WESTMINSTER
COLORADO

Discussion of Water & Wastewater Infrastructure

Special Study Session #2

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Tuesday, October 20, 2020

Discussion of Water & Wastewater – Schedule, Tasks

Meeting Number	Date	Topics for Discussion	Status?
Special Study Session #1	10/8/20	• Setting the Stage • Community Participation • Water and Wastewater Infrastructure – System Focus	• Completed • Completed • Started
Special Study Session #2	10/20/20	• Continuation of Water and Wastewater Infrastructure – System Focus • Meter Replacement Project discussion • Community Engagement follow up discussion	• Completing Tonight • On agenda • On agenda
Special Study Session #3	11/5/20	Water Costs and Rates	
Special Study Session #4	11/17/20	Wastewater Costs and Rates	
Special Study Session #5	12/15/20	Options and Issues	

Themes in Community Comments/Concerns

- Meters (accuracy, changes to measurement, increased cost)
- Overall rates and comparison to other areas
- Tier III rate, impacts on owners of large lots
- Billing periods (variability, length, impact on monthly bills)
- PWU available financial resources, whether rate increases are needed
- Numbers of taps, how they affect rates (growth and development)
- Impacts of hot summer weather on usage and rates

When Topics of Concern

Infrastructure – October 20 continuation of conversation

- Meters – as part of the overall infrastructure

Water Rates – November 5 / Wastewater Rates – November 17

- Overall rates and comparison to other areas
- Tier III rate in particular
- Billing periods (meters will come in again here, too)
- PWU resources and the $100M
- Numbers of taps affecting rates (growth and development)

Policy and Options Discussion (December date TBD)

- Rates generally (and relationship to all the above topics)
- Impacts of weather on usage and rates - whether/how to address

Here's the Path for Our Discussion

Staff presentation on evening's topics	Council questions	Council discussion
• Answering Council questions from interviews • New approach to sharing the information • Unpacking of assumptions and expectations	• Clarifying questions to ensure we all have the same understanding • Identification of questions that weren't answered for staff to circle back	• Have your questions on this topic (if you had them) been answered? • What thoughts do you have about this information? • *We aren't making policy recommendations or decisions at this time.*

City Council Interests

- Protect public health safety
- Provide sustainable, efficient, and reliable water infrastructure
- Ensure affordability/lower water rates that offer a better quality of life (and do not force people to choose water over other vital costs of living)
- Conserve water
- Balance structural needs with resident pricing
- Invest in a reasonable and responsible manner
- Ensure equity and that people pay their fair share
- Focus on duty of care
- Create a plan that provides for a safe, clean, and dependable water system that meets current and future needs of Westminster
- Build a strong foundation for the next generation and invest in infrastructure for the future
- Help people who are hurting financially with their water bills
- Prevent failure that could impact residents and businesses
- Ensure water quality

A WORKSHOP *DISCUSSION!*

Use first names: Let's talk to each other as people, not jobs, titles, and positions.

Assume good intentions: Everyone wants to do what's right for the city and its residents.

Acknowledge the range of views: Reasonable people can disagree about how to solve a problem.

Be optimistic: People who disagree can (and regularly do) solve problems anyway!

Ask questions: Work to understand the issue and how others understand it, not to convince anyone of your own opinion.

Disagree with civility:

- "That's not how I understand it." vs "That's wrong."
- "I remember that differently." vs "That's not what happened."

Be open and creative.

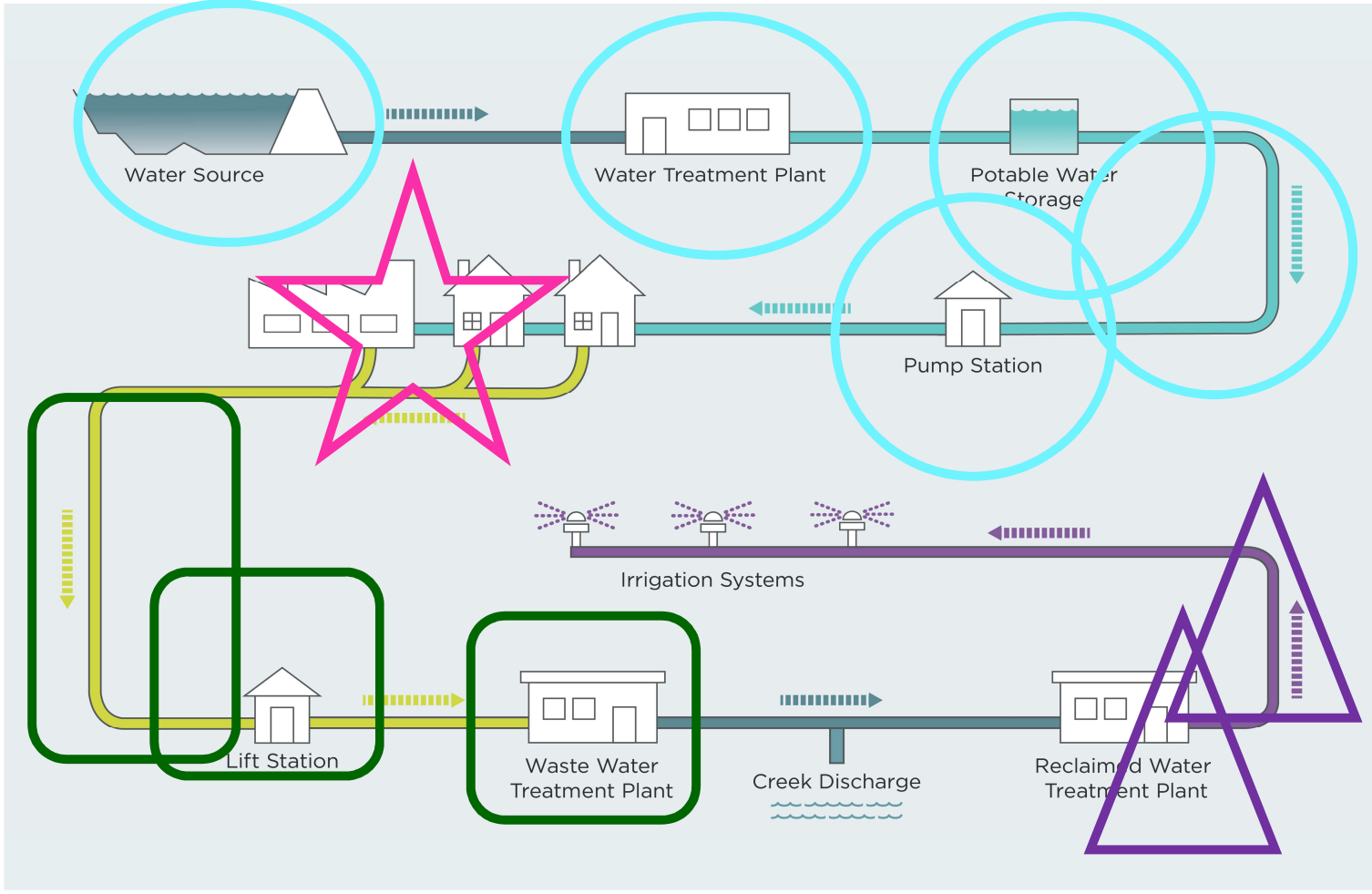
- What if?
- Could we?
- Yes, if!
- ~~No, because…~~

Meeting #1, Part B – Water & Wastewater Infrastructure Focus

Meeting #1 Covers Water and Wastewater Infrastructure from a System Focus

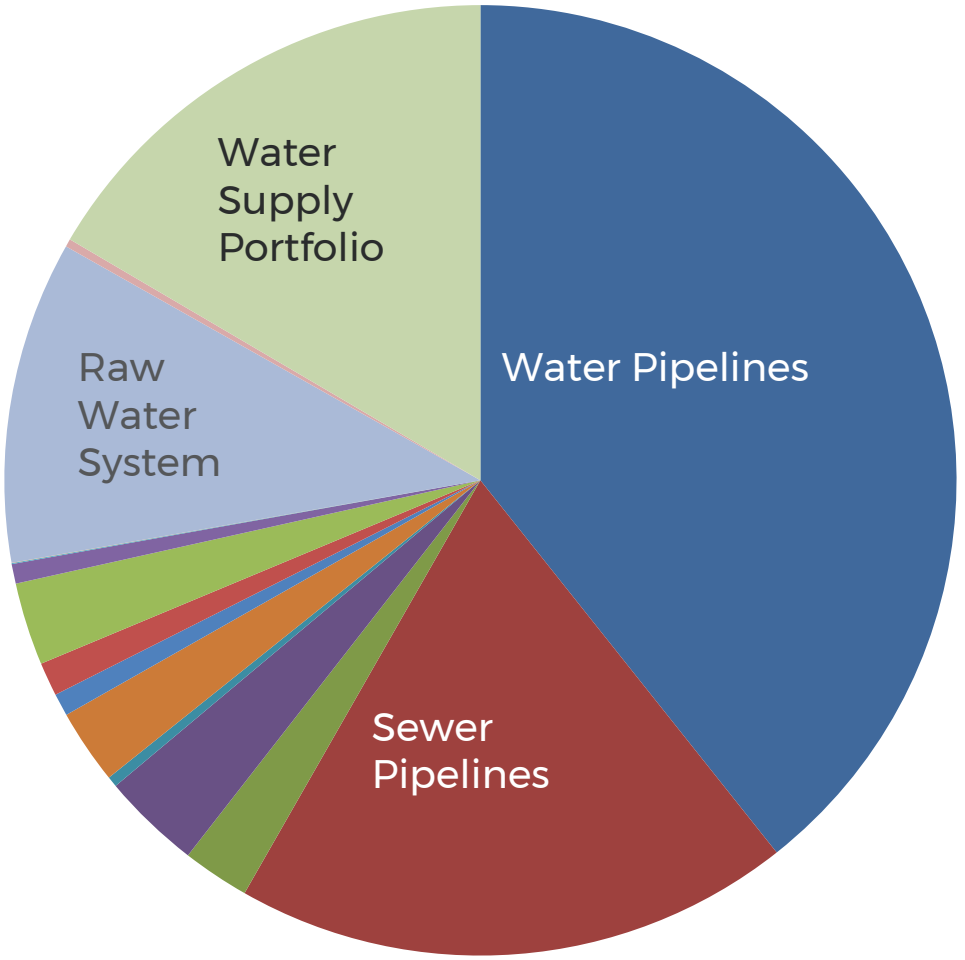
- Format is to respond to the 6 Questions identified in the Process Proposal
- System Focus – water and wastewater infrastructure go together
- Ask questions and provide comments – after each question we will pause for questions and discussion

PRE Question 1: What infrastructure is included when we talk about rates?



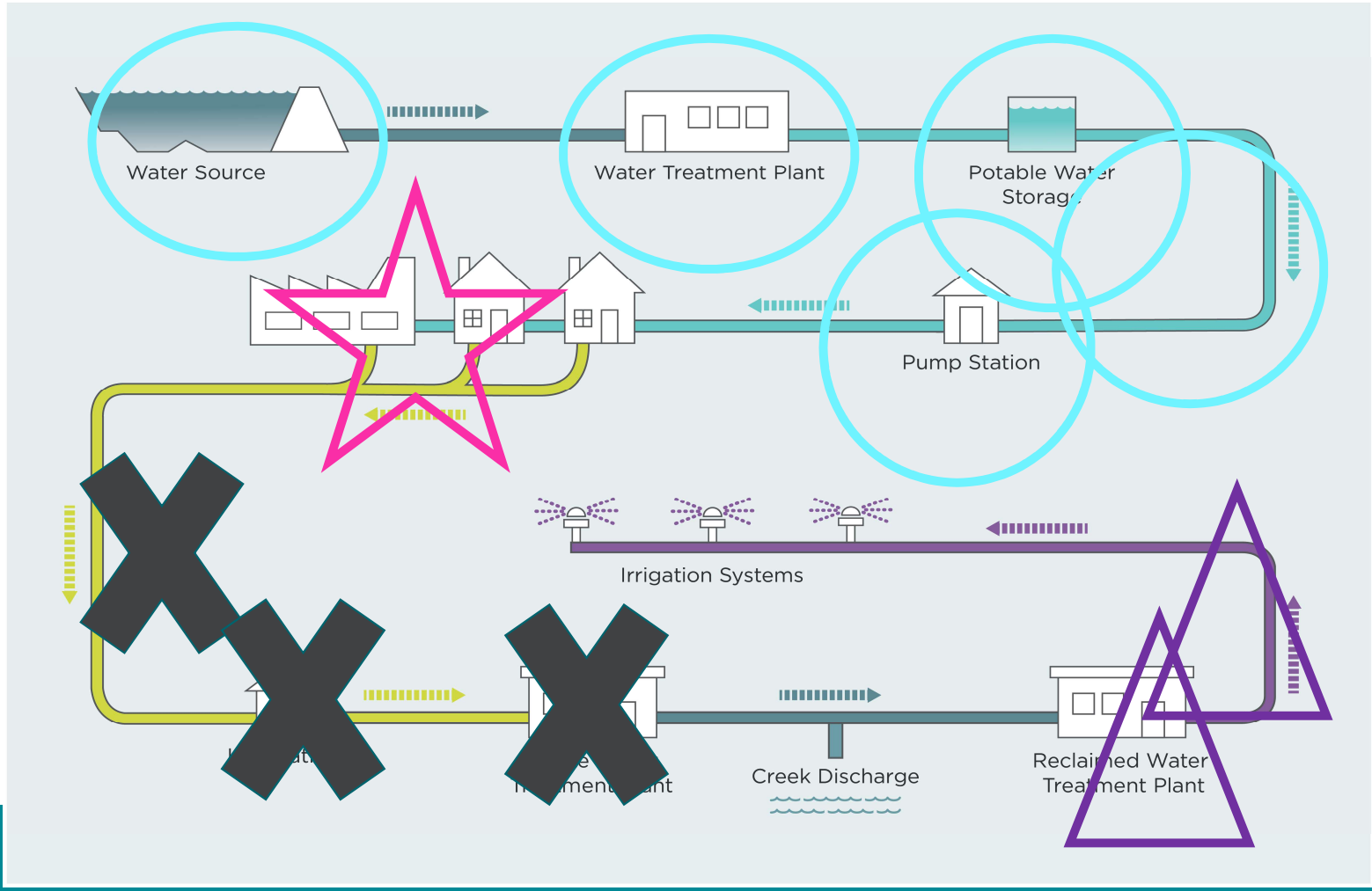
PRE Question 1: What infrastructure is included ?

