King County

Asset Management

Asset Management is the coordinated activity of an organization to realize the value from its assets. WTD manages over 60,000 assets valued at almost $5 Billion, including equipment like pumps and motors, infrastructure like pipelines and tanks, buildings, vehicles and technology, and software and databases.

Management of these assets includes planning, design, procurement, maintenance, repair, refurbishment or replacement of sewer lines and equipment at pump stations and treatment plants to avoid sewer overflows, and to keep our staff and the public safe. WTD is committed to meeting all regulatory requirements and fulfilling our customer's expectations while minimizing the total cost of the system.

Much of the King County wastewater treatment system is over 50 years with many assets reaching "end of life" each year. WTD uses objective and measurable criteria to prioritize asset management projects so that we can plan and forecast the maintenance or replacement of critical assets.

Contact us

If you have questions regarding this information, please contact:

Olivia Robinson at Olivia.Robinson@kingcounty.gov, 206-477-3566

A big mechanical job at our West Point Treatment Plant replaced a special part of our sedimentation tanks. Learn more.

Status of key areas of Asset Management Program (March 2022)

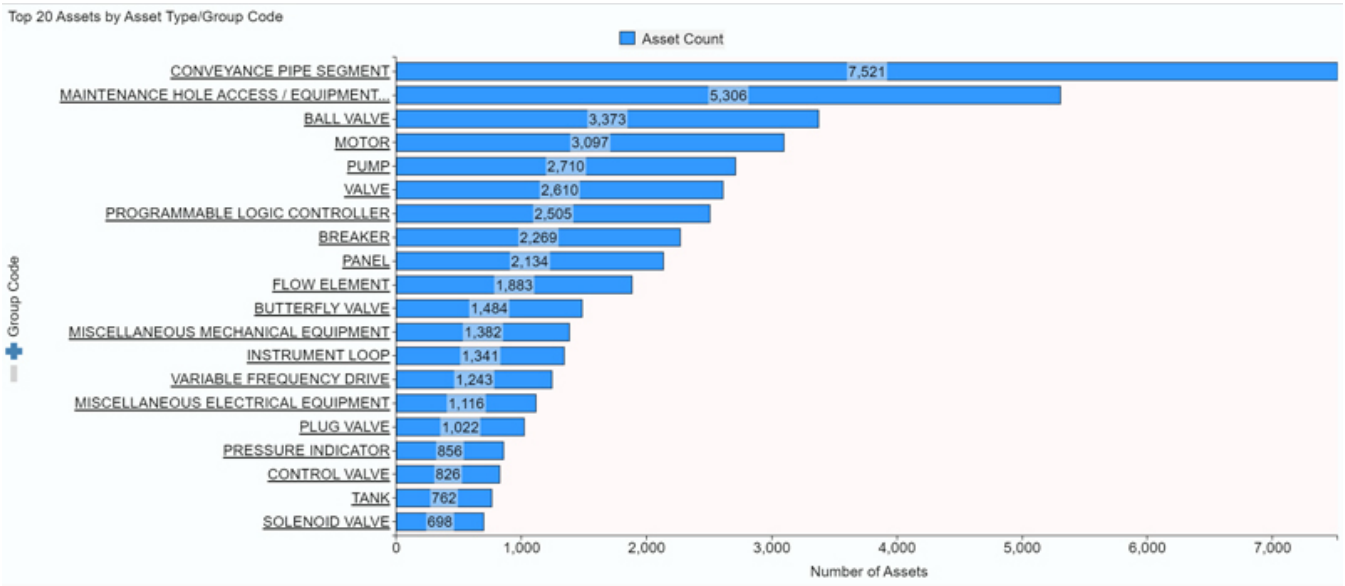
WTD Assets +

Asset Registry

The Asset Registry is the database of physical assets in our maintenance system. The database includes multiple attributes of our assets to help us maintain and analyze our value-added activities to extend useful life of the asset.

