

2012 Annual Report

CITY OF NORTH POLE UTILITY DEPARTMENT

FEBRUARY 2013

2012 Highlights

- *Flint Hills Resources built a \$3 million sewer main for the Utility*
- *Utility received a \$2.59 million grant to repair sewer mains*
- *Voters approved a \$302,500 emergency generator loan*

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\$3 Million Sewer Main...for Free!

In 2012, Flint Hills Resources built and gifted to the City of North Pole a sewer main valued at over \$3 million. The sewer main carries wastewater from the industrial park on H&H Lane directly to the Utility's sewer treatment plant. The new sewer main is over 6,000 feet of six-inch epoxy-line iron pipe encased in 10-inch diameter PVC pipe; 17 manholes; and an electronic leak detection system.

In the 1980s, the Utility built the original sewer main serving the industrial park. That sewer main was almost two miles long; included five lift stations and was a mixture of gravity flow and wastewater under pressure. Approximately a mile of the old sewer main snaked through un-

developed residential land.

Since 2005, the Utility wanted to build a sewer main dedicated to serving the industrial park so it would not pass through residential property. The Utility does not have the money to build expensive projects like the industrial sewer main. Because the sewer main worked and was not failing, the project was not competitive for state grants or low-interests loans.

The new sewer main follows H&H Lane, travels northward beside the Old Richardson Highway, turns west and follows the dump road to the sewer treatment plant. Now, a single sewer pump station or lift station, pumps the



Industrial sewer main under construction showing a manhole and the iron sewer pipe surrounded by PVC outer pipe.

wastewater from the industrial park to the treatment plant where it formerly required three lift stations.

The Utility decommissioned the old sewer main, but if the property in the area is developed, the main and lift stations can be re-commissioned.

New Utility Department Garage

In 2012, the Utility built a 6,000 square foot garage. The garage is valued at \$1.2 million, but only cost the Utility about \$500,000 with the help of a \$700,000 state grant.

The Utility was sharing garage space with the Public Works

Department for over two decades. The two departments have been growing and the existing garage could no longer meet the two department's needs.

The new garage is located on Homestead Road close to the

Old Richardson Highway intersection. It is a blue steel building with four vehicle bays, office space, indoor storage and outdoor cold storage.

Waste Water Treatment Plant Renovation Project



View of the contact chambers where the last stage of treatment occurs at the North Pole waste water treatment plant.

The Utility is poised to begin a long overdue renovation of the waste water treatment plant (WWTP). The Utility received grants from the USDA and state totaling \$500,000 to assess the condition of the WWTP and develop engineering plans. The Utility's contracted engineering firm, USKH, Inc., worked throughout 2012 to complete the analysis of the WWTP and to generate designs.

Because USDA is funding 75%

of the project, they must approve the designs. In December 2012, the USDA granted conditional approval to proceed with generating the final designs for the WWTP renovation. USDA authorization to proceed is conditional on approval from the Federal Emergency Management Agency (FEMA). The Utility needs FEMA approval because sections of the WWTP are in the Tanana River 100-year flood zone.

With FEMA approval, the Utility will start the multi-year process of renovating the 27 year-old WWTP. Phase 1 is estimated to cost about \$2.5 million. The state will pay 75% of the cost which helps to hold down utility rates. Phase 1 renovations will include replacing aging pipes and pumps; installation of pretreatment equipment to make treatment more efficient; and replacing the aging emergency generator.

“Issuing industrial pretreatment permits locally enables the Utility to protect its treatment plant while working with local businesses.”

Industrial Pretreatment Permitting

In August 2012, the Utility was granted authority to issue industrial pretreatment permits for industrial discharges to the waste water treatment plant (WWTP). There are three industries in the City—Flint Hills and Petro Star refineries and GVEA power plant. Formerly, the EPA and later the state, had the responsibility for issuing

industrial pretreatment permits in the City.

