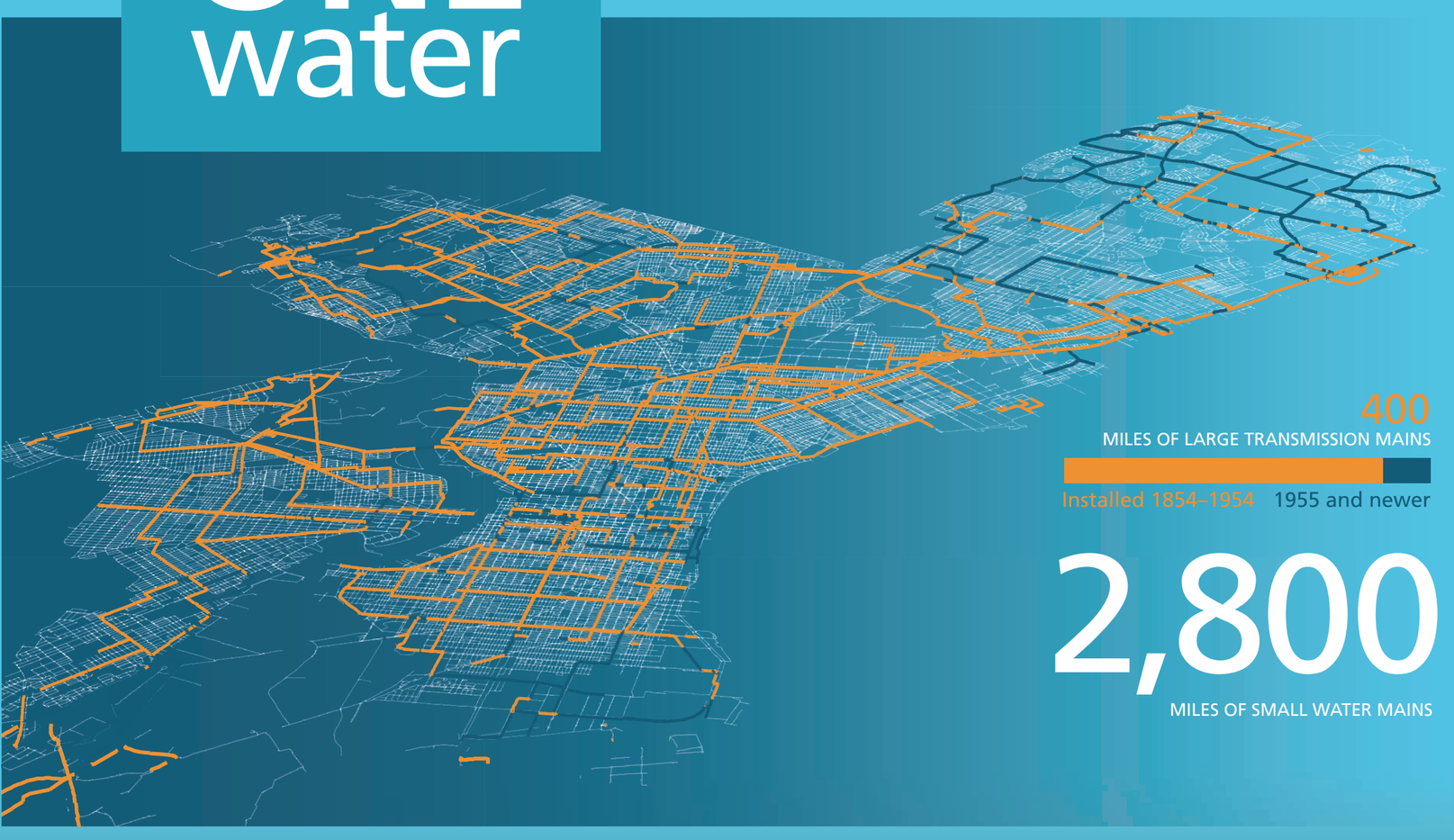
Two Rivers ONE water



400
MILES OF LARGE TRANSMISSION MAINS
Installed 1854–1954 | 1955 and newer

2,800
MILES OF SMALL WATER MAINS

PHILADELPHIA: THE MAIN STORY

Under our feet are thousands of miles of pipe that bring water to our homes and remove storm overflow, wastewater, and sewage. Philadelphia is an old city, so we manage old infrastructure; some of our water mains were first installed in the 1800s.

