




Cast Iron Pipes: What You Can Expect in Older Houses

August 1, 2014 | 12  (<https://nevadapreservation.org/cast-iron-pipes-what-you-can-expect-in-older-houses/#comments>)

Shortly after I purchased my first home here in Beverly Green, I was pretty naive as to what owning an older home can mean and what to expect. I planned and budgeted oh so carefully for the items my inspector had red-flagged and all the small cosmetic renovations I planned on making. After only two weeks into the renovation process, I received a phone call from the electrician I had hired. “Did you know you have mushrooms growing under your house?” he said. Turns out, I had a leak in the main sewer line which had contaminated the dirt under the house in the crawl space. After running through my inspection papers with a fine-toothed comb, I verified that there was no mention of any plumbing red flags and that plumbing isn’t typically covered in a home inspection beyond running faucets and flushing toilets. In hindsight, I should have done my homework on what to expect from the old pipes found in these beautiful, vintage homes. As preservation enthusiasts, no doubt that some of us live in the older neighborhoods of central Las Vegas and probably own or rent a home that was built before 1970. For all their charm, these homes are not immune to the aging and wear and tear that will inevitably occur over 40-plus years.

One of the most common problems is the aging cast iron pipe that was used in construction until about 1980, when PVC was introduced to residential building. According to a 2012 Water Infrastructure and Sustainability fact sheet by the Environmental Protection Agency (EPA), the average age of a broken water main in the U.S. is 47 years. Unfortunately for us, this means most of our homes’ pipes are on the tail end of their life expectancy. This especially affects the main sewer line and pipes coming from your bathrooms and kitchens. These pipes are subject to a much faster corrosive process than the pipes carrying just drinking water, which is what is used to fill

bathubs and sinks. According to the website [oldhouseweb.com](http://www.oldhouseweb.com) (<http://www.oldhouseweb.com/how-to-advice/cast-iron-waste-pipes.shtml>):

“When cast iron waste pipes fail, it’s usually due to corrosion from within.

As a result of what runs through waste lines, hydrogen sulfide gas can form. This can oxidize and produce sulfuric acid, which corrodes cast iron. Some drain cleaners also contain sulfuric acid and, if used continuously, can accelerate the corrosive action and shorten the life of the cast iron piping system. “

To add injury to insult, these pipes are often buried in the foundation slab or within walls, making it hard to visibly detect when our pipes are starting to fail. The following are six questions the American Water Resources website (http://www.awrusa.com/american-water-resources/about-us/news/articles/6_Questions_Every_Homeowner_Should_Have_About_Water_Pipes.html) recommends for homeowners to look out for to help detect if there may be a leak or other unseen deficiencies in your household plumbing:

“1. How old are your pipes?”

Let’s face it, our pipes are old. It’s likely your pipes are original and thus as old as the year your house was built. If you’re unsure, find out when your house was built and if there have been any plumbing replacements or repairs since you moved in.” Knowing the age of your pipes will help you to assess their need for repair.”

“2. Do you have mature trees near your water service lines?”

One of the many draws to the old neighborhoods of Vegas is the mature trees and established landscaping that provide shade from the hot sun. These roots systems, however, may have spread into the plumbing lines beneath our houses. If you do have mature trees and plants located close to your house, do some quick research on their root systems and determine if your pipes have been endangered.

“3. Do you have clay soil?”

The most common types of soil in Las Vegas are clay, sand and hard rock caliche. “According to NACE International, the world’s leading professional organization for the corrosion control industry, sandy soils are among the least corrosive, and clay soils are among the most severely corrosive.” There’s nothing we can do about this one, folks. Look for warning signs mentioned below and plan ahead.

“4. Have you been ignoring the warning signs?”

