

Governor's Office of Management and Budget

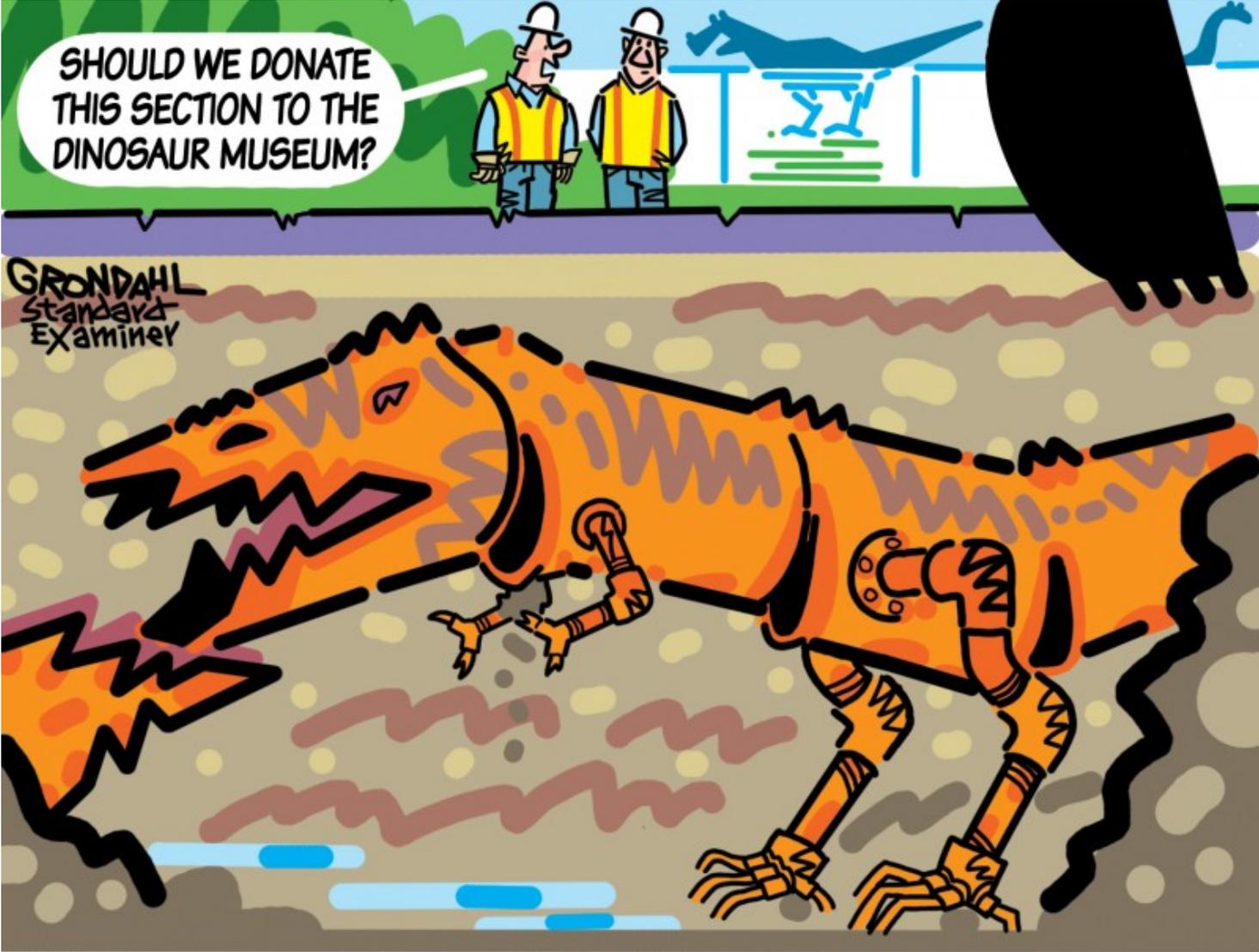
Executive Water Finance Board

June 11, 2019

OGDEN CITY CONSERVATION EFFORTS