The 4 Largest Utility Areas represent 86% of the $4B value of the Utility

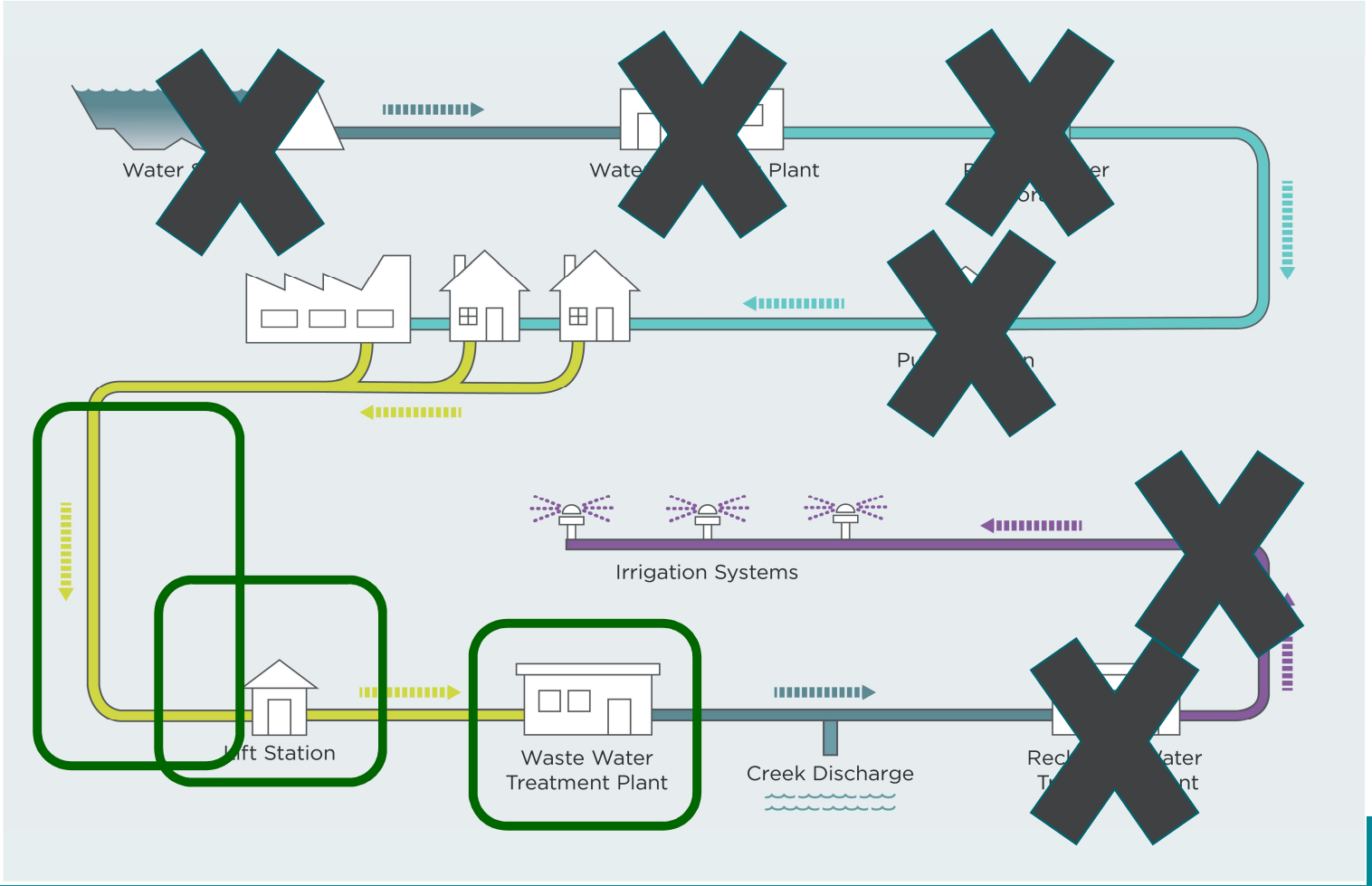


The 11 remaining Utility Areas represent all the rest: reclaimed pipeline, meters, pumping stations, 4 different treatment facilities, water quality labs, and communications system

Question 1: What infrastructure is included with water rates?



Question 1: What infrastructure is included when we talk about wastewater rates?

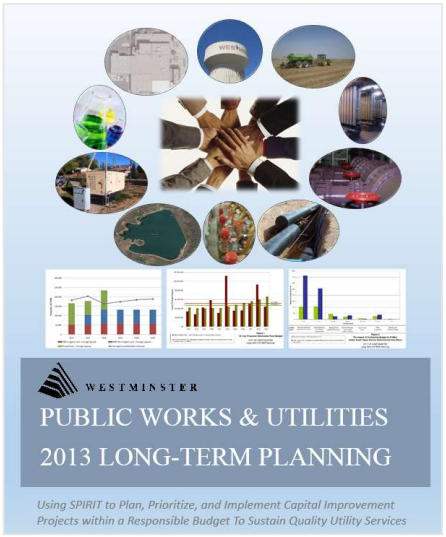


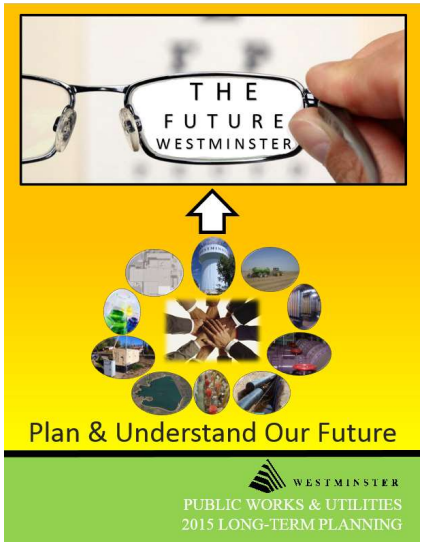
Comments, Questions, Discussion about Response to Question #1?

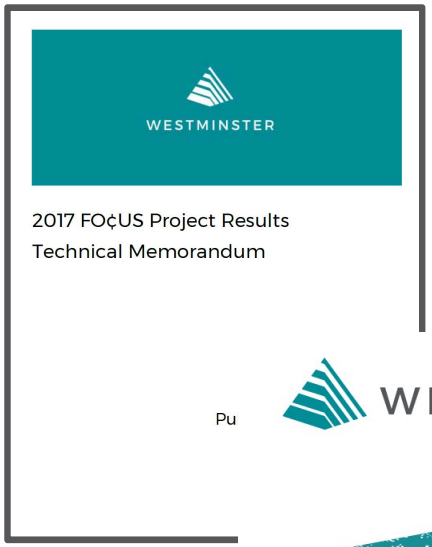
Question 2: What is the age, rate of decline, and history of repair/upgrade/replacement of water and wastewater infrastructure?

- Long Term Planning
- Asset Database

In 2010 Utilities Engineering Initiated Long-Term Planning for Capital Improvements Projects







