



Domestic Water Issues

LMS 195 Citygate 1

What's the issue?

The acidic water supply of Greater Vancouver produces a corrosive effect on copper piping and slowly dissolves the pipe wall causing the pipe wall to wear thin. Electrolysis, high velocity water flow and undersized piping are other reasons for pipe failure. To compound the problem the GVRD added ozone treatment to the City water supply in 2000. The addition of ozone increased the water carrying capacity of oxygen increasing the reaction with copper piping, further shortening its life.

The result is a plumbing system plagued with pinholes, leaks and in need of frequent costly repairs. These repairs cause inconvenience and frustration to our residents. The "band-aid" method of a rubber hose and clamp covering pinholes on the pipe is a quick-fix solution. However, this method is most often short lived. Total pipe replacements have been necessary to buildings as young as eight years in age.

This issue was recognized in early 2000 and failures have been steadily increasing in frequency since. We are at the point where action is required to stem the continuing and increasing expenditure on repairs.

Background

Citygate 1 was constructed between 1990 and 1992. At that time, the building code for high-rise domestic water systems was different than it is today. The code then permitted:

- Thin walled (Type L) copper pipe.
- Bending copper pipe to ease alignment of connection, which thinned and weakened the pipe wall.
- Use of smaller diameter pipe than is in use today resulting in higher pressure and velocity in the re-circulating lines causing them to wear out sooner.

As a result of the above, copper pipes are developing pinhole leaks along pipe surfaces or at bends and joints.

Today's systems follow an updated code specifying Type K copper (twice the thickness of L), no bending of pipe for alignment and much larger pipe size resulting in lower line pressure and flow rate. Systems built to the new code are expected to last upwards of 30 years or more.

Where Are We Now!

A review of the monthly expenditures on plumbing related repairs for the past 4 calendar years shows the following

Year	Number of water Shut downs	Cost of repairs
2000	9	\$15,839.41
2001	8	\$12,777.43
2002	14	\$47,643.76
2003	15	\$57,297.31

The numbers show a disturbing trend. The cost of plumbing repair is increasing and the problem will get worse. Finding a permanent fix for our domestic water copper piping is the only way to mitigate the cost of repair. The longer we wait to address the root cause, the more money we will spend on temporary, stopgap repairs.

In the last 2 years our insurance coverage has become a major problem. A portion of the increase in premiums and difficulty obtaining insurance is related to our claim history on plumbing. Our deductible has increased from \$2,500 to \$20,000 per claim. Basically we only have insurance for catastrophic failures. One positive saving us even higher expenditures to date is that leaks have been located and stopped quickly, minimizing the cost of repairs.

Impact

The fact we having domestic water system problems will not be a mystery to anyone reading the Strata Council minutes and monthly financial statements. Although the minutes and financials do not spell out the minute detail, they do recognize the problem and raise a cautionary flag to prospective purchasers and current owners.

Our ongoing water leak problems impact us in the following ways:

- We are spending increasing amounts needlessly on stopgap repairs - \$100,000 in the past 2 years alone (02/03).
- Water shut downs are an inconvenience to residents.
- We are gaining a reputation of a place not to buy in because of plumbing problems. This is and will have a continuing impact on the value of our units.

So What Do We Do From Here?

- Do nothing and continue making repairs as leaks occur.
- Look for Someone to Blame and Sue.
- Re-line the pipes with a glass epoxy hardener.
- Replace all the domestic water pipe bringing it up to current engineering standards and building code.

1.) Do Nothing

It really isn't "doing nothing" but a continuation of what we do now – continue to spend money-repairing leaks as they occur. An unfortunate aspect proven in other high-rise structure with the problem is what we are experiencing now is only the tip of the ice burg - we are not unique. The number of leaks in the hot water system will continue to increase, expand to the cold-water piping and become wide spread throughout the building.

2.) Blame Someone and Sue

This has been reviewed but does not appear to be an option. The building was built to code of the day. It has been 12 years since installation so it would be difficult to prosecute. No one else in this situation is or has sued – there is no class action suit we could join. The cost of staging a suite could be onerous and the outcome uncertain.

