

The Economics of Wastewater Flow Monitoring

Q. What is the actual cost of a Sewer Area-Velocity flow meter?

Q. What would it mean in economic terms if the annual cost of maintaining and recalibrating a Sewer flow meter decreased by 50% - 80%?

These are two questions that every Municipality and Consulting Engineering firm is faced with on a continual basis, especially in today's world, with so much emphasis being placed on the elimination of Sanitary and Combined Sewer Overflows by the EPA.

To answer the above questions, Eastech analyzed the necessary steps required for obtaining timely and reliable flow data with present-day Doppler techniques versus Hybrid Technology engineering.

Our Economic Cost Analysis resulted in the following conclusion:

A HYBRID TECHNOLOGY FLOW METER WILL REDUCE, ON AVERAGE, ANNUAL FLOW DATA ACQUISITION COSTS BY 70%

Doppler/Pressure Cell methods of sewer flow measurement require highly repetitive cleaning of "bottom sitting" sensors coupled with periodic physical confirmation of both level and velocity readings. Both of these tasks are expensive due to the need for time-consuming confined space entries under hazardous conditions.

Hybrid Technology Cartridge Meters eliminate these costs by:

1. Utilizing "above the flow" ultrasonic level sensors and non-fouling velocity sensors that remain free from the continual problems of sediment build-up, fouled sensors and accumulated debris.

2. Providing a state-of-the-art Self-Validation and Self-Calibration technology, Status IQ, where in less than five minutes operating personnel can undertake a full in-situ assessment of any Cartridge Meter without removing the unit, stopping the flow of wastewater or entering the manhole.



Comparative Cost Analysis	Doppler/Pressure Cell			Hybrid Cartridge Meter		
	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3
Pipe Size: 12"						
Flow Meter	\$3,500	\$0	\$0	\$5,800	\$0	\$0
Maintenance & Recalibration	\$8,000	\$8,000	\$8,000	\$1,000*	\$1,000*	\$1,000*
TOTAL COST / METER	\$11,500	\$8,000	\$8,000	\$6,800	\$1,000	\$1,000
TOTAL SAVINGS / METER / YEAR				\$4,700	\$7,000	\$7,000
TOTAL SAVINGS / 20 METERS / YEAR				\$94,000	\$140,000	\$140,000
% SAVINGS / YEAR				41%	87%	87%

* Bi-yearly inspection