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**City of Harrisonburg**  
**Department of Public Utilities**  
**Parkview Tank and Pump Station Replacement**  
***Preliminary Engineering Report***  
**January 2015**

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# Park View Tank



# Park View Pump Station



# Project Driver #1: Fire Protection

ISO Residential :	750 gallons per minute for 2 hours
ISO Commercial:	1,000 gallons per minute for 2 hours
ISO Industrial:	1,500 gallons per minute for 2 hours
ISO EMU :	3,000 gallons per minute for 3 hours

- Park View Tank must be upgraded from 75,000 gallons to 405,000 gallons or greater!
- Park View Pump Station must be upgraded from 300 gallons per minute to greater than 750 gallons per minute!

# ISO – Needed Fire Flow

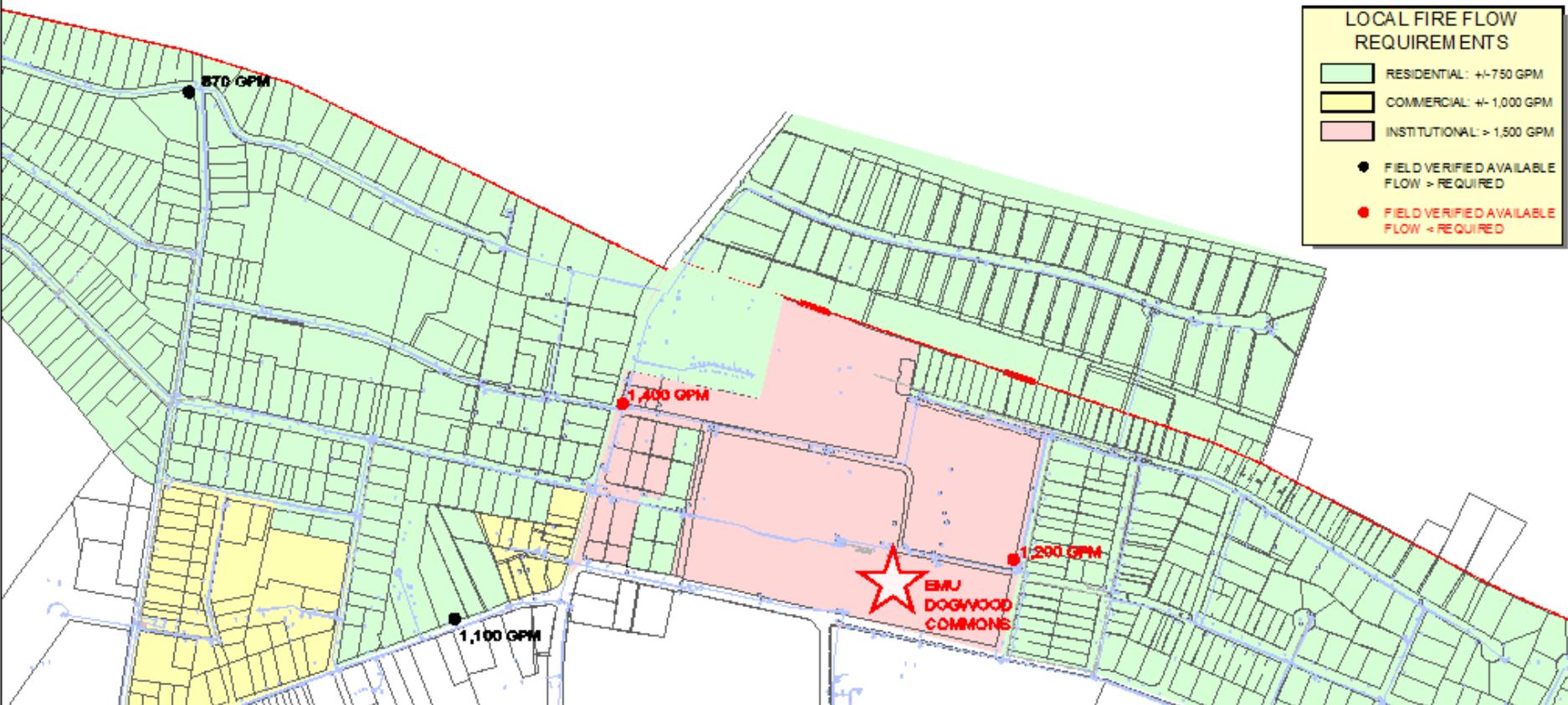
