



TOWN OF BLOWING ROCK

1036 Main Street • Post Office Box 47 • Blowing Rock, NC 28605

For the 2018-19 fiscal year the Town Council had approved approximately \$224,000 to go toward the purchase of a centrifuge for the wastewater treatment plant. Then plan at that time was to purchase the centrifuge to process the sludge from the plant in house and then haul the by product to a remote facility.

We currently contract the hauling of our sludge with Honeywell Pumping at a cost of \$70,000 per year. The product Honeywell hauls is approximately 98% water and only 2% solids. The centrifuge would be able to process the sludge and create a product with a moisture content of 15% or below. This would have greatly reduce the amount of haul trips needed to remove the sludge from the plant and would have removed the need for the contracted hauling. In September of 2018 dewatering equipment was demoed at the wastewater treatment plant. The equipment performed as we expected and produced a product with a moisture content of around 15%.

It was determined after the demo that this plan would not be a viable option for the Town. We were unable to locate a facility which would accept the solid waste which was generated. The Watauga County Landfill would not take the product due to the fact they are simply a transfer station. Other surrounding county landfills do not accept waste generated in a different county. The closest facility we could find which would allow us to dump was in Concord. In considering the logistics in hauling that distance and the amount of trip that would be needed, we determined that this would not be a cost effective option.

In an effort to determine ways to reduce the annual operating cost for the plant we continued to explore options for sludge processing/removal. The most viable option we found would be the purchase of a tank truck which would be operated by the Town. We would continue hauling our sludge to the Lenoir plant for processing at a rate of \$0.05 per gallon. Nicole Norman ran a cost benefit analysis for the purchase of the truck. Assuming a 10 year useful life, we could assume an approximate savings of \$170,000 during that time. The truck could also be utilized in other situations where we currently contract out pumping services. These could include, along with others, pumping sewer manholes in the event of a blockage, cleaning floor drains and holding tanks at the Town Public Works Facility, and pumping water and silt from excavation holes during a water leak.

ATTACHMENT #3A

Cost Benefit Analysis: Sludge Processing- 6 Yr. Useful Life Scenario

Today's process: Service is contracted at an annual cost of approx.	\$70,000
	\$721,000 10 yrs. Cost of contracting out service.
Other Options:	
● <i>Centrifuge</i> - Option is not available due to lack of facility that will accept by products.	
● <i>Town Trucks its own sludge to Lenior disposal sight</i> - Expected Cost of this option:	
Dump Truck with Chassey to hold sludge:	\$ 51,573.91 Debt Service at 2.89%- \$150,000 with annual payments over 3 yrs.
Man Hrs. to Dump Sludge in Lenoir:	\$ 6,960.00 116 trips at 2 hrs. per trip @ time and a half, since would generate overtime (taking 2 trips per week, with one week per month having three trips)
Benefits:	\$ 1,839.02 FICA, 401K & General Retirement
Milage:	\$ 2,693.17 20 miles 116 trips two ways @ IRS standard mileage rate of \$0.545 per mile
Disposal Fee:	\$ 23,200 \$0.5 per gallon, estimating 4,000 gallons per trip.
Estimated Maintenance Cost for the Truck:	\$ 5,000 Estimate, would be only minimal the 1st year.
	\$ 91,286.10 Annual cost for financing period.
	\$ (51,573.91)
	\$ 39,712.19 Annual cost after truck is paid for, once replacement is needed, cost will go back up for 3 yrs. during vehicle paydown.
	\$706,565.34 10 Yr. Cost if truck is replaced every 6 Yrs.
Conclusion:	
	\$34,434.66 Savings over 10 yrs. with hauling sludge in house.

Cost Benefit Analysis: Sludge Processing- 10 Yr. Useful Life Scenario

Today's process: Service is contracted at an annual cost of approx.	\$70,000
	\$721,000 10 yrs. Cost of contracting out service.
Other Options:	
● <i>Centrifuge</i> - Option is not available due to lack of facility that will accept by products.	
● <i>Town Trucks its own sludge to Lenior disposal sight</i> - Expected Cost of this option:	
Dump Truck with Chassey to hold sludge:	\$ 51,573.91 Debt Service at 2.89%- \$150,000 with annual payments over 3 yrs.
Man Hrs. to Dump Sludge in Lenoir:	\$ 6,960.00 116 trips at 2 hrs. per trip @ time and a half, since would generate overtime (taking 2 trips per week, with one week per month having three trips)
Benefits:	\$ 1,839.02 FICA, 401K & General Retirement
Milage:	\$ 2,693.17 20 miles 116 trips two ways @ IRS standard mileage rate of \$0.545 per mile
Disposal Fee:	\$ 23,200 \$0.5 per gallon, estimating 4,000 gallons per trip.
Estimated Maintenance Cost for the Truck:	\$ 5,000 Estimate, would be only minimal the 1st year.
	\$ 91,286.10 Annual cost for financing period.
	\$ (51,573.91)
	\$ 39,712.19 Annual cost after truck is paid for, once replacement is needed, cost will go back up for 3 yrs. during vehicle paydown.
	\$551,843.61 10 yr. Cost if truck is replaced every 10 yrs.
Conclusion:	
	\$169,156.39 Savings over 10 yrs. with hauling sludge in house.