In 2008 when EPA issued the Utility its waste water permit they required the Utility to create an industrial pretreatment program (IPP) within 18 months. The Utility met all its required deadlines, but delays at EPA and state led to the process taking over three years. The

delays were a significant expense for the Utility that had to pay all the upfront costs to develop the program. Once approved, the Utility did recoup its costs from local industries.

Issuing industrial pretreatment permits locally enables the Utility to protect its treatment plant while working with local businesses.



The existing emergency generator at the waste water treatment plant is undersized for planned renovations at the plant.

Voters Approved Emergency Generators Loan

On October 2, 2012, North Pole voters approved a ballot initiative granting the Utility the authority to borrow \$302,500 for emergency generators. The vote was 84.74% in favor and 15.26% opposed.

The loan from the state is for a 20-year term at an interest rate of 1.5%. The Utility is also eligi-

ble to receive two subsidies that could reduce the principle by more than \$30,000 that could reduce the loan payment—a savings for utility rate payers.

The loan is for the purchase of two mobile generators to power utility equipment like lift stations. You definitely want lift stations to keep working when

the power is out so you can keep flushing your toilets among other things. The loan is also intended to purchase an emergency generator for the waste water treatment plant (WWTP). The treatment plant generator replacement is part of the Phase 1 WWTP renovation discussed in the story at the top of this page.

\$2.59 Million Grant to Line aging Sewer Mains

In 2012, the Utility received a \$2.59 million grant to help fund lining 7,000 feet of aging sewer mains. The Utility will combine the grant with a \$1.4 million low-interest state loan received in 2011.

The oldest sewer mains in the Utility are made from a material called Techite that has begun to fail. Municipalities across the US are experiencing problems with Techite pipe installed in the 1970s. The City of Fair-

banks installed Techite sewer mains in the 1970s. Their Techite sewer mains began to fail a few years after installation. In 1987, Fairbanks filed a \$39 million lawsuit against the manufacturer of Techite pipes. Fairbanks settled with the manufacturer in 1998 for \$4 million paid over 20 years.

In 2001, the Utility lined about a mile of its Techite sewer mains. The Utility will use the grant and loan to line the re-

maining sewer mains.

The 2001 lining project used a process that does not require digging up and replacing the old pipes. The process involved pulling a long fabric tube impregnated with resin through the sewer main. The contractor pumps hot water through the fabric tube causing it to expand and harden lining the pipe. The lined pipe has a projected 40-year life, comparable to new iron pipe.



Damaged section of Techite sewer main. Ground water leaks into the pipe and this section of pipe is likely to collapse in the future .

Engineering and Design for Water System

The City built its water treatment plant (WTP) in the mid-1980s. Until 2010, few renovations occurred at the WTP. By 2010, equipment and systems were approaching or at the end of their design life.

In 2010, the Utility received federal economic stimulus funding to replace the water pumps at the WTP. In 2011,

Flint Hills Resources installed two new drinking water wells for the City. These were critically needed renovations.

In 2009, the Utility applied to the USDA for a planning grant to assess the water treatment system and to design appropriate renovations. At the end of 2009, USDA and the state fully funded the \$500,000 project.

In 2012, PDC Engineers conducted the bulk of the analysis of the WTP. PDC should complete the analysis in mid-2013 and provide the Utility with engineering documents. The Utility needs engineering documents before it can apply for grants and loans to make the needed renovations.

“At the end of 2009, USDA and the state fully funded the \$500,000 project.”

Tanana River Channel Ran Dry

The Utility’s waste water treatment plant (WWTP) discharges treated waste water to the Tanana River. The discharge pipe does not extend to the Tanana River’s main channel but to one of its smaller side channels.

During a routine inspection in early May 2012, Utility staff found the channel dry. There is

no record of the channel running dry in the past 30 years. The only water in the channel was treated waste water. Staff hiked approximately two miles up the channel before they encountered a channel with flowing water. Rainfall later in May plus melt water from the mountains returned flow to the discharge channel.