## PARK VIEW TANK PROJECT EXHIBIT

### PARK VIEW TANK: PROJECT DRIVERS

- #1. EXISTING RESIDENTIAL AND COMMERCIAL STRUCTURES THROUGHOUT PARK VIEW ARE CURRENTLY PROTECTED IN TERMS OF FIRE FLOW RATE AND DURATION.
- #2. EXISTING LARGE EMU ASSETS ARE NOT PROTECTED TO THE RECOMMENDED FIRE FLOW RATE AND DURATION.
- #3. CITY DESIGN AND CONSTRUCTION STANDARDS HAVE ADOPTED ISO POLICY: FUTURE DEVELOPMENT ON THE EMU CAMPUS WILL NOT BE PERMITTED WHERE THE ISO CONDITIONS ARE NOT MET.

### LOCAL FIRE FLOW REQUIREMENTS

- RESIDENTIAL: +/- 750 GPM
- COMMERCIAL: +/- 1,000 GPM
- INSTITUTIONAL: > 1,500 GPM
- FIELD VERIFIED AVAILABLE FLOW > REQUIRED
- FIELD VERIFIED AVAILABLE FLOW < REQUIRED

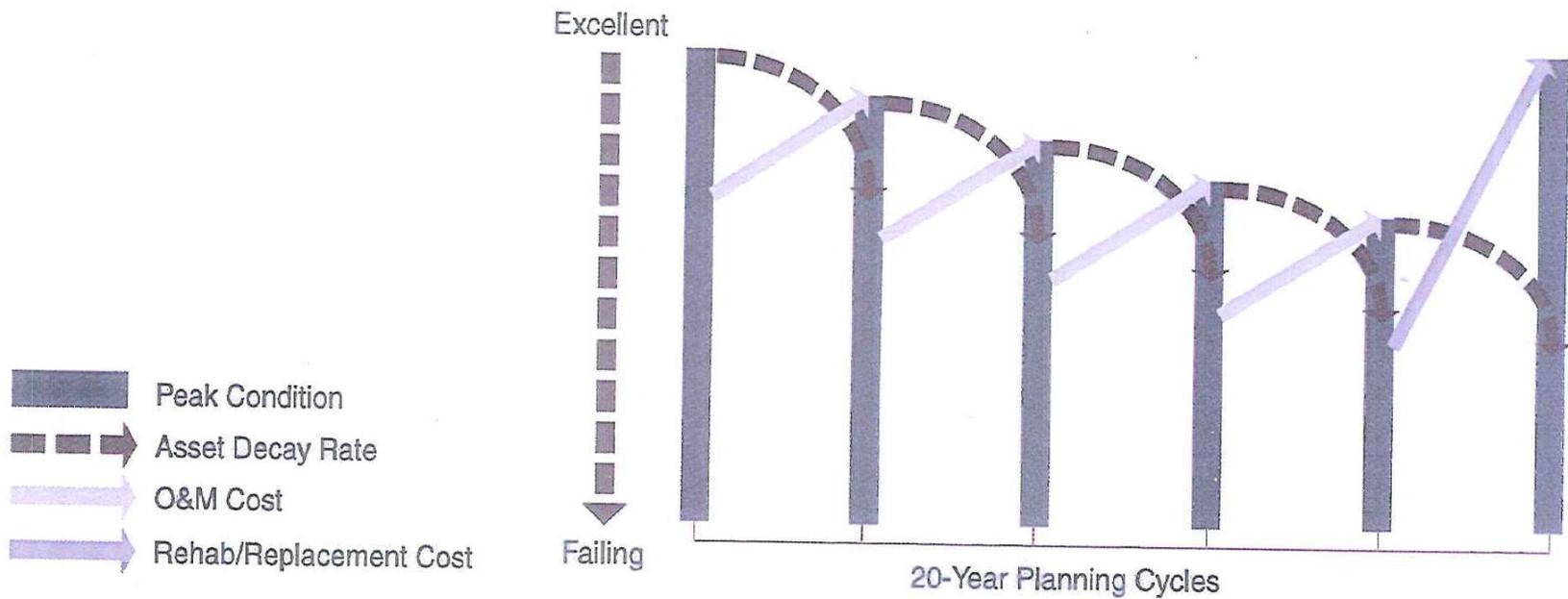


# Project Driver#2: Asset Management

**Asset Management** . . . is a systematic process of operating, maintaining, upgrading and disposing of assets cost-effectively.

