

OUR CITY OF MADISON



Water Utility

Water Pipeline Replacement

Introduction

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CITY OF MADISON

Water Pipeline Replacement

- Overview
- Elements of a Great City
- Key Staff
- Legislative Actions
- Community Engagement

Overview



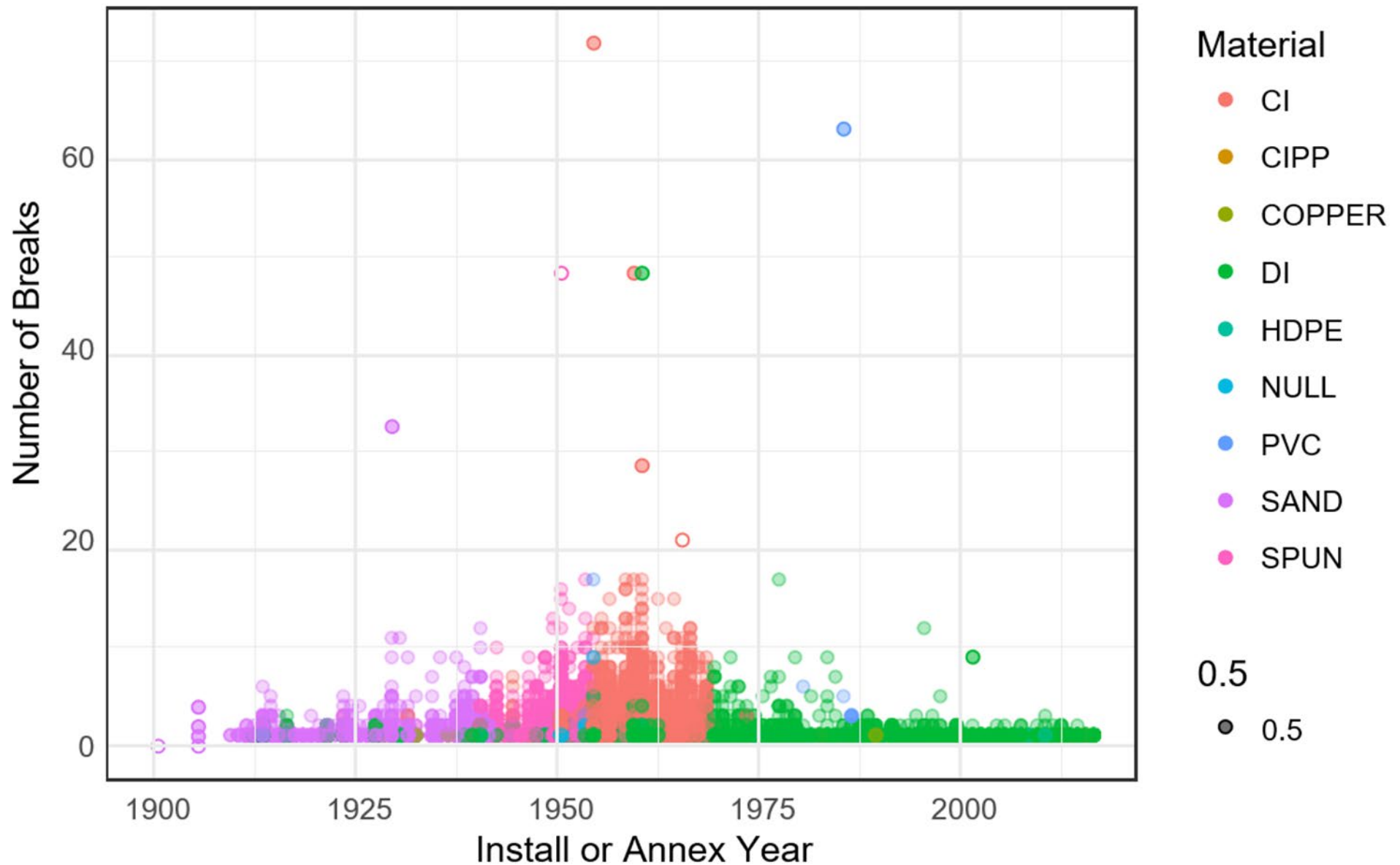
Overview

- Over 920 miles of water pipelines throughout Madison.
- A variety of materials but most common is iron-based casting.
- Various stages of overall life-cycle:
 - Some pipelines over 100-years old.
 - Some pipelines now under-sized based on modern water demands.
 - Some pipelines showing an increasing trend in breaks, deterioration as they age.
- Using asset management principles, Madison Water Utility identifies pipeline areas that are due for replacement and creates/coordinates projects to address these areas.

