



THE MCCANDLESS TOWNSHIP SANITARY AUTHORITY

In-house work and projects key to success!

As part of the Authority's mission statement the Authority has pledged to its customers that it will continue its efforts to control operating costs while up-grading facilities to meet local, state, and federal environmental rules and regulations. To accomplish this the Authority has undertaken numerous "inhouse" work and projects to reduce overall costs and improve efficiency within the organization. The following outline describes a few of these cost-effective measures:

Sanitary Sewer Collection System

Maintenance Activities	MTSA	Contractor	Savings	Average Annual Savings
Cleaning of Sewer Lines	\$0.50/foot	\$1.00/foot	\$0.50/foot	\$50,000.00/ 100,000 feet completed
Televising of Sewer Lines	\$0.50/foot	\$1.43/foot	\$0.93/foot	\$93,000.00/ 100,000 feet completed
Manhole Coating/Sealing	\$155.00/foot	\$250.00/foot	\$95.00/foot	\$114,000.00/ 150 manholes completed
Sectional Lining of Sewer Lines (Spot Repairs- 4-foot section)	\$800.00/repair	\$2000.00/foot	\$1200.00/foot	\$240,000.00/ 200- 4/ft spot repairs completed

Average Annual Savings = **\$497,000.00**

Replacement Activities	MTSA	Contractor	Savings	Average Annual Savings
Sanitary Sewer Line Replacement (8")	\$150.00/foot.	\$408.00/foot	\$258.00/foot	\$516,000.00 /2000 feet completed
Manhole Replacement (10')	\$3,000.00	\$6630.00	\$3630.00	\$90,750.00 /25 manholes
Force Main Replacement (8")	\$175.00/ft.	\$408.00/foot	\$233.00/foot	\$233,000.00 /1000 feet completed
Open-cut section repair	\$300.00/foot	\$612.00/foot	\$312.00/foot	\$156,000.00 / 500 feet completed

Average Annual Savings = **\$995,700.00**

***Contractor pricing is from the North Hills COG Sanitary Sewer Rehabilitation Contract for 2022-2023*

MTSA Machine Shop

The Authority has a fully operational Machine Shop with various metal working equipment. This equipment was purchased through the Federal Surplus Program. Typically, this equipment is acquired through this program for 10% of its true value. The Authority has spent roughly \$30,000.00 for equipment that is well worth more than \$300,000.00. The Authority has several skilled machinists in its work force that can operate and maintain this equipment. With this equipment MTSA is able to perform many inhouse



projects for the repair of a wide variety of equipment in its Treatment Plants and Pump Stations. Many times, equipment failures require immediate attention to protect the operation of the facilities and for continued protection of the environment. Waiting for weeks or even months on replacement parts from manufacturers many times is not feasible and finding machine shops that can



fabricate the needed parts is many times difficult and can be extremely expensive. While it is hard to put an exact savings on having the ability to do this work inhouse it is easy to see that considering all facts that several thousands of dollars can be saved on one project. An instance of this is when a shear plate on grinder pump wore out to the point that it needed replaced. In contacting the manufacturer the Authority was given a price of slightly over \$2,200.00 for a replacement shear plate and we couldn't get an exact shipment date after a few weeks of trying. Inhouse technicians purchased the needed stainless steel plate to make the replacement part and set up the Authority's CNC Machine to fabricate the part. The entire project was completed in house for under \$1,000.00 and was completed within 3 days.



In-House Capital Expenditure Projects:

-Centrifuge Installation Pine Creek Plant



The MTSA Maintenance Staff undertook a major in-house project to do the complete installation of a new State of the Art Sludge De-Watering Centrifuge. The Authority Engineers did a complete design and bid application for this project. The Equipment bid amount came in at \$475,000.00 and with MTSA installation and materials the complete project cost the Authority \$680,000.00. The Engineers estimate for a Contractor to do the installation was 25% of that total cost so the Authority realized a savings of nearly \$170,000.00.



The installation included the removal of existing outdated Sludge Dewatering Belt Filter Press System and all the accessories included with it. Then a new concrete base system was installed followed by the Centrifuge and the required piping. Transfer pumps were installed in the lower pipe gallery to feed this high rate system and finally a new "in-house" conveyor was fabricated to carry the dewatered sludge to the landfill trailer for disposal. While this in-house work was a great savings to the

Authority additional saving were realized by reduced Landfill costs of over \$60,000.00 per year annually, because the Centrifuge removes approximately 30% more water from the sludge.

- Headworks Mechanical Bar Screen

The removal of failing bar screen and the replacement of that outdated equipment with a new computer controlled mechanical bar screen and washer compacter was an in-house project undertaken by the MTSA Maintenance Staff. With the assistance of the Authority's Engineer the required equipment was specified and bid as an equipment purchase only. The cost of the equipment and installation by MTSA was very close to \$450,000.00. Engineers estimates for this purchase and contractor installation was \$625,000.00. Thus, by performing this work in-house the Authority saw a cost reduction of \$175,000.00 for this overall project. This project was particularly difficult because the new screen is approximately 35 feet in length, required a section of the roofing removed and a large crane was needed to place the new unit



Closing:

In keeping with the Authority's Mission Statement this in-house work and projects continue on a daily basis. The Authority is fortunate to have the staff and experienced technicians that can routinely perform this cost saving work to save the Authority and its rate payers thousands of dollars every year.