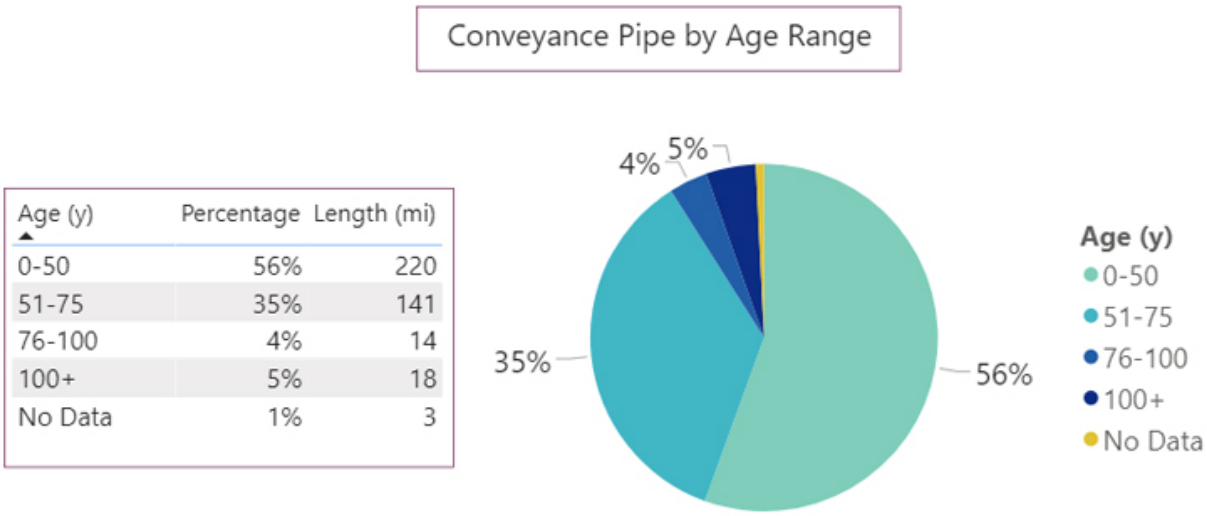
Below is a graph of the top 20 assets by asset type or group code.