Overview

- Pipeline replacement is generally budgeted for annually as part of the City's capital budget.
- Funding is largely derived from water rate revenue:
 - \$5M as of 2024
 - May change depending on rate structures ordered by the Wisconsin Public Service Commission
- Long-term goal of perpetually replacing 1% of the City's water pipelines every year:
 - Over 9 miles of pipe annually
 - Potentially \$15M in 2024 dollars annually, based on current estimates

Overview – Historical Breaks



Overview – Pipeline by Numbers

Pipe Size (Diameter, in.)	pre-1900	1901-1920	1920-1940	1941-1960	1961-1970	1971-1980	1981-1990	1991-2000	2001-2010	2011-2020	2021-2030	Total	Percent of Total System
0.75			118	231	61	13	121					544	0.01%
1.00			581	1,784	409	363		284	139	12	51	3,623	0.07%
1.25			464									464	0.01%
1.5			30	768	318	97	450	173		210		2,046	0.04%
2				3,536	64	4	336	219	144	756		5,059	0.10%
3				317	256	151						724	0.01%
4	9,479	11,902	19,017	26,322	2,314	133	1,606	3,378	660	701	59	75,571	1.55%
6	13,892	54,000	124,609	689,108	282,662	87,564	36,197	33,234	18,574	65,412	3,531	1,408,783	28.94%
8	2,278	16,976	34,269	94,208	62,684	159,628	152,777	307,724	481,767	375,366	54,964	1,742,641	35.80%
10	409	4,046	34,239	101,310	57,210	75,336	121,447	125,378	73,255	24,218	6,122	622,970	12.80%
12	613	9,003	18,488	16,270	56,319	42,807	59,205	135,597	134,125	172,333	26,704	671,464	13.79%
14	768		44		1,059	33			1,562	185		3,651	0.08%
16		442	142	3,538	30,140	40,221	29,788	55,522	62,416	47,276	231	269,716	5.54%
18						25						25	0.00%
20		856	6,678		10,671	16,584	7,281	32	12,091	3,251	353	57,797	1.19%
24					2,178		38		253			2,469	0.05%
Total	27,439	97,225	238,679	937,392	506,345	422,959	409,246	661,541	784,986	689,720	92,015	4,867,547	100%
Percent of Total System	0.56%	2.00%	4.90%	19.26%	10.40%	8.69%	8.41%	13.59%	16.13%	14.17%	1.89%	100%	
	Secondary Replacement Focus			Primary Replacement Focus									

*The source of this information is a report run on data in our GIS system based on work completed by December 31, 2023.

Overview – Options for Addressing

- **LOW RISK REDUCTION VALUE:**

- **MEDIUM RISK REDUCTION VALUE:**

- **HIGH RISK REDUCTION VALUE:**

REPLACEMENT

Vs.

REHABILITATION

Vs.

SPOT REPAIR

Vs.

...etc.

STATUS QUO / “RUN TO FAILURE”?

SPOT REPAIR?

RENEWAL INVESTMENT



Elements of a Great City



Elements of a Great City

Gr

Green &
Resilient

Hs

Health &
Safety

- Green & Resilient
- Health & Safety

Key Staff



Key Staff

Name	Title/Role	Phone	Email
Pete Holmgren	Chief Engineer	608.261.5530	pholmgren@madisonwater.org
Adam Wiederhoeft	Principal Engineer	608.266.9121	awiederhoeft@madisonwater.org

Legislative Actions

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Legislative Actions

Description	File #	Date	Action
Public Service Commission Final Rate Decision (2022)	<u>455440</u>	12/29/2022	Ordered
Wisconsin DNR Code Chapter NR811	<u>Sub-chapter X</u>	(Various)	Enacted
Approval of 2025 Standard Specifications for Public Works Construction	<u>86639</u>	2/3/2025	Enacted

Community Engagement

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Community Engagement

- [Water Utility Projects Webpage](#)
 - Some major pipeline projects may be included here.
- [Public Works Contracts](#)
 - Many pipeline replacement projects are part of larger City reconstruction work.
- [Community Advisory Process](#)
 - For major Water Utility-led pipeline projects, as applicable.

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Thank You!

Additional Information:

www.madisonwater.org

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