Should the flow of the Tanana River be shifting and the discharge channel no longer have reliable year-round flow, this could be costly for the Utility. Possible solutions include a pipe that extends further to an active channel or dredging the existing discharge channel.



A side channel of the Tanana River where the Utility discharges its treated waste water ran dry in Spring 2012.

City Council approved 2013 Utility Budget

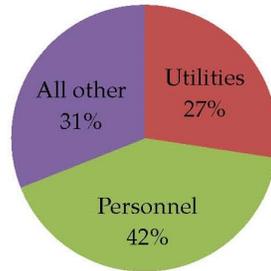
Developing the City of North Pole annual budget, including the Utility Department budget, begins in October and concludes in December.

Department heads submit their draft budgets to the mayor in mid-October and to the City Council at the end of the month. Next the mayor submits the budget to the Council as an ordinance. The budget ordinance must pass three votes by the Council to be adopted as the City budget.

Many expenses in the Utility budget reflect increasing costs not directly controlled by the Utility; for example, rising energy costs. Within the 2013

Utility budget, utility cost (heat, electric & telephone) are an estimated 27% of all expenses and personnel costs are estimated to cost 42% of expenses.

Personnel costs go up automatically—health and other insurances, retirement benefits and a mandated cost of living increase. The remaining 31% of the Utility budget funds all the other things associated with running the utility—chemicals, professional services, equipment repair and replacement, building maintenance, office supplies, etc.



As part of the 2013 Utility budget, the Council approved rate increases. The approved water rate went from \$0.015 to \$0.01705 per gallon of water and \$0.01014 to \$0.01141 per gallon of waste water. The residential and commercial base charges and capital projects charges (Facility Repair & Replacement-FRR) remained unchanged.

The industrial FRR went from \$0.00345 to \$0.00391.

The Utility determines rates based upon a cost of production approach—the estimated ex-

penses to operate the Utility are divided by the previous 12 months of billed water and billed waste water. This method yields a per gallon charge for water and sewer. If the utility rates were not increased in 2013, the Utility was projected to have a \$137,000 deficit.

The Utility has structured utility rates to encourage conservation—per gallon water and sewer charges based upon usage and two modest fixed costs (base charges). For the average North Pole utility customer, their monthly utility bill is less than it would be in Fairbanks.

Looking Ahead to 2013

It could be a busy construction season for the Utility in 2013. Cash flow will affect what can be constructed in 2013.

The Utility finances large capital projects with grants, loans and Utility funds. State grants and loans require first spending the money then requesting reimbursement. Also, most state utility grants require a 30% cash match. Any project cost not funded with grants or loans must be paid with Utility cash.

The Utility's cash reserve at the end of 2012 was about \$1 million. The Utility is estimated to earn about \$200,000 in additional capital earnings in 2013

making about \$1.2 million available for capital projects in 2013.

Large utility capital projects can cost several million dollars. The short five-month construction season concentrates spending in a short period. For a large construction project, it is not unusual for the Utility to receive bills ranging from \$500,000 to \$1 million in a month.

The Utility's cash reserves are about 2/3 of the City's total cash reserves. Paying Utility construction bills could make the City's balance sheet fluctuate wildly.

Utility Capital Projects Proposed for 2013

<i>Project</i>	<i>Estimated Cost</i>	<i>Funding source*</i>
<i>Sewer main lining project</i>	<i>\$3.9 million</i>	<i>MMG: \$2.59 million ACWF: \$1.14 million</i>
<i>Waste water treatment plant renovation project</i>	<i>\$2.5 million</i>	<i>MMG: \$1.7 million Utility match: \$730,000</i>
<i>Wireless well control network</i>	<i>\$100,000</i>	<i>DCCED: \$90,000 Utility match: \$10,000</i>
Total	\$6.5 million	

* *Funding source*

MMG: Municipal Matching Grant (state grant)

ACWF: Alaska Clean Water Fund (state loan)

DCCED: Department of Commerce, Community and Economic Development (state grant)