

Capital Asset Assessment, Maintenance and Replacement Policy

Commentary on the GFOA Best Practices Part I

In our ongoing mission to assist local governments in the optimization of their capital investments, [CIPPlanner Corporation](#) is continuing to evaluate the recommended GFOA best practices adopted by the Government Finance Officers Association. This six part analysis will focus on the recently revised Capital Asset Assessment, Maintenance and Replacement Policy. This policy has been reworked by the GFOA just three years after its initial adoption. We see this change as a sign of the rapid evolution of the thought process around Capital Program Management and its growing importance in unifying the planning, financing, and implementation and performance measurements across the governmental enterprise. Specifically the recommended best practice is bringing together the key elements of both the finance and engineering points of view.

This commentary will focus on each of the six recommendations in turn. Our perspective gained from working closely with local governments and agencies puts us in day to day contact with the subtle issues that often become the tips and tricks in implementing the recommended GFOA best practices. This series intends to analyze those practices and offer up our tips, tricks and recommendations on how to get the most out of those practices.

GFOA Recommendation

Background. *Capital assets include major government facilities, [infrastructure](#), equipment and networks that enable the delivery of public sector services. The performance and continued use of these capital assets is essential to the health, safety, economic development and quality of life of those receiving services. Budgetary pressures often impede capital program expenditures or investments for maintenance and replacement, making it increasingly difficult to sustain the asset in a condition necessary to provide expected service levels. Ultimately, deferring essential maintenance or asset replacement could reduce the organization's ability to provide services and could threaten public health, safety and overall quality of life. In addition, as the physical condition of the asset declines, deferring maintenance and/or replacement could increase long-term costs and liabilities. Government entities should therefore establish capital planning, budgeting and reporting practices to encourage adequate capital spending levels. A government's financial and capital improvement plans should address the continuing investment necessary to properly maintain its capital assets. Such practices should include proactive steps to promote adequate investment in capital maintenance and replacement and necessary levels.*

Recommendation. *The Government Finance Officers Association GFOA best practices recommends that local, state and provincial governments establish a system for assessing their assets and then appropriately plan and budget for any capital maintenance and replacement needs. This includes:*

- 1. Developing a policy to require a complete inventory and periodic measurement of the physical condition of all existing capital assets. The assessment should document the established methods of condition assessment, including any that are used to evaluate below-ground infrastructure. This*

physical condition inventory and measures used should be kept current; with facility condition ratings updated every one to three years.

This inventory should contain essential information, including:

- *Engineering description*
- *Location*
- *Physical dimensions and condition*
- *"As-built" documents*
- *Warranties*
- *Maintenance history*
- *Replacement costs*
- *Operating cost information*
- *Usage statistics*
- *Book value*
- *Original Useful Life*
- *Remaining Useful Life*

Commentary

Generally the recommendation has adopted the logical underpinnings of the alternative approach to the GASB 34 with its emphasis on establishment of service levels and the justification of investments to support those service levels. This emphasis on an empirical justification as the baseline for justification of capital investment decisions is in line with the KPMG studies that we wrote about last week. In that article we discussed how from the private infrastructure perspective, a less political decision making process might have the effect of providing a better justification process for funding. We see including service levels as one the elements of this enhanced justification.

Looking at the first recommendation, we see that the utilization of GIS and asset management technologies has been downgraded to a foot note mention. We disagree with that approach.. Over the last ten years since the adoption of GASB 34, asset management and GIS technologies have been widely adopted by government agencies that support more than 100,000 in population size. The ongoing adoption of asset management, work order management and GIS technologies will support these agencies in maintaining the recommended asset condition catalog. The adoption rate of these technologies has accelerated in the last five years to include smaller government agencies.

We recommend that both finance and engineering consider how existing asset management, work order management and GIS systems can be enhanced to carry the asset condition

information so that it can become part of not only the periodic plain language report, but also be a component of the annual Capital Improvement Plan and Capital Budget process.

Tips and Tricks

1. Original Useful life is a fixed concept or estimate created at original installation based on the known information regarding material, expected use and most importantly expected maintenance. The remaining useful life can be manipulated to extend beyond the original expected useful life. This maintenance investment defers the higher capital expense of asset replacement. It is important that this tradeoff be transparent so that the capital impact of maintenance budgets is well understood at the Board level when budget cuts are suggested as part of the operating budgets which include a maintenance component.
2. The City of Dallas characterizes its inventory and measurement as a needs inventory with a set of criteria established for each asset class. Consideration needs to be given to creating a similar matrix to preserve executive thinking in evaluation of asset condition.
3. Master and Strategic Plans need to be evaluated for inclusion in the asset/needs catalog.