Top 20 assets by Asset Type or Group Code



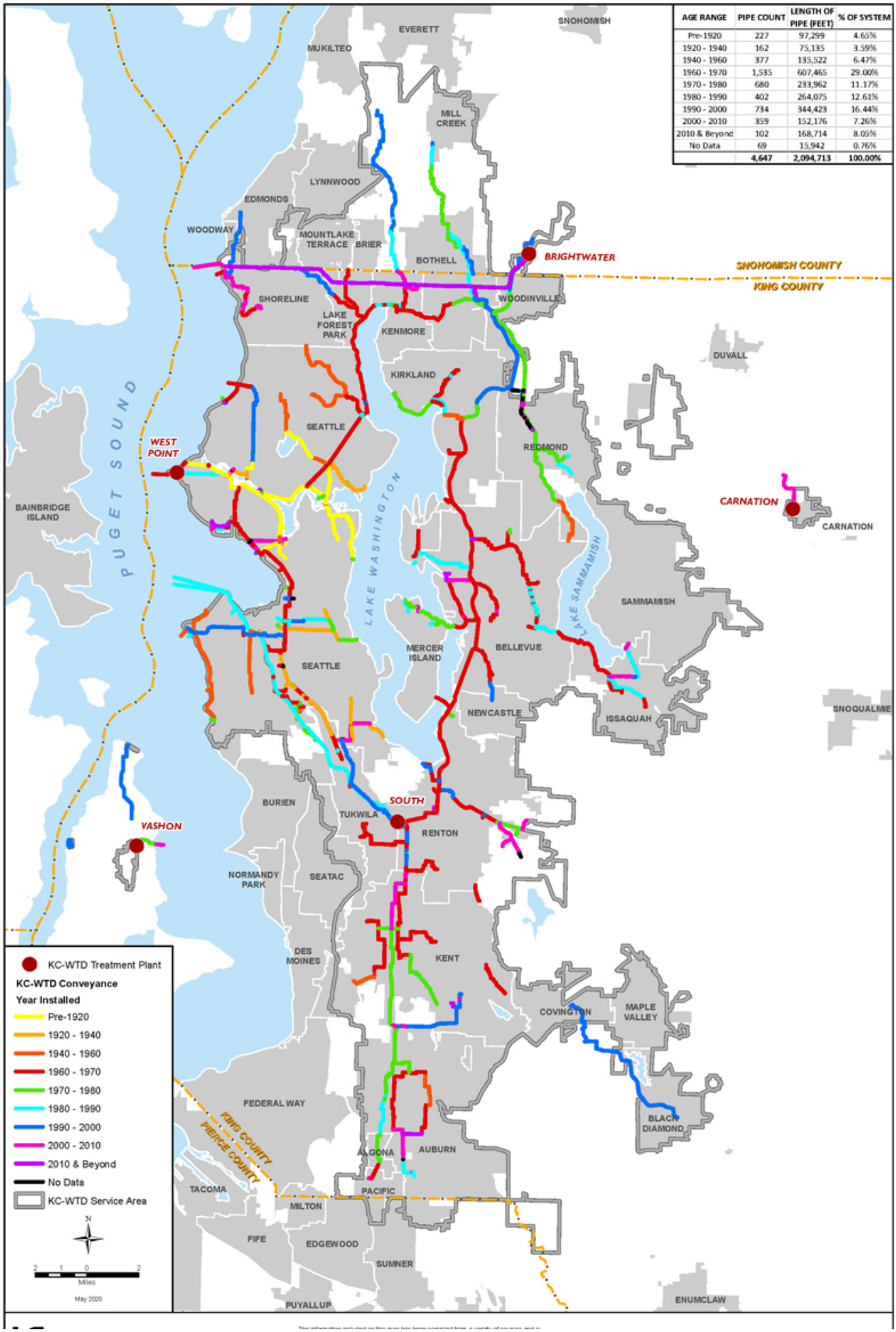
Conveyance Pipe Age

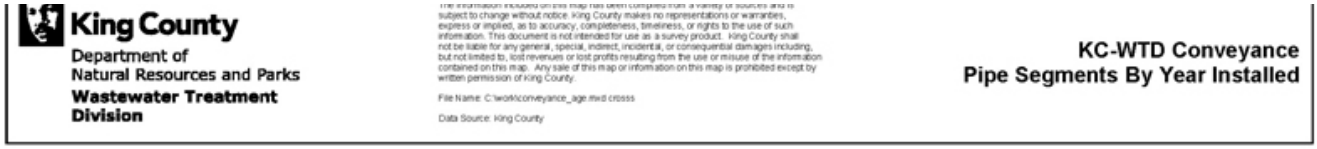
Conveyance Pipe by Age Range



Age (y)	Percentage	Length (mi)
0-50	56%	220
51-75	35%	141
76-100	4%	14
100+	5%	18
No Data	1%	3

