

Treated Water Distribution

City Council Update
March 15, 2016





PROTECT & CONSERVE BOULDER'S WATER



**CITY OF BOULDER
DRINKING WATER
PROGRAM**

5605 NORTH 63RD ST.
BOULDER, CO 80301

FOR MORE INFORMATION CALL:
303-413-7400
OR VISIT OUR WEB SITE AT:
WWW.BOULDERUTILITIES.NET

Watersheds Providing Boulder's Drinking Water

Betasso Water Treatment Facility (WTF)

- 1** Barker Reservoir Watershed
38 sq. miles
- 2** Lakewood Reservoir Watershed
21 sq. miles
- 3** Silver Lake Watershed
Owned by the city of Boulder
10 sq. miles

Boulder Reservoir Water Treatment Facility (WTF)

- 4** Colorado Big Thompson / Boulder
Feeder Canal Watershed - 1,004 sq. miles
- 5** Boulder Reservoir Watershed
9 sq. miles
- 6** Watersheds occasionally linked to
Boulder's water storage reservoirs
132 sq. miles

- Hydroelectric Facilities
- Water Treatment Facilities
- Canals / Ditches
- Source Water Pipelines
- Treated Water Pipelines

**Drinking Water Supply
Current Usage (%)**

- 40% Barker Reservoir
- 40% Lakewood Reservoir
plus Silver Lake Watershed
- 20% Boulder Feeder Canal
plus Boulder Reservoir



Approximate North

Area covered by 3D view is
approximately 4,200 sq. miles

Approximate Foreground Scale
1:43,500

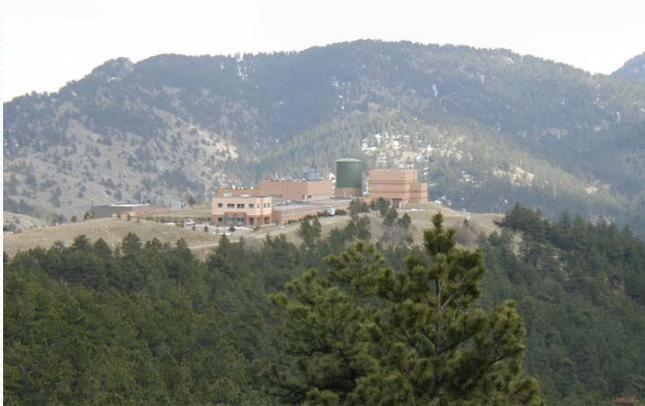
Approximate Horizon Scale
1:79,500

Date: June 2002



Computer Terrain Mapping, Inc.
1401 Walnut - Suite C - Boulder, CO 80302
www.ctmap.com • EMAIL: ctmap@ctmap.com
303-444-6730 FAX: 303-443-4856

Water, Wastewater, Stormwater & Flood Management



Water Utility Infrastructure

- 14 Dams
- 29 Miles of Source Water Pipeline
- 8 Hydroelectric Facilities
- 7 Pump Stations/Pressure Reducing Valve Stations
- 1 Pressure Reducing Valve Station



Water Utility Infrastructure

- Two Water Treatment Facilities
- 6 Treated Water Storage Tanks
- **460 miles of Treated Water Pipeline**



