To: Director of Research and Technical Activities
RE: Project No. 3-43P
director@gasb.org

To the Director and Board,

Please accept my comment submission regarding the ***Preliminary Views of the Governmental Accounting Standards Board on major issues related to Infrastructure Assets - Project No. 3-43P.*** I write in hopes of remedying a critical omission in your otherwise well-considered pending changes to Infrastructure accounting.

I am providing these written comments by the Jan. 17th, 2025 date so that participants in the forthcoming user forums have the opportunity to consider them in advance. My hope is to attend the February 12, 2025, public forum virtually, beginning at 8:30 a.m. EST., which will be 5:30am my time – that is the only session my international travel schedule will allow. I am available by mutual scheduling to discuss these matters before Feb. 14th, or after Feb 23rd, as desired. My status is a combination of financial statement user and recent elected official.

Before beginning my comments, I want to commend GASB for their continued diligence in pursuing the improvement of infrastructure accounting. Infrastructure is the lifeblood of our civilization, and requires the best disclosure and insight we can provide, as the decisions which rest upon infrastructure are life-threatening, or life-sustaining. Thank you for your continued conscientious efforts in this regard.

Below I propose a method for assessing the financial condition of infrastructure which is simple to implement, yet provides more insight into the fiscal health of entities than some of the revisions to Notes and RSI which the Board is considering. Before I describe the methodology, I provide the reasons why consideration of asset replacement costs is critical. Following a description of the methodology, I anticipate some objections or concerns with the methodology, and explain why they are either not material, or how they can be overcome. In the final section, I review the GASB Preliminary Views by Chapter, and offer comments on the Board's positions.

Again, thank you for the opportunity to comment on this essential evolution of accounting practices.

Sincerely,

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I. The Socio-Economic Imperative

Our public works infrastructure is decaying without a fiscally sustainable plan to replenish it. The scope of this problem is in the trillions. *"In its 2021 report card [PDF], the American Society of Civil Engineers (ASCE), an industry group, gave the nation's infrastructure a "C-," up from a "D+" in 2017—the highest grade in twenty years. Still, the group estimated that there is an "infrastructure investment gap" of nearly $2.6 trillion this decade that, if unaddressed, could cost the United States $10 trillion in lost gross domestic product (GDP) by 2039."*[1] The Biden administration went to great lengths to fund infrastructure repairs during its term, and the Trump administration acknowledged the issue with Infrastructure Week on a frequent basis. Our civilization relies on the infrastructure in power, water, sewer, roads, bridges, stormwater, and more. Our failure to adequately fund the replenishment of that infrastructure is likely the third major Inter-Generational Injustice, after the Climate Crisis and Unfunded Pension Liabilities.

At present, the cost of unfunded asset replenishment is hidden from our financial statements, because the replacement cost of those assets is not reported, nor are the reserves required to fund those costs estimated. Fortunately, the recent treatment of Unfunded Pension Liabilities provides a model for a solution to this problem.[2]

GASB 67 and 68 led to quantification of the financial risk in outstanding future pensions, and motivated state and local governments to begin to address the unfunded liabilities. That approach began with a Note to the Financial Statements, which was then advanced to a Balance Sheet item.

Allowing public works to fall into disrepair will lead to critical failures which will ultimately burden residents more when costly emergency remedies become necessary. Also, failure to reserve for replenishment leads to borrowing - which typically adds 70% to the cost of each asset[3] so funded, and shifts the financial burden from existing users of the infrastructure onto future generations.

This comment submission begins the process of addressing this 'hidden cost' problem by establishing a method for quantifying these hidden deficits[4].

This comment submission proposes a simple normative and comparative methodology to assess the fiscal sustainability of government public works and other infrastructure-intensive entities, and proposes new benchmark metrics to surface and manage the iceberg of public fiscal liability attendant to our critical public infrastructure.[5]

A. An Important Assumption

This analysis assumes that an entity with significant capital asset infrastructure should have financial reserves proportional to: a) the current replacement costs of its assets, and b) the age of those assets. When that is the case, an entity can pay cash to replace the aged assets necessary, and will not need

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[1] https://www.cfr.org/backgrounder/state-us-infrastructure