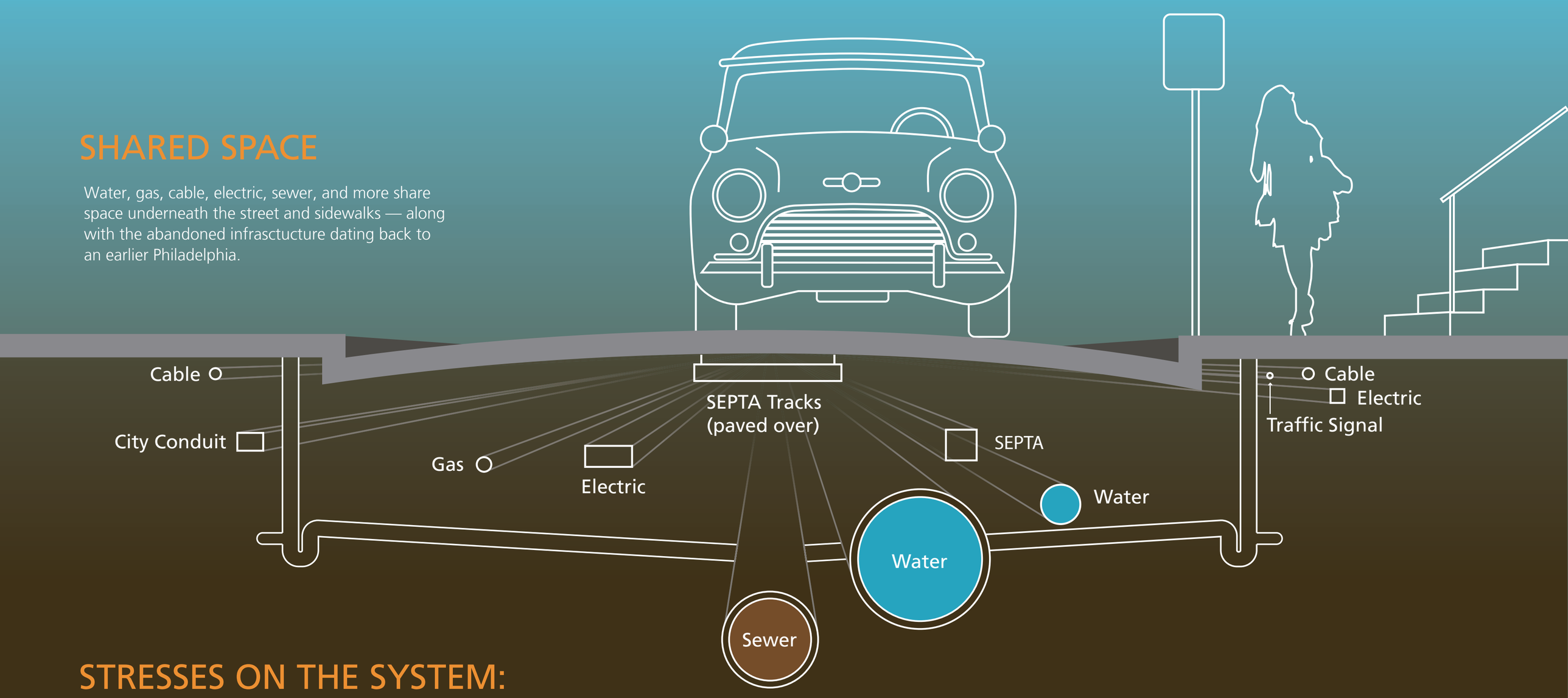
PWD inspects and maintains 3,200 miles of shared water mains and relies on building owners for maintenance of their water service lines and plumbing.

AVERAGE AGE	LIFE EXPECTANCY	DIAMETER
70	**120**	**6-93"**
Our average water main is older than I Love Lucy.	On average, mains last a bit longer than we do—between 100 and 120 years.	Most are 6-8 inches, but you could drive a Mini Cooper through a big one.

# OF BREAKS	MILES INSPECTED	REPLACEMENT COST
750	**1,000**	**$1,300,000**
Fewer than the national average, the breaks (and repairs) each year are mostly of 6-8" mains.	On average, we inspect a third of all our water mains each year for defects and stress.	That's the cost to replace ONE MILE of water main; our goal is to replace 22 miles annually.

