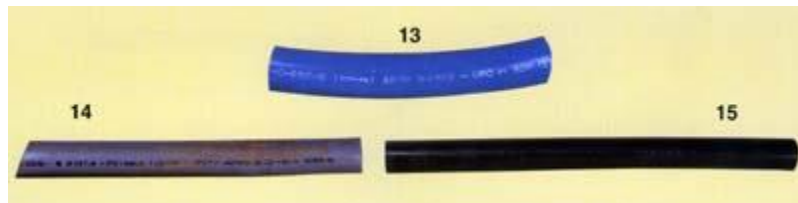


An Overview of Woodbine Water Leaks

- Woodbine was built as a 229-unit apartment community in 1989. The material used for providing water throughout the community was **Blue Polyethylene piping**. This type of piping was manufactured with a **180 psi** (pound-force per square inch of pressure) rating.
- Polybutylene is a plastic resin used to manufacture water pipes from 1975 to 1996. **Inexpensive** and easy to install, polybutylene pipes were used extensively in the construction of new homes **in place of copper pipes**. In 1996 Shell Oil Company, after settling a major lawsuit, stopped selling the resin that manufacturers had used in this polybutylene piping; it is not banned on a national level, but neither is it available.



- Research suggests that old blue polybutylene pipes are too fragile to withstand common disinfectants found in the public water supply and will become brittle and crack **from the inside out**. Over time, once enough microfractures have formed in the pipe, it will wear out completely and rupture, causing a water leak.
- In addition, the underground main waterlines in Woodbine are threaded throughout a rocky riverbed and amongst the over 300 trees on the property; rocks, root movement and ground shifting causes **exterior pressure** on the piping and creates additional fractures, i.e. leaks.
- Since 2013 Woodbine has incurred **34 water line leaks** and the repairs for the major leaks have cost \$71,268; additional small leak repairs and related costs like re-seeding the grass, fixing broken sprinkler lines due to digging, etc. brings the expense total to **\$82,111**.
- Repairs to these leaks have been done with coupling inserts when the leak is very small, or pinhole size. Larger leaks that required replacement of pipe sections have been done with **black poly pipe** that is now produced at **250 psi rating**, hence resistant to leaking.



- These leak repairs cost do not include the additional expense of **wasted water or related sewer billing** (which is calculated on water usage). The last 4 years of Water / Sewer cost and increases is as follows:

Woodbine Water / Sewer Usage

WATER Year	Woodbine Cost	% of expense	WB \$ % increase	City Rate increase	SEWER Year	Woodbine Cost	% of expense	WB \$ % increase	City Rate Increase
2015	\$26,667	8.6%	-2.4%	Dec - 6%	2015	\$38,092	12.3%	35.4%	Oct - 4%
2016	\$31,930	9.5%	19.7%	Dec - 2%	2016	\$43,460	12.9%	14.1%	Oct - 14%
2017	\$33,467	9.0%	4.8%	Dec - 0%	2017	\$54,953	14.6%	26.4%	Oct - 4.5%
2018	\$38,037	10.6%	13.7%	Dec - 0%	2018	\$74,272	18.4%	35.2%	Oct - 9.0%
		TOTALS 2015-18	42% increase				TOTALS 2015-18	95% increase	

TOTAL OPERATING EXPENSES: 2015 - \$309,447 / 2016: - \$337,032 / 2017 - \$373,668 / 2018 - \$403,378

FACT: Total water/sewer costs for Woodbine consumed 29% of total operating expenses in 2018!

- Water leaks, just as water/sewer expenses **continue to increase** as years go by and pipes get older.

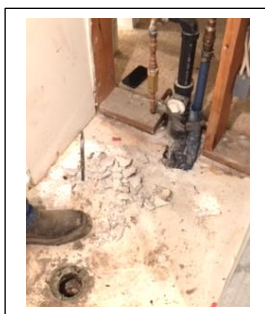
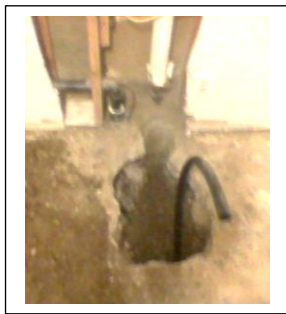
Year	# of Leaks	Amount \$	Year	# of Leaks	Amount \$
2013	4	\$2,975	2017	6	\$16,687
2014	2	\$3,182	2018	8	\$19,969
2015	7	\$13,521	2019 (so far)	3 (4?)	\$4,256
2016	4	\$10,677			