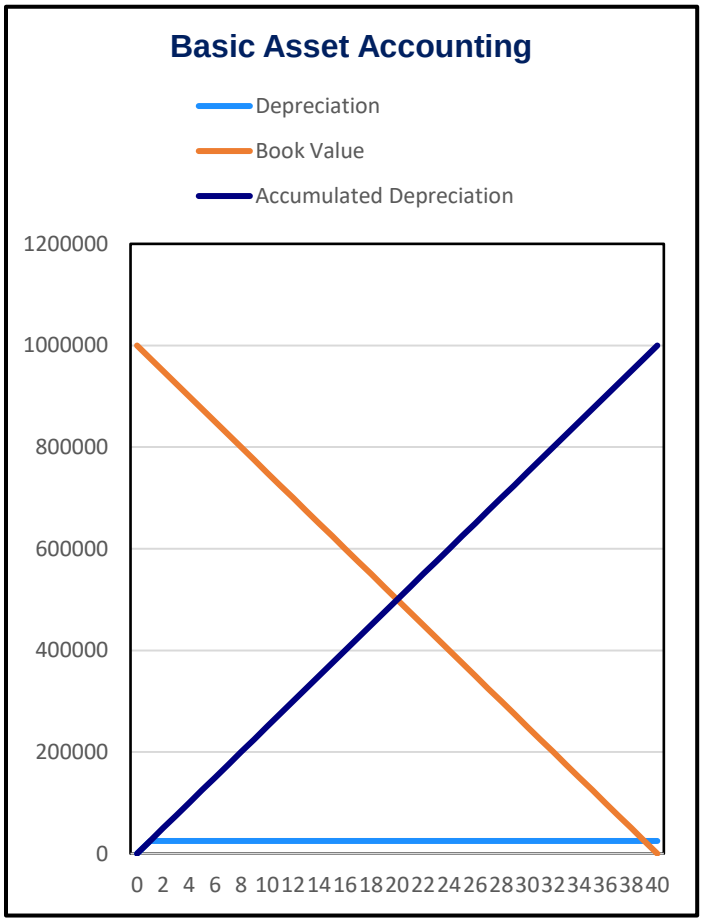
[2] From that link: *"Following a comment period and an exposure draft, on June 25, 2012, the GASB issued Statements 67 and 68 amending GASB Statements 25, 27 and 50. Statement 67 details plan-level financial reporting rules for state and local governments and pension plans, and is effective for fiscal years beginning after June 15, 2013. Statement 68 details the accounting and financial reporting rules impacting a jurisdiction's balance sheet and income statement effective for fiscal years beginning after June 15, 2014."*

[3] 4% interest on a 30-year bond adds 71.8% to the cost, plus issuance costs of 1% and above.

[4] A version of this article has been submitted to the American Water Works Association (AWWA) under the title: *"Assessing Public Works Fiscal Sustainability"*. Any revisions to the approach proposed herein will be updated following peer review.

[5] **Terminology:** GASB uses the term Government, but the infrastructure typically resides in specific Public Works Agencies or "enterprises" within a Government entity (e.g. sewer, stormwater, roads). For these comments we use the term "entity" to refer to all the above.

to borrow at added costs. Yet, *"the entire industry is addicted to debt"* in the words of the former head of the AWWA's[6] Rates and Charges committee. Those borrowing costs further undermine an entity's ability to accumulate reserves. An example of this problem is the $6.7 Billion reserve deficit for the SFPUC *(attached),* which entity also has negative cash flow due to debt service cost.



How current accounting practice hides the capital reserve deficit issue can be shown by two graphs. The chart at left shows the traditional depreciation, remaining book value, and accumulated depreciation for a hypothetical $1 million asset over 40 years – a typical lifetime for the blended assets in a public works agency such as water or sewer. The chart below shows what is missing, the growing cost of replacement assets. We used 3.5% as the inflation assumption[7], which results in a **4-fold increase in the cost of an asset over 40 years**; an original cost $1 million will cost $4 million to replace after 40 years.