Commentary on the GFOA Best Practices Part 2

Part 1 of our commentary focused on what information needs to be gathered to facilitate Capital Asset Assessment best practice. This week's analysis focuses on recommendation number 2 covering condition measures and performance standards. These measures and standards define the meaning of information that is gathered in response to recommendation number 1. Together recommendation one and two create the lens thru which capital policy will be set.

GFOA Recommendation

- *2. Establishing condition/functional performance standards to be maintained for each type of capital assets. The condition measures and related standards should be understandable and reliable. Such standards may be dictated by mandated safety requirements, federal, state, or provincial funding requirements or applicable engineering and other professional standards,² including available software models. Use these standards and a current condition assessment as a basis for multi-year capital planning and annual budget funding allocations for capital asset maintenance and replacement. Assets near high risk areas such as hospitals may require a higher standard of performance and require a higher frequency of condition assessment.*
- *2 These measures include state government-established standards, bridge sufficiency ratings, Pavement Quality Index (PQI) or Pavement Condition Index (PCI), Facility Condition Index (FCI), etc. Indirect measures such a water main breaks sewage overflows, etc., are also available for certain asset types.*

Commentary

Condition Policy not Standard

Have you seen those financial planning commercials with the arrow and the green path to retirement plan success? You know the one that you magically get when you sit down with your financial advisor and share your retirement goals? The one that keeps steering you around that new boat or sports car you simply must have? Too bad local governments do not have one of those plans.

The standards adopted for long term performance measurement of an agencies assets is an evolving process setting the long term goals of a government. Our recommendation would be that the standards of measurement be adopted as a policy at the Board level for each asset class in the capital plan.

Just like adoption of a debt or investment policy the guidelines and justifications for spending need to be fully defined in an open discussion and not left to ad hoc decisions. Like creating an annual personal financial path, an agency is confronted with choices that will either keep them on their current path, or could lead them astray from their long term goals. Unfortunately for local governments, many haven't identified a blinking roadmap for guiding them on making the right choices. However, many agencies actually have that investment map but are unaware of its existence.

We believe that many local government agencies have many if not all of the tools required to help them make these decisions. For instance, GIS and asset management systems contain much of the raw data but lack the lens of a policy of standards and measures with which to interpret the asset condition and define a path toward their capital asset goals. By establishing a policy, the three perspectives of capital project prioritization will be brought together: empirical, financial and political.

Engineering/Public Works departments will make sure that driving the **empirical** information regarding condition is properly included and balanced. As an example, airports conditions and performance levels really drives this home. There are four ratings: excellent, good, fair and poor. The airport has four runways.

- Runway one is in excellent condition
- Runways two and three are in good condition
- Runway four is in poor condition.

Which runway gets done first? From the engineering perspective you might say runway four is the obvious choice. But in a collaborative performance standard or goal setting policy where you might start with the condition rating, you will press the engineer to gather additional factors. In the case of the airport these factors might be:

- How many planes take off and land on each runway?
- Does runway direction have an effect on capacity?
- If one runway is being replaced, what is the capacity of the others to compensate without a reduction of service?

Additional **financial** factors that might be asked of Finance may be:

- What is the landing fees associated with each runway?
- How much federal funding is available for the projects?

Additional factors with **political** impact that might be asked of the Board may be:

- What level of flight delays is acceptable during construction?

Once all of these factors are added as criteria to establishment of a policy for the agency, one could see different opinions as to what gets done first. Runway four which is in the poorest condition is short and has an average of fifteen planes a year take off and land on it, and thus produces limited revenue and has limited impact on the overall airport landing/take off capacity. For the three other busier runways, only one can be closed at a time for construction in order for the airport to maintain an acceptable capacity for take offs and landing. Therefore the best result of this policy would be runway two or three.

By setting this at a policy level, all elements are considered in turn and a good map to the agreed upon service level can be maintained. We see policy setting with the Board participation having a greater driving effect than a simple adoption of a standard.

Capacity is as important as condition

One element missing from this recommendation is a measurement of capacity as part of the creation of a standard or as we argue 'policy'. This can be as straight forward as in the capacity of the airport example above. However, with wastewater systems, capacity can be more complex. The capacity of the pipe to meet day to day demand and peak load demands are important considerations. In this way capacity is an important dimension of level of service.

Social Impact

The social impact or risk as a component of the establishment of a standard is mentioned in the recommended practice, but primarily as a driver of the frequency of assessment due to a higher standard of performance. We feel that this underplays the importance of the social impact as an essential condition factor in determining the condition assessment. For example, the sewer main under Boston's Fenway Park should be replaced in the off season when it slips to a good condition rating or a capacity rating whereas as other parts of the system may be slated for replacement as they approach the poor condition rating.