KC-WTD Conveyance Pipe Segments By Year Installed

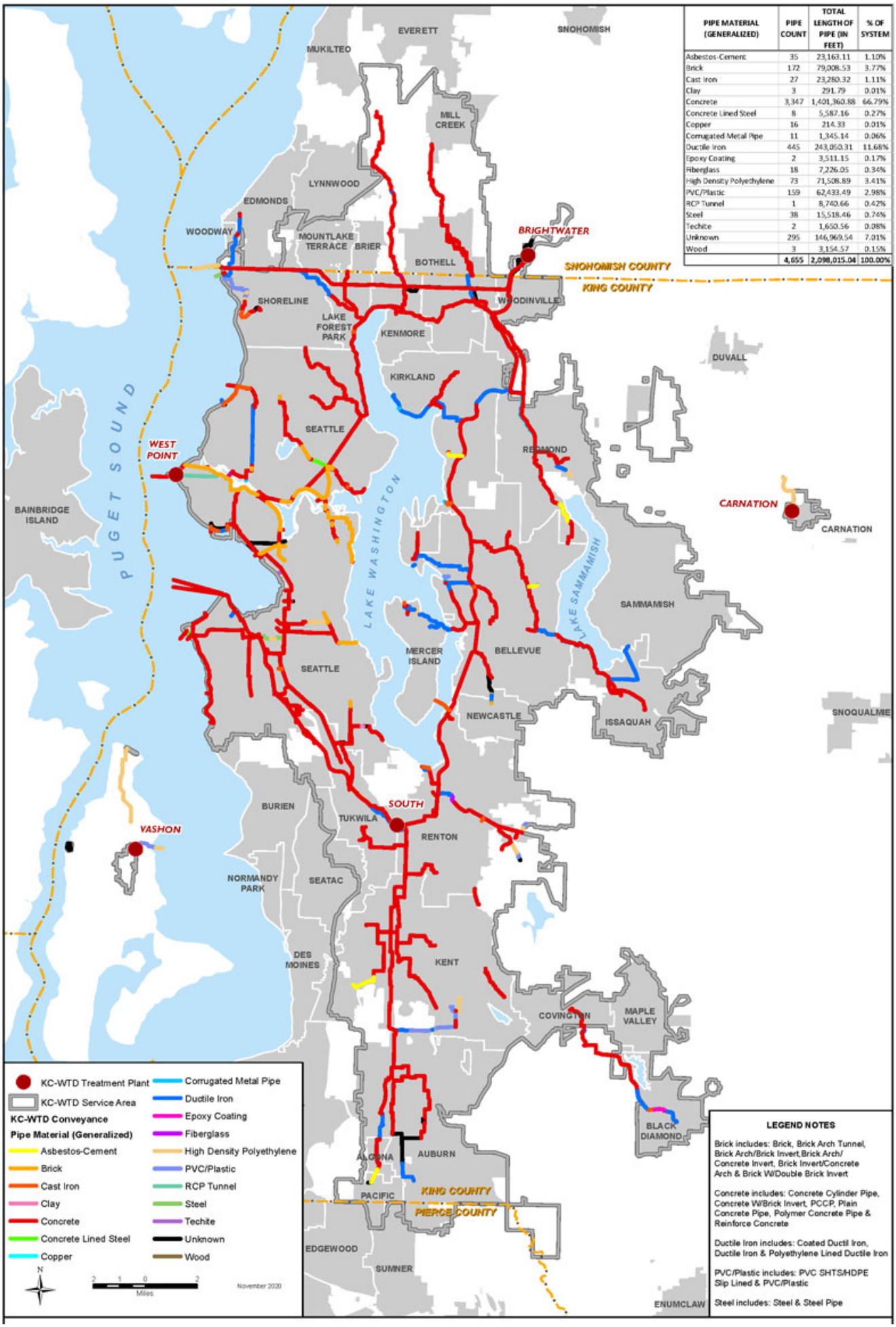

AGE RANGE | PIPE COUNT | LENGTH OF PIPE (FEET) | % OF SYSTEM
Pre-1920 | 227 | 97,299 | 4.65%
1920 - 1940 | 162 | 75,135 | 3.59%
1940 - 1960 | 377 | 135,522 | 6.47%
1960 - 1970 | 1,535 | 607,465 | 29.00%
1970 - 1980 | 680 | 233,962 | 11.17%
1980 - 1990 | 402 | 264,075 | 12.61%
1990 - 2000 | 734 | 344,423 | 16.44%
2000 - 2010 | 359 | 152,176 | 7.26%
2010 & Beyond | 102 | 168,714 | 8.05%
No Data | 69 | 15,942 | 0.76%
4,647 | 2,094,713 | 100.00%
EVERETT
SNOHOMISH
MUKILTEO
MILL CREEK
LYNNWOOD
EDMONDS
WOODWAY
MOUNTLAKE TERRACE
BRIER
BOTHELL
BRIGHTWATER
SNOHOMISH COUNTY
KING COUNTY
SHORELINE
LAKE FOREST PARK
KENMORE
WOODINVILLE
DUVALL
KIRKLAND
SEATTLE
WEST POINT
REDMOND
PUGET SOUND
BAINBRIDGE ISLAND
LAKE WASHINGTON
LAKE SAMMAMISH
CARNATION
SAMMAMISH
MERCER ISLAND
BELLEVUE
NEWCASTLE
ISSAQUAH
SNOQUALMIE
BURIEN
SOUTH
TUKWILA
RENTON
VASHON
NORMANDY PARK
SEATAC
DES MOINES
KENT
COVINGTON
MAPLE VALLEY
FEDERAL WAY
BLACK DIAMOND
KING COUNTY
PIERCE COUNTY
ALGONA
AUBURN
TACOMA
PACIFIC
MILTON
FIFE
EDGEWOOD
SUMNER
PUYALLUP
ENUMCLAW
KC-WTD Treatment Plant
KC-WTD Conveyance
Year Installed
Pre-1920
1920 - 1940
1940 - 1960
1960 - 1970
1970 - 1980
1980 - 1990
1990 - 2000
2000 - 2010
2010 & Beyond
No Data
KC-WTD Service Area
N
2 1 0 2
Miles
May 2020



View as PDF.

