

MFOA/AMCTO FALL SEMINAR SERIES

TANGIBLE CAPITAL ASSETS
ACCOUNTING

TOPIC:
VALUATION APPROACHES

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Steps to Implement a TCA System

- 1) Develop TCA Framework
- 2) Perform Inventory
- 3) Perform Valuation (Costing)
 - **Categorize inventory by Property Category & Sub-Class**
 - **Assign Functional Responsibility**
 - **Identify and Denote Contributed Assets**
 - **Develop Cost or Fair Value**
 - **Estimate Residual Value for applicable TCA**
- 4) Assign Amortization Rates
- 5) Produce Compliant TCA Report
- 6) Develop Guidelines For Maintenance of TCA System

FOCUS OF PRESENTATION

STEP 3: PERFORM VALUATION



Premises of TCA Valuation

- TCA should be recorded at **Cost** which is defined as “the gross amount of consideration given up to acquire, construct, develop or better a tangible capital asset, and includes all costs directly attributable to acquisition, construction, development or betterment of the tangible capital asset, including installing the asset at the location and in the condition necessary for its intended use.”

Premises of TCA Valuation

- The Cost of a Contributed TCA is considered to be equal to Fair Value as at the date of contribution

Fair Value is defined as: “the amount of consideration that would be agreed upon in an arm’s length transaction between knowledgeable, willing parties who are under no compulsion to act.”

Methods of Determining TCA Cost

1. Historical Cost

- Based on the documented amount a municipality paid at the time the asset was originally purchased or built
- Via this method costs are obtained from:
 - TCA Invoices
 - Annual Capital Schedules
 - Departmental Records
 - Engineering/Maintenance Files
 - Suppliers'/Contractors' Records

Methods of Determining TCA Cost

2. Discounted Cost of Reproduction New (CRN)

- CRN is defined as: “The current Cost of producing a new replica of a property with the same or closely similar materials, as of a specific date.”
- Discounted Cost is defined as: “The CRN discounted back to the TCA’s “In-Service” date.”
- Reasonableness of Cost will be dependent on accuracy of CRN and discount factors utilized

Methods of Determining TCA Cost

3. Discounted Replacement Cost New (RCN)

- RCN is defined as: “The current Cost of similar new property having the nearest equivalent utility as the property under consideration, as of a specific date.”
- Discounted Cost is defined as: “The RCN discounted back to the TCA’s “In-Service” date.”
- Reasonableness of Cost will be dependent on accuracy of RCN and discount factors utilized

Methods of Determining TCA Cost

4. Appraisal

- Professional assessment of the TCAs under consideration
- Determine Cost by retrospective cost analysis or discounting back CRN or RCN
- Determine Cost by retrospective Fair Value analysis

Methods For Developing CRN & RCN

- Obtain Current Quotes from Contractors & Suppliers
- Analyze Capital Project Cost of Recent Years
- Reference Published Construction Cost Data
- Engage a Qualified Professional Appraiser

Development of Discount Factors

- **Factors must be developed by Asset Type**
 - **Construction and Civil Works**
 - **Machinery and Equipment**
 - **Licensed Vehicles**
 - **Furniture & Fixtures**
 - **IT and Technology Equipment**
- **Factors should reflect Regional Economic Condition**
- **Use Published Recognized Sources**
 - **Statistics Canada**
 - **Marshall & Swift/Boeckh**
 - **R.S. Means**
 - **Engineering News Record (ENR)**

Example of Discount Factors

Year	Discount Factor
2007	---
2006	.922
2005	.888
2004	.798
2003	.774
2002	.755
2001	.748
2000	.736
1999	.704
1998	.686

Year	Discount Factor
1997	.672
1996	.654
1995	.643
1994	.624
1993	.603
1992	.586
1991	.581
1990	.570
1989	.561
1988	.552

Classification: Steel Frame Buildings
Region: Western District
Source: Marshall & Swift/Boeckh