Water Transmission Mains



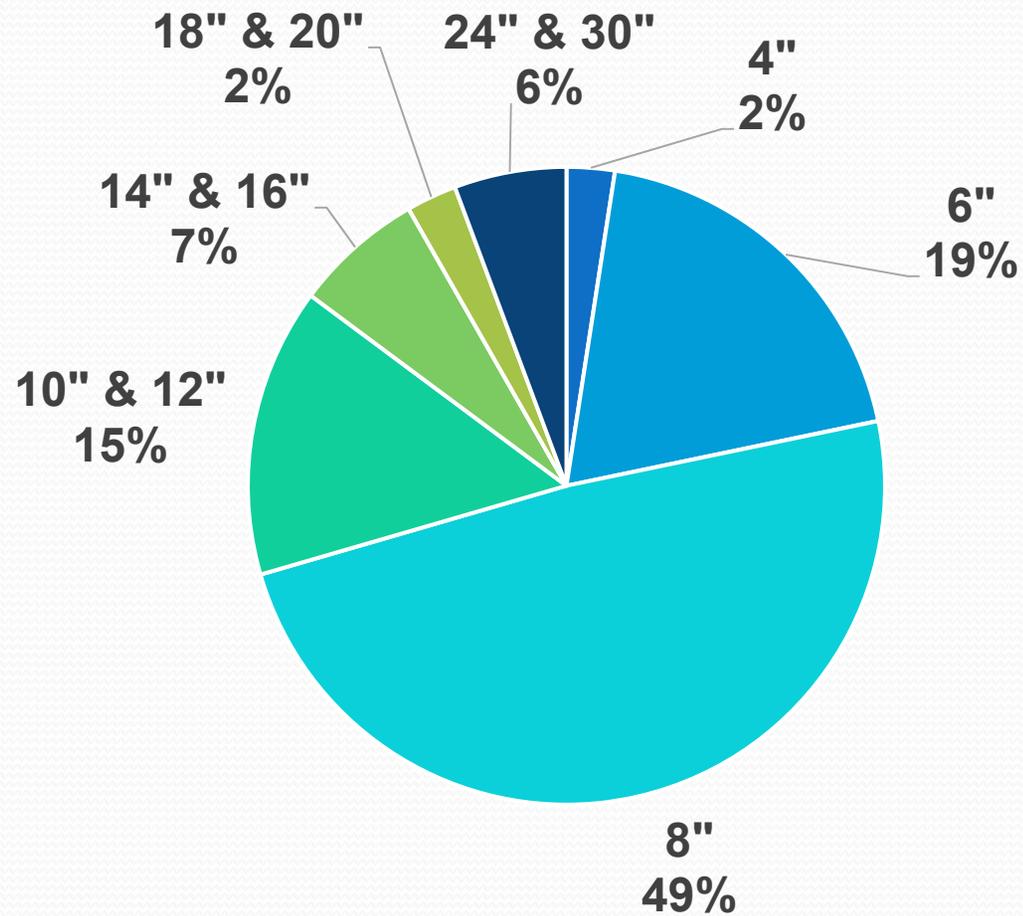
- 14-inch diameter and larger
- 65 miles
- Up to 330 psi