Conveyance Pipe Material

KC-WTD Conveyance Pipe Segments By Type of Material



PIPE MATERIAL (GENERALIZED)	PIPE COUNT	TOTAL LENGTH OF PIPE (IN FEET)	% OF SYSTEM
Asbestos-Cement	35	23,163.11	1.10%
Brick	172	79,008.53	3.77%
Cast Iron	27	23,280.32	1.11%
Clay	3	291.79	0.01%
Concrete	3,347	1,401,360.88	66.79%
Concrete Lined Steel	8	5,587.16	0.27%
Copper	16	214.33	0.01%
Corrugated Metal Pipe	11	1,345.14	0.06%
Ductile Iron	445	243,050.31	11.68%
Epoxy Coating	2	3,511.15	0.17%
Fiberglass	18	7,226.05	0.34%
High Density Polyethylene	73	71,508.89	3.41%
PVC/Plastic	159	62,433.49	2.98%
RCP Tunnel	1	8,740.66	0.42%
Steel	38	15,518.46	0.74%
Techite	2	1,650.56	0.08%
Unknown	295	146,969.54	7.01%
Wood	3	3,154.57	0.15%
	4,655	2,098,015.04	100.00%

LEGEND NOTES

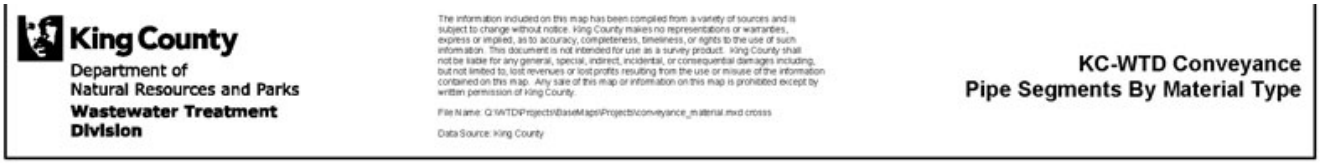
Brick includes: Brick, Brick Arch Tunnel, Brick Arch/Brick Invert,Brick Arch/ Concrete Invert, Brick Invert/Concrete Arch & Brick W/Double Brick Invert

Concrete includes: Concrete Cylinder Pipe, Concrete W/Brick Invert, PCCP, Plain Concrete Pipe, Polymer Concrete Pipe & Reinforce Concrete

Ductile Iron includes: Coated Ductil Iron, Ductile Iron & Polyethylene Lined Ductile Iron

PVC/Plastic includes: PVC SHTS/HDPE Slip Lined & PVC/Plastic

Steel includes: Steel & Steel Pipe



View as PDF.