Answer by American Water Resources: “Many times, it’s the deceptively small things homeowners overlook that may signify a water issue. Just putting grease and food remains down the drain can lead to continued grease and food disposals building up over time in the sewer and drain lines. A stammering faucet can be an indication that a water line is leaking, and a clogged toilet or slow drainage can signal to a homeowner that the sewer line is clogged. All

of these signs could point to a sudden and potentially costly repair. Detecting these easy fixes and taking care of them can save you from potential problems – and save you more than 10% on water bills, according to the EPA.”

“5. Do you live where the seasons suddenly change?”

We know the desert weather can be harsh and change drastically from one day to the next. “The Washington Suburban Sanitary Commission and the American Society of Civil Engineers advises that just a 10-degree change in temperature can increase stress on water mains and service lines, and increase their risk of damage. It’s a good idea to keep an eye on things water-wise just after a major change in temperature. If your water pressure seems different or toilets are not flushing as usual, it may be that a seasonal change finally pushed your pipes to the limit.

“6. Do you know what your pipes are made of?”

For most of us, our pipes are made of cast iron. “Steven Folkman, USU professor of mechanical and aerospace engineering completed a comprehensive pipe materials study and discovered that ‘nearly 75 percent of all utilities have corrosive soil conditions and combined with a high portion of old cast iron and ductile iron pipes, corrosion is ranked the second-highest reason for water main pipe failure in the United States.”

If you do have access to your pipes, there are visible signs of corrosion and potential problems as well. Oldhouseweb.com gives us more insight into what kind of signs to watch out for:

“When examining cast iron piping, you’ll typically find two different signs of failure. One is the crack that you describe, usually forming on top of the pipe or at a seam, created by the form used during the casting process. This is likely due to the hydrogen sulfide gas collecting in concentration and the resulting acidic attack weakening the pipe wall.

The other external indication of failing cast iron pipes is blobs of rust, usually found on the underside of horizontal sections. The size of these blobs can be anything from little pimples to about the size of half a walnut shell. These aren’t as obvious as cracks and can be overlooked because they don’t perpetually leak. As the iron around a pinhole rusts, the iron expands and seals the leak. While they might not be actively leaking when discovered, it’s certainly a sign that internal corrosion has breached the wall of the pipe.”

So what does all this mean? Do we need to have all our plumbing replaced at once? No, but if you haven’t yet, you should start forming a plan of attack for if and when the old pipes in your vintage home start failing. One good recommendation is to account for this in your budget for any major kitchen, bathroom, or other renovation projects you might be planning. It will often save you money in the long run if you plan to have your old plumbing replaced while you already

have opened a wall or stripped the flooring material. If any of the above warning signs sound familiar, plan to have your trusted plumber do a full inspection. Cast iron pipes can often be patched and replaced in segments, so if you catch problem areas before they spread or create major infrastructure damage, it's likely you could move at a more budget friendly pace. And for the do-it yourselfers of the group, check out [realtor.com](http://www.realtor.com/home-garden/do-it-yourself/plumbing/tying-old-cast-iron.aspx?source=web) for a full blown explanation of replacing cast iron pipe with pvc. (<http://www.realtor.com/home-garden/do-it-yourself/plumbing/tying-old-cast-iron.aspx?source=web>)

And, in case your still wondering what happened with my sewer line, I was lucky enough to be early in my renovation process when disaster struck, and so I was able to re-budget and move some stuff back onto the wish list. It was a pretty extensive project, excavating the dirt (among other things) out from under the house, putting new dirt back in and replacing the entire 40-foot sewer main and the connecting bathroom pipes and as well as the vertical piping in one of the bathrooms. Needless to say, it's done, behind me, and I'm on to bigger and better things.

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12 Comments



Kevin on September 7, 2017 at 11:44 pm

About how much did that repair/replace job cost you if you don't mind me asking. I'm looking at a house 130 years old in St. Louis Missouri. Had a lateral inspection done today and he suggests replacing all the pipes under the home.

