

Omak Sewer Replacement Project A Brief History

The Omak Sewer Replacement Project began with a sewer main collapse in November of 2009. The collapse resulted in a sewer backup and an over the ground spill of approximately 30,000 to 40,000 gallons of raw sewer effluent that eventually flowed into the Okanogan River through our Storm Drain system.

When the spill was first discovered, the City Public Works Department immediately deployed its crews to block flow to the collapse area, and do a pump around to bypass the collapsed area of sewer line. An emergency was declared by the City Council, and a contractor was mobilized to excavate the area of the collapse to repair the pipe. When the excavation began we realized that we would have to replace the full length of the sewer main between manholes because the concrete cylinder pipe that comprised the sewer main had been eroded by the acidity of the waste stream so that the wall thickness was only about 3/8 inch, instead of the 1 1/4" thickness that it was when installed.

The realization that our sewer mains had become so fragile was sobering, and underscored the need to inspect all of our older mains, and make plans for replacement. The sewer mains in the area of the failure had been installed in the mid 1930s to early 1940s, and were well past their expected 50 year life expectancy.

The 2009 sewer main failure caused the city to initiate a system-wide evaluation of the sewer collection system, and develop a long range plan to replace all of the system that was past its design life and in danger of failure. A review of our system by our consulting engineers resulted in a proposed system replacement divided into 5 phases, with the oldest, and highest risk portions of the system being replaced first, and the newer and lower risk areas being planned for replacement in the future. The engineers estimated that all the system in phases 1 through 4 needed to be replaced as soon as funding could be secured to reduce the risk of further environmental damage. (both the 2009 and the 2011 sewer main collapses resulted in raw sewage effluent being spilled into the Okanogan River)

Additional environmental concerns are due to an acknowledged problem with infiltration and exfiltration from the system. We have documented significant increases in our flows at the sewer plant during times when the ground water is elevated. This increase can only be attributed to ground water leaking into flaws and unsealed joints in our sewer mains.

We contacted the Governor's Office of Regulatory Assistance and outlined our situation. They convened a meeting in Omak to include representatives of the City, the City's Consulting Engineers, Department of Ecology, USDA Rural Development, the Public Works Trust Fund and the Community Development Block Grant section of the Department of Commerce.

During that meeting, and subsequent meetings organized by the ORA, the availability of various loan and grant programs from each of the different agencies was explored along with application deadlines and the maximum amount available through each of the various funding sources. In addition, the debt service requirements that would be necessary to service the debt incurred was estimated, and a projection of sewer rates was developed based on the revenues needed to cover the debt service.

As a result of our meetings with ORA, and of a subsequent Tech Team Meeting during the 2010 IACC, the City applied to USDA-RD, the Public Works Trust Fund, and the Department of Ecology for funding. We were recommended for a loan in the amount of \$10,000,000 from the Public Works Trust Fund by the Board, and we were recommended for a loan in the amount of \$1,707,000 from the DOE for Construction of Phase 1, and for another loan in the amount of \$1,770,000 from the DOE for Engineering Design Work on Phases 2 through 5 as a result of this exercise. When the City was approved for the Public Works Trust Fund loan, we were informed by USDA RD that we did not qualify for assistance through their program because the loan offer from the PWTF demonstrated that we were able to access loans from other sources, thus no longer qualifying for the RD programs.

During the legislative discussions on the Public Works Trust Board recommendation in the spring of 2011, the legislative staff realized that the City had a Public Works Trust Fund loan recommendation of \$10,000,000 in addition to the DOE's \$1,707,000 construction loan, and \$1,770,000 Engineering Design Loan. As a result, the legislature reduced the PWTF loan by \$3,000,000 to a total loan amount of \$7,000,000. This was done in spite of the fact that the City had documented funding needs far exceeding the total of \$13,477,000 that had been recommended.

During the spring of 2011, the City had another sewer main failure. The second failure underscored the fact that our collection system was dangerously fragile, and needed immediate attention.