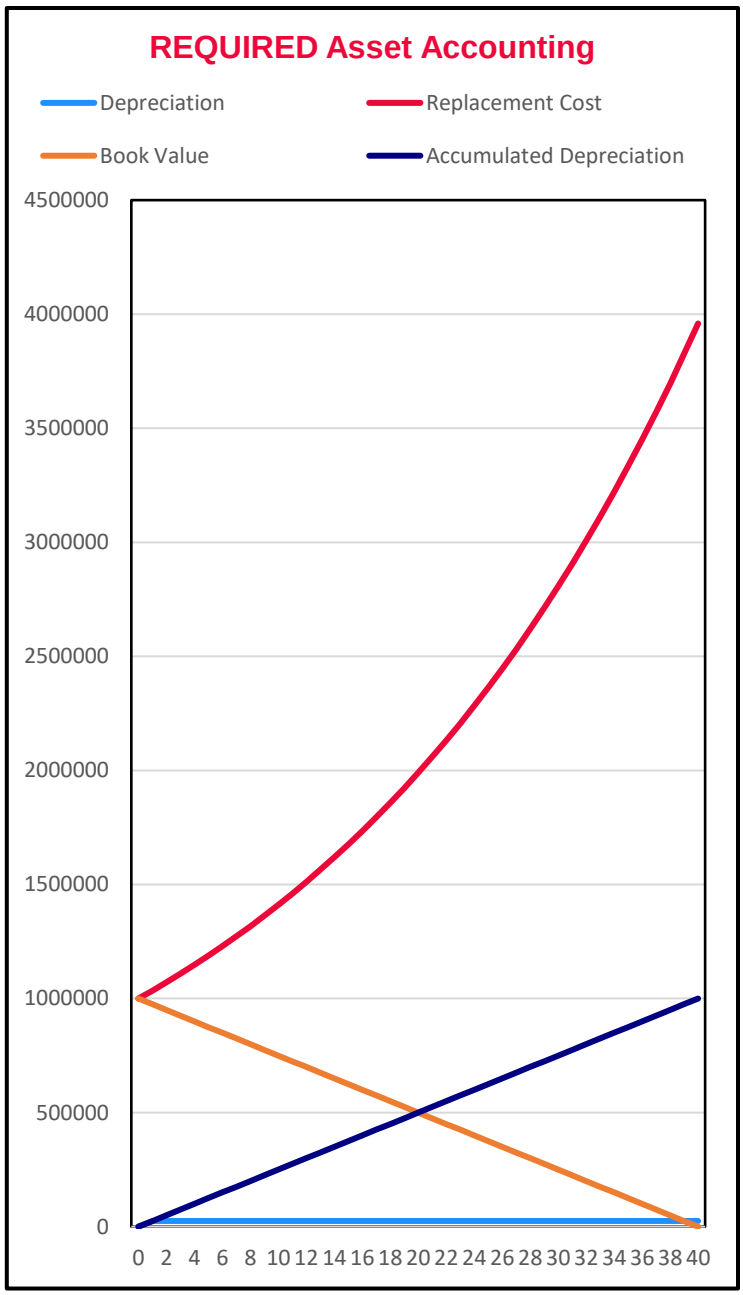
Yet local and state governments and public works agencies typically have assets reported at depreciated values, and those irrelevant numbers are often used for analysis of required reserves. Even if Original Cost is used for financial planning, those numbers are a fraction of the impending replacement costs.[8]

[6] American Water Works Association, industry trade group for water and sewer agencies.
[7] Form 4Q-1999 to 4Q-2024 the compound growth rate of pumping plant construction was 3.69%
[8] A 2022 survey in San Mateo County, CA found a $2.5 Billion deficit in 20 local agencies:

B. An Invisible Problem

The AWWA, the ASCE, and other national professional organizations have long discussed the failing nature of our nation's infrastructure, and the massive financial liabilities related thereto. However, there appear to be no benchmarks for the fiscal sustainability of public works.[9] While there are articles showing increasing concern regarding Fiscal Sustainability, and increasing interest and use of asset management programs[10], there is as yet no widely available financial model or benchmark metric to enforce the discipline of considering infrastructure assets as PERPETUAL obligations of the public works entity, and the funding required to replenish those assets.[11]

The recent surge in construction cost inflation due to the Pandemic, the War in Ukraine, and associated supply chain disruptions, coupled with the increase in bond interest rates, combine to make the assessment and funding of capital asset replenishment an urgent topic. Recently, public works districts have been quoted 4% interest on 30 year loans, plus 1.5% issuance costs for capital funding.[12] Those borrowing costs add over 73% to the cost of each asset, and competition for funding is surging. As interest rates rise from 80+ year lows, these extra costs are likely to increase for some years to come. Construction costs recently had their highest spike in 50 years. In California, construction costs increased 13.4% in 2021, and the recent year-to-year monthly increase was 24.5%. *[chart below]*



[9] **Literature on Fiscal Sustainability:** Much of the literature on Fiscal Sustainability seems focused on debt and the ability to repay it, e.g. https://read.oecd-ilibrary.org/governance/long-term-fiscal-sustainability-analysis-benchmarks-forindependent-fiscal-institutions_budget-17-5jfjb4lcpkhh#page1 There is clear consideration of the inter-generational justice issues, for example pg. 135 "Fairness – the capacity of government to pay current obligations without shifting the cost to future generations". However, there don't appear to be metrics for the need to continually replenish underlying assets – merely the statement that such indicators should exist (e.g. C.02 pg. 139).