Water Distribution Mains

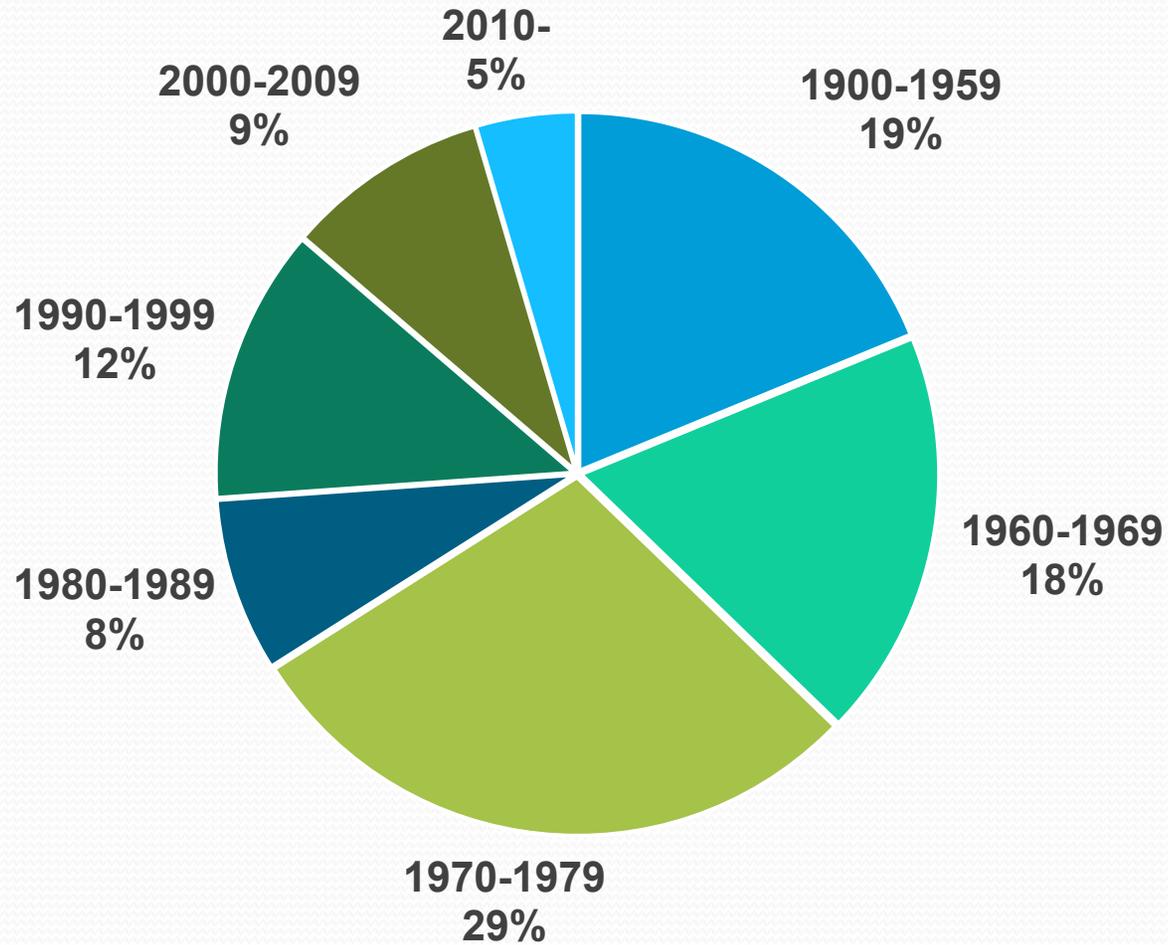


- 12-inch diameter and smaller
- 8-inch diameter in most residential areas
- 4-5 ft. deep
- 40-195 psi