Again, the City Council declared an emergency, and a local contractor was mobilized to repair the break. This time, it was necessary to replace over 1,000 feet of main in order to make the system secure and stable. Fortunately, the location of the second break was within the area planned for replacement during the first phase, and the emergency repair was able to be accomplished using the preliminary plans and specifications that had been developed in anticipation of going to bid for replacement of this portion of our system.

To date, the City has made two emergency repairs to our sewer system, and completed Phase 1 and Phase 4A which total 15,552 lineal feet of sewer main replacement, and 9,766 feet of side connecting sewers. The Phase 2A project, currently under construction, has a plan quantity of 14,000 lineal feet of sewer main to be replaced, and 9,900 lineal feet of side sewer connection pipe.

The City's consulting engineers are completing plans for the Phase 4B project which is anticipated to include 8,650 lineal feet of sewer main, and about 10,600 side sewer connections. This project is expected to go to bid in early 2014. Once the total cost of the phase 4B project is known, our engineers will develop plans for Phase 2B, to replace about 2,500 feet of the largest pipe in our system, bringing all of the system flows into the sewer treatment plant headworks. This will complete the replacement of the highest risk portions of our collection system.

Expenditure on these projects has proceeded as follows:

DOE Phase 1 Construction Loan:

Second Emergency Repair	\$212,262.50
Phase 1 Schedule A	\$1,695,700.61
Total DOE Phase 1 Construction (as amended)	\$1,907,963.11

Public Works Trust Fund Loan No. PC12-951-021	\$7,000,000.00
Emergency Repair and Phase 1 Design	\$105,977.59
Phase 1 Schedule B	\$298,849.73
Phase 2A – Estimate	\$4,158,264.00
Phase 4A – Actual	\$416,751.17
CICA G&O Phase 2A&4A NTE Contract Amt.	\$569,000.00
Total Committed on PWTF Loan	\$5,548,842.49
PWTF Balance for Phase 2B and 4B	\$1,450,000.00

Capital Appropriation Net Grant	\$1,950,000.00
Total Available for Phase 4B and 2B	\$3,400,000.00
Engineer's Cost Estimate for Phase 4B	\$2,300,000.00
Balance remaining for Phase 2B	\$1,100,000.00

As we went through the process of planning for our system replacement, we also estimated what our debt service costs would be, and made significant increases to our Sewer Rates beginning in 2010. The history of our sewer rates is shown on the table below:

Year	Single Family Residential Rate
2009	\$29.75/Mo
2010	\$40.01/Mo
2011	\$56.65/Mo
2012	\$58.35/Mo
2013	\$62.43/Mo
2014	\$66.80/Mo

These rates were increased in anticipation of significant increases in debt service that has accrued, and will continue to increase until all of our currently authorized loans have been fully expended. Our plans call for an increase of 7% in 2015, 4% from 2016 through 2021 and 3% to match assumed inflation thereafter. These rates can be adjusted as necessary to match the rate of inflation and costs of operations.

The City had created a spread sheet to estimate its total operating costs and debt service assuming that we would continue to be able to use loan funds from the Public Works Trust Fund. The rates were increased by 34% in 2010 and another 42% in 2011 as the City recognized it would need over \$850,000 per year to service existing and anticipated loan payments. Projections were extended into the future in anticipation of being able to secure an additional PWTF Loan in the amount of \$5,706,000 to be available in 2013. That loan request was recommended by the Public Works Board, but was not funded by the Legislature as they swept the funds from the Public Works Assistance Account for other state operations.

At this point, the City has been able to repair the most precarious parts of its problem sewer collection system. We are very fortunate that we were able to access the funds through the Public Works Trust Fund to allow us to accomplish these repairs. We still have much to complete to make our system tight and eliminate all of the infiltration and inflow we are experiencing. We have made the commitment to maintain the rate structure that would have been required to service the additional debt for the \$5,706,000 PWTF loan that was lost and use those revenues to build our reserves. Then the City plans to complete our system replacement using local reserve funds instead of being dependent on continuing availability of state and federal funding stream mechanisms. This will prolong the time it takes to accomplish the full system replacement by 12 to 15 years, but in the end, it will be accomplished, and in a manner that is more sustainable by the community.