

What Condition is it in?

Probability of Failure

- Material type
- Repair history
- Static pressure
- Soil corrosivity
- Asset life consumed
 - Pipe thickness
 - Pipe strength



What Condition is it in?

Consequence of Failure

- Business/public facility service interruption
- Traffic disruption
- Cost to repair
- Public health



What is it Worth?

- Replacement Cost
 - 72 miles of water main
 - 2 Storage Tanks

\$85 million!
+ WTP costs

Major Capital Asset!

Need a Plan



Project Scope

- Data Collection/GIS Data Development, Map Update
- Storage Tank Evaluation
- Distribution System Evaluation
- Capital Improvement Planning



Data collection and integration

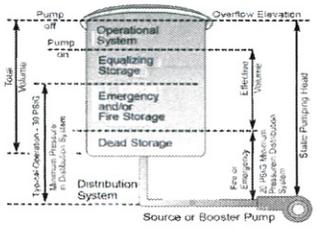
Collect available information

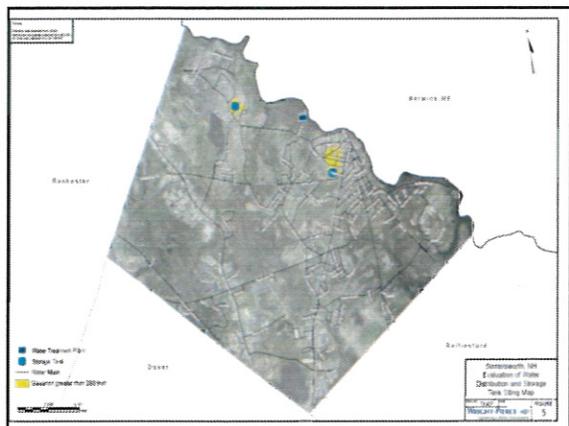
- New water mains, valves, hydrants
- Subdivisions
- Review existing mapping
- Integrate break history, hydrant and valve spreadsheet into GIS
- Develop wall maps of new information

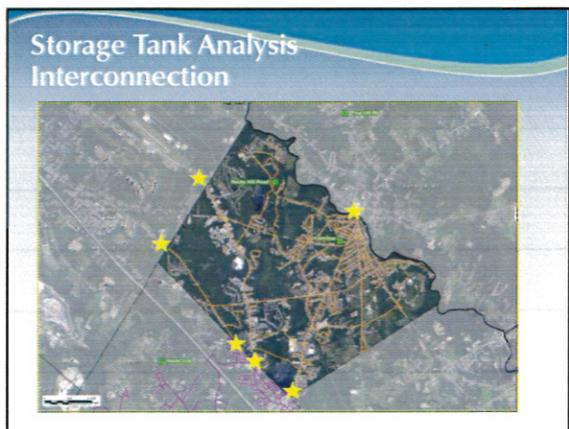


Storage Tank Analysis Quantity

- Current Active Storage Volume = 0.96 MG
- Current ADD = 1.23 MG
- Future ADD = 1.42 MG
- Consider additional storage options for future







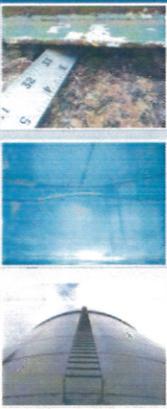
Rocky Hill Road Tank

Recommend:

- Internal/external coating replacement

Considerations:

- Operator safety
 - Safety climb system, ladder cage
- Painter's ring removal
- Base plate grouting
- Tank mixing system evaluation



Noble Pines Tank

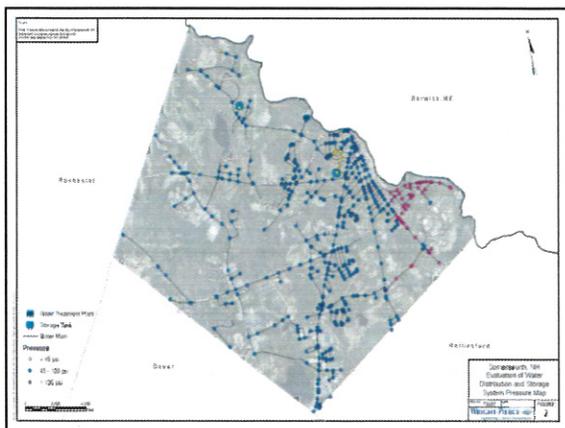
- **Recommend:**
 - 1 MG Elevated Storage at Existing Site
- **Considerations:**
 - Demolition
 - Lead Paint
 - Historical Significance?
 - Cellular Carriers