WESTMINSTER

TAKE CARE OF WHAT WE OWN

2020 LONG TERM PLANNING

Asset Database is the Core of Long Term Planning

Spreadsheet Numbering	Utility Area Number	Water / Wastewater	Utility Area Description	Asset Numbering	Treatment Process / Basin / Zone	Major Component / Subasset / Subsystem	Discipline	Discipline Installation Year	Significant Rehabilitation Year	Codes for Useful Life Modifiers	Original Useful Life	Useful Life Multiplier (always 1.0 or greater)	Stretched Useful Life	Capital Useful Life Remaining	Actual Replacement Year	Stretched Replacement Year	Remaining Useful Life	Stretched Remaining Useful Life	Portion of Stretched Useful Life Remaining	Capital Replacement Value	Design Contingency (35%)	General Conditions (12%)	Contractor O&P (8%)	ELAC (30%)	Total Replacement Project Cost (Includes ELAC)	Asset Amount City is Responsible For	City Owned Portion of Total Replacement Project Cost (Includes ELAC)	Depreciated Value of City-Owned Prorated Cost	Repair Cost Factor	Repair Project Cost	Annual O&M Cost Based on City Owned Pro-Rated Capital Cost	Criticality					Vulnerability		Risk	Stretched Risk
																																Public Health & Safety Protection	Environmental Avoidance	Cost of Repair	Overall [Z]				
								First Available Budget Year=					2023																											
								Current Year					2020																													
																				Value																					
1	1	W	W Dist Sys & PRVs	Potable Dis Sys - 100	Potable Transmission	Transmission Line (>12") Prior to 1959 6576 LF at $1020/LF	Mech/Elec/Instru/Piping	1959		160	60	1.0	60	2023	2023	0	0	0%	$3,616,800	$1,265,880	$434,016	$289,344	$1,085,040	$6,692,000	100%	$6,692,000	$0	75%	$5,019,000	$83,650	5	5	4	6	20	0.9	0.9	18.0	18.0
2	1	W	W Dist Sys & PRVs	Potable Dis Sys - 110	Potable Transmission	Transmission Line (>12") 1960-1969 15038LF at $1020/LF	Mech/Elec/Instru/Piping	1965		160	60	1.0	60	2025	2025	2	2	3%	$11,744,150	$8,270,900	$1,409,298	$939,532	$3,523,245	$25,888,000	100%	$25,888,000	$862,933	75%	$19,416,000	$323,600	5	5	4	6	20	0.7	0.7	14.0	14.0
3	1	W	W Dist Sys & PRVs	Potable Dis Sys - 120	Potable Transmission	Transmission Line (>12") 1970-1979 77108 LF at $1020/LF	Mech/Elec/Instru/Piping	1975		160	60	1.0	60	2035	2035	12	12	20%	$46,108,150	$42,409,400	$5,532,978	$3,688,652	$13,832,445	$111,572,000	100%	$111,572,000	$22,314,400	75%	$83,679,000	$1,394,650	5	5	4	6	20	0.1	0.1	1.0	1.0
4	1	W	W Dist Sys & PRVs	Potable Dis Sys - 130	Potable Transmission	Transmission Line (>12") 1980-1989 57276 LF at $1020/LF	Mech/Elec/Instru/Piping	1985		160	60	1.0	60	2045	2045	22	22	37%	$31,501,800	$31,501,800	$3,780,216	$2,520,144	$9,450,540	$78,755,000	100%	$78,755,000	$28,876,833	75%	$59,067,000	$984,438	5	5	4	6	20	0.0	0.0	0.4	0.4
5	1	W	W Dist Sys & PRVs	Potable Dis Sys - 140	Potable Transmission	Transmission Line (>12") 1990-1999 43149 LF at $1020/LF	Mech/Elec/Instru/Piping	1995		160	60	1.0	60	2055	2055	32	32	53%	$23,733,050	$23,731,950	$2,847,966	$1,898,644	$7,119,915	$59,332,000	100%	$59,332,000	$31,643,733	75%	$44,499,000	$741,650	5	5	4	6	20	0.0	0.0	0.4	0.4
6	1	W	W Dist Sys & PRVs	Potable Dis Sys - 150	Potable Transmission	Transmission Line (>12") 2000-2009 54066 LF at $1020/LF	Mech/Elec/Instru/Piping	2005		160	60	1.0	60	2065	2065	42	42	70%	$29,951,350	$29,736,300	$3,594,162	$2,396,108	$8,985,405	$74,664,000	100%	$74,664,000	$52,264,800	75%	$55,998,000	$933,300	5	5	4	6	20	0.0	0.0	0.4	0.4
7	1	W	W Dist Sys & PRVs	Potable Dis Sys - 160	Potable Transmission	Transmission Line (>12") 2010-2020 27215 LF at $1020/LF	Mech/Elec/Instru/Piping	2015		160	60	1.0	60	2075	2075	52	52	87%	$12,346,400	$14,968,250	$1,481,568	$987,712	$3,703,920	$33,488,000	100%	$33,488,000	$29,022,933	75%	$25,116,000	$418,600	5	5	4	6	20	0.0	0.0	0.2	0.2
8	1	W	W Dist Sys & PRVs	Potable Dis Sys - 170	Potable Transmission	Transmission Line (>12") Age unknown 17980 LF at $1020/LF	Mech/Elec/Instru/Piping	1975		160	60	1.0	60	2035	2035	12	12	20%	$1,660,450	$9,889,000	$199,254	$132,836	$498,135	$12,380,000	100%	$12,380,000	$2,476,000	75%	$9,285,000	$154,750	5	5	4	6	20	0.1	0.1	1.0	1.0
9	1	W	W Dist Sys & PRVs	Potable Dis Sys - 200	Potable Distribution	Distribution Line (<=12") Prior to 1959 48572 LF at $785/LF	Mech/Elec/Instru/Piping	1959		160	60	1.0	60	2023	2023	0	0	0%	$20,594,528	$7,208,085	$2,471,343	$1,647,562	$6,178,358	$38,100,000	100%	$38,100,000	$0	75%	$28,575,000	$476,250	0	0	4	2	6	0.9	0.9	5.4	5.4
10	1	W	W Dist Sys & PRVs	Potable Dis Sys - 221	Potable Distribution	Distribution Line (<=12") 1960 - 1969 126357 LF at $785/LF	Mech/Elec/Instru/Piping	1965		160	60	1.0	60	2025	2025	2	2	3%	$53,575,368	$18,751,379	$6,429,044	$4,286,029	$16,072,610	$99,115,000	100%	$99,115,000	$3,303,833	75%	$74,337,000	$1,238,938	0	0	4	2	6	0.7	0.7	4.2	4.2
11	1	W	W Dist Sys & PRVs	Potable Dis Sys - 220	Potable Distribution	Distribution Line (<=12") 1970 - 1979 588450 LF at $785/LF	Mech/Elec/Instru/Piping	1975		160	60	1.0	60	2035	2035	12	12	20%	$249,502,800	$87,325,980	$29,940,336	$19,960,224	$74,850,840	$461,581,000	100%	$461,581,000	$92,316,200	75%	$346,186,000	$5,769,763	0	0	4	2	6	0.1	0.1	0.3	0.3
12	1	W	W Dist Sys & PRVs	Potable Dis Sys - 230	Potable Distribution	Distribution Line (<=12") 1980 - 1989 377528 LF at $785/LF	Mech/Elec/Instru/Piping	1985		160	60	1.0	60	2045	2045	22	22	37%	$160,071,872	$56,025,155	$19,208,625	$12,805,750	$48,021,562	$296,133,000	100%	$296,133,000	$108,582,100	75%	$222,100,000	$3,701,663	0	0	4	2	6	0.0	0.0	0.1	0.1
13	1	W	W Dist Sys & PRVs	Potable Dis Sys - 240	Potable Distribution	Distribution Line (<=12") 1990 - 1999 488778 LF at $785/LF	Mech/Elec/Instru/Piping	1995		160	60	1.0	60	2055	2055	32	32	53%	$207,241,872	$72,534,655	$24,869,025	$16,579,350	$62,172,562	$383,398,000	100%	$383,398,000	$204,478,933	75%	$287,549,000	$4,792,475	0	0	4	2	6	0.0	0.0	0.1	0.1
14	1	W	W Dist Sys & PRVs	Potable Dis Sys - 250	Potable Distribution	Distribution Line (<=12") 2000 - 2009 643828 LF at $785/LF	Mech/Elec/Instru/Piping	2005		160	60	1.0	60	2065	2065	42	42	70%	$272,983,072	$95,544,075	$32,757,969	$21,838,646	$81,894,922	$505,019,000	100%	$505,019,000	$353,513,300	75%	$378,765,000	$6,312,738	0	0	4	2	6	0.0	0.0	0.1	0.1
15	1	W	W Dist Sys & PRVs	Potable Dis Sys - 260	Potable Distribution	Distribution Line (<=12") 2010-2019 166106 LF at $785/LF	Mech/Elec/Instru/Piping	2015		160	60	1.0	60	2075	2075	52	52	87%	$70,428,944	$24,650,130	$8,451,473	$5,634,316	$21,128,683	$130,294,000	100%	$130,294,000	$112,921,467	75%	$97,721,000	$1,628,675	0	0	4	2	6	0.0	0.0	0.1	0.1
16	1	W	W Dist Sys & PRVs	Potable Dis Sys - 270	Potable Distribution	Distribution Line (<=12") 2020 726 LF at $785/LF	Mech/Elec/Instru/Piping	2020		160	60	1.0	60	2080	2080	57	57	95%	$307,824	$107,738	$36,939	$24,626	$92,347	$570,000	100%	$570,000	$541,500	75%	$428,000	$7,125	0	0	4	2	6	0.0	0.0	0.1	0.1
17	1	W	W Dist Sys & PRVs	Potable Dis Sys - 280	Potable Distribution	Distribution Line (<=12") Age unknown 56472 LF at $785/LF	Mech/Elec/Instru/Piping	1975		160	60	1.0	60	2035	2035	12	12	20%	$23,944,128	$8,380,445	$2,873,295	$1,915,530	$7,183,238	$44,297,000	100%	$44,297,000	$8,859,400	75%	$33,223,000	$553,713	0	0	4	2	6	0.1	0.1	0.3	0.3
18	1	W	W Dist Sys & PRVs	Potable Dis Sys - 290	Potable Distribution	Unknown Line Size - Various Age (1970-2019 and unknown) 13538 LF at $424/LF	Mech/Elec/Instru/Piping	1995		160	60	1.0	60	2055	2055	32	32	53%	$5,740,112	$2,009,039	$688,813	$459,209	$1,722,034	$10,620,000	100%	$10,620,000	$5,664,000	75%	$7,965,000	$132,750	0	0	4	2	6	0.0	0.0	0.1	0.1

When I say Asset Database, please think about a Car

Asset Database is the Core of Long Term Planning

Utility Area Number	Water / Wastewater	Utility Area Description	Discipline Installation Year	Significant Rehabilitation Year	Codes for Useful Life Multiplier	Original Useful Life	Useful Life Multiplier (always 1.0 if criticality>13)	Stretched Useful Life using Useful	Calculated Replacement Year	Stretched Replacement Year	Remaining Useful Life	Stretched Remaining Useful Life	Portion of Stretched Useful Life Remaining
1	W	W Dist Sys & PR\											
1	W	W Dist Sys & PR\											
					First Available Budget Year=			2023					
					Current Year			2020					
			1959		160	60	1.0	60	2023	2023	0	0	0%
			1965		160	60	1.0	60	2025	2025	2	2	3%

Asset Database is the Core of Long Term Planning

Utility Area Number	Water / Wastewater	Utility Area Description
1	W	W Dist Sys & PRVs
1	W	W Dist Sys & PRVs

	Capital Replacement Value	Design Contingency (35%)	General Conditions (12%)	Contractor O&P (8%)	ELAC (30%)	Total Replacement Project Cost (includes ELAC)
		35%	12%	8%	30%	
Value	$3,616,800	$1,265,880	$434,016	$289,344	$1,085,040	$6,692,000

Asset Database is the Core of Long Term Planning

Utility Area Number	Water / Wastewater	Utility Area Description	Asset Numbering		Year	Remaining Useful Life	Stretched Remaining Useful Life	Portion of Stretched Useful Life Remaining
1	W	W Dist Sys & PRVs	Potable Dis Sys - 100	Potab	3	0	0	0%
1	W	W Dist Sys & PRVs	Potable Dis Sys - 110	Potab	5	2	2	3%

Criticality					Vulnerability	Stretched Vulnerability	Risk	Stretched Risk
Public Health & Safety	Effect on Operations	Environment Violations	Cost of Repair	Overall [Σ]				
5	5	4	6	20	0.9	0.9	18.0	18.0

The Asset Database Can Be Organized To Provide Different Snap-Shots of Information

	B	C	D	E	F	G	H	K
4	Utility Area Number	Water / Wastewater	Utility Area Description	Asset Numbering	Treatment Process/ Basin / Zone	Major Component / Subbasin / Subzone	Discipline	Discipline Installation Year
5								
6								
7								
8	1	W	W Dist Sys & PRVs	Potable Dis Sys - 200	Potable Distribution	Distribution Line (<=12") Prior to 1959 48572 LF at $785/LF	Mech/Elec/Instru/Piping	1959
9	1	W	W Dist Sys & PRVs	Potable Dis Sys - 100	Potable Transmission	Transmission Line (>12") Prior to 1959 6576 LF at $1020/LF	Mech/Elec/Instru/Piping	1959
10	2	WW	WW Collection Sys	WW Collection -005	City-Wide Sewer	Unlined Interceptor (> 15") - Prior to 1959 0 feet at $715/LF	Mech/Elec/Instru/Piping	1959
11	2	WW	WW Collection Sys	WW Collection - 006	City-Wide Sewer	Interceptor (> 15") - Prior to 1959 - Lined 0 feet at $715/LF	Mech/Elec/Instru/Piping	1959
12	2	WW	WW Collection Sys	WW Collection - 016	City-Wide Sewer	Lined Interceptor (> 15") - 1970-1979 27235 feet at $715/LF	Mech/Elec/Instru/Piping	1975
13	2	WW	WW Collection Sys	WW Collection - 050	City-Wide Sewer	Unlined Collection (<=15") - Prior to 1959 13340 feet at $525/LF	Mech/Elec/Instru/Piping	1959
14	2	WW	WW Collection Sys	WW Collection - 055	City-Wide Sewer	Unlined Collection (<=15") - 1960-1969 8601 feet at $525/LF	Mech/Elec/Instru/Piping	1965
15	2	WW	WW Collection Sys	WW Collection - 060	City-Wide Sewer	Unlined Collection (<=15") - 1970-1979 509689 feet at $525/LF	Mech/Elec/Instru/Piping	1975
16	2	WW	WW Collection Sys	WW Collection - 85	City-Wide Sewer	Unlined Collection (<=15") Age Unknown 105460 feet at $525/LF	Mech/Elec/Instru/Piping	1975
17	4	W	Master Meters & Shop	Master Meters - 600	100th & Federal Blvd	Piping, 8" meter	Mech/Elec/Instru/Piping	1994
18	4	W	Master Meters & Shop	Master Meters - 200	85th & Zuni	Piping, 10" meter	Mech/Elec/Instru/Piping	1994
19	4	W	Master Meters & Shop	Master Meters - 745	Potable Interconnect - Arvada 82nd & Sheridan	Meter	Mech/Elec/Instru/Piping	1996
20	4	W	Master Meters & Shop	Master Meters - 735	Potable Interconnect - Broomfield North 132nd & Zuni	Meter	Mech/Elec/Instru/Piping	1995
21	4	W	Master Meters & Shop	Master Meters - 740	Potable Interconnect - Broomfield South 118th & Gray	Meter	Mech/Elec/Instru/Piping	1995
22	4	W	Master Meters & Shop	Master Meters - 705	Potable Interconnect - CW&SD 74th & Zuni	Meter	Mech/Elec/Instru/Piping	1996
	4	W	Master Meters & Shop	Master Meters - 730	Potable Interconnect - Denver	Vault structure	Structural/Archictectural	1976

When PWU says “25% of assets that are at or beyond their useful life”, we get this information from the asset database.