Reply (</cast-iron-pipes-what-you-can-expect-in-older-houses/?replytocom=402#respond>)



Michelle Larime on October 10, 2017 at 6:32 pm

Hi Kevin, sorry for the late reply. Direct email is often the best way to get a hold of us quickly. If I remember correctly, the final price was around \$2,700 for just the plumbing work. The portion of my home that was done was about 1500 square feet. Obviously, prices can vary pretty significantly by region. I hope this helps!

Reply (/cast-iron-pipes-what-you-can-expect-in-older-houses
/?replytocom=496#respond)



Chris Kinsey on August 19, 2018 at 2:40 pm

Hi Michelle,
Who did your plumbing work to replace the cst iron pipes?
Thanks,
Chris

Reply (/cast-iron-pipes-what-you-can-expect-in-older-houses
/?replytocom=943#respond)



Michelle Larime on August 23, 2018 at 10:55 pm

Patriot Plumbing out of Boulder City. I recently used Drew's Plumbing to replace a small portion that wasn't done previously. They were a little less easy to coordinate with, but ultimately had a good price and service.

Reply (/cast-iron-pipes-what-you-can-expect-in-older-houses
/?replytocom=946#respond)



Mike on July 11, 2018 at 7:05 am

Can you email me the name of the plumber? I bought a house in the area and the quotes I am receiving are super high. I replaced my water main myself, but need to replace all of my sewer pipes. My email is oceabs@hotmail.com (mailto:oceabs@hotmail.com)
Thanks
Mike

Reply (/cast-iron-pipes-what-you-can-expect-in-older-houses/?replytocom=812#respond)



David Harrison on August 4, 2018 at 2:43 pm

Hi.

Wonder if you can help. I live in an apartment & I have a blocked 4 inch metal down pipe, it has what I can only think us a 'service plate' on it & I'm sure that's where the block is as water doesn't go down it, it just goes past & to my bath/basin, the 'service plate' is rusted. How do I remove it?

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Michelle Larime on August 10, 2018 at 3:01 am

Hi David,

I'm not sure I understand what you mean by service plate. Your best bet is to call a plumber or handyman and ask their advice. If you need a reference, give us a call!

Reply (/cast-iron-pipes-what-you-can-expect-in-older-houses
/?replytocom=932#respond)



Glenn Curtis, CMI-SME (<http://www.masterinspectornv.com/>) on

November 13, 2018 at 6:42 pm

As a builder and Master Inspector here in southern Nevada, I've been under countless homes in the past 40 years. Here's the advice I give my clients. Have a licensed plumber run a 'boroscope' (snake-camera) through the cast-iron sewer lines under the home and out toward the street and take a look at the waste-lines from the 'inside'. I've crawled under many a home where the CI lines 'looked' ok from the outside...but after the lines were 'scoped' problems that weren't visible from outside became apparent. Every home with cast-iron DWV piping should be 'scoped' prior to 'closing'.

Reply (/cast-iron-pipes-what-you-can-expect-in-older-houses/?replytocom=1119#respond)



Chris curl on December 2, 2018 at 8:05 pm

Explain to me what has to be done to remove cast iron plumbing on a slab Home

Reply (/cast-iron-pipes-what-you-can-expect-in-older-houses/?replytocom=1170#respond)



Michelle Larime on December 3, 2018 at 5:31 pm

You'll need to have the portion of the slab removed where the plumbing is. Once the pipes are replaced, it will be filled back in. It's pretty common, but is definitely a process!

Reply (/cast-iron-pipes-what-you-can-expect-in-older-houses
/?replytocom=1171#respond)



Laz (<http://www.lazarodinhblog.com/>) on May 20, 2019 at 3:58 pm

I will like to repost your article in my blog, i will of course credit the author please advise.

Reply (/cast-iron-pipes-what-you-can-expect-in-older-houses/?replytocom=2359#respond)



Jacki McCarthy on May 28, 2019 at 6:21 pm

Yes, you may repost. Could you include a link to our website as the author?
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