Tips and Tricks

- A good resource for finding the policy level type of condition and capacity criteria by asset class is “Capital Project Planning and Evaluation: Expanding the Role of the Finance Officer” by Joseph Casey and Michael J. Mucha.
- A good template for policy adoption by asset class is The City of Dallas criteria.
- When adopting condition assessment standards and performance measurements make sure to include your GIS department into the discussion. The capabilities of GIS make it possible to understand visually over time the impact of changing one of the factors that are identified in the standards.

Commentary on the GFOA Best Practices Part 3

Recommendation 3 of the GFOA centers on what we call capital project prioritization and filtering. By prioritization we mean ranking the projects to reflect the empirical, financial and political dimensions that we discussed last week. However this section makes a number of specific recommendations that we will respond to on a line by line basis.

GFOA Recommendation

3. Evaluating existing assets to determine if they still provide the most appropriate method to deliver services.

Commentary

Service applicability should consider a triple bottom line approach of (1) functional ability to meet current needs, (2) physical ability to meet need and (3) consequence of failure. As an example, a utility line that has been in service for many years may not provide the capacity needed for current conditions; it could be degraded below its original capacity and could be in proximity to interrupt other services if it failed. We find that much of this information exists in an organization’s asset management and GIS systems; however it is not consistently applied to the Capital Program Management process.

GFOA Recommendation

3. ... Maintenance and replacement plans for assets should then be prioritized in accordance with overall goals and objectives to maintain expected service levels.

Commentary

Progressive governments are mapping out the connection of how each class of capital asset replacement projects aligns with the goals of their agency. This is nuts and bolts work of breaking down what is meant by a good place to live into clean and reliable water, sewer and streets. Then further breaking this down into what is required to maintain the asset base in a manner that meets these goals.

The key thing we see missing from this recommended practice may be more of a word choice preference than substance. We feel that adding the word “systemic” before “expected service levels” would make the meaning clearer. Systemic standards that are adopted as a policy provide a baseline on which prioritization decisions are made. We emphasize systemic because it is important to keep in mind that individual assets compose a system, and the improvement of the individual components will result in the overall improvement of the entire system.

Through our interactions with over 200 government agencies, we have found that the vast majority have asset management systems to track the condition and maintenance process of their assets. However, the most commonly used tool being used for the **prioritization** of capital projects is a standalone spread sheet. A spread sheet is the most commonly used tool because it can often perform the job quickly and with some flexibility. However it does not address the systemic and dynamic nature of capital planning where prioritization leads to funding decisions that in today's economy are in a state of constant flux. This is driving the needs of local governments to continually adjust their priorities. This constant adjustment from multiple inputs is cumbersome in the current spreadsheet environment. For example, in the current economy many local governments are being forced to cut their capital budgets in order to balance the constrained financial situation that they find themselves in. But by having systemic goals and policy measures, funding constraints of 3 to 5 years can easily be absorbed.

GFOA Recommendation

Consider developing financial policies that identify and dedicate fees or other revenue sources to help achieve this goal.

Commentary

For the majority of local governments, proper assessment and prioritization is going to reveal a gap between the available funding and the identified need. They will find that due to their funding limitations, they will have to make tough choices in order to maintain their asset base at an acceptable level of performance. We haven't yet identified in the GFOA best practices but we recommend that agencies maintain an unfunded or funding to be determined source for capital projects.

For example, the City of Henderson Nevada uses a unique version of the unfunded list. They have unfunded projects and projects that are more likely to actually secure funding which are designated as “funding to be determined” We see this “funding to be determined” designation as a progressive way for the City to identify assets and projects which are necessary to maintain the agreed upon service levels but for which funding has not yet been secured. So often the class of assets and projects is well known within local governments but is not transparent to the public as part of building the case for the required funding.

Tips and Tricks

1. Yarlont, Mark (April 2010, Vol. 22, No.4) Factoring Condition Assessment and Asset Management Into Capital Planning” WE&T Magazine [WefOrgArticle](#)

Commentary on the GFOA Best Practices Part 4

Recommendation number four of the GFOA Replacement Policy focuses on matching funding to the level of service a government has committed to provide.

GFOA Recommendation

4. Allocating sufficient funds in the multi-year capital plan and annual operations budget for condition assessment, preventative maintenance, repair and replacement of capital assets in order to continue the provision of services that contribute to public health, safety, and quality of life of the public.

Each government should establish an on-going source of funds in both the capital plan and budget for the repair and renewal needs of its assets consistent with this best practice. The Capital Improvement Program (CIP) should also include projections based on the remaining useful life and replacement costs over the next three to ten years regarding the government's intended future investment in these facilities and the estimated impact of these investments toward achieving the minimum or adequate-performance rating for each asset type or class. If the assets are part of the function of an enterprise fund, the rates, fees and charges may need to be adjusted to meet the funding requirements.