- The leaks have not produced much of a **concentration pattern** since 2013 and the next leak is unpredictable

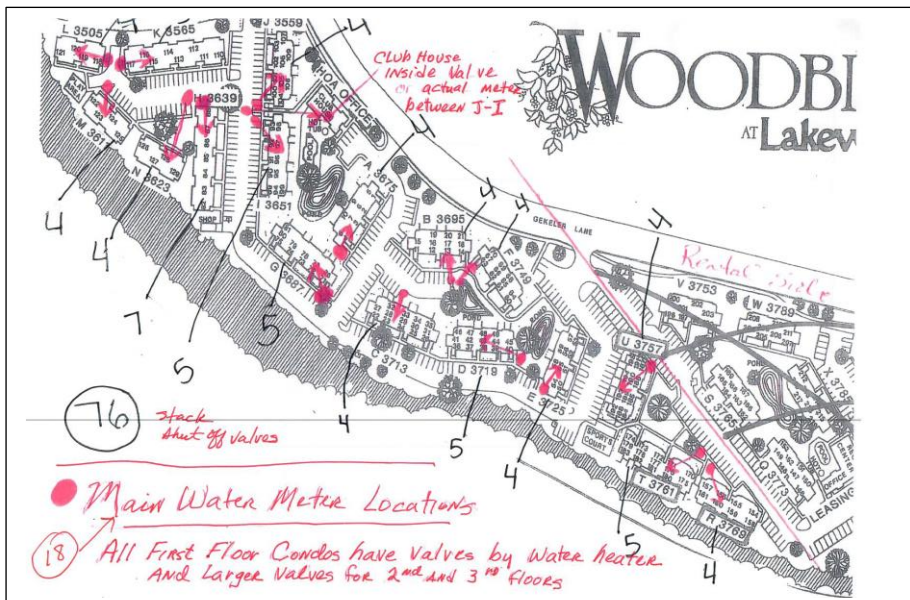
Bldg. # units	# of Leaks	Bldg. # units	# of Leaks	Bldg. # units	# of Leaks	Bldg. # units	# of Leaks	Bldg. # units	# of Leaks	Bldg. # units	# of Leaks
A - 10	1	D - 14	0	G - 11	6	J - 10	1	M	2	R - 8	0
B - 11	3	E - 10	2	H - 7	3	K - 8	8	N	1	T - 14	0
C - 14	2	F - 11	0	I - 11	1	L - 4	4	Club H	0	U - 12	0

- There are 2 types of leaks locations that can be addressed in different ways
 1. Leaks of pipes that are **external to a building** and easily exposed to digging operations; we'll call these **mainline leaks** (note: the 3 leaks in March of 2019 have all been mainline leaks)
 2. Leaks of pipes that are **inside a building or underneath** the building slab or patio concrete; we'll call these **feeder leaks** because they happen after the shut off valve to the building
- External leaks are located by **hand digging** a trench (sometimes less expensive) or using a **backhoe** for more efficiency (usually more expensive but easier). Leaks not always come from right below where water appears on the ground because water will work its way up the path of least resistance.
- Some leaks require an **outside leak detection company** to locate where to dig (usually *American Leak Detector*; current cost for location is a flat \$425). There are times when we don't have a visual leak but deduce that there is one because of the unusually high water bill and/or seeing that the water meter for a building is spinning fast when no one is using water.