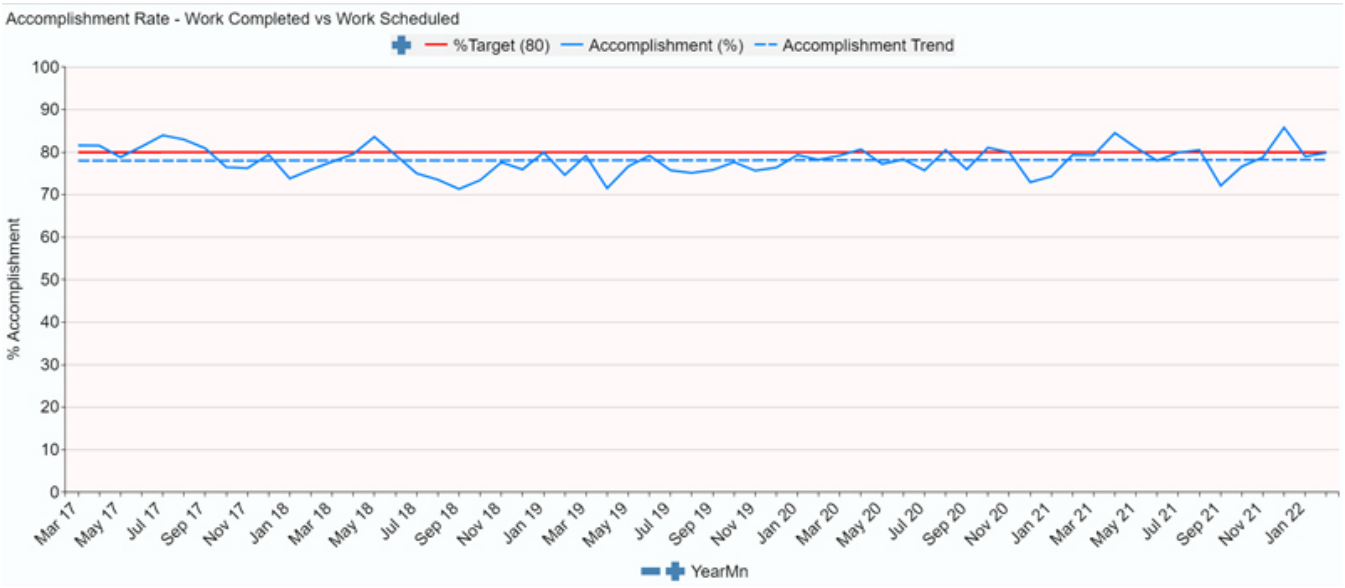
How we maintain +

Scheduling allows us to implement proactive maintenance strategies while simultaneously coordinating short-term/unexpected work. By measuring the accomplishment against the schedule we develop a weekly feedback loop to increase completion and address roadblocks. This helps us to:

- Review the backlog of work to make sure we are addressing the highest priority items.
- Coordinate maintenance activities with affected groups to promote efficiency (maintenance, operations, etc)

Below is a chart documenting the accomplishment rate.

Maintenance Work Accomplishment Rate – Work Completed vs Work Scheduled

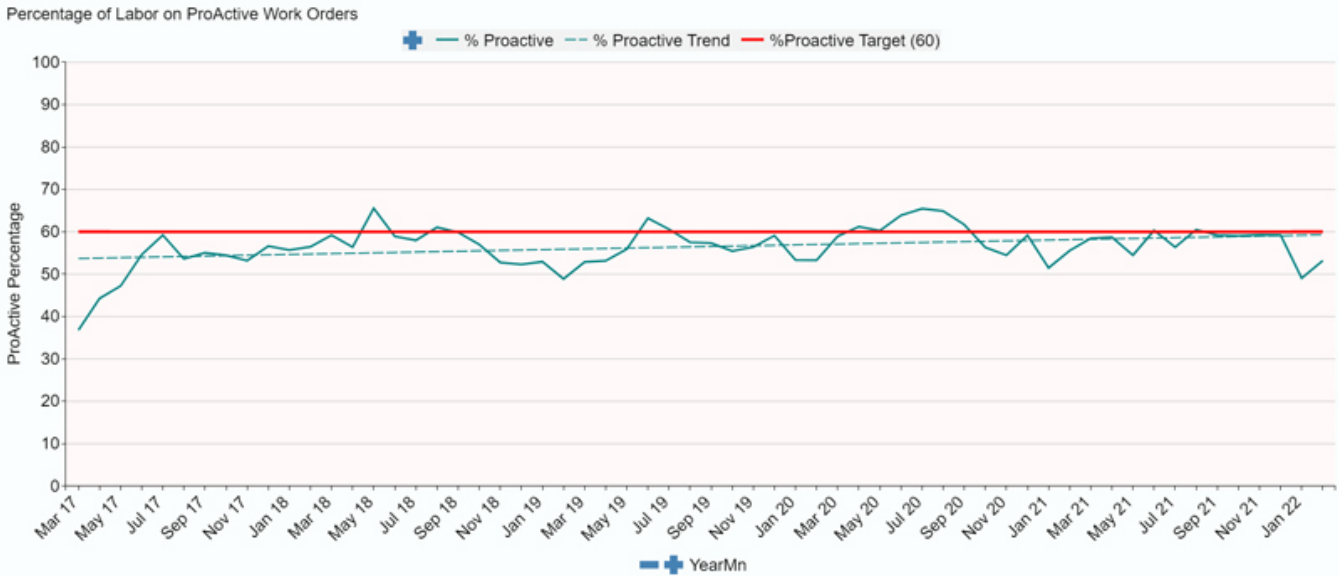


Proactive activities are documented maintenance strategies that we have to avoid or detect failure before it affects our system. Reactive activities are when our assets are telling us what they need. We are always in a continuous improvement process to:

- learn what our assets need to proactively address them
- reduce our reactive maintenance to improve reliability and decrease operating costs

Below is a chart documenting the percentage of our labor hours against proactive work.