Valuation Example #1

Allocation of Pooled Historical Cost

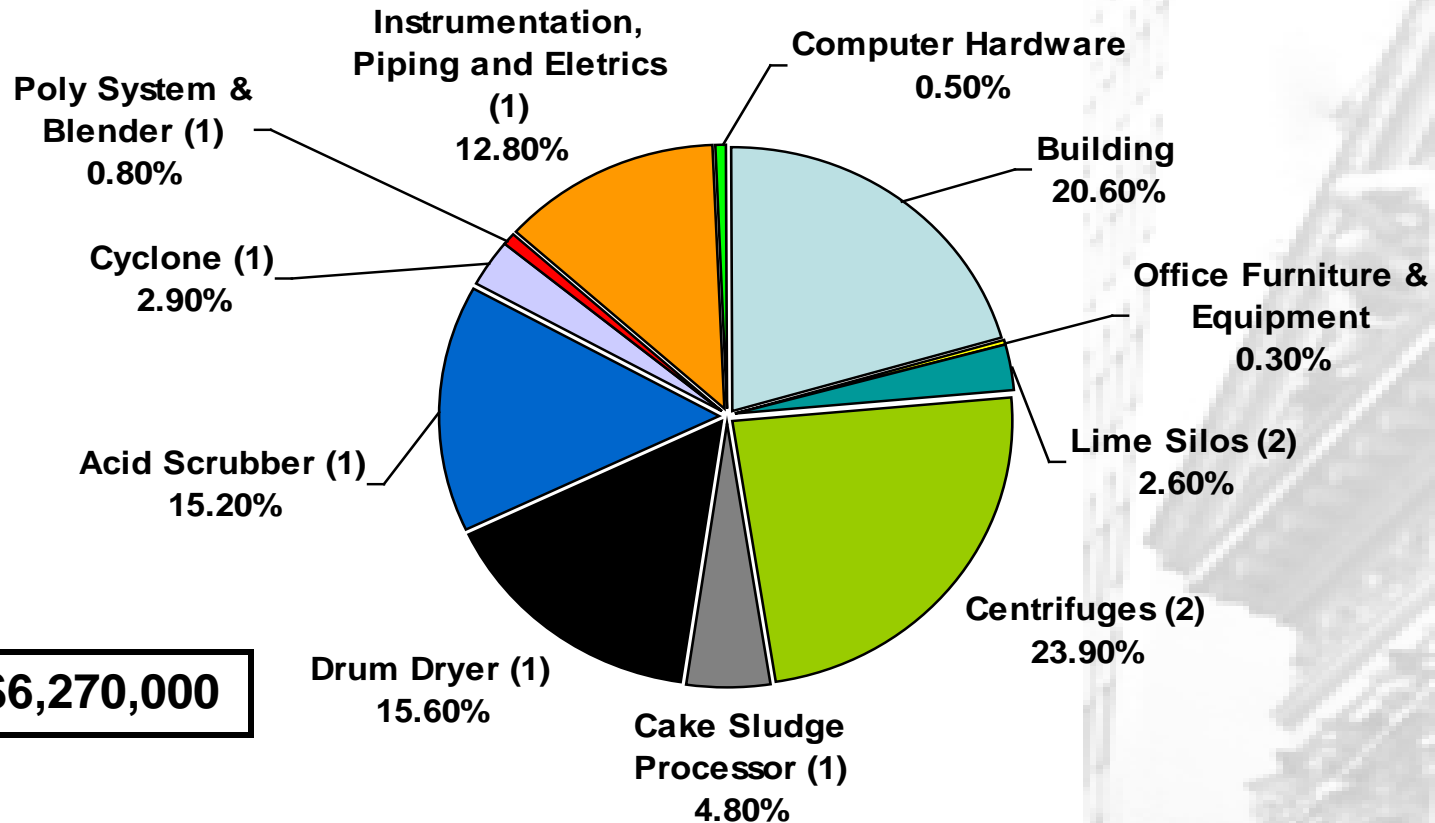


Pollution Control Plant – Bio-solids Building

Year Built:	2000
Total Historical Cost:	\$4,800,000
Cost Breakdown:	None

Valuation Example #1

Allocation of Pooled Historical Cost



CRN = \$6,270,000

Step 1

Determine CRN of Individual Assets and their % of overall CRN

Valuation Example #1

Allocation of Pooled Historical Cost

<u>Asset</u>	<u>Allocation Factors</u>	<u>Historical Cost</u>
Building	.206	\$989,000
Office Furniture & Equipment	.003	\$14,000
Lime Silos (2)	.026	\$125,000
Centrifuges (2)	.239	\$1,147,000
Cake Sludge Processor (1)	.048	\$230,000
Drum Dryer (1)	.156	\$749,000
Acid Scrubber (1)	.152	\$730,000
Cyclone (1)	.029	\$139,000
Poly System & Blender (1)	.008	\$38,000
Instrumentation, Piping and Electrics (1)	.128	\$615,000
Computer Hardware	.005	\$24,000
Totals:	1.00	\$4,800,000

$$\begin{matrix} \text{Total} \\ \text{Historical Cost} = \\ (\$4,800,000) \end{matrix}$$

Step 2

Allocation Factors X Total Historical Cost = Historical Cost of Individual Pooled Assets

Valuation Example #2

Discounted CRN – Discreet Asset



**Museum in Northern Ontario
Gross Floor Area is 17, 672 Square Feet**

Valuation Example #2

Discounted CRN – Discreet Asset

Facts: Building was constructed in 1906, but no historical cost details are available relative to original construction. Records indicated that the Building Services and Interior Finishes were replaced in 2007 at a cost of \$2,000,000.