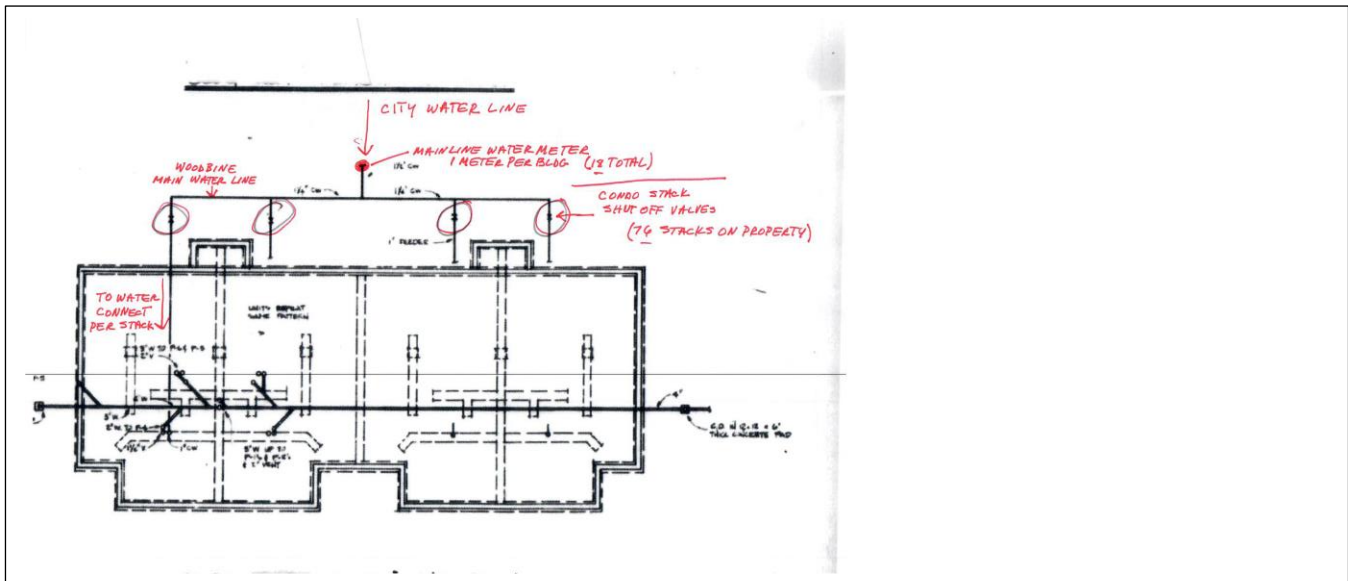
- Given the conditions of Woodbine ground (river rock and tree roots), there is sometimes needed more powerful equipment (like water jetting machines) to blast away a path to the leak. This causes a basic \$1200 plumbing repair to jump up to \$3200 – at least on the last 2 leaks that required this additional time and equipment. However, we keep negotiating with plumbing companies to control costs.
- “Feeder leaks” can be repaired with a minimal of digging, which is good because it also reduces the breaking up of concrete in search of the leak. In these cases, **the leaking 1½ inch in diameter blue poly pipe can be threaded with a 1-inch black poly pipe** and effectively seal the leak(s) wherever they are. Typically, the black poly pipe is pulled through the old blue poly pipe starting at the shut off valve location outside the building, through the feeder line up to the water heater, where it is then connected to water lines that run throughout the condo and those stacked above it.
- Some small demolition of the floor and wall at the water heater site is required for this **threading technique**, as well as digging up the shut off valve connection outside the building; it takes a unique plumbing line puller machine to accomplish this. The cost of this procedure was \$3200 with Express Plumbing, but we have now negotiated a \$2500 process with Cloverdale Plumbing.



- Another issue with repairing water leaks at Woodbine is to shut off the water while the repair is being done. This can be (and sometimes needs to be) shutting off the water for the entire building from a central location. However, most of the individual buildings do have **shut off valve locations** that only affect the ground floor condo and those above it, what we call a “**stack**”. Unfortunately, these locations were not identified on a map and in most cases had been covered up by landscape and soil.
- We began to uncover these shut off locations as leaks developed and last year worked on finding the rest to make them accessible as well as visual. Long and tedious process without good mapping but we now have located and placed **a blue cap** over the access point for the various locations. (Unfortunately, buildings R, T, and U were constructed with only 1 or 2 locations for the whole building.) Now we can shut off the water only for a stack of condos while doing an interior repair, not the whole building.



- For your reference, below is a schematic of how water from Boise City (Suez) runs from a master line into Woodbine at 18 places on the property, one for each building. These **18 places are the water meters** that are read for billing purposes. Any issue with the line from the City to Woodbine's main water lines is the responsibility of the City. Any leaks or issues from the water meters to the mainlines and feeder lines into the condos is the responsibility of Woodbine.