I. REPAIR AND REPLACEMENT OF INFRASTRUCTURE



OGDEN'S MONSTER WATER PROJECT

I. REPAIR AND REPLACEMENT OF INFRASTRUCTURE

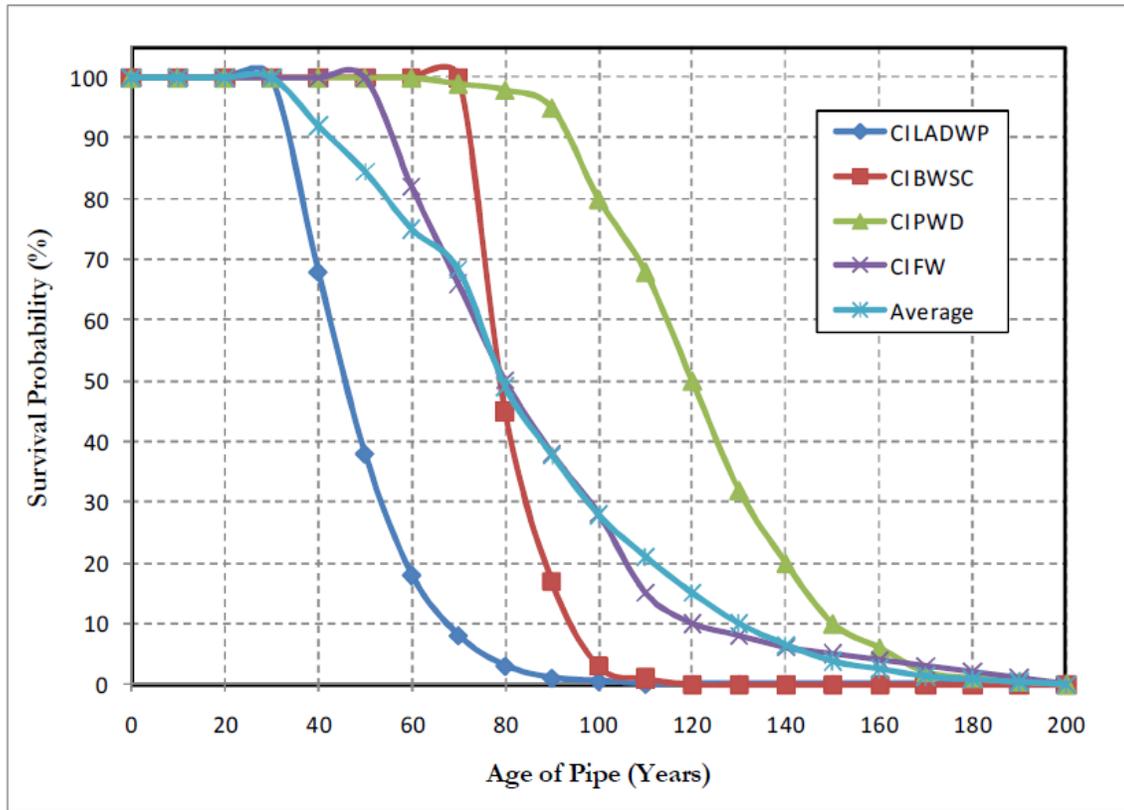


Figure 8.8- Survival curves of cast iron pipe

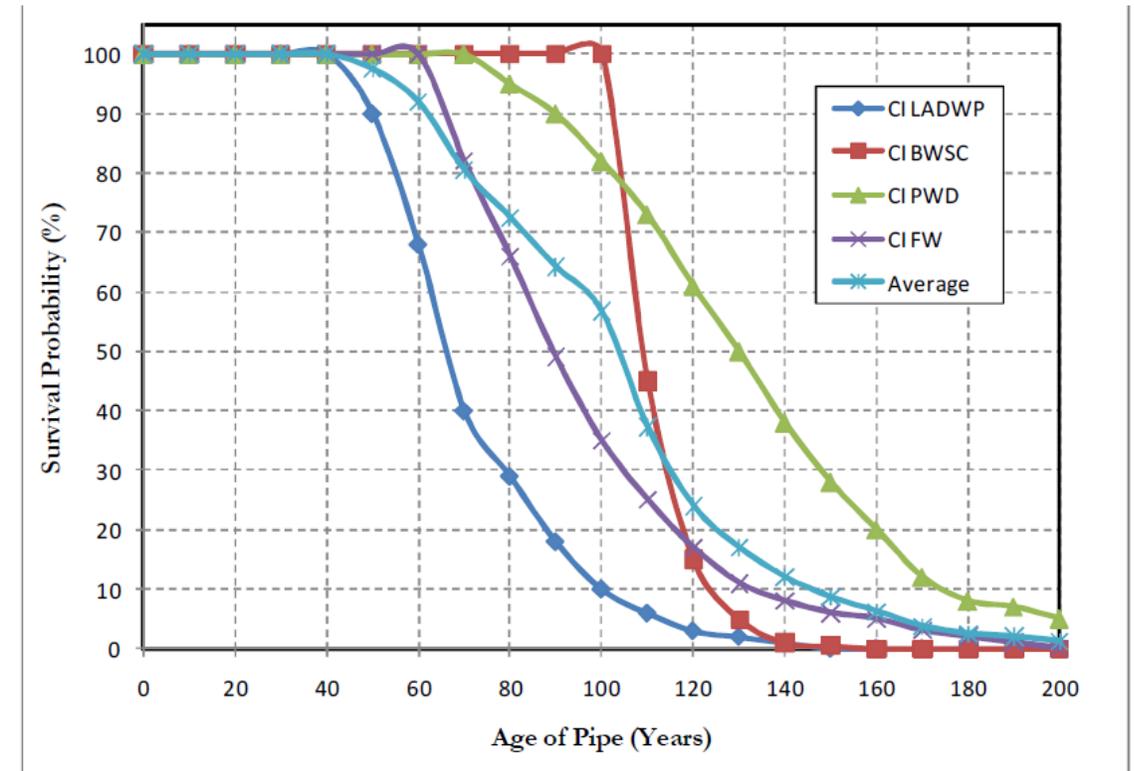
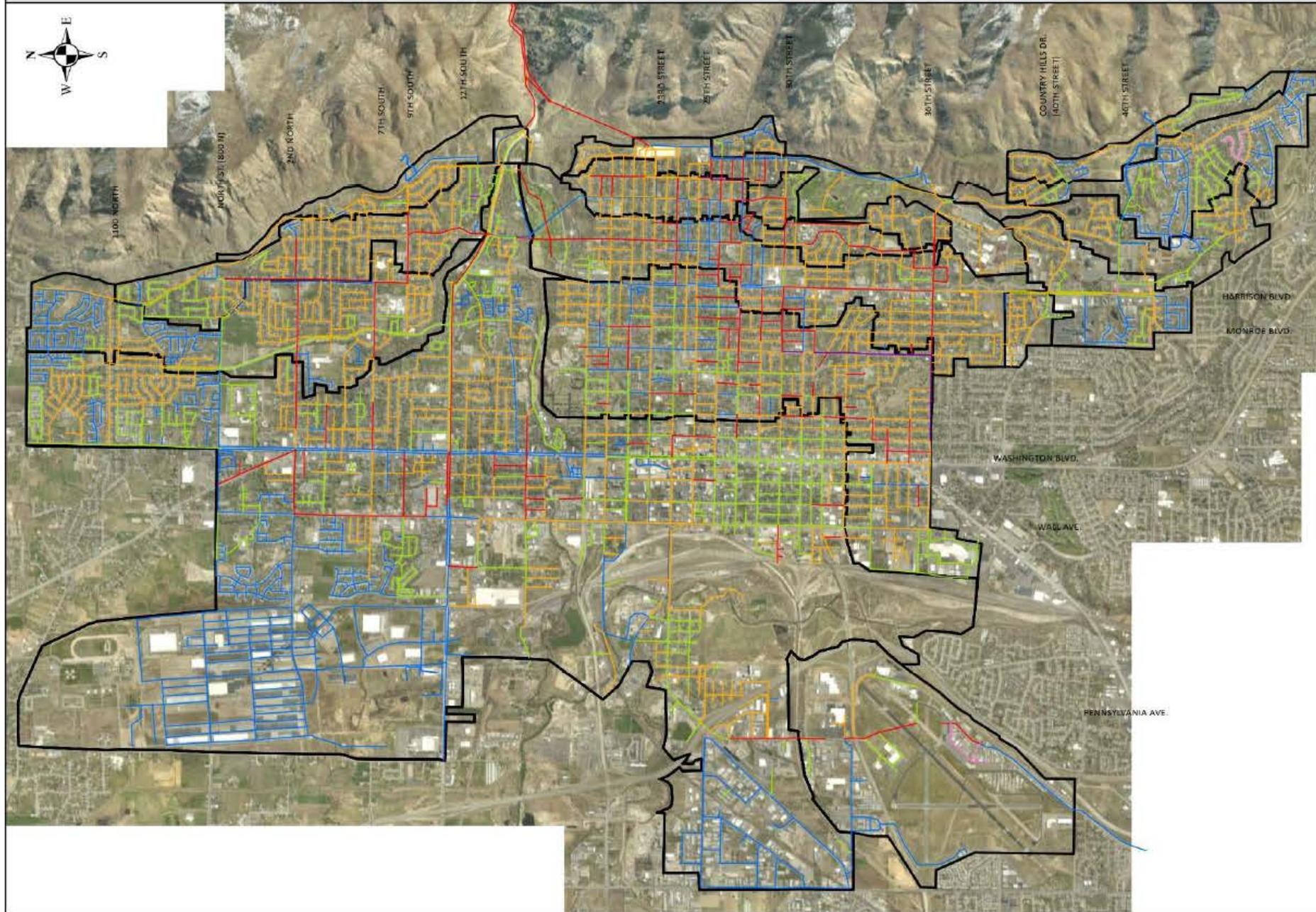