3.) Re-line the pipes

This is a process that was developed about 10 years ago. It involves drying out the lines with compressed air, then blowing grit through the pipes to clean the inner surface. Finally an epoxy is sprayed in to bond to the inner surface of the copper pipe. The problem with this process is there is no guarantee that all the surfaces get adequately coated and you are working with a defective pipe to start with. The procedure also involves extensive down time. Residents can go for lengthy periods without water to their unit. This method will not do anything to correct the problem of low water temperature and lack of pressure to some units. The City building inspection branch does not support this procedure, as they can't see inside the pipe to inspect it. The procedure is approximately 30% cheaper than re-piping.

4.) Re-place the copper pipe

Re-piping the building is the preferred method of getting beyond the problem of leaky copper pipes in buildings of our age and construction. It is more expensive but in the end it will:

- Eliminate the money pit of continuing repairs.
- Remove the stigmatism associated with a bad reputation. The longer we wait, the more entrenched the reputation will become.
- Stop the inconvenience to residents from multiple shut downs. We now average more than 1 per month and that will continue. At present we typically wait until a minimum of 2 leaks in one section occur before initiating a shut down - unless the leak cannot be temporarily plugged.
- Bring the building plumbing up to current code. This should also remedy the problem of uneven hot water temperature and pressure occurring in some units.
- Lessen the problem of obtaining insurance coverage.

So, if we decide to re-pipe....

The immediate decision required is for a commitment to provide a long-term fix. This will be expensive project.

Several issues are impacting what the final cost may be:

- The price of copper continues to increase and has doubled in the past XX months.
- There are few companies in the Vancouver market of the size and expertise required to complete a project of this magnitude and complexity. Those qualified do not lack work and may demand premium contract prices.
- Due to our building design, the water distribution is not as simple as it would be in a building with a straight vertical rise bottom to top. Our building has several setbacks that make the piping more complicated and expensive to replace.
- In general the cost of labor and materials is increasing due to demand on the market place for qualified tradesmen. Qualified contractors are currently running a 3 to 6 month backlog in scheduling.

To proceed with a re-piping project the following process is anticipated:

- Accept bids for an Engineering firm to provide an independently engineered plan specific to Citygate 1. The objective is to have a firm selected so the cost of the engineering plan can be presented and voted on at the 2004 spring AGM. The cost for this phase is approximately \$30,000.
- Once an Engineering firm has been selected they would be tasked to provide the engineering plans for re-piping the building from the main City inlet to the fixtures in each unit (sinks, toilets, tubs, showers, ice makers, washing machines). This phase would require approximately 8 weeks.
- When the plan is available tenders would be called to bid on the project. This phase would take another 8 weeks.
- Once the tenders were in, a winning bid would be selected and presented at an SGM in late fall of 2004 for owners to vote on.
- Once the contract is let and the winning bidder has slotted the work in their schedule it is expected the project would require approximately 5 months to complete.

How much do you expect this to cost?

Current bids range from \$1,200,000 to \$1,400,000 plus GST. These estimates were obtained from 2 contractors in Dec 2003 and Jan 2004 without benefit of an engineered plan. Cost per unit would be in the range of \$7,000 to \$10,000 depending on entitlement. These costs are strictly a guesstimate and are not to be relied on as accurate. Recent increases in the price of metal over the last 6 months will also have an impact on the final cost. Only when the actual bids come in can the cost be finalized.

How can this be paid for?

Several options are available. For example, a combination of special levy, the use of contingency funds, etc. A committee will review the options and provide a recommendation.

How will I be told what is going to happen?

The bid contractors will provide open house sessions to explain the process and answer questions.

How long will I be without water?

Re-piping will involve installing a parallel supply system to the one in use today. Water shut down to individual units is estimated at 2 hours on 2 or 3 occasions when your unit is transferred to the new supply lines.

What is required in my unit?

A daily schedule would be provided on the work for the next day. In most cases the new piping will be installed in sections of false ceiling in your unit. Access holes will be cut in the ceiling to run in new piping. Piping with-in your unit will be PEX plastic. Installation within your unit will cause minimal disruption as the PEX is flexible and will be run through the ceiling area and down inside interior walls.

I have unique paint or wallpaper in my unit will this be preserved?

The contractors in all cases will do their utmost to restore wall/ceiling surfaces to their original. In instances where this is specialized, the contractor will restore the wall to painted surface ready for your special treatment.

Will the taps in my unit be replaced?

No, but the contractor will offer a range of new fixtures you can have installed during the process if you choose.