- The existing tank was constructed in 1960 and has been professionally inspected in 1993, 2006, and 2011. The 2011 inspection recommended painting and safety upgrades of \$267K; expected much higher.
- The existing pump station on Greystone Street was constructed with the tank in 1960. The pumps are now obsolete and repairs are becoming increasingly more difficult.

# Asset Management



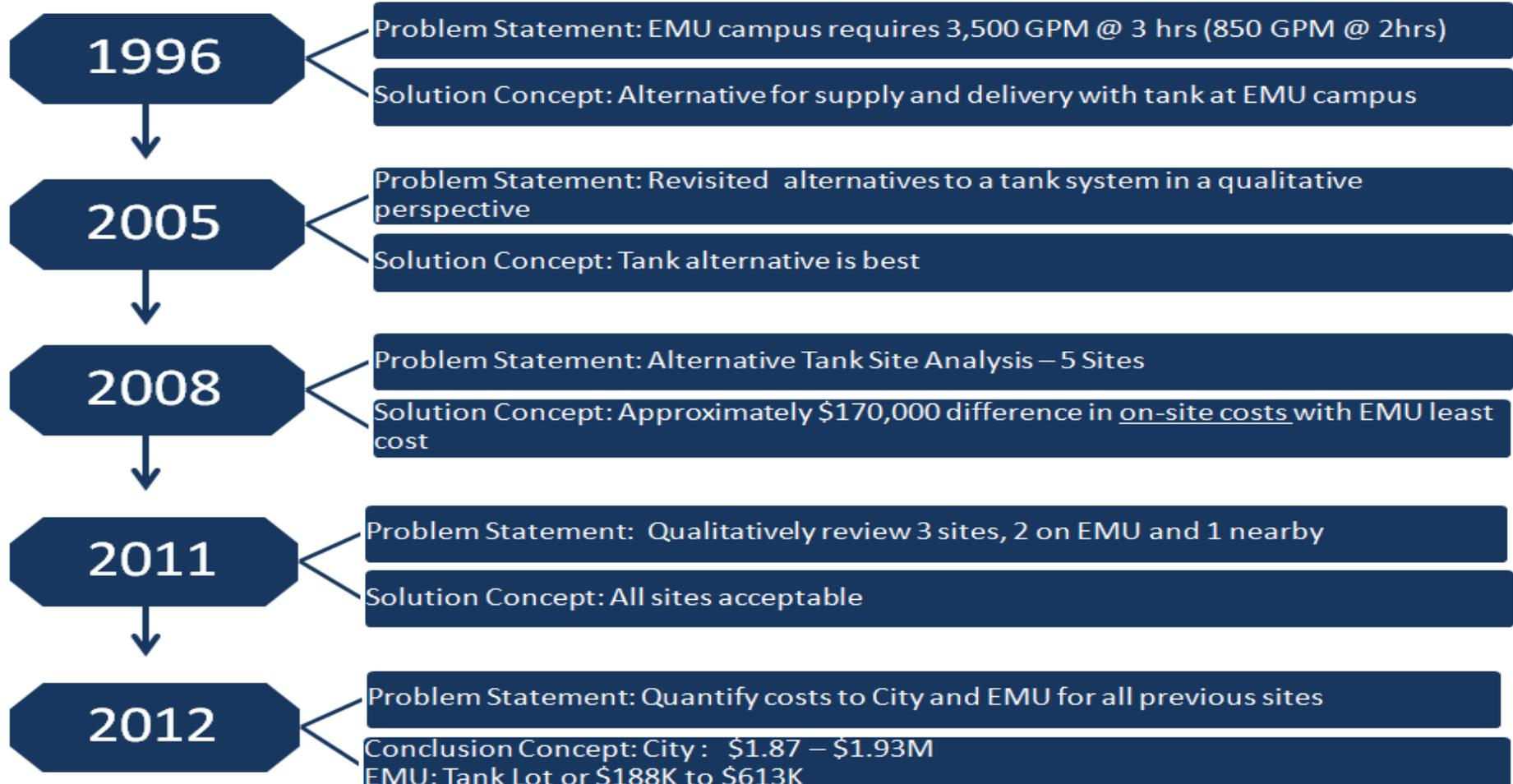
# PER Objectives



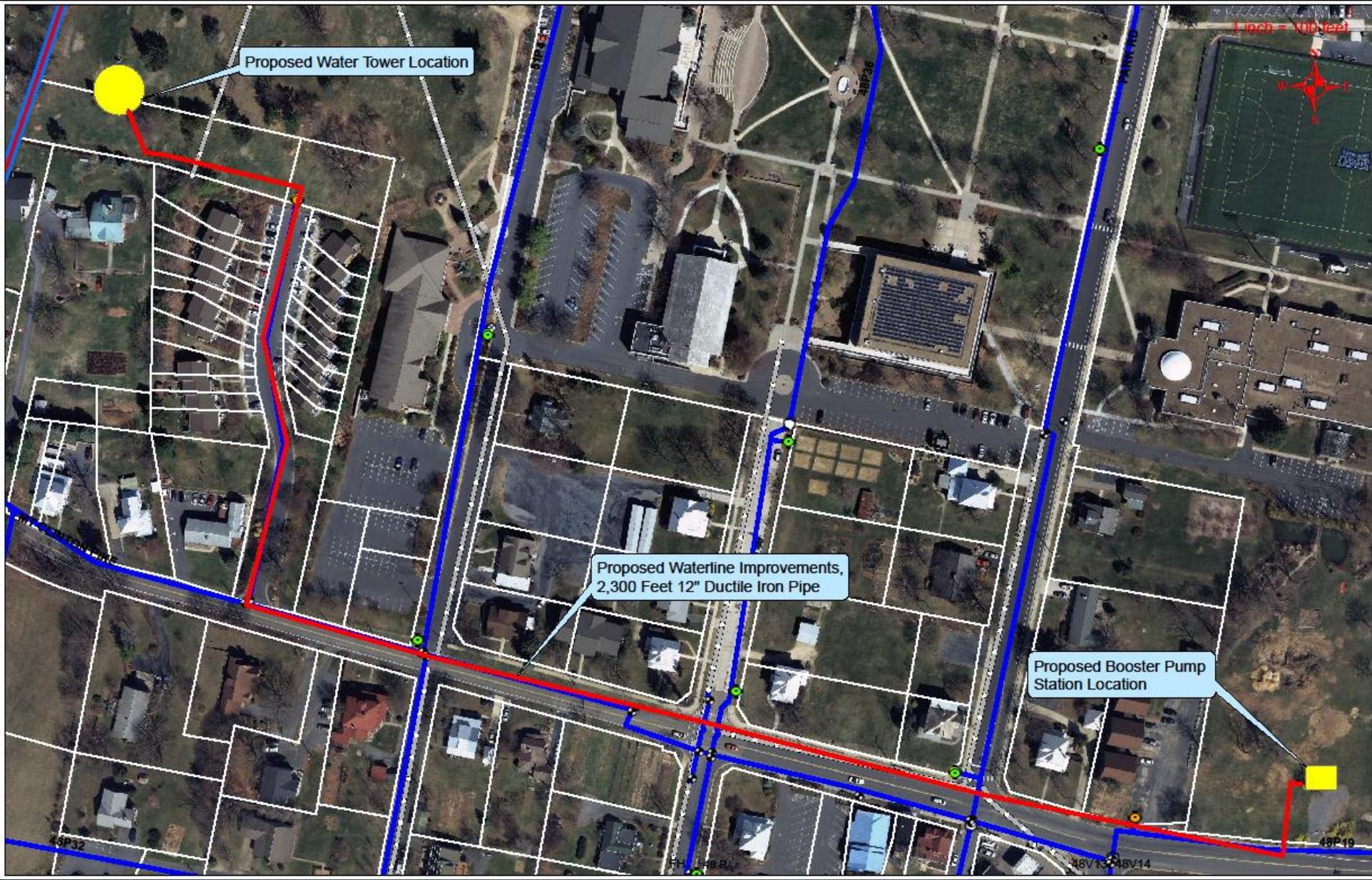
- Project Scope
- Project Cost
- Project Schedule