Step 1

Calculate CRN of structure via reliable costing sources –
Yields CRN of: \$5,300,000

Step 2

Select deflation factor to discount CRN back to 1906. From M&S Cost Index Table, factor of .0236 is applied to CRN that yields estimated original cost of \$125,080

Valuation Example #2

Discounted CRN – Discreet Asset

Step 3

Determine and Deduct portion of Original Cost for Building Services and Interior Finishes replaced in 2007, discounted back to 1906. This is calculated as follows:
 $(\$2,000,000 \times .0236) = \$47,200$

Step 4

Record two capital entries as follows:

- 1) A capitalized amount of \$77,880 in 1906
- 2) A capitalized amount of \$2,000,000 for Building Improvements in 2007

Valuation Example#3

Discounted RCN – Water Distribution Network

Assume that a Water Distribution System has been inventoried by Geographic Area, Vintage, Size and Construction Material. For the purpose of example, the inventory data is meant to represent the Assets in one Geographic Area

<u>In Service Date</u>	<u>Description</u>	<u>Diameter Size</u>	<u>Material</u>	<u>Total Length (Ft.)</u>
1990	Water Main	6"	PVC	10,000
1980	"	8"	Ductile Iron	15,000
1970	"	12"	Cast Iron	5,000

Valuation Example #3

Discounted RCN – Water Distribution Network

Step 1

Establish current cost per foot for each type of pipe, by material and diameter, by referencing recent construction projects or recognized cost sources

<u>Material</u>	<u>Size</u>	<u>Cost/Foot</u>
PVC	6"	\$80
Ductile Iron	8"	\$95
Cast Iron	12"	\$120

Valuation Example #3

Discounted RCN – Water Distribution Network

Step 2

Calculate RCN of each asset entry by multiplying unit cost by total length.

<u>Description</u>	<u>Diameter Size</u>	<u>Material</u>	<u>Cost/Foot</u>	<u>Total Length</u>	<u>RCN</u>
1990 Water Main	6"	PVC	\$80	10,000	\$800,000
1980 Water Main	8"	Ductile Iron	\$95	15,000	\$1,425,000
1970 Water Main	12"	Cast Iron	\$120	5,000	\$600,000

Valuation Example #3

Discounted RCN – Water Distribution Network

Step 3

Discount RCN for deflation back to In-Service Date

<u>Description</u>	<u>In Service Date</u>	<u>Total Length</u>	<u>RCN</u>	<u>Discount Factor</u>	<u>Estimated Original Cost</u>
6" PVC Water Main	1990	10,000	\$800,000	.60	\$480,000
8" Ductile Iron Water Main	1980	15,000	\$1,425,000	.44	\$627,000
12" Cast Iron Water Main	1970	5,000	\$600,000	.21	\$126,000

Valuation Example #4

Contributed Asset – Cost = Fair Value

Facts: Records indicate that 2 acres of Vacant Land zoned as Commercial was donated to the Municipality in 2000.

Step 1

Conduct research to determine typical Market Value of Commercial Land back in 2000. Historical comparable sales indicate average market cost of \$40,000 per acre.

Step 2

**Capitalize this Asset at Fair Value as at the Donation Date:
\$40,000 X 2 = \$80,000**

Valuation Phase Recommendations

- 1) Ensure inventory is complete and accurate**
- 2) Ensure inventory is properly categorized by Asset Class and Sub-class**
- 3) Identify and Denote Contributed Assets**
- 4) Arrange access to all available Historical Cost Data**
- 5) Develop Unit of Cost Benchmarks for Linear Assets**
- 6) Develop Discount Tables by Asset Category from Reliable Sources**
- 7) Use consistent valuation methodology in compliance with PSAB PS 3150 Guidelines**
- 8) Document Valuation Approaches utilized to satisfy external auditor requirements**