Figure 8.9- Survival curves of ductile iron pipe

Goal to replace system between 80 and 100 years (1.2% of system each year)

FIGURE 8.1- PIPE BY YEAR

MAP LEGEND



I. REPAIR AND REPLACEMENT OF INFRASTRUCTURE

Table 8.1 - Water Pipe Attributes Categorized by Age

Year	Length (LF)	Length (MI)	Percentage (%)
Unknown	27,798	5.26	1.4%
< 1930	11,154	2.11	0.6%
1930's	140,720	26.65	7.2%
1940's	181,776	34.43	9.3%
1950's	336,237	63.68	17.3%
1960's	364,199	68.98	18.7%
1970's	302,305	57.25	15.5%
1980's	194,268	36.79	10.0%
1990's	192,710	36.50	9.9%
2000's	197,907	37.48	10.2%
Totals	1,949,074	369	100.0%

I. REPAIR AND REPLACEMENT OF INFRASTRUCTURE

Table 8.11 - Replacement Length and Cost for Aging Pipes

Year	LF	LF/Year	\$/Cycle	\$/Per Year
2021	229,696	45,939	\$ 65,004,000	\$ 13,001,000
2026	47,150	9,430	\$ 13,344,000	\$ 2,669,000
2057	538,359	17,366	\$ 152,357,000	\$ 4,914,700
Totals	815,205	-	\$ 230,705,000	-

Table 8.12 - Length and Cost of Pipe Replacement (1.2% of system/year)

Year	LF	LF/Year	\$/Cycle	\$/Per Year
2021	101,901	20,380	\$ 28,837,900.00	\$ 5,768,000
2026	101,901	20,380	\$ 28,837,900.00	\$ 5,768,000
2036	203,801	20,380	\$ 57,675,800.00	\$ 5,768,000
2046	203,801	20,380	\$ 57,675,800.00	\$ 5,768,000
2056	203,801	20,380	\$ 57,675,800.00	\$ 5,768,000
Totals	815,205	-	\$ 230,703,200	-

Table 8.12a - Length and Cost of Pipe Replacement w/ 3% inflation

Pipe Replacement w/ 3% Inflation				
Year	LF	LF/Year	\$/Cycle	\$/Per Year
2021	101,901	20,380	\$ 30,623,095.35	\$ 6,124,619
2026	101,901	20,380	\$ 35,500,560.52	\$ 7,100,112
2036	203,801	20,380	\$ 88,864,664.18	\$ 8,886,466
2046	203,801	20,380	\$ 119,426,677.74	\$ 11,942,668
2056	203,801	20,380	\$ 160,499,468.35	\$ 16,049,947
Totals	815,205	-	\$ 434,914,466	-

II. Water Rates

- Fixed costs (85% - 90% versus variable costs (10% - 15%)
- Base Rate (37% - 43%)
- Usage Rate / Tiers (57% - 63%)
- Sewer Charge (over 6,000 gallons winter use)

Without Secondary-Summer Rates: (May 1st - October 30th)	
Base Rate: based on meter size	
3/4" and Smaller	\$ 20.90
1"	\$ 34.58
Usage Rate: per thousand gallons	
0 to 6,000	\$ 1.79
6,001 to 42,000	\$ 2.74
42,001 - 84,000	\$ 3.17
Above 84,000	\$ 3.57

With Secondary-Year Round Rates:	
Base Rate: based on meter size	
3/4" and Smaller	\$ 20.90
1"	\$ 34.58
0 to 6,000	\$ 1.79
6,001 to 12,000	\$ 2.74
Above 12,000	\$ 3.57

III. How Conservation and Affordability Play into Tiered Rate Structure