Asset Database Uses Industry Standard Useful Life for Consistency

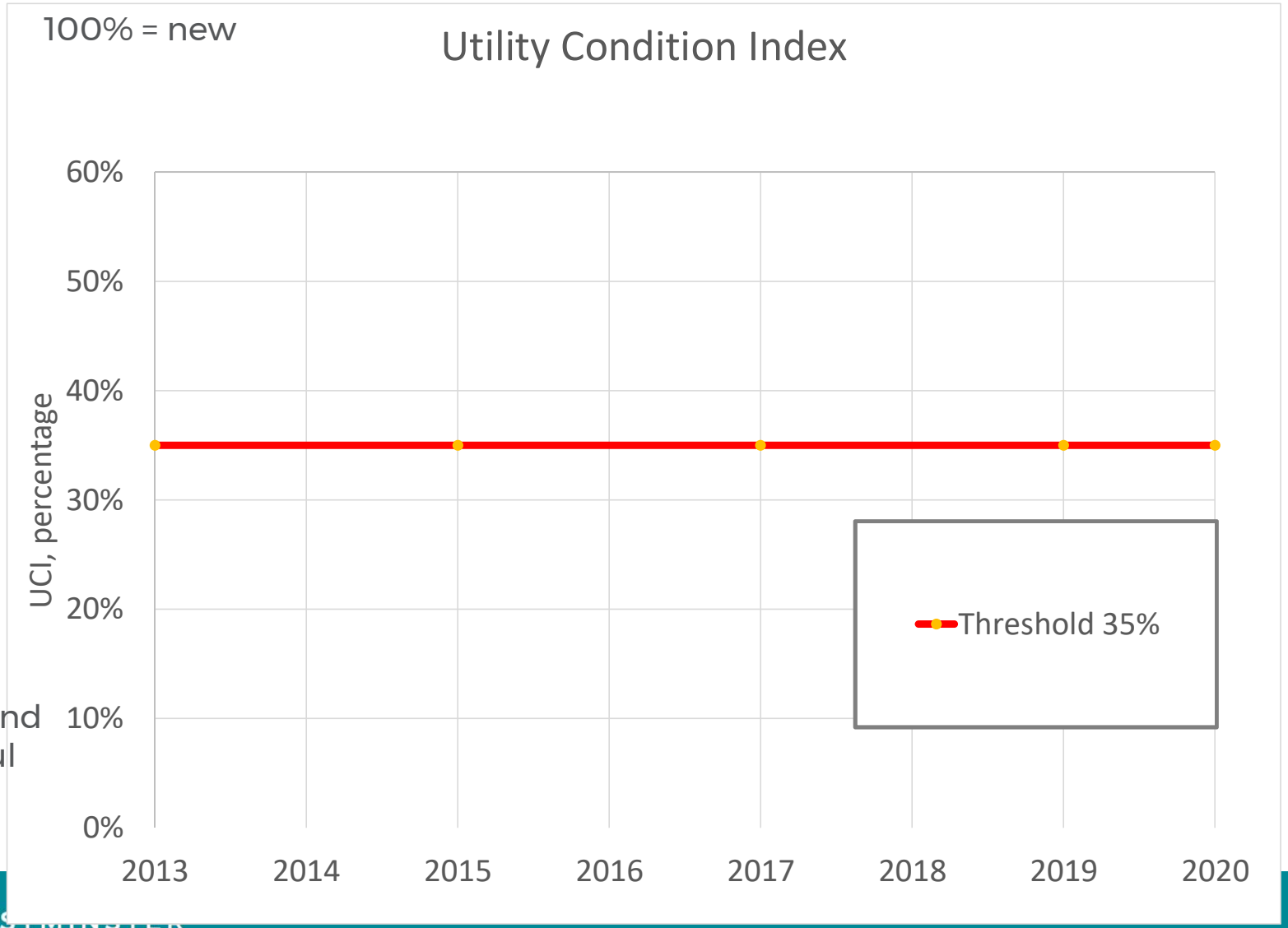
Estimated Useful Life Based on Asset Type (This data is referenced in the database and can be changed here if desired)				
Asset Type - Description of Typical Type of Asset	Code	Typical Standard Useful Life	Useful Life Multiplier**	COW Remaining Useful Life
Tank Interior Coatings	5	8	1.0	8
Harsh Duty Pumps and Equipment and/or Small <25 Hp	10	10	1.2	12
WQ Lab Equipment 1 of 2 - Short Life	15	10	1.0	10
SCADA, Instrumentation & Control, Comm and High Tech	20	12	1.0	12
Steel Tank Exterior Coatings	30	14	1.0	14
Medium Duty Pumps and Equipment and/or 25-100 Hp	40	15	1.2	18
PLCs	50	15	1.0	15
VFDs, Soft Starts and Outdoor Electrical	60	17	1.0	17
HVAC (General Building Whole System)	65	20	1.0	20
Mechanical and Process Equipment (i.e., bar screens, floc)	70	20	1.2	24
Roofs 1 of 3 - Standard and/or Membrane	80	20	1.0	20
WQ Lab Equipment 2 of 2 - Long Life	85	20	1.0	20
Valves, Piping and Headers	90	25	1.0	25
Fiber Optics, Electrical and Generators	100	30	1.2	36
Force Mains, and IMS CAP Underdrains	105	30	1.2	36
Roofs 2 of 3 - Metal or Extra Built-up	110	35	1.0	35
Sewer - 12-inch and smaller and All CIPP Lined Sewers	112	40	1.0	40
PRV Vault - Life Span	115	40	1.3	52
Tank Structure	120	40	1.2	48
Pipeline 1 of 2 - Short Life (yard piping, siphons)	125	40	1.0	40
Structural	130	50	1.4	70
Roofs 3 of 3 - Clay Tile	140	50	1.0	50
Site/Civil	150	55	1.0	55
Pipeline 2 of 2 - Long Life (Dist. System, Interceptors)	160	60	1.0	60
Generic Reservoir (not Standley Lake)	170	100	1.0	100
Raw Water-Style Long-Life Structures	180	100	1.0	100
Standley Lake Earthen Dam	190	150	1.0	150
Earthen Canal or Canal System	200	200	1.0	150
**All Assets with Criticality >13 were forced via excel formula to remain at a useful life multiplier of 1.00				

We Use The Asset Database in Many Ways

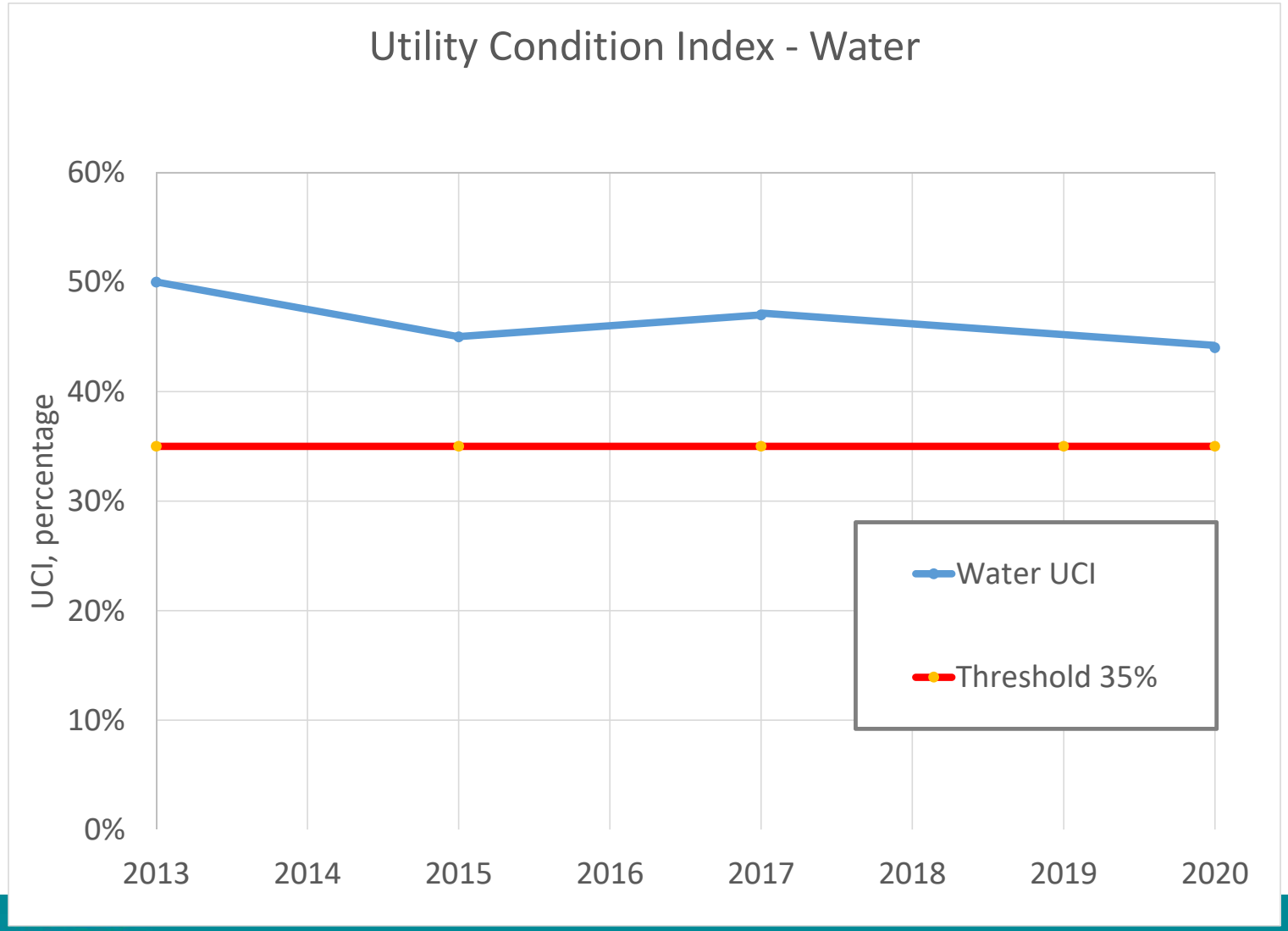
Another Way to View Age/Decline/R&R is the Utility Condition Index (UCI)

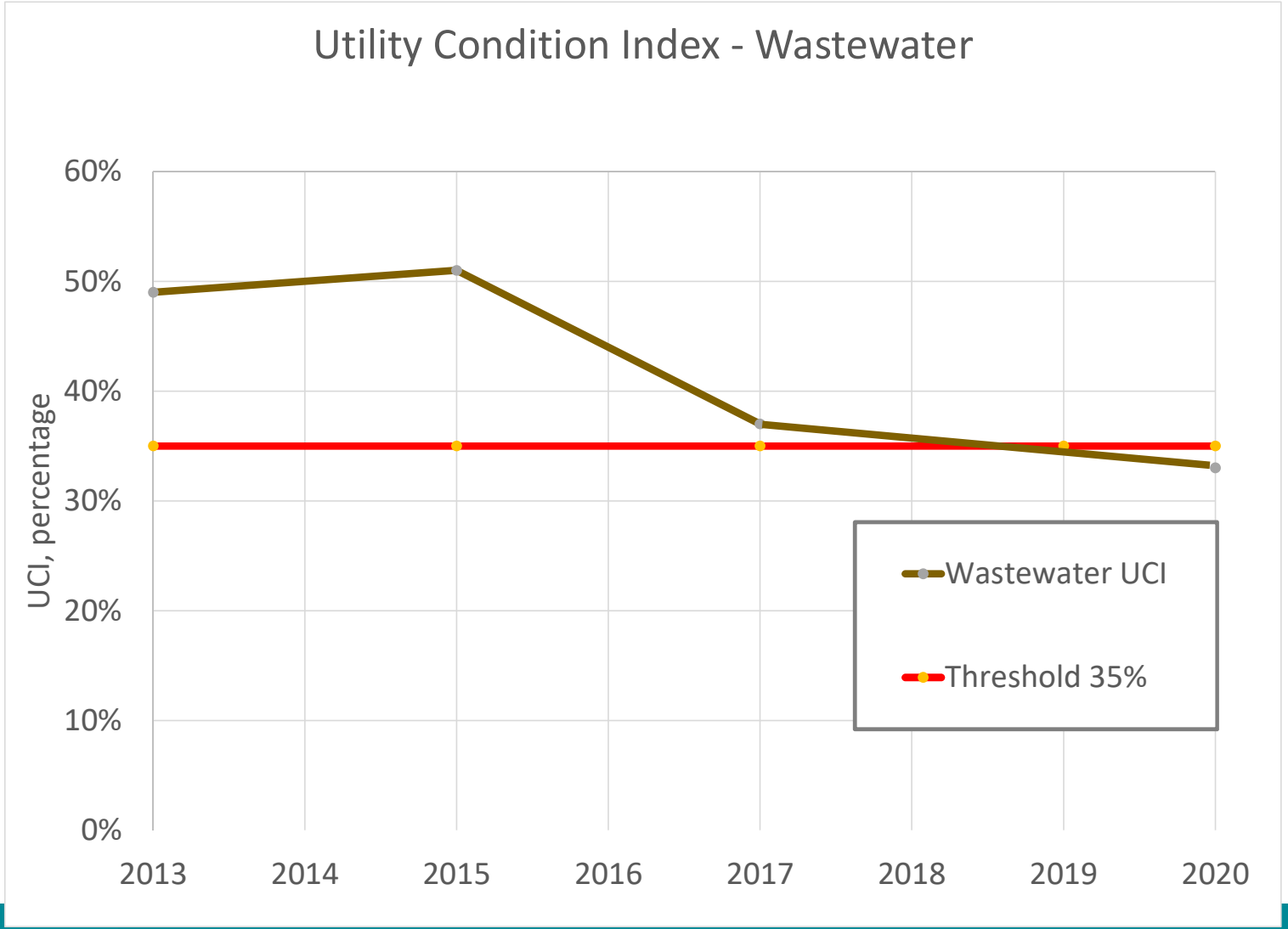
- Calculated from information in the asset database
- Measure of depreciation : Depreciated Value /Replacement Value
- A way of asking “How is the Infrastructure Doing?”
- We use the UCI to describe the infrastructure but not as a direct method to identify projects or calculate rates
- Utility Condition Index concept borrowed from the Pavement Condition Index (PCI) used by Streets.
- American Society of Civil Engineers uses report c
  grades like A, B, C, D, F