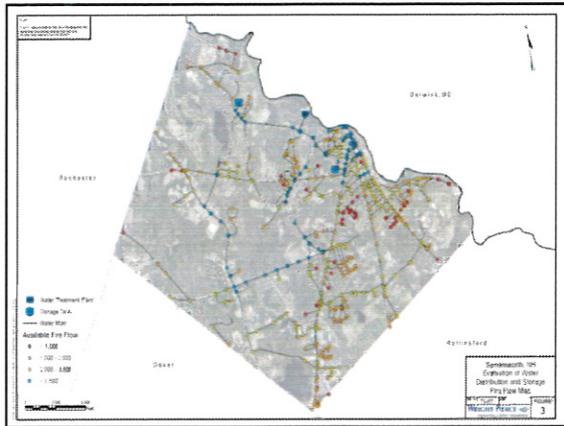


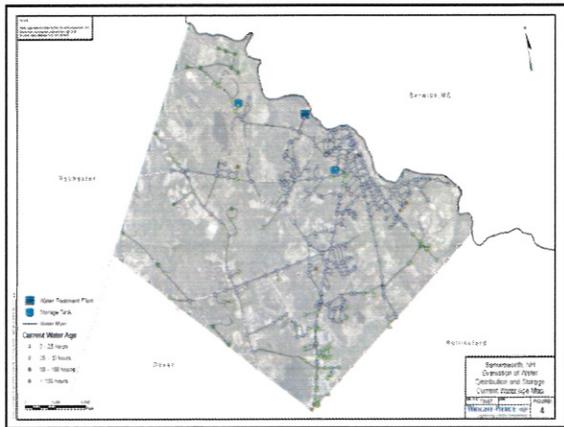
Distribution System Evaluation

- **Refine the calibrated model**
 - 17 flow tests
 - Geocode new demands
 - New piping improvements
 - Water age
 - Available fire flow
 - Normal Pressure









Business Risk Exposure

| Probability of Failure | Consequence of Failure |
|---|---|
| <ul style="list-style-type: none"> ▪ Static Pressure ▪ Pipe Material ▪ Break History ▪ Installation Date ▪ Corrosive Soils | <ul style="list-style-type: none"> ▪ Business Interruption ▪ Traffic Disruption ▪ Diameter |

- $PoF \times CoF = BRE \text{ Score}$
- Weigh additional "non-failure" factors into CIP

CIP – Intermediate Term (2020-2027)

| Type | Description | Estimated Budget |
|--------------|---|---------------------|
| Storage | 1.0 MG Elevated Storage Tank near Noble Pines | \$2,400,000 |
| Distribution | Green St - Indigo Hill Rd to Town Line | \$1,610,000 |
| Distribution | Blackwater Road - Kilda St to Lilac Ln | \$780,000 |
| Distribution | High St - Washington St to Indigo Hill Rd | \$1,200,000 |
| Distribution | High St - Commercial St to Kelwyn St | \$1,640,000 |
| Distribution | West High St - Lily Pond Rd to Rt. 108 | \$570,000 |
| Distribution | Main St - Indigo Hill to Parsons | \$1,440,000 |
| Storage | Rocky Hill Road Tank Inspections | \$10,000 |
| Distribution | Pipe Rehabilitation Program | \$1,000,000 |
| Total | | \$10,680,000 |

CIP – Long Term (2027 to 2032)

| Type | Description | Estimated Budget |
|--------------|---|--------------------|
| Distribution | High St - Indigo Hill Rd to Commercial St | \$1,830,000 |
| Distribution | Indigo Hill - Green St to Maple St Ext. | \$990,000 |
| Distribution | West High St - High to Maple | \$880,000 |
| Distribution | Green St - Washington to Indigo Hill | \$1,260,000 |
| Storage | Interconnection with Rochester | \$750,000 |
| Distribution | Tank Inspections | \$20,000 |
| Distribution | Pipe Rehabilitation Program | 1,000,000 |
| Study | Comprehensive Water Master Plan Update | \$50,000 |
| Distribution | Pipe Rehabilitation Program | \$2,000,000 |
| Total | | \$8,780,000 |

Questions / Discussions



WRIGHT-PIERCE
Engineering a Better Environment
