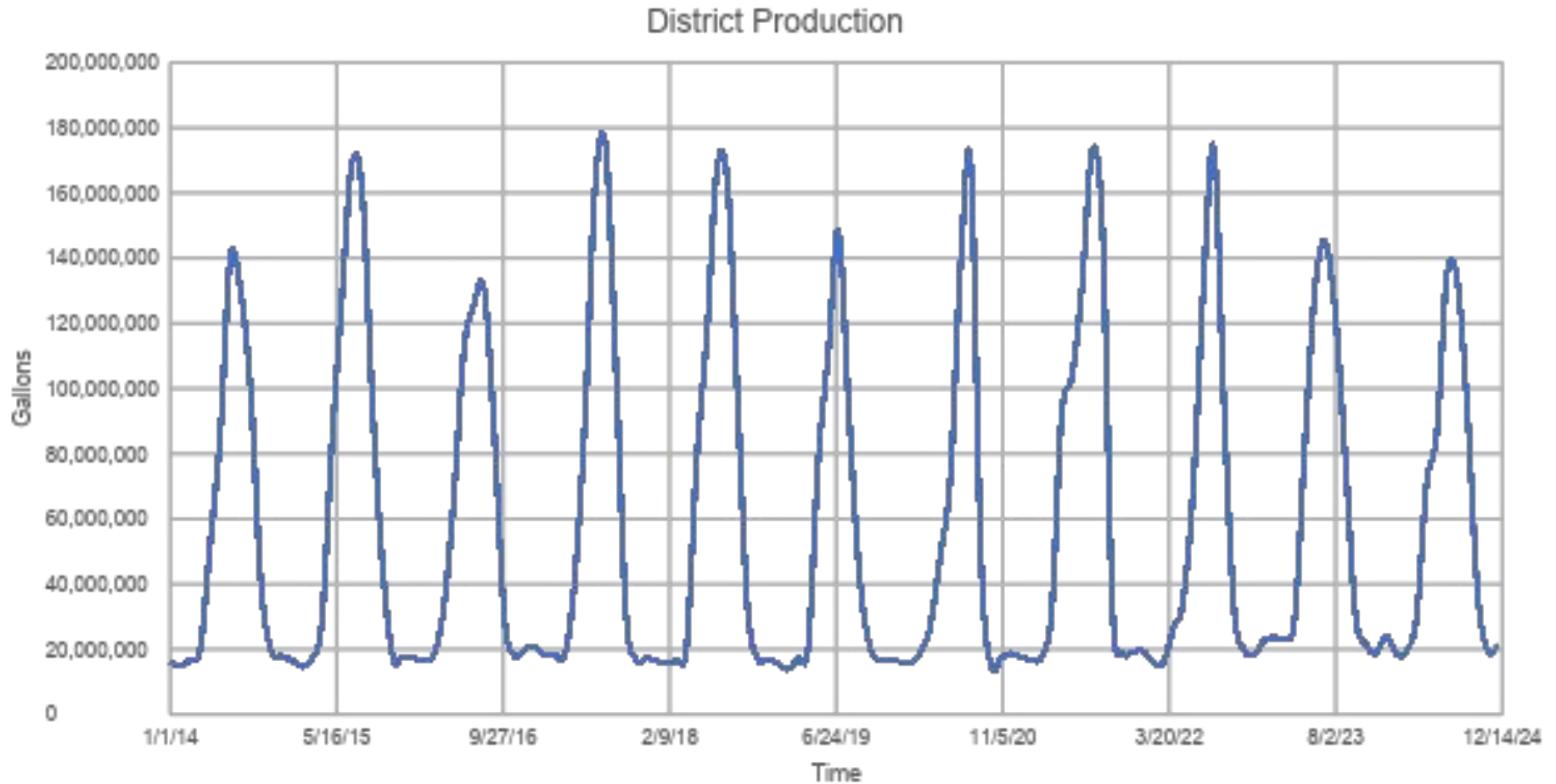
Present Day



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Water Production (2014 to 2024)



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Power Reduction

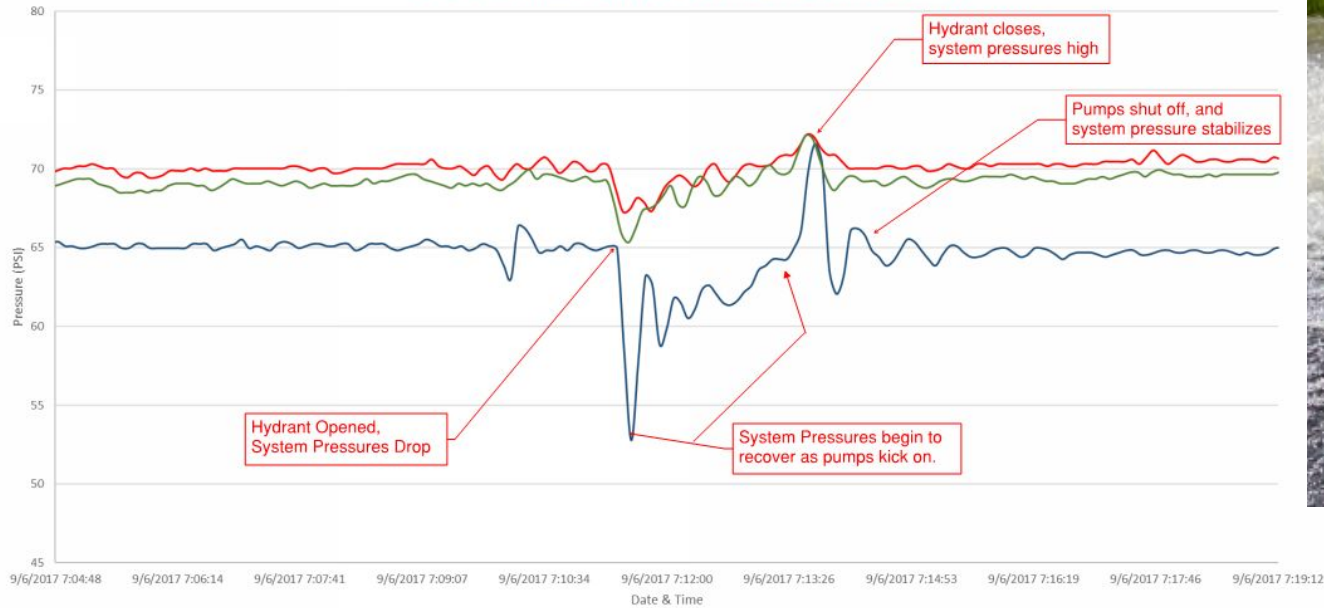
HLID - Impacts of installation of 2.0 MG Tank on lead pump



Lead Pump	2022	2023	2024	
Monthly Production (MG)	56.2	60.4	52.3	increase
System Connections	3230	3476	3874	increase
Pump Hours (peak month)	709	413	260	decrease
KWH (winter month)		75.73	39.61	decrease

Reliable Fire Flows

SYSTEM RESPONSE TO FIRE FLOW TESTING



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Tank Inspection Completed in 2025



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Questions and Open Discussion

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