# Planning Process

## Park View Tank Evaluation



# Project Scope



# Scope

Composite Structure: Steel  
Bowl and Concrete Pedestal

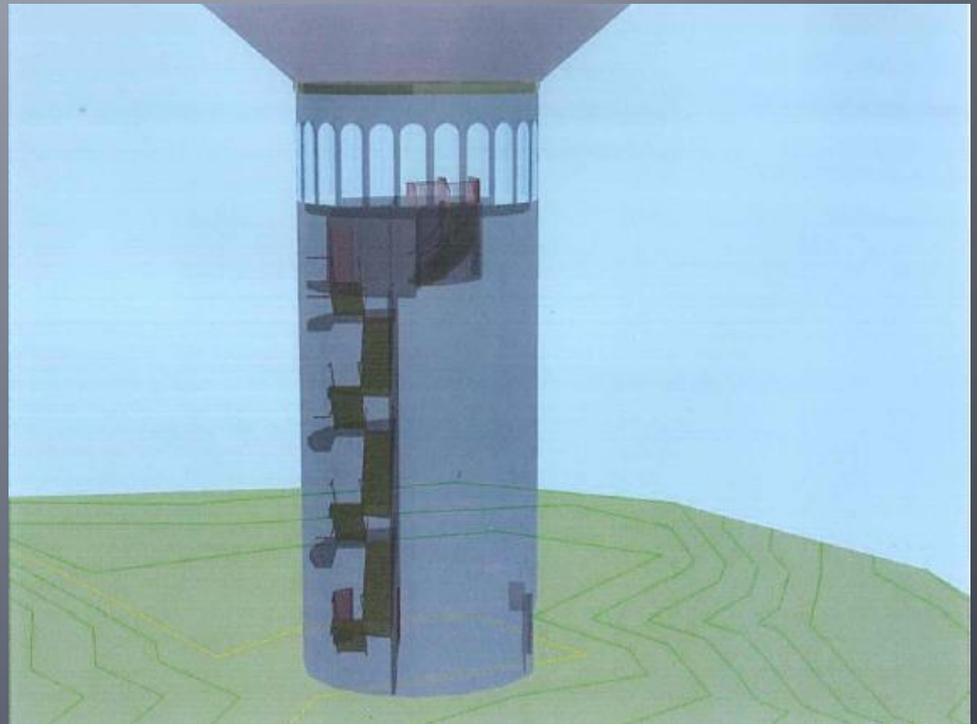
Best Life Cycle Cost

Aesthetic Options



# Scope Options for Community Input

- Type of water tank
- Color and style
- Graphics and text
- Architectural amenities
- Landscaping
- Access
- Ancillary uses
- Lighting



# Cost

Tank Structure Construction	\$1,828,000	
Tank Site Construction	\$ 421,000	
Tank Access Construction	\$ 84,000	
Pump Station Construction	\$ 342,000	
Pump Station Site Constructions	\$ 55,000	
Waterline Construction	\$ 371,000	
Tank Demolition	\$ 100,000	
Subtotal Construction	\$3,201,000	
Basic Engineering Services (7%)	\$ 224,000	
Land Acquisitions	\$ 405,000	
Legal and Administrative Services	\$ 50,000	
Non Construction Contingency (10%)	<u>\$ 48,000</u>	
Project Cost	\$3,928,000	
Option		\$3,524,000

# Customer Costs

Debt service at 30 years and 3% = \$180,000 per year

Rate impact = \$0.09 per 1,000 gallons

Monthly bill will increase anywhere from \$0.45 to \$1,200 per month

The typical residential customer will see an increase from \$160.56 per year to \$165.40. (compared to the statewide average of \$361.32)

# Schedule

2015: Site Work and Utility Construction

2016: Tank and Pump Station Construction

Activity Schedule Provided in PER