Commentary

Funding Alignment

In our view, most local governments have a weak linkage between funding and levels of service. We see this weak linkage as the root of the funding gaps found in many capital programs.

One of the first principals accounting students learn is matching expenses to revenues. This matching concept doesn't necessarily work for local governments except for enterprise funds or single purpose agencies. General Purpose Local governments are not required to draw the matches between their general taxing revenue and the needed capital investments. We see alignment between where the funding is coming from and the goals of local government as the key challenge in securing an adequate level of funding for maintenance and replacement projects.

This matching principal is also a key to the alignment of the goals of and agencies finance and engineering departments. Take for example Boston Water and Sewer Commission. Their CIP is developed around the larger principals of long term planning and is also built around the practical aspects of matching cash expenditure with funding from bond issues. The Commission does this by maintaining a rolling monthly cash flow projection covering the typical three year life span of a capital project. The matching principal crates a structural alignment of purpose.

Another good example of the matching principal is the City and County of Denver Capital Improvements Program. The City divides requests and funding into 'discretionary' and 'maintenance' requests. The City has created a Capital Improvement Fund that has a dedicated mill levy for capital maintenance. These dedicated funds were voter approved in 2007 for the specific purpose of addressing ongoing maintenance and repair of major capital assets. The first priority for the application of these funds is the maintenance projects that have been identified. The second priority is discretionary projects. These discretionary projects are vetted by the City's Investment Committee to give a broader perspective to capital budgeting and align the capital budget with important City initiatives.

We like this approach because it captures the multiple levels of prioritization: asset condition, service level, departmental priority, and alignment with policy goals through a political lens.

Tips and Tricks

1. [Boston Water and Sewer Commission CIP](#)
2. [City and County of Denver Budget](#)

Commentary on the GFOA Best Practices Part 5

Recommendation five of the GFOA Replacement Policy focuses on performance measurement against the defined service level goals.

GFOA Recommendation

5. Monitoring and communicating progress toward stated goals and the overall condition of its capital assets with appropriate controls to ensure the validity and accuracy of the information. This process should describe how actual facility condition and performance compares to the targeted standard for each asset type. Governments should also review and report the operating impacts related to capital investments during project implementation and for a specified time period following project implementation...

Commentary

We spoke with Michael Daun, Chairman of the GFOA Economics Development and Capital Planning committee about the thought behind this recommendation. Michael told us that no single report was identified as a deliverable for these recommendations. He informed us that in order to encompass the great variation in the scope of capital programs the committee's goal is to establish benchmarks or guidelines for "monitoring and communication". He outlined the following four main elements to these guidelines:

1. The reporting needs to be auditable, accurate, timely info.
2. The reporting needs to set a condition target by infrastructure type and then periodically report against these standards.

3. TMonitoring the operations and related cost impacts of major capital improvement projects during construction.
4. TCapital project management reporting targeting the goal of increasing the predictive accuracy of the capital plan in completing projects on time and on budget.

We are focusing on goal number 2 above regarding condition targets. Mr. Daun confirmed that the committee was thinking about the “Required supplementary information” of GASB 34. We had not encountered any of these types of reports in our research prior to preparing this article. However, after having reviewed them, we highly recommend that our readers review these reports due to the valuable insights that they provide.

For example, in reviewing the “Required Supplemental Information” of the Reedy Creek Improvement District in Florida, we found some key insights that arise from this approach.

On bridges for example, the District as a result of its bi-annual inspection and assessment of bridges within the District identified that bus traffic had been causing “excess deterioration of armor joints within bridge decks.” They used this information to amend their program of replacing the armor joints with a ‘new expansion system that would greatly reduce maintenance efforts, decrease maintenance costs and extend the useful life of the bridge joints.’

In our view this type of insight provides a strong endorsement of the alignment of the capital planning, funding, construction management and performance measurement that result from the adoption of the alternative approach to GASB 34. In the case of Reedy Creek this alignment results in the early identification and adjustment to the capital planning process resulting in both improved service delivery and cost savings.

Another interesting example is the City of Saco, Maine that has also implemented the GASB 34 modified approach. The “Required Supplemental Information” demonstrates how the capital investments that the City has made have improved the condition of the roads of the City over time.

Addressing goal number four for Capital Project Management standards, the most comprehensive that we have encountered is found in the City of Pearland, TX which has an excellent Project Delivery model. The thing that we like most about this model is that it aligns the entire Capital Program Management process. The Pearland Delivery Model is a living document that is continuously updated in response to the changing conditions.

Tips and Tricks

1. [Reedy Creek Improvement District CAFR](#) (see page 51)