[10] Asset Management Best Practices: Keeping Ahead of the Curve; Journal AWWA, August, 2019.

[11] **Fiscal Sustainability Metrics:** This 2020 study surveyed available literature using "a flexible and comprehensive framework composed of 214 criteria distributed across nine categories that measure the degree of sustainability of public works" https://mdpi-res.com/d_attachment/sustainability/sustainability-12-06896/article_deploy/sustainability-12-06896.pdf?version=1598350253. It documents a wide variety of concerns, but we find no usable metrics.

[12] Bartle Wells Associates, City of Pacifica Wastewater Rate Study: Page 3. https://www.cityofpacifica.org/documents/Sewer%20Rate%20Study%20Summary%20Memorandum.pdf

California Construction Cost Index 2021-2025

Month	2025	2024	2023	2022	2021
January			15%	8151	7090
February				8293	7102
March				8736	7130
April			24.5%	8903	7150
May					7712
June					7746
July					7892
August					8122
September					7900
October					8080
November					8141
December					8072
Annual % *					13.4%

**Annual Percentage is calculated from December to December.*

More than ever, governments need to assess their capital replenishment needs, their rates and fees, and their funding programs because of these inflationary pressures. Yet the only AWWA benchmark related to capital funding is the “System Renewal/Replacement Fund Allocation (%)”, which is based on the outdated original cost of assets, and does not set a normative standard for what SHOULD be allocated. What is needed for assessment of infrastructure capital adequacy is a tool that is both normative and comparative, showing the extent of the funding issues compared to need, and across entities and regions. GASB can take an important step in facilitating better analysis with new RSI disclosures.

In fact, our comments here rest on this belief***: "the objective of accounting is to depict the financial condition of an entity".*** As we have seen with Unfunded Pension Liabilities and GASB 67 & 68, some liabilities can be off-balance sheet, but GASB was willing to address those. Similarly, the hidden chasm between current replacement costs, current book values, and the reserves required to remain fiscally sustainable is huge, and is a major problem preventing accurate depiction of the financial condition of any entity. In the spirit of advancing the mission of GASB, we offer the following proposal.

II. The Proposed Accounting Solution[13]

Require a Note to Financial Statements which discloses estimated replacement costs, and estimates unfunded capital reserves.

A. Precedent for this approach

The infrastructure condition and financial concerns cited above are well recognized, yet not treated in a consistent manner. This is where GASB disclosure requirements can be of enormous benefit – as they have been with Unfunded Pension Liabilities. We provide below a method to organize those disclosures and estimate the level of unfunded government infrastructure reserves. For discussion purposes we refer to this as the **FAIR Method**: **F**iscal **A**ssessment: **I**nfrastructure **R**eserves. Naturally GASB can evolve this terminology, but we have found that a good acronym goes a long way in fostering conceptual understanding.

Part of the Fair Method is to provide a fiscal sustainability metric, which we here call the Reserve Adequacy Rating. These comments build upon established concepts previously expressed piecemeal, and integrates them into an assessment of how the capital reserves on hand compare to the amount needed to replenish the current asset inventory. The concept that Fiscal Sustainability is required for public works entities has been with us since at least 2014.[14]

A second foundational concept is that capital reserves must be sized based on the age and current replacement cost of assets. This concept has been hinted at since at least 2010.[15] In 2018, the AWWA's Cash Reserve Policy Guidelines[16] included a table *[Figure 1, below]* showing how annual rehabilitation and replacement funding should be determined by the current asset replacement cost divided by the remaining service life *[table below]*, but those guidelines did not mesh this insight into an assessment of required reserves. Nonetheless, the concept is clear, you must pay today's prices to replenish assets, and cannot use yesterday's costs to size those investments.

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[13] This approach was first published in: The Iceberg of Public Works Deficits in June, 2022.