- Since we began to recognize the ongoing nature of Woodbine's water leak problem, some of the various actions taken to evaluate and address the problem are as follows:
 - **Homeowner Education:**
 - Regular updates in the quarterly newsletter that is distributed in drop boxes, emailed and posted on the Woodbine website
 - Discussions at the annual and past semi-annual HOA meeting; minutes posted on the website
 - Discussions at the regular HOA Board meetings with minutes posted on the website
 - In the newsletter prior to the 2018 Annual Meeting, the HOA offered to perform **utility audits** on individual units; the audit would be at no cost and then the homeowner would pay for any water leak recommendations
 - Newsletters have also contained **recommendations on water conservation** to conserve HOA dues
 - HOA Management has conducted several **audits of water and sewer bills**, including:
 - After fixing numerous leaks we applied to Suez Water and Boise City Utilities (sewer) for rebates but received only \$516.98 in credits.
 - We also had some of our **meters evaluated for accuracy** and had our **sewer bills audited for correct calculations**; the results presented to us was everything is proper according to utility formulas.
 - We identified comparatively **high usage buildings** as related to the number of occupants and begin looking for underground leaks that were not currently obvious. One method was to have all occupants at a certain date and time refrain from using water for about half an hour. We then checked the building meter and see if it is still calculating water usage, which would indicate an outside leak maybe under the building somewhere.
 - We developed comparison grids to evaluate **usage per unit** on various sizes of buildings at all the location addresses. See sewer data base of costs per building/unit since June of 2018.

- We have worked with **various plumbing companies** and vendors in an effort to get the best service at the most reasonable cost. This includes having our in-house labor complete some of the less skilled work like digging, opening and patching walls, and cleaning up holes and mud caused by a leak. Over the past 6 years we have engaged the following companies for repair solutions:

All Star Plumbing / Bee Boise Best / Cloverdale Plumbing / DeBest Plumbing / Express Plumbing / Viking Sewer

- We have also consulted with several major contracting companies and requested re-plumbing proposals including: *Express Plumbing / EKC General Contractors / Buss Mechanical / Cloverdale Plumbing*

To date we have had difficulty getting a company to put the time and effort into analyzing our problem and offering a **plumbing replacement proposal**. However, we are now working with Cloverdale Plumbing who is inspecting each building, the location of the main lines, the location of the shut off valves, and the potential location of new pipes. This takes into consideration any concrete sidewalks or asphalt areas that would need to be worked around or under.

- The main obstacle seems to be the ground condition of Woodbine with all the river rock and roots, and a lack of precisely how much main water line we must replace. Accordingly, a **time and materials approach** would possibly be more feasible than a flat bid; of course, that leaves **unknown the funding for the project**.

THOUGHTS ON THE BOTTOM LINE

- Undoubtedly the **leaks will continue** as the years go on, and we must continue to patch. On the other extreme we can **replace all the blue poly pipe at Woodbine**, a monumental task unless we develop a rational approach to phase in replacement.
- **Breaking down the approach** into two segments might be a place to start, for example **feeder lines** into the buildings as one division and the **main water lines** as the other.
- We have about 70 feeder lines that could be replace for **approximately \$2500 each which equals \$175,000**. These are not leaking now but probably will sometime over the next years; this would be a preventative maintenance approach using the threading technique. This could be done over some years, building by building.
- Main water line replacement is **“guestimated” to cost twice as much as the feeder lines** but again the unknown obstacles of rocks and roots may make it a larger challenge.
- Another discussion has been to try and get a loan to fund it all at one time; possible but a long-shot as the HOA does not have any assets for collateral as security for a loan. **Perhaps a special assessment could be used for security for a loan -?** Default would mean a lien against every homeowner’s property. We have checked with the Public Works Department of the City of Boise and they do not have funding for privately owned entities like our HOA.
- A **special assessment** is another option which could be levied against Woodbine homeowners until the plumbing replacement is complete. That could start once a plan of action is put in place (or immediately if the HOA wants to get ahead of the project and build a war chest to fund it).
- A special assessment @ \$50 per month etc. ($\$50 \times 165 = \$8250/ \text{mo.} \times 12 = \$99,000 \text{ yr.}$). **An assessment could be higher or lower depending on how quickly the replumbing is to be done.** The special assessment collections would be designated for plumbing purposes and put into a separate reserve account.
- Finally, it should be recognized that the plumbing leak problem at Woodbine is affecting property values, not only regarding the drain on HOA funds that could be used to enhance the property, but also in resale values. It could be considered a condition that should be disclosed to potential buyers; **such a disclosure could be minimized with an ongoing plan of action to address and eventually reverse the issue.**