



TOTAL LIFE CYCLE VALUE – WHY THE PURCHASE PRICE OF ICI METERS MEANS LESS THAN YOU THINK...

When you are evaluating Industrial, Commercial, and Institutional (ICI) water meters, the purchase price at times seems to be the single-most important factor to consider. The purchase price of an ICI meter is an important factor; however, it should not be the only one.

There are several other areas – both “hard” and “soft” costs – you should be prepared to examine closely in order to develop an accurate assessment of the meter’s overall value. This more detailed analysis, often referred to as a Total Life Cycle Value (TLCV) analysis, could result in spending more upfront to achieve lower costs and higher revenues over the long-term life of the meter.

Total Life Cycle Value analysis is a concept by which, in your value assessment, you account for all of the costs associated with a meter purchase over a given time period. After you make the decision to acquire new meters, a TLCV analysis will help you develop the right type of information from which you can choose the best value between meter manufacturers.

Neptune Technology Group has developed the following to help you start your own Total Life Cycle Value analysis.

TLCV ANALYSIS:

How much does it really cost to maintain and operate an ICI water meter? Many of the factors we will consider in the analysis include the following:

- Meter cost
- Installation costs
- Testing costs
- Maintenance costs (including parts)
- Revenue loss
- Total cost of ownership

INSTALLATION COST

First we consider the cost of purchasing and installing the meter. You should note that in many cases, *the installation of an ICI meter can cost more than the entire purchase price of the meter.*

When purchasing any ICI meter, the cost of installation should be a strong consideration when determining the actual meter purchase price. For example, in an existing installation, the initial consideration to minimize cost is to replace the meter type for type. However, if the *size and weight* of the meter (in comparison to another option) require more than the standard number of personnel, equipment, and resources to install, then this additional cost, when factored into the purchase decision, may make your choice a more costly one.

If the meter to be installed is not identical to the original meter, then consideration should be given to lay length.

- 1 Will the meter selected fit in the lay length provided?
- 2 Did I factor the additional cost of spacers?
- 3 Did I consider the cost of cutting sections of pipe to make allowance for the meter?

All of these factors add cost to the purchase price, and should be considered as part of your purchase decision and your Total Life Cycle Value evaluation.

The table below (Table A) lists a typical cost for the installation of fire service compound meters:

TABLE A: FIRE SERVICE COMPOUND METER INSTALLATION

	4"	6"	8"	10"
Neptune	\$ 900.00	\$1,350.00	\$1,800.00	\$2,250.00
MFR A	\$ 900.00	\$1,350.00	\$1,800.00	\$2,250.00
MFR B	\$ 900.00	\$1,350.00	\$1,800.00	\$2,250.00
MFR C*	\$1,020.00	\$1,530.00	\$2,040.00	\$2,550.00
MFR D**	\$ 940.00	\$1,410.00	\$1,880.00	\$2,350.00

* Requires additional time and resources to install due to weight and size

** Includes the 12" spool piece required on inlet side for installation

The following (Tables B and C) are a list of typical repairs we recommend for turbine, compound, and fire type meters by manufacturer based on a five and ten year in-service record (data based on actual field test and repair experience).

TABLE B: RECOMMENDED REPAIRS - YEAR 5 SERVICE

Turbine / Turbo

	Low Side	High Side (s)	Valve (s)
Neptune	-	✓	-
MFR A	-	✓	-
MFR B	-	✓	-
MFR C	-	✓	-
MFR D	-	✓	-

Compound

	Low Side	High Side (s)	Valve (s)
Neptune*	-	-	-
MFR A	✓	-	-
MFR B	✓	-	-
MFR C	✓	✓	✓
MFR D	✓	✓	✓

Fire Service

	Low Side	High Side (s)	Valve (s)
Neptune*	-	-	-
MFR A	✓	-	-
MFR B	✓	-	-
MFR C	✓	✓✓	✓
MFR D	✓	-	✓

TABLE C: RECOMMENDED REPAIRS - YEAR 10 SERVICE

Turbine / Turbo

	Low Side (s)	High Side (s)	Valve (s)	Register	Coordinator
Neptune	-	✓	-	✓	-
MFR A	-	✓	-	✓	-
MFR B	-	✓	-	✓	-
MFR C	-	✓	-	✓	-
MFR D	-	✓	-	✓	-

Compound

	Low Side (s)	High Side (s)	Valve (s)	Register	Coordinator
Neptune*	-	✓	-	✓	-
MFR A	✓	✓	✓	✓	-
MFR B	✓	✓	✓	✓	-
MFR C	✓	✓	✓	✓	-
MFR D	✓	✓	✓	✓	✓

Fire Service

	Low Side (s)	High Side (s)	Valve (s)	Register	Coordinator
Neptune	-	✓	-	✓	-
MFR A	✓	✓	✓	✓	-
MFR B	✓	✓	-	✓	-
MFR C	✓	✓✓	✓✓	✓	-
MFR D	✓	✓	✓	✓	-



REVENUE LOSS

One of the most important costs to any water utility is the cost associated with the loss of revenue due to a meter not performing to accuracy standards. A meter with decreased accuracy can cost the utility literally tens of thousands of dollars in lost revenue.