Percentage of Maintenance Labor on Proactive Work Orders



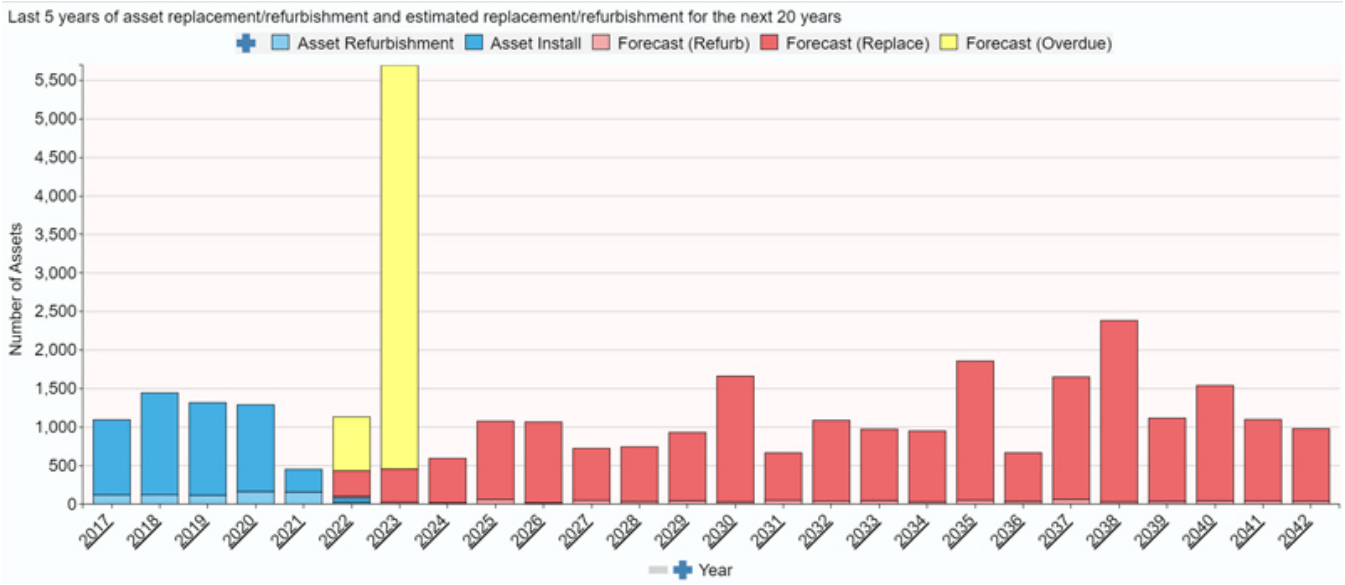
Eyes on our current assets +

WTD is in the process of estimating the useful life of our 60,000 assets. This estimation allows us to:

- Determine a condition assessment cycle to assess both the individual asset and it's estimated useful life.
- Proactively refurbish or replace them to maintain our high levels of service.
- Track assets to ensure needed work is completed and issues are addressed in a timely manner.

The graph below depicts the magnitude of assets refurbished or replaced in past years as well as a forecast (using the estimated useful life) of assets to be refurbished or replaced for planning purposes. Areas in yellow indicate backlog of assets that are operating beyond their estimated replacement/refurbishment date. These assets have a medium to low priority because they are still in good condition, meet performance standards and have a low criticality within the system. These assets may require increased maintenance attention to ensure reliability.