SHARED SPACE

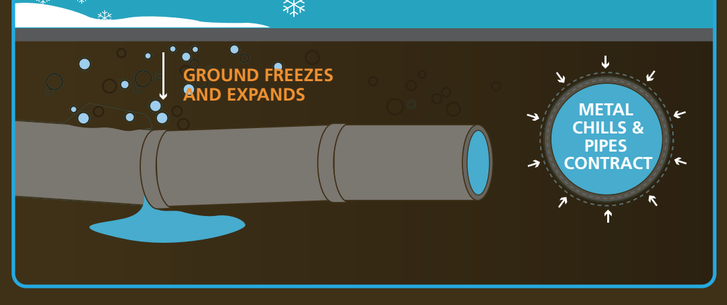
Water, gas, cable, electric, sewer, and more share space underneath the street and sidewalks — along with the abandoned infrasctucture dating back to an earlier Philadelphia.



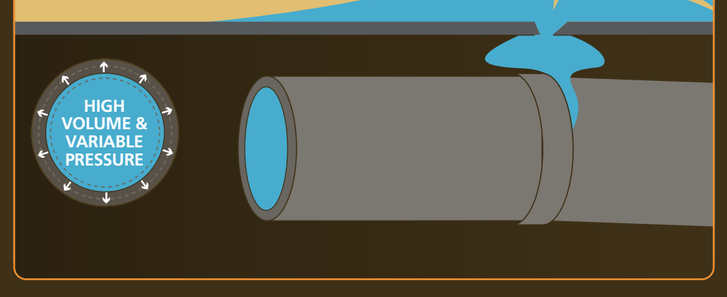
STRESSES ON THE SYSTEM: Even healthy mains can break

Weather plays the biggest role in main breaks, but specific local conditions can affect mains as well.

In extreme cold, water temperatures in the pipe drop, causing the metal to contract. If the ground freezes, it expands and puts even more pressure on the pipe joints. The smaller the pipe, the greater the stress, so most winter breaks happen in the smaller mains.



Larger transmission mains are more affected during summer, because our water use increases and the increase demand and variation in pressure puts additional stress on the mains.

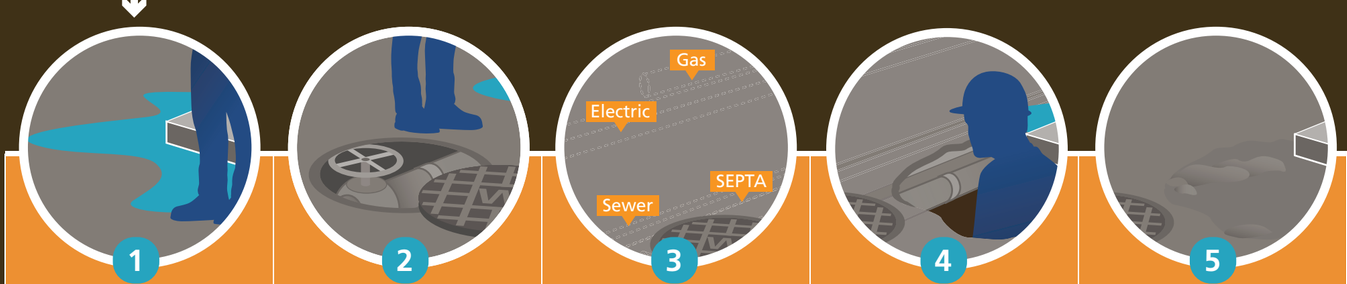


See water where it shouldn't be? CALL 215-685-6300

Because the system is buried, most leaks are not obvious until water comes up through the ground or into a basement.

FIXING A MAIN BREAK

WATER IS SPOTTED
A break is detected during a PWD inspection or someone sees water in the wrong place and calls PWD. We ask questions to determine the problem.



1 IDENTIFY	2 CONTAIN	3 PINPOINT	4 REPAIR	5 RESTORE
An inspector assesses the problem: What type of leak? How urgent? Is it from a main or a customer's water line?	An emergency crew shuts down the main if it is causing flooding and a repair crew is assigned.	If we need to dig to pinpoint the leak, a call is made to PA One Call and other utilities mark gas, electric and other lines.	The repair crew digs, finds the leak and repairs it — usually with a band. The main is disinfected and water is turned back on	The crew then temporarily patches the road, which is permanently repaired by the Streets Dept. once weather permits.
EXPECTED REPAIR TIME FOR SMALL MAIN BREAKS				
30 minutes	*1 hour*	*2 hours in an emergency*	*2-4 hours*	*1 hour*
POSSIBLE COMPLICATIONS	*Shut-off valve is frozen or buried.* *Water shut-off will affect a school or hospital.*		*Weather conditions reduce visibility and make finding the break more difficult. Shut off valve is frozen or buried.*	