Neptune Technology Group developed a tool called SEER® (an online version of SEER can be found at www.neptunetg.com). For over 15 years, the group conducted meter tests on over 10,000 ICI meters representing many types, sizes, and manufacturers. Using this data, a multiple linear regression was created

that enables the program to determine, within a 95% confidence interval, the test accuracy of a meter in the field.

Using SEER, the loss in revenue per \$10,000 was determined for a 4" AWWA compound meter and listed in the table below (Table D).

**TABLE D:
LOSS IN REVENUE
FOR 4" AWWA
COMPOUND METER**

Year	Neptune	MFR A/B	MFR D	MFR C
1	\$38.15	\$42.17	\$49.24	\$1,837.12
2	\$76.58	\$84.71	\$98.97	\$1,883.54
3	\$115.32	\$127.61	\$149.19	\$1,930.33
4	\$154.35	\$170.87	\$199.92	\$1,977.48
5	\$193.68	\$214.51	\$251.15	\$2,025.01
10	\$395.01	\$438.41	\$515.25	\$2,268.42
15	\$604.45	\$672.36	\$793.31	\$2,521.91
20	\$822.51	\$917.03	\$1,086.48	\$2,786.09
25	\$1,049.72	\$1,173.18	\$1,396.01	\$3,061.65

TOTAL LIFE CYCLE VALUE

In the cost of ownership example listed below, we consider the TLCV of a 4" compound meter. It is clear that if one considers the revenue loss associated with each meter, the Neptune ICI meter has a lower Total Life Cycle Value due to lower costs in the area of

maintenance, part inventory requirements, and the ability to hold its accuracy over a longer period of time, all of which result in increased revenue.

LOOK AT THE WHOLE PICTURE

The effects of long-term accuracy can wipe out any theoretical cost savings you may have realized from

purchasing a lower-cost meter. In terms of accuracy, using the previous example of a 4" compound meter, a 10% decrease in accuracy could result in a revenue loss of up to \$1,000.00 per year!

In short, be sure to weigh all of the important factors in determining the best meter for your purchase.

**TABLE E:
TOTAL LIFE
CYCLE VALUE**

MANUFACTURER	Neptune*	MFR A/B	MFR D	MFR C
Meter Cost (4" AWWA compound)	\$3,100.00	\$2,800.00	\$2,500.00	\$2,600.00
Installation Cost (per meter)	\$900.00	\$900.00	\$900.00	\$900.00
Revenue Cost (5 year)	\$578.08	\$639.87	\$748.47	\$9,653.48
Maintenance Cost (5 year)	\$255.00*	\$601.00**	\$1,580.00**	\$1,580.00**
TOTAL COST (per meter)	\$4,833.08	\$4,940.87	\$5,728.47	\$14,733.48

*Cost to test meter only

** Testing cost, labor cost, and parts included

WHAT ELSE TO LOOK AT?

In addition to accuracy, there are more factors to consider. A Total Life Cycle Value analysis covers the combined “hard” and “soft” costs of owning a piece of capital equipment. In the case of ICI water meters, hard costs account for definite out-of-pocket costs and expenses for equipment and peripherals. These are considered “hard costs” because they are real and can be easily accounted for.

A short list of hard costs includes:

- Meter cost
- Installation cost
- Upgradeability
- Electronic output options
- Smart register options
- Hardware costs – strainer, gaskets, flanges
- Recommended spare parts

Other hard costs you may wish to factor into your TLCV analysis include costs related to pressure drop and environmental requirements – (NSF/ANSI 61).

OTHER FACTORS TO CONSIDER

In some cases, “soft” costs are also significant. These are the costs related to support, training, and hidden costs. Because they don’t occur at acquisition time, they are often overlooked in acquisition budgets. This oversight can lead to unexpected increases in your operating costs and, worse, can lower your water billing revenues.

There are a variety of ways you can manage these “soft” costs. Service and support contracts that include telephone support can help you handle new or existing applications. Look for a water meter manufacturer that offers toll-free telephone support nationally or locally from a regional distributor.

Take advantage of training – an important value offered by any water meter manufacturer.

There should be a specific amount of training included and additional training should be readily available locally or from the manufacturer’s facility. Neptune Technology Group offers annual training schools, regional, and on-site training schools on ICI meters.

TAKE A CLOSE LOOK FOR YOURSELF

In summary, accurately identifying and evaluating all of the costs associated with owning and operating ICI water meters – and not just the cost of the meter – is an exercise worth pursuing.

Remember: The best way to avoid costly mistakes when purchasing ICI water meters is to consider the Total Life Cycle Value and purchase accordingly. 