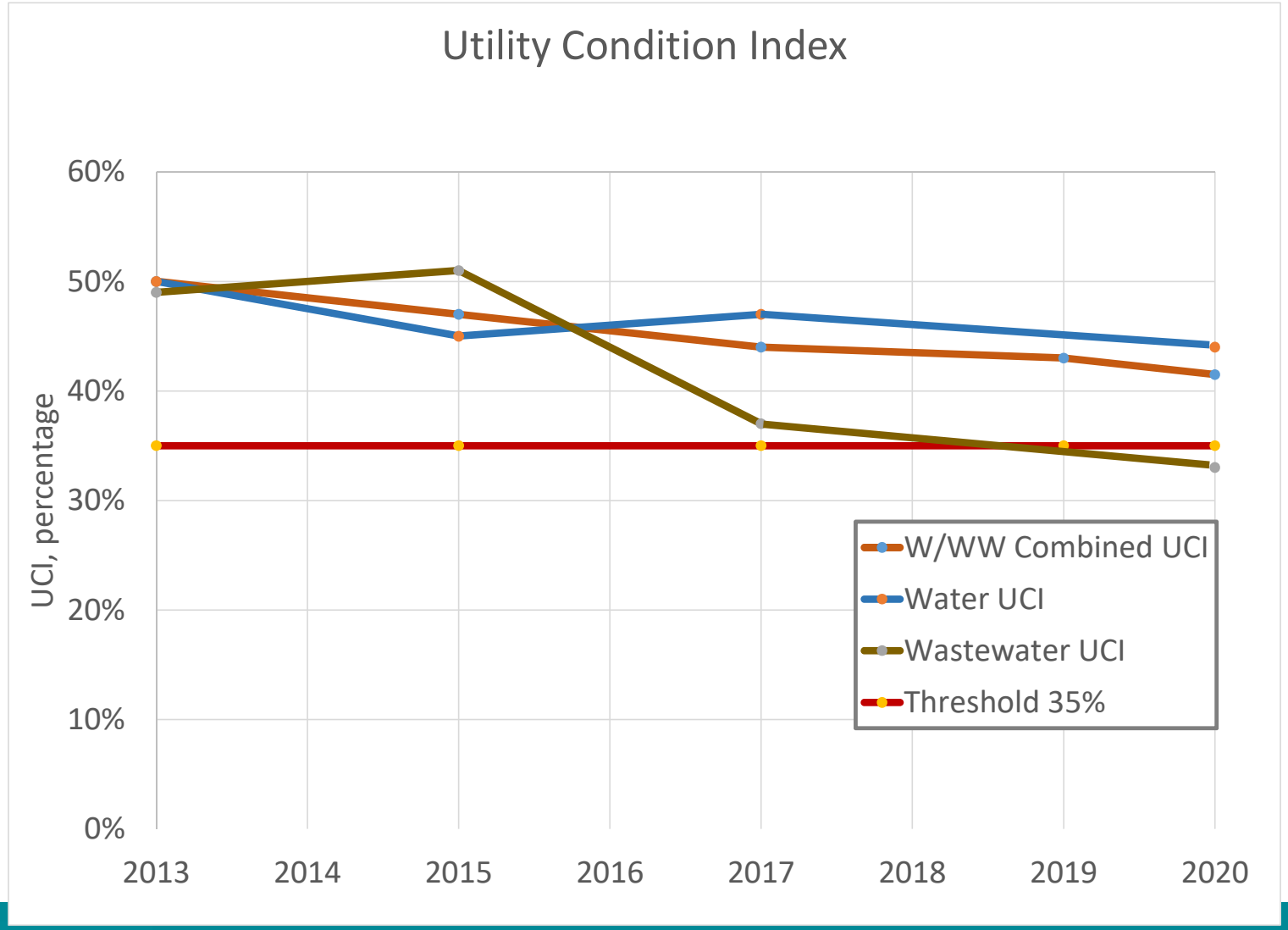
100% = new

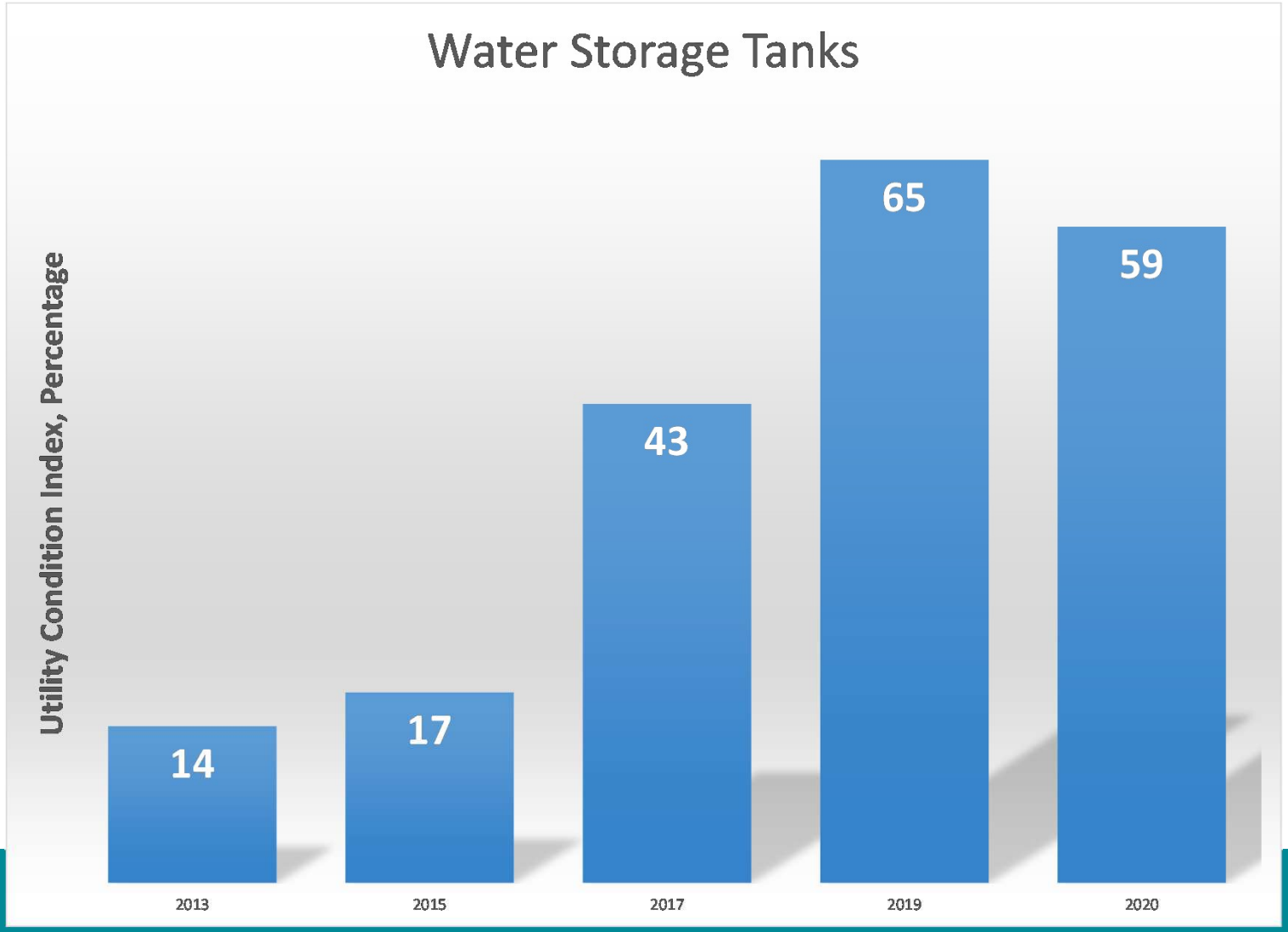


10% = end of useful life


Utility Condition Index - Water
60%
50%
40%
30%
20%
10%
0%
UCI, percentage
2013
2014
2015
2016
2017
2018
2019
2020
Water UCI
Threshold 35%


Utility Condition Index - Wastewater
60%
50%
40%
30%
20%
10%
0%
UCI, percentage
2013
2014
2015
2016
2017
2018
2019
2020
Wastewater UCI
Threshold 35%

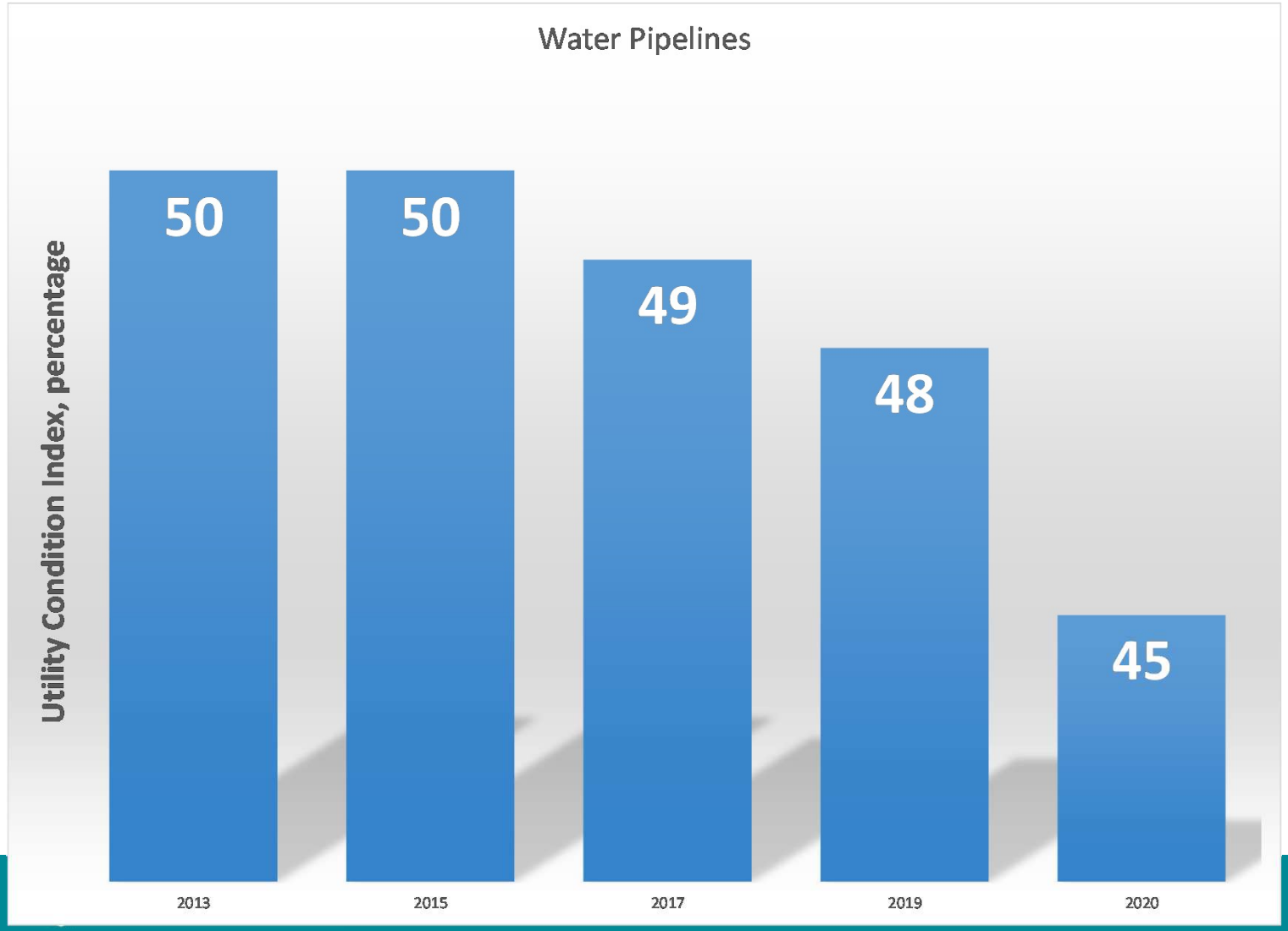

Utility Condition Index
60%
50%
40%
30%
20%
10%
0%
UCI, percentage
2013
2014
2015
2016
2017
2018
2019
2020
W/WW Combined UCI
Water UCI
Wastewater UCI
Threshold 35%



In 2013 the City's water storage tanks were basically used up, the UCI was very low.

Since 2013, the City has invested in water storage tanks.

The UCI for tanks has improved dramatically.