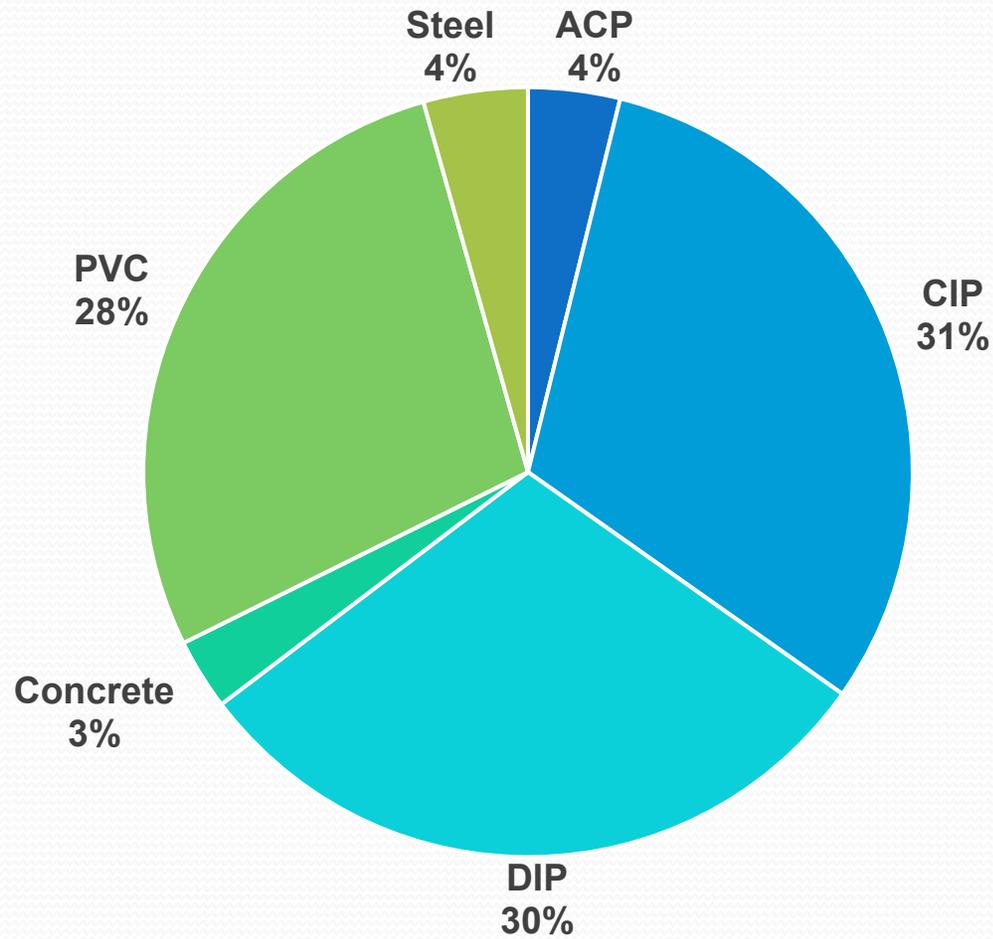
Water Pipe Diameter



Water Pipe Installation Year



Water Pipe Material



Water Valves



Water Main Breaks

- Corrosion
- Ground Movement
- Operations
- Construction









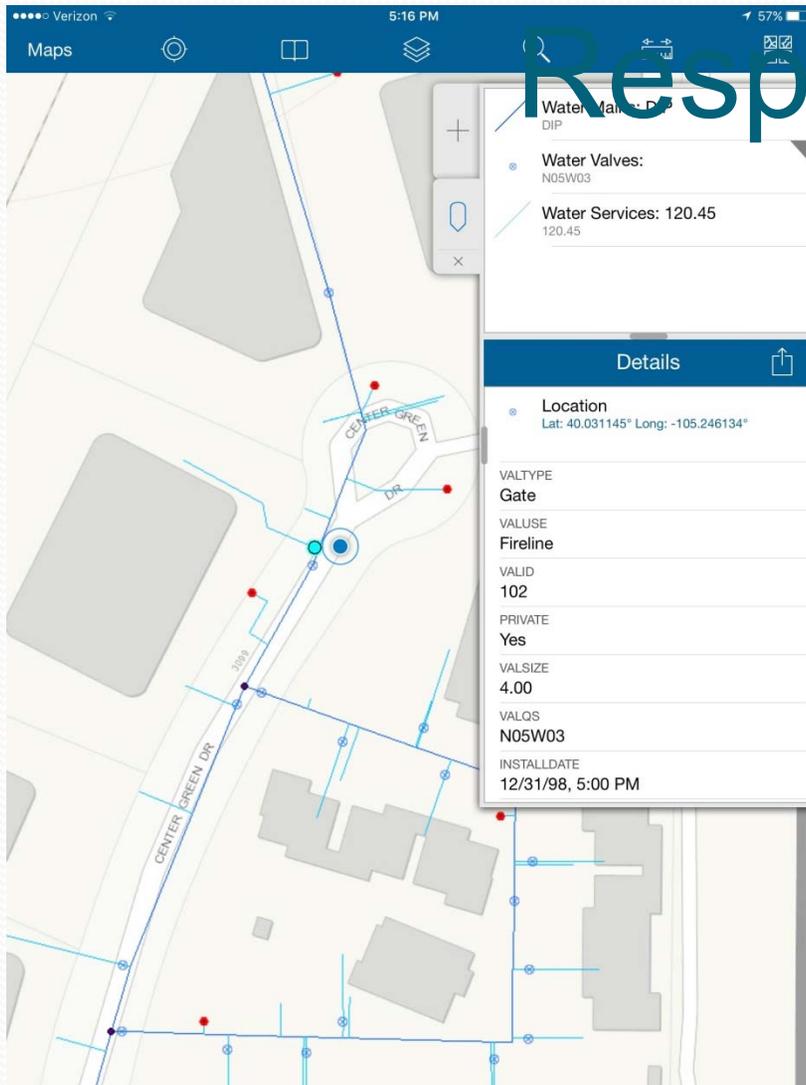


Iron Pipe Corrosion



Water Main Break

Response





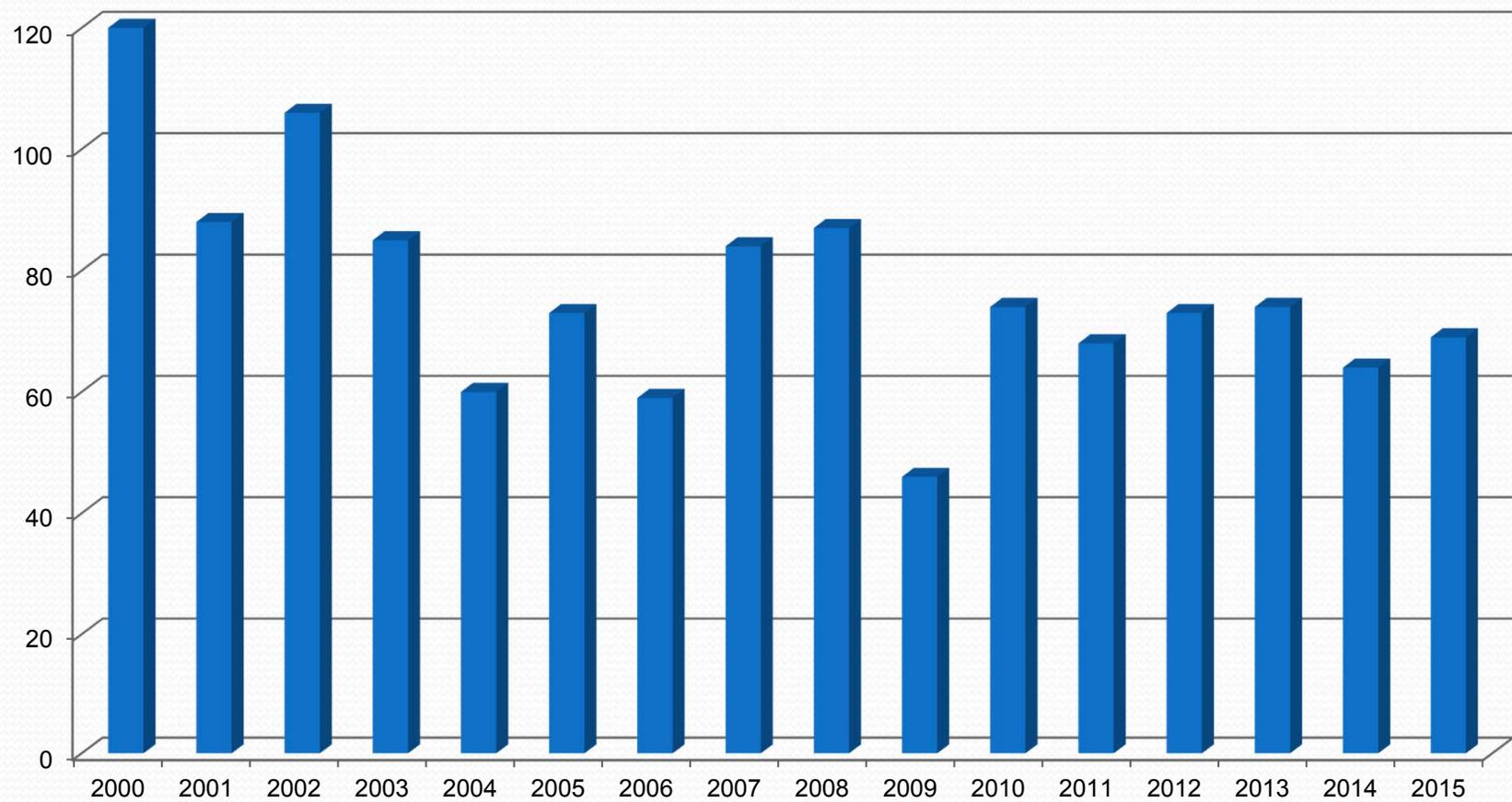
Repair Clamp



Partial Pipe Replacement



Water Break History



Pipe Replacement Program



- \$3.1 million per year
- 4 miles in 2015

Key Replacement Prioritization Considerations

- Pipe Material
- Pipe Age
- Break History
- Soil Conditions
- Consequences of Failure



Other Preventative Maintenance

- Leak Detection
- Valve Operation
- Hydrant Repair & Replacement
- Internal Corrosion Control



