

# APPA Total Cost of Ownership: A Standard in the Making

By Ana Thiemer and Dana K. “Deke” Smith

In the September/October 2017 issue of *Facilities Manager*, we introduced the new APPA standard under development for Total Cost of Ownership (TCO). Significant progress has occurred since the writing of that article. In December 2017, our committee of experts delivered *APPA 1000-1, Total Cost of Ownership for Facilities Asset Management (TCO)—Part 1: Key Principles*, and in January 2018, the American National Standards Institute (ANSI) approved it as an American National Standard. That document is now available from both the APPA and ANSI bookstores.

## WHAT'S IN APPA 1000 TCO, PART 1—KEY PRINCIPLES

TCO goes far beyond a new building’s “first cost” (planning, construction, and commissioning) and factors in a variety of critical requirements and costs over the life of the building with a comprehensive view to include:

- Replacement of energy, utility, and safety systems;
- Continual maintenance of the building exterior and interior and replacement of materials;
- Personnel implications related to skill levels and training needed;
- Updates to design and functionality;
- Recapitalization costs.

TCO incorporates elements necessary for the C-Suite to make decisions. For the best decisions to be made at this level, a more holistic understanding of all costs must be understood, and information must come from the bottom-up and across to inform those decisions. First cost rules the roost with our current decision-making processes, but with significant education, organizations can realize the potential of their investment and plan for the costs over an asset’s lifetime. A more complete understanding of the asset, from the C-Suite to the technician, creates a far more sustainable asset: Acquisitions and investments will be made using all of the available information; facility professionals will be able to plan for maintenance, replacements, and decommissioning of

the asset, while aligning their asset management strategy with the overall organizational or institutional strategy; and technicians will have information that will better inform them of what day-to-day decisions should be made about the asset.

Part 1 of the standard found that TCO is scalable to small and large organizations or portfolios, and can be applied to a range of assets. Applicability of TCO is not only for specific product decisions, but also for a single new structure or an entire portfolio of existing facilities or infrastructure, from buildings to bridges and everything in between. TCO applies to:

- Budget analysis and support
- Asset/product selection decisions
- New facilities and infrastructure assets
- Existing facilities and infrastructure assets
- Decisions to renovate or remove an asset.

The standard outlines each of the 13 principles of TCO, along with the relationships of each of the principles to one another. A summary of the requirements of each of those principles included in Part 1 of the standard is summarized below:

- **Managed Assets** shall be applicable to land parcels, facilities, structures, infrastructure, and equipment;
- A detailed **Asset Inventory** shall be maintained;
- All fixed assets shall be located using a **Global Location Hierarchy** using a global unique identifier;
- All assets shall be organized using an **Asset Classification standard**;
- **Asset Costing** shall use the standard TCO framework;
- A continuous process of **Asset Inspection** shall be initiated as part of normal business;
- **Asset Performance** is a key metric that shall be assessed as a baseline, and again during normal operation to ensure optimum efficiency;
- **Asset Decisions** shall be made based on a strategic asset management plan;
- **Asset Annual Funding** shall be projected for near and long term and updated annually;

- An **Asset Comprehensive Plan** *shall* be developed for each asset;
- **Asset Information Sharing** *shall* be implemented to ensure data collection is minimized and to ensure everyone is working from the same data for decision making;
- Comprehensive and continuous **Asset Reporting** *shall* be implemented to convey key information about all assets throughout the organization to support planning and decision making;
- Accurate information founded on good **Data Management and Verification** strategies *shall* be implemented organizationally.

We encourage you to obtain a copy of Part 1 of the standard to fully understand the implications of this summary by visiting the APPA bookstore at [www.appa.org/bookstore](http://www.appa.org/bookstore).

### WHAT'S COMING IN APPA 1000 TCO, PART 2—IMPLEMENTATION AND KEY DATA ELEMENTS

Part 2 of the APPA 1000 TCO standard focuses on detailed implementation strategies. TCO can seem daunting to implement, but with this implementation guide, any organization of any size will be able to create elements to positively impact communication and decision making within the organization. There are many aspects that will affect its implementation; a few of those issues are the following:

- **Size of portfolio**—from one facility to hundreds of thousands
- **Size of organization**—from a single facility manager to a large staff
- **Level of maturity of implementation and ability to grow**—from those just starting out to experienced practitioners
- **Use cases**—from making single product selections to using TCO for an entire new facility, from incorporating existing facilities and determining end of life for a facility to planning and budgeting.
- **Organization of information**—systems typically used for planning and design (Uniformat), or the more construction-oriented products using Masterformat.
- **Availability of information**—from very little data collected manually to an information-centric environment. We believe these capabilities will be expanding exponentially as the construction industry continues to move into the Information Age.

Part 2 of the standard is targeted for public comment around November 2018 with publishing of the standard in early 2019.

### MORE WORK TO DO AND YOUR INVOLVEMENT

In addition to participating in the public review, APPA underscores the need for education to help individuals and organizations understand the benefits of TCO. Should you have any good case studies on the application of TCO strategies, we encourage you to reach out to the committee so that we may highlight your successes. It is never too early to begin the education process, as this change to the industry will take time to implement. ☎

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