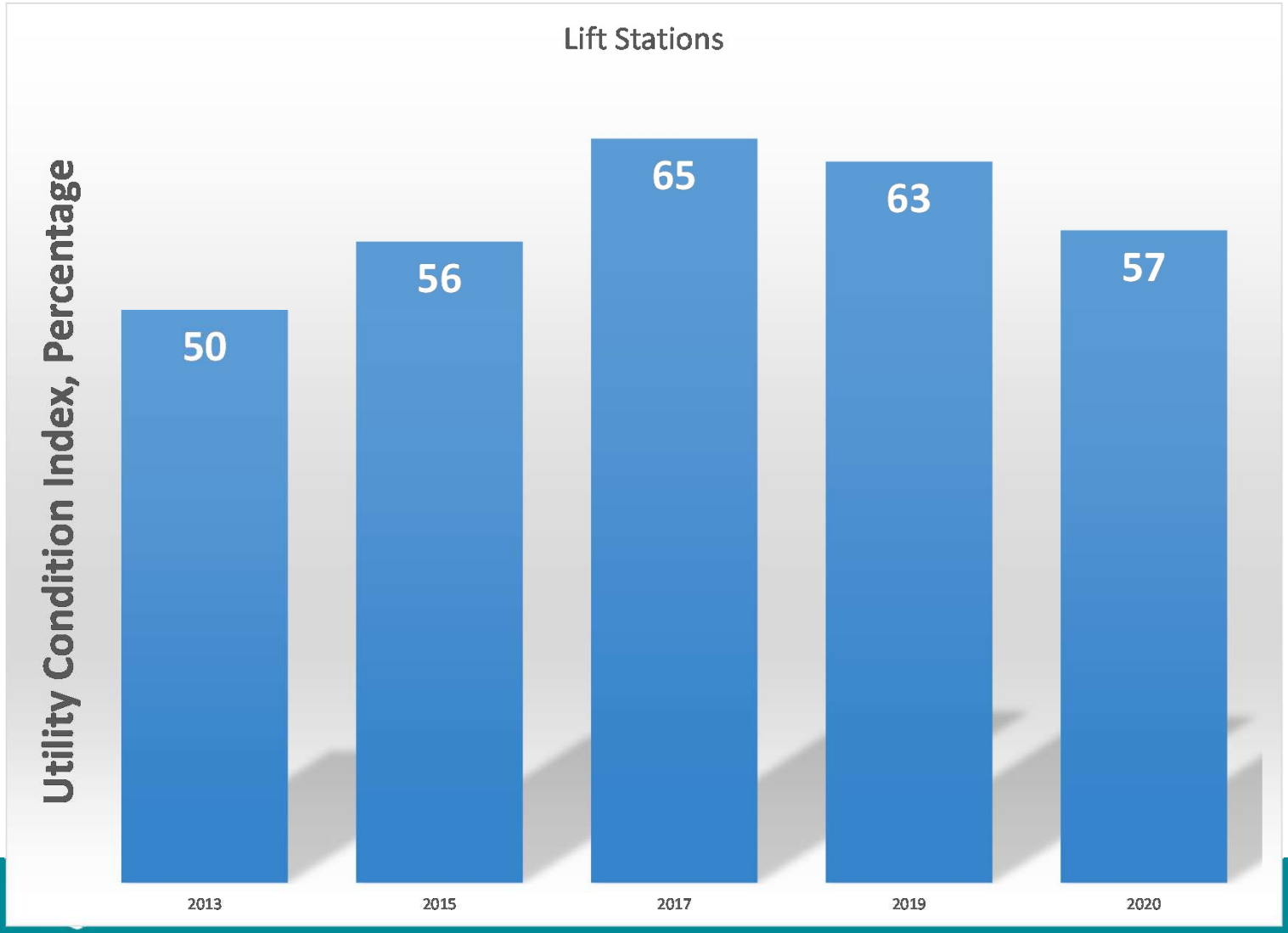


In 2013 the UCI for the City's water pipelines was 50%

Since 2013, the City has invested in water pipelines however, this is a $2B utility area.

It is difficult to show UCI improvement.

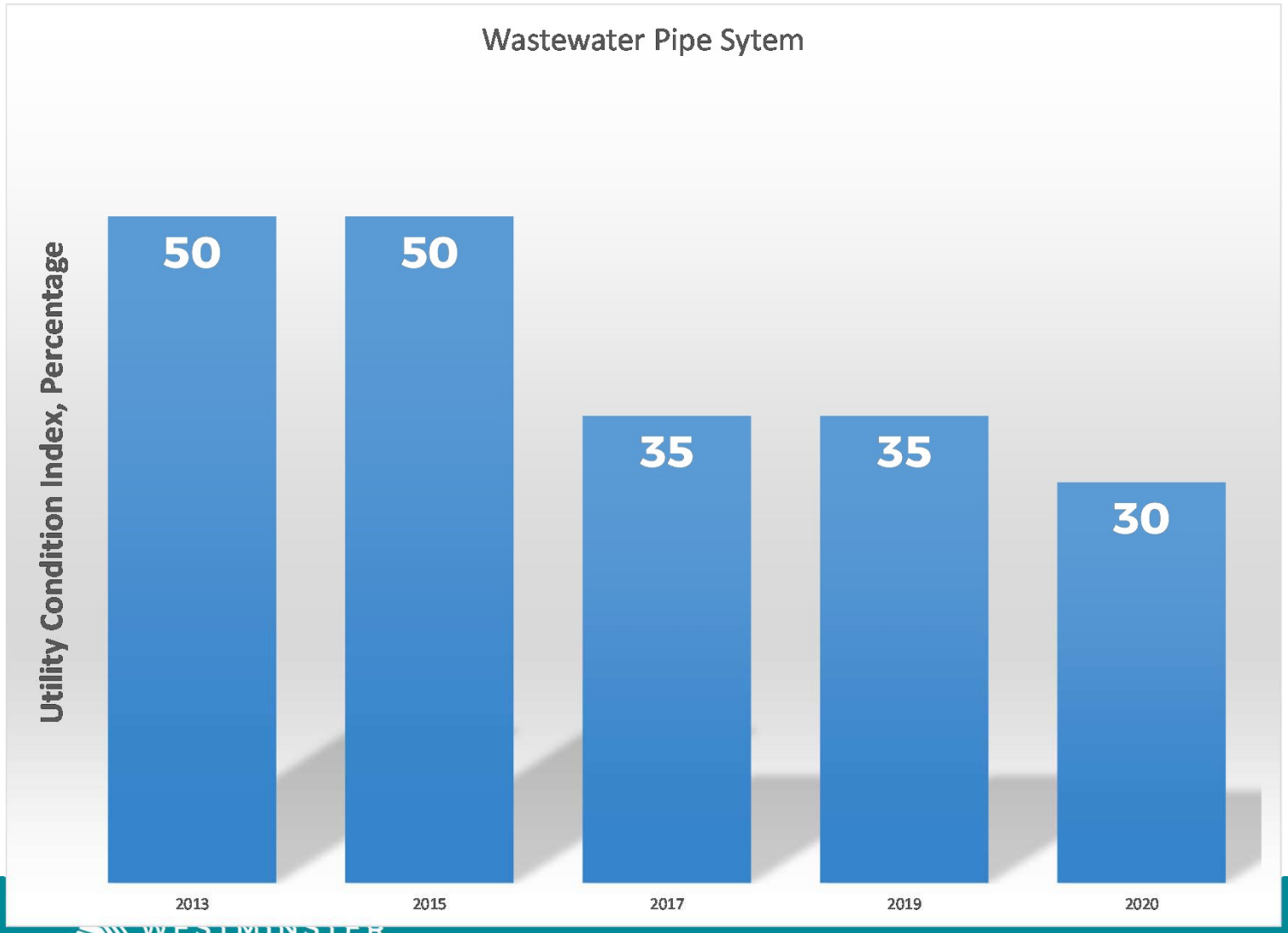
The UCI has declined in big chunks because some existing pipe from the 1960s is in the ground and needs to be replaced.



In 2013 the UCI for the City's lift stations was 50%

Since 2013, the City has systematically invested in lift stations.

The UCI has improved



In 2013 the UCI for the City's wastewater pipe system was 50%

In 2017 sewer pipe hit the end of useful life based on industry standard. The UCI dropped to 35.

Since 2013, the City has systematically invested in sewer pipe.

It is difficult to show UCI improvement.

The UCI has declined in big chunks because some existing pipe from the 1960s is in the ground and needs to be replaced.

Questions, Comments, Discussion about Response to Question #2?

Staff to continue discussion here from 10/8/20

Question 3: What drives the decline in water and wastewater infrastructure? (Age? Use? Materials? Location?)

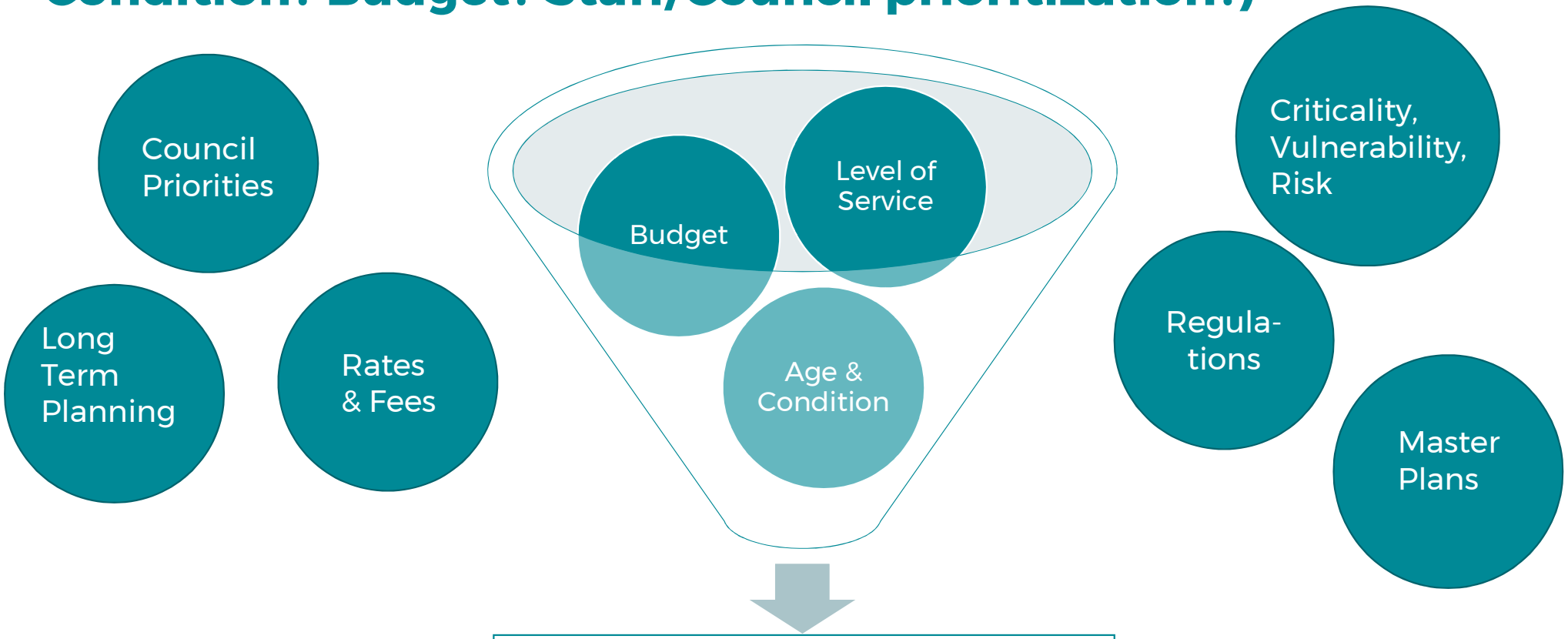
Water Pipelines
Reclaimed Pipelines
Wastewater Pipelines
Water Meters
Pumping Stations (water & sewage)
Storage Tanks
Water Treatment & Reclaimed Facilities
Wastewater Treatment Facility
Raw Water System

Age / Use :
motors, moving parts,
software obsolete,
parts obsolete,
industry standard useful life

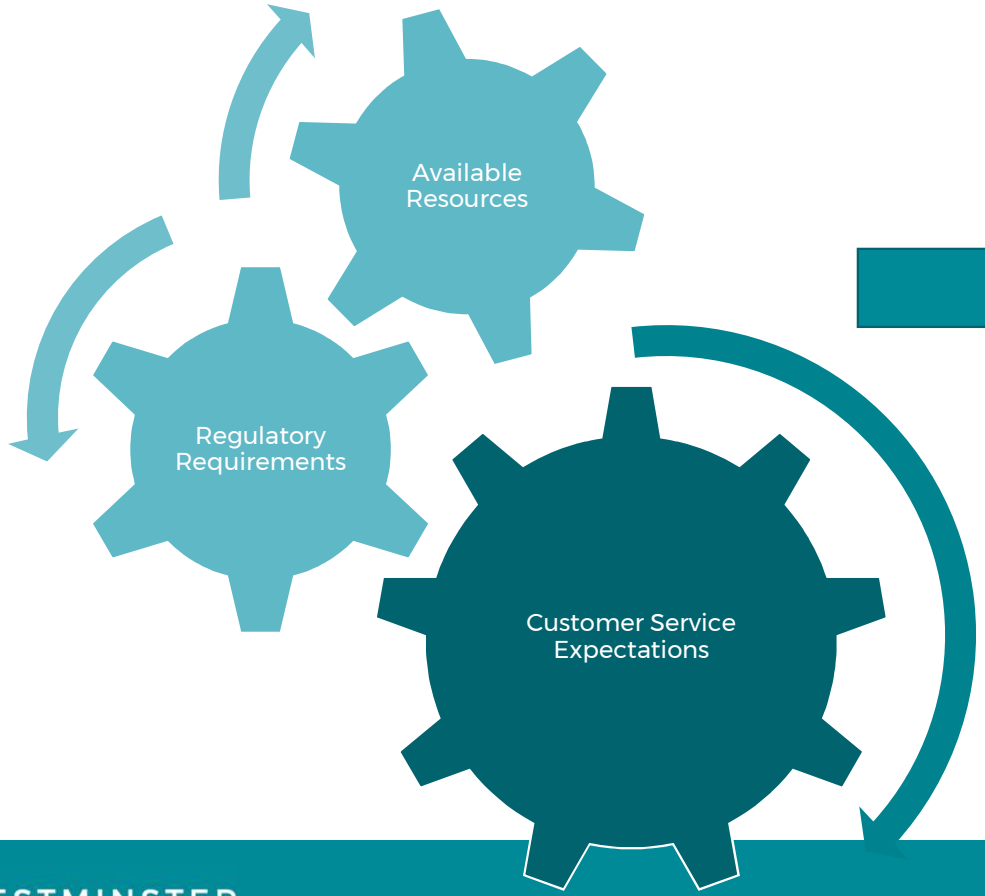
Materials / Location :
harsh duty environment,
UV light degradation, outdoors
corrosive soils

Questions, Discussion, Comments about the Response to Question #3?