Last 5 years of Asset Replacement/Refurbishment and Estimated Replacement/Refurbishment for the next 20 Years

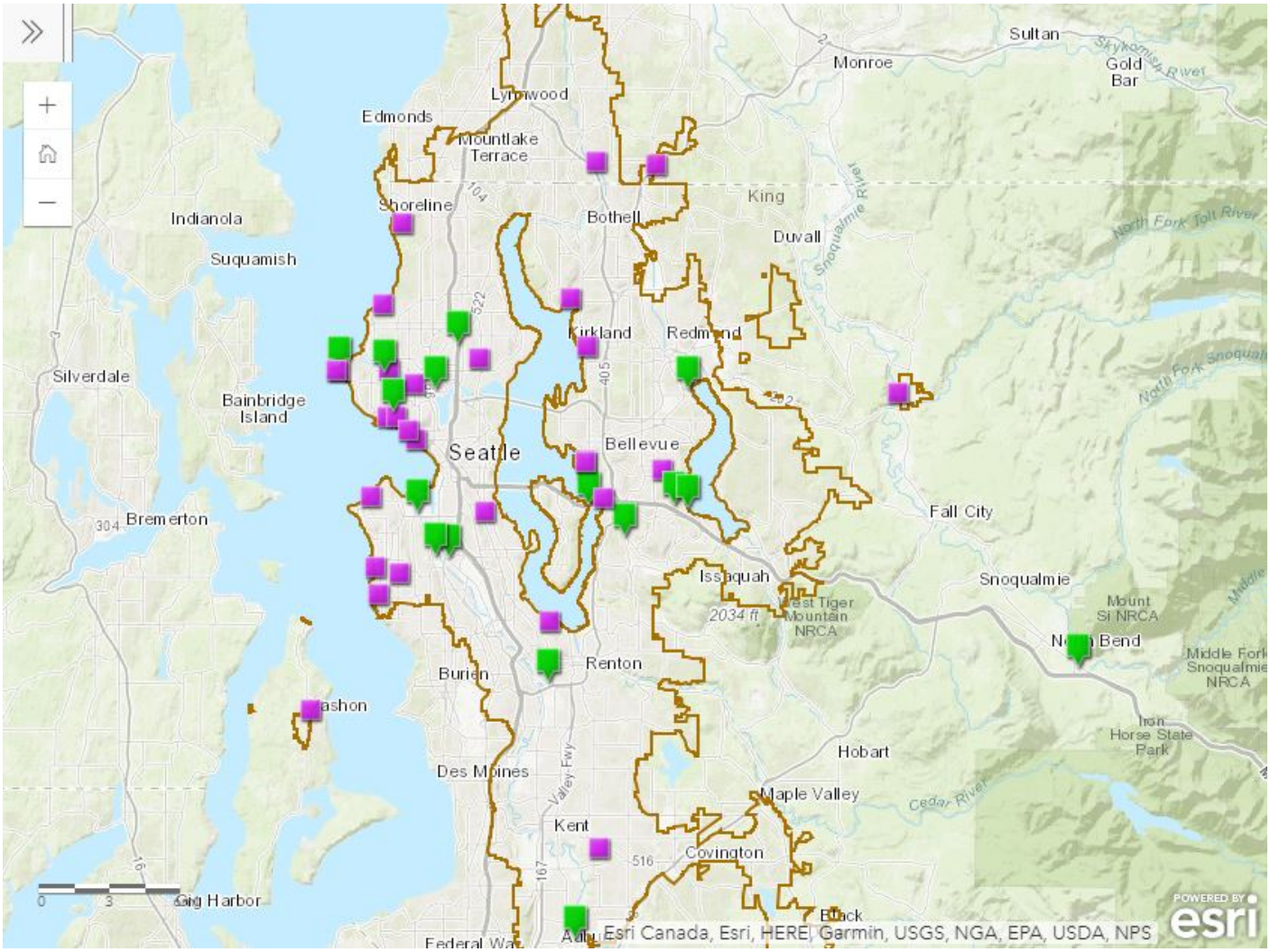


Web page archive +

- September 2021
- July 2021
- April 2021
- January 2021 (web page launch)

Learn more about asset management and capital projects

WTD Capital Projects



WTD Clean Water Stories

Working from home works for inspection group, August 3, 2021

Videos

How King County Wastewater extends the life of our pipes by lining them

Learn how King County repairs and protects pipes from degradation using a technique called "lining."

Wastewater Treatment Division

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Get directions

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WTD Division Directory

website.wtd@kingcounty.gov

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