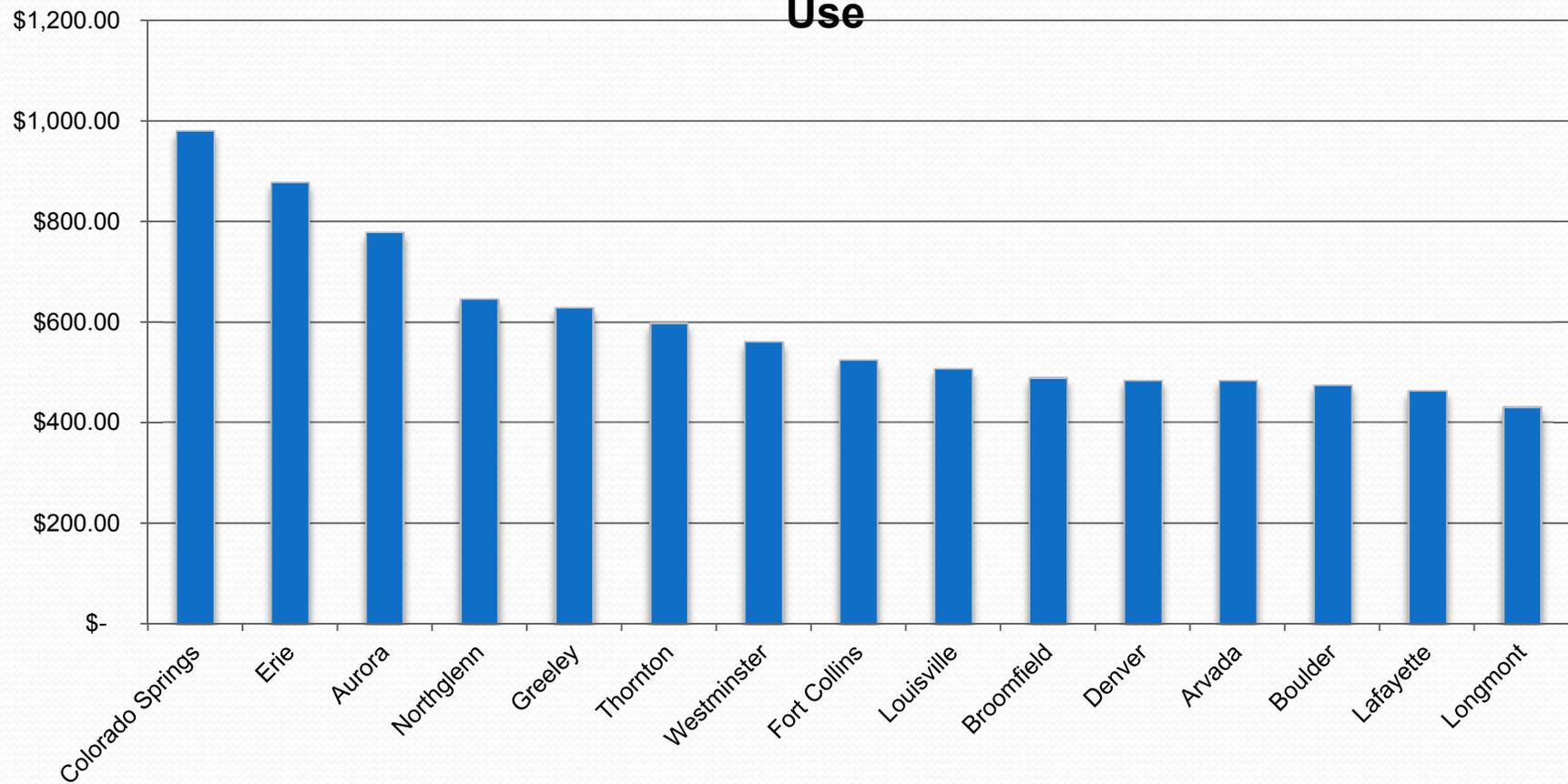
Financial Considerations



- Annual Budget ~ \$32M
- 1 gallon ~ \$0.0037
- 1% Rate Increase ~ \$250k

Rate Comparisons

2016 Annual Water Bill – Typical Single Family Residential Use

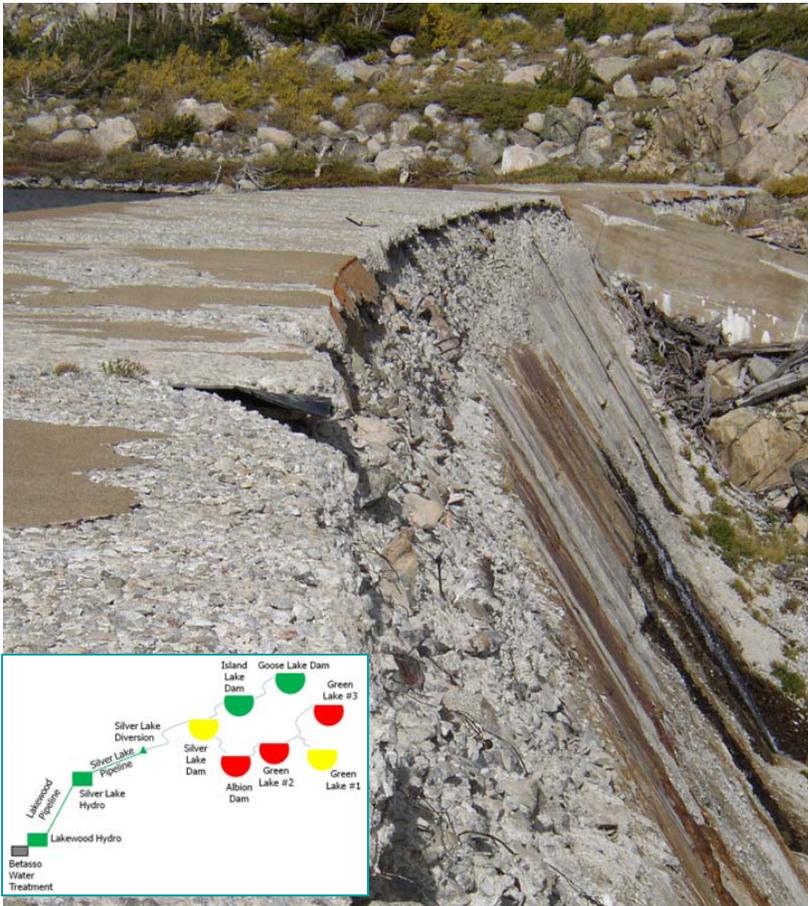


Alternatives

- ❑ 24/7 Water Distribution Operator Staffing
- ❑ Fire Department Operation of Water Distribution System
- ❑ Pipe Inspection
- ❑ Early Warning Technology
- ❑ Increased Preventative Maintenance
- ❑ Increased Capital Investment



Capital Investment





Questions & Next Steps