Question 4: What drives the schedule for repairs, upgrades, replacement for infrastructure? (Age? Condition? Budget? Staff/Council prioritization?)



Question 4: In 2017 PWU developed Level of Service Goals for each Utility Area



Level of Service : degree of reliability desired for our Utility assets

Assumptions Behind Level of Service Goals

PWU thinks our Customers Want

- Turn on the tap for clean, safe, reliable drinking water every time and environmentally compliant wastewater treatment.
- Expedient commute on City streets
- Limited service interruptions

PWU Must Meet Regulatory Drivers

- Must meet State and Federal requirements for Drinking Water and Wastewater.

Rate-payer Experience With Relaxed Level of Service Goals Could Include:

- More frequent service interruptions
- Longer lasting service interruptions
- Increased inconvenience during the commute due to pipeline breaks
- Possible harm to the environment due to sewage spills

Question 4: What drives the schedule for repairs/upgrades/replacement for infrastructure? (Age? Condition? Budget? Staff/Council prioritization?)

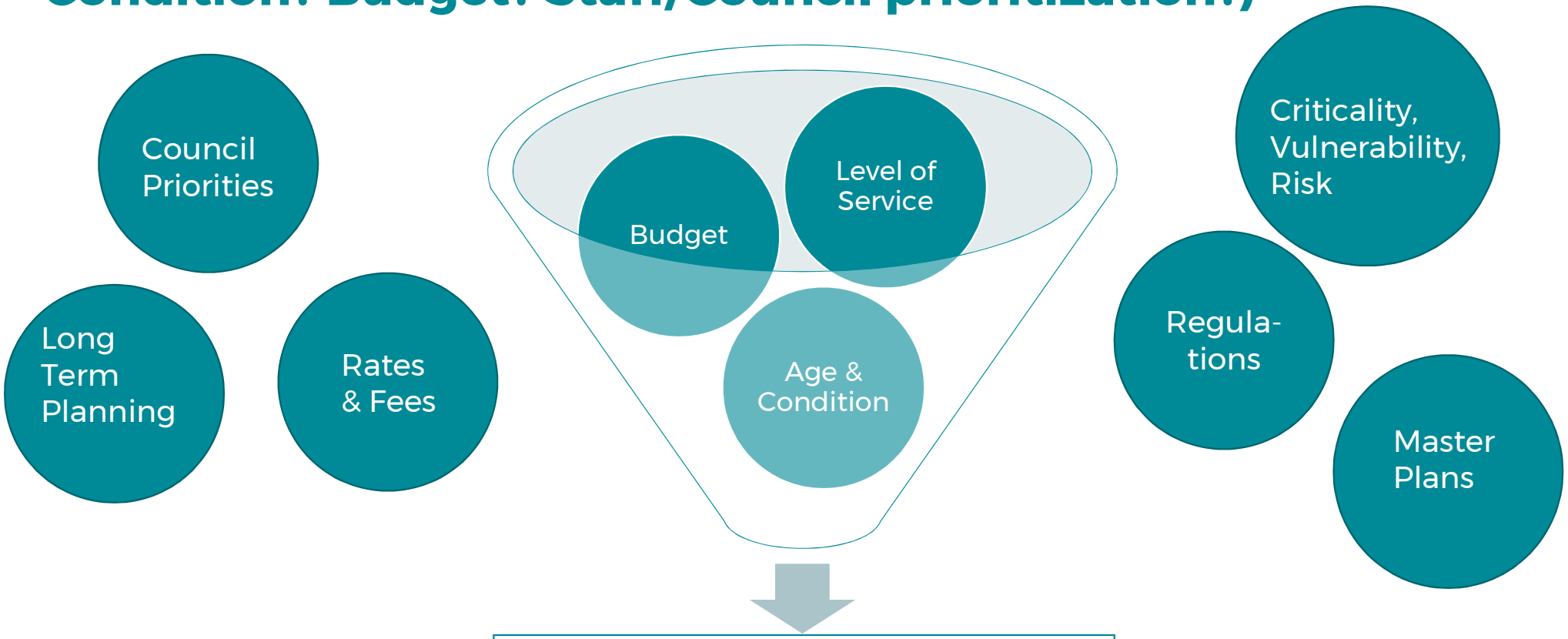
nconstrained Model

t of assets at the
d of useful life.
te-driven
dustry Standards
e and Condition
st $100s of millions

Constrained Model

Level of Service
Criticality, Vulnerability & Risk
Prioritize Assets
Group into Projects
Budget Focus

Question 4: What drives the schedule for repairs, upgrades, replacement for infrastructure? (Age? Condition? Budget? Staff/Council prioritization?)



Discussion, Comments, Questions on Response to Question #4?

Question 5: What Creates Need for New Water and Wastewater Infrastructure?

Age and Condition

Capacity – growth & non-growth

Regulatory

Environmental

Contract

Lack of Capacity Drives the Need for New Infrastructure

Growth Requires New Infrastructure in Some Cases

- New, larger sewer interceptors
- Water supply limits some growth
- Evaluate development proposals case by case
- Investment in raw water reservoirs (growth + non-growth)

Non-Growth Requires New Infrastructure in Some Cases

- Hydraulic modeling for a system-wide view reveals capacity issues compared to a development by development approach

Question 5: What Creates Need for New Infrastructure?

Regulations

Question 5: What Creates Need for New Infrastructure?

Environmental

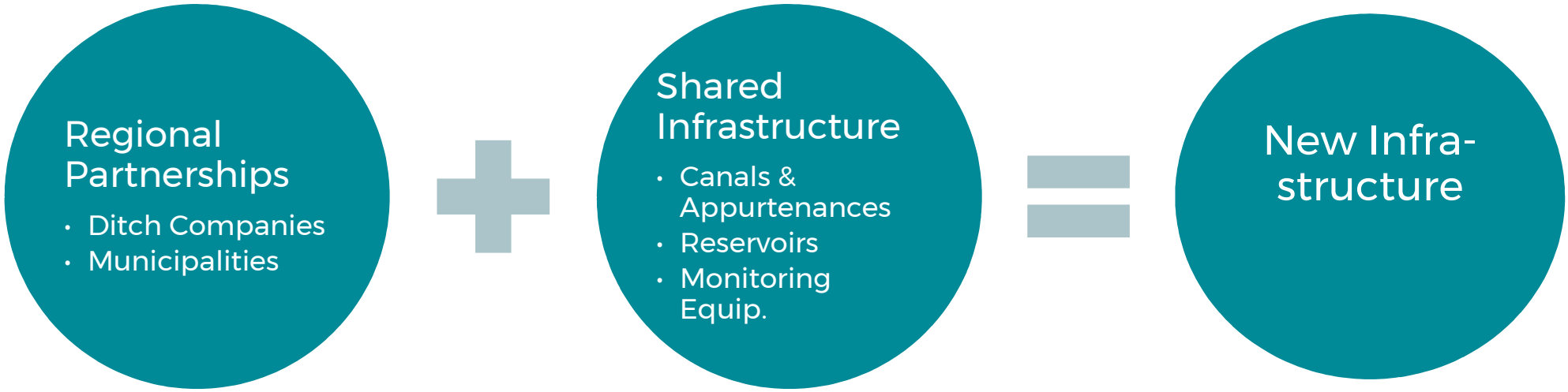
Changes in the environment that compromise water quality

Examples: Fire in the watershed, Compromised water quality in Standley Lake

Wastewater Treatment Facilities – Discharge Permits – receiving water's water quality from a system perspective drive more stringent permit requirements, downstream users

Question 5: What Creates Need for New Infrastructure?

Contract

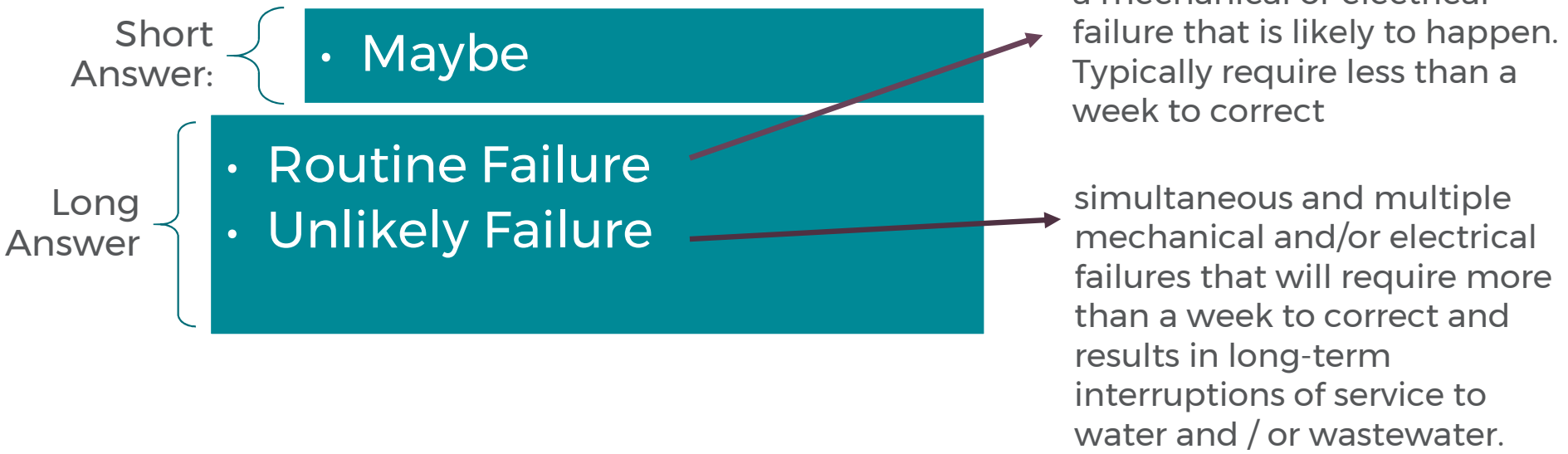


Questions, Discussion, Comments to the Response to Question #5?

Question 6: What are the consequences if we delay some of the proposed near-term repairs or upgrades or replacements for infrastructure?

- The thing will still need to be done
- Delay means the thing will cost more in the future
- Delay means that if the thing fails we will pay a premium to have it repaired and we will pay for damages to others (if relevant)

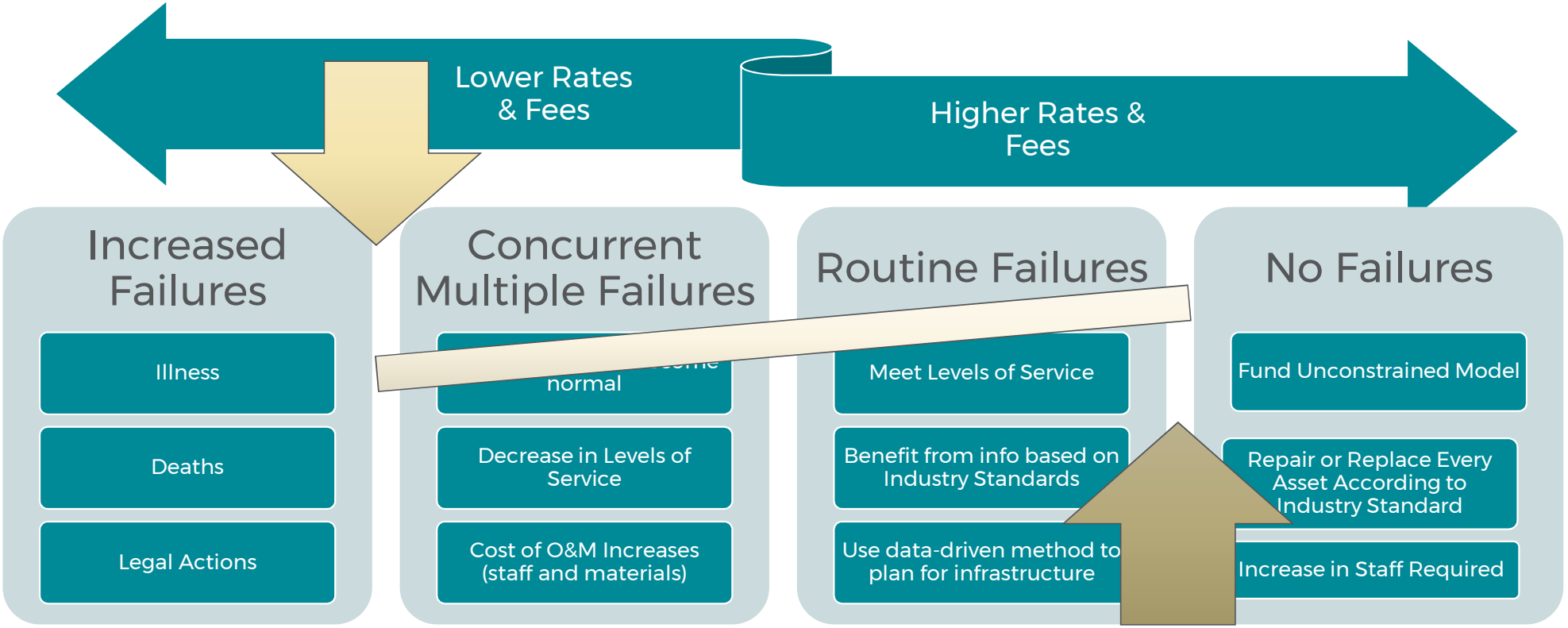
Question 6: What are the consequences of delay…will there be catastrophic failure?



Question 6: Will it kick the can down the road for a future council or generation to sort out?

Yes.

Question 6: What are the best-case and worst-case scenarios? Utility perspective



Questions, Discussion, Comments to the Response to Question #6?

Tracking assumptions and topics for future discussion:

- Levels of service

Following up on water meters

Timeline


2006-2007
Small meters installed
2016
Small meters at end of useful life
2016-2018
Pilot new meters
2018-2019
Competitive Bidding Process
June 2019
City Council Approval
January 2020
Replacement project begins
February 2021
Expected replacement completion
July 2021
Customer portal launch
Possible Billing Cycle Adjustment

Why Did We Have To Change Meters?

Purchased in 2006

Expected useful life = 10 years (supposed to last until 2016)

Triggered evaluation in 2016

Meters included moving parts + radio parts

As they age, moving parts stop, moving/radio batteries die, impacts accuracy

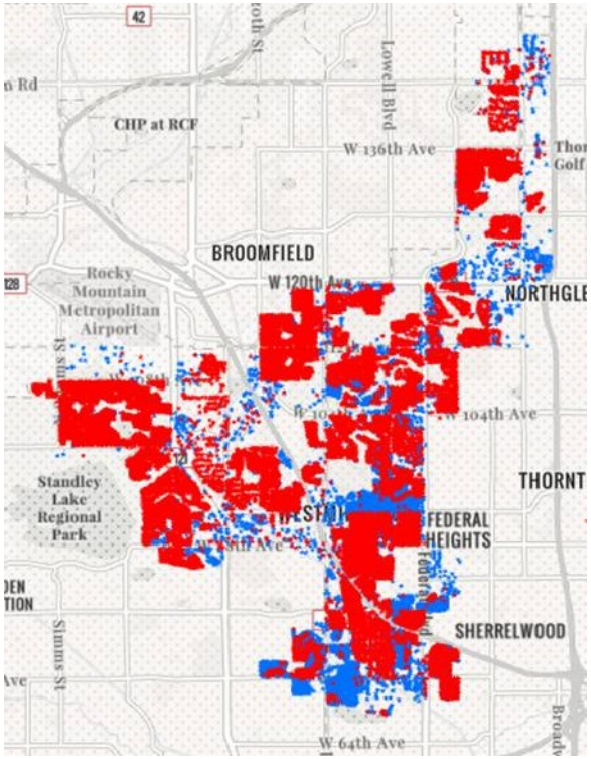
Too expensive to keep fixing

Replacement identified as cost-effective

How Were The Meters Selected?

- Identified Five meter manufactures based on industry experience/availability
- 2016-2018: Piloted meters from five manufacturers in homes & businesses
- Distributed piloted meters in different places around City based on topography and communication considerations
- Competitive bidding process with five companies, two responded, one was disqualified for failure to meet qualifications
- UMS selected to install Sensus iPerl meters for:
  - Accuracy
  - Maintenance
  - Long-term cost effectiveness
  - Best options for providing data to customers

What is the Status of the Meter Replacement Project?



- Started January 2020
- 26,775 homes complete as of October 13, 2020
- Expected completion in February 2021 – approx. 31,500 total
- Small meters only (predominantly residential)
- Installed throughout City based on billing cycles to limit disruption/confusion
- Customer portal before summer 2021

What Should We Know About These Meters?

- Hourly data available to staff and customers
- Review past usage
- Provide leak alerts
- 20-year life expectancy – no moving parts
- Allows software updates to be pushed remotely
- Remote meter reading capability = not driving trucks to read small meters

What Is the Long-Term Plan?

Customer portal (ETA July 2021):

- Customizable leak and high-use alerts
- On-demand access to hourly usage data
- Historical bill and water use comparisons over time

Ability to support a change in billing cycle length at a future time.

Are You Aware of the Legal Troubles with the Sensus Meters?

- Prior to 2017 there were accuracy issues with meters
- Sensus changed their manufacturing process to fix these problems
  - New manufacturing process was found to cause problems
  - Reverted back to original materials and process to resolve problem
  - No issues since then
- Continuous testing will flag any problems

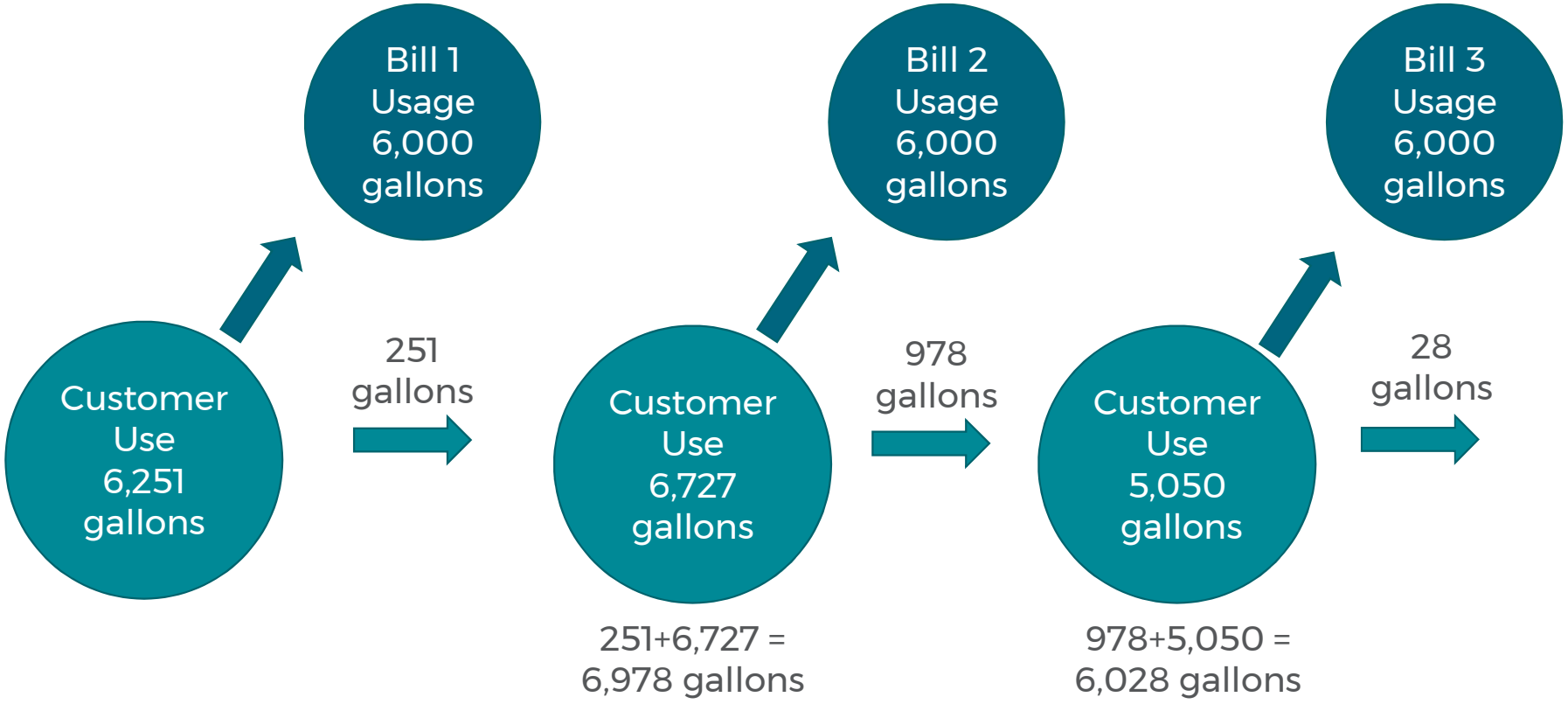
How Do We Know the Meters Are Accurate?

- Exceeds the most recent revision of the American Water Works Association (AWWA) Standard C-715 for accuracy
- Tested by 3rd party
- Tested by staff using meter test bench
- Customer requests to test

What if my meter is accurate but I still have concerns?

- We have had some customer concerns about their meters
- A few meters were installed incorrectly. Leak credits were provided
- We walk through the customer hourly water use data with the customer – many things can cause:
  - Leaking toilet
  - Sprinkler system settings
  - Indoor leak
- Free irrigation audits for customers to review sprinkler system settings
- New indoor leak investigation program

How is Water Use Metered and Billed?



Questions about the Meters?

Customer Questions Since Last Workshop

- Will there be a rate increase in 2022 to reflect to reflect 2021 revenues?
  - Policy question for City Council to discuss in December/January
- Are new meters causing spikes in usage?
  - We think Stephen answered that question tonight
- What was the 2019 actual revenue v. 2019 budget? What is the projection for 2020?
  - This will be addressed at the November 5th meeting
- Should Staff provide annual actual revenue v. budget projection on a regular basis for consideration of rate changes?
  - Staff provides this information as part of annual budget conversations, and with monthly financial updates to City Council
- Does City Council want to consider changing rates in response to revenues received above the budget?
  - Policy question for City Council to discuss in December/January
- Are rate payers charged for repairs when contractors damage pipes?
  - No, they are required to make those repairs
- Why are current customers bearing the brunt of paying for all of these current and future infrastructure projects?
  - This will be addressed at the November 5th meeting. Also a policy question for City Council to discuss in December/January

Community Engagement

PRINCIPLES OF COMMUNITY ENGAGEMENT

01	02	03	04
Ask for input on things that matter to them	Ask for input that can influence the outcome	Ask for input in ways / places that are accessible and convenient for them	Ask for input at a time when it can be used to influence the outcome

#1 Rule: Don't ask if you don't care. Don't ask about things you aren't willing to change in response to input.

Example: We don't ask people if they want safe water, because we will give them safe water no matter what.

TWO ROUNDS OF COMMUNITY ENGAGEMENT

NOVEMBER/ DECEMBER

- Learn about community values and preferences
- Address infrastructure, costs, rates, and tradeoffs
- Use information to help Council develop option(s) for further discussion

January – Council develops option(s)

LATE JANUARY/ EARLY FEBRUARY

- Get community input on option(s) developed by Council
- Use information to revise option(s) or narrow down to one option

NOVEMBER/DECEMBER:
Community Input on Values/Preferences

Level of service expectations	Level of concern about long-term needs and future infrastructure and why	Allocation of resources to current / future infrastructure	Options or ideas for paying for future infrastructure needs
Level of concern about current water rates / current bill and why	Preferences / options for having people who use more water pay more (or not)	Considerations that should/should not be included in rates	Prioritization of values (low bills, planning for future, conservation, etc.)

INTERLUDE IN JANUARY:

Council Development of Option(s)

Based on information learned in workshops

Informed by community preferences and values

May be one option or more than one option

A single “option” could be a package of ideas that includes multiple components

LATE JANUARY/EARLY FEBRUARY: Community Input on Option(s)

Outline interests Council is trying to balance

Describe option(s)

For each option, ask:

- What do you like about this option?
- What concerns do you have about this option?
- What changes would you recommend to make this option better?

Invite additional ideas:

- What interests or values are not adequately reflected in the option(s)?
- What additional ideas or suggestions do you have?

ENGAGEMENT METHODS

Online surveys

- English and Spanish
- Posted on website
- Noticed in utility bills
- Also noticed through press release, weekly email notice and social media

Virtual focus groups

- Survey questions with discussion
- English and Spanish
- Reservation required
- Up to 10 people per group
- At least 5 focus groups
- One Council member observer per group

ENGAGEMENT METHODS

Telephone Poll

- English and Spanish
- Statistically valid survey responses
- Increased likelihood of representative sample of community

ADDITIONAL CONSIDERATIONS

In-person, socially distant focus groups

- Place-based / group-based
- Target underserved communities
- English and Spanish
- *COVID PERMITTING*

Outreach to Underserved Communities

- Outreach to / through Growing Home and other organizations serving underserved communities
- Engagement methods will be based on recommendations from these organizations