[14] "On June 10, 2014, President Obama signed into law the Water Resources Reform and Development Act of 2014 (WRRDA). Among its provisions are amendments to the Federal Water Pollution Control Act (FWPCA), which includes the administration of the Clean Water State Revolving Fund (SRF) program. The WRRDA requirement to complete and **implement a fiscal sustainability plan** (FSP) will be a new condition of the SRF loan agreement." https://www.in.gov/ifa/srf/files/SRF-WRRDA-Fact-Sheet-January-2025.pdf

[15] How Can We Determine How Much Money to Set Aside for Financial Reserves? Opflow, 1 Sept. 2010 https://doi.org/10.1002/j.1551-8701.2010.tb02346.x *"depreciation expense is an accounting concept to estimate the decline in useful life of an asset and doesn't represent an asset's current replacement cost. Therefore, an optimal balance may be an amount that's greater than annual depreciation expense to approximate replacement cost."*

[16] AWWA Rates & Charges Committee Whitepaper – Cash Reserve Policy Guidelines 2018, pg. 8.

Example Calculation of Rehabilitation and Replacement Needs (in $1,000)

Line No.	Asset Category	Original Cost	Current Cost*	Service Life (years)	Annual R&R (rounded)**
	Source of Supply Plant				
1	Wells and Springs	710	2,560	30	90
2	Supply Mains	1,340	3,760	60	60
	Pumping Plant				
3	Structures and Improvements	1,430	6,490	30	220
4	Pumping and Power Production Equipment	2,080	3,050	25	120
	Water Treatment Plant				
5	Structures and Improvements	550	2,100	30	70
6	Sand or Other Media Filtration Equipment	250	260	30	10
	Transmission and Distribution Plant				
7	Distribution Reservoirs and Standpipes	950	1,770	50	40
8	Transmission and Distribution Mains	12,070	40,940	80	510
9	Services	6,990	12,290	30	410
10	Meters	2,850	5,400	20	270
11	Hydrants	1,990	3,530	45	80
	General Plant ***				
12	Computer Equipment	50	30	4	10
13	Transportation Equipment	590	710	10	70
14	Tools, Shop and Garage Equipment	240	300	20	20
15	Power Operated Equipment	470	710	15	50
16	Communication Equipment	120	170	10	20
17	SCADA Equipment	1,470	450	10	50
18	Total	$34,150	$84,520		$2,100

* Current cost may be calculated based on multiplying an inflation factor to the original cost, based on the year of installation for each asset, or by engineering estimates of the current replacement cost.
** Annual rehabilitation and replacement amount is equal to the current cost divided by service life.
*** Any of these assets included in separate equipment replacement reserves should be excluded from the rehabilitation and replacement reserves.

Figure 1 AWWA Cash Reserve Policy Guideline, 2018

Even national organizations such as condominium associations and real estate trade groups understand the concept of proactive reserving for asset replenishment:

"…leaders in the reserve study industry developed the National Reserve Study Standards in conjunction with Community Associations Institute (CAI). The authors of the standards defined the term fully funded as being "100 percent funded when the actual (or projected) reserve balance is equal to the fully funded balance." The ***fully funded balance*** is the balance that is in direct proportion to the fraction of life "used up" for a given component. "[17]

Determining the current replacement cost of an entity's Asset Inventory can be done in three ways. First, and most comprehensively, a total can be calculated in detail with help of an Asset Management Program to assess the current replacement cost of each asset, the technologies now available for replacement, the options and costs to prolong the lives of current assets, and comparing those to the payoff from replenishment (e.g. with more efficient equipment). We call this the **Thorough Method.** That is a laborious process, and one not often done annually, nor publicly disclosed. A second method, which we term the **Detailed Method**, is to use the Asset Inventory Spreadsheet entity staff forward to

[17] https://www.reserveadvisors.com/resources/blog/are-your-reserves-fully-funded/

the accountants annually, and to use the original costs for each asset based on the date of purchase or service, together with the change in inflation indices since those dates, to calculate the current replacement costs for each asset/class, and then sum the results for the asset portfolio. However, one cannot compare those costs easily across entities as detailed asset inventory information is not routinely published. The third, or **FAIR Method**[18] described herein, involves using publicly available financial statements to derive the average age and replacement cost of infrastructure assets.

Determining how much of an entity's asset inventory it needs to replenish depends on asset remaining lifetimes. Without relying upon access to detailed asset inventory spreadsheets, we can adopt and extend a concept used by the Fitch Rating Agency, among others, to calculate both the expected and remaining average asset lifetimes based on publicly available asset book values and current depreciation, and then can calculate what percentage of its useful life an asset inventory has already exhausted.[19] (Fitch calls this the "Life Cycle Ratio", when the meaning is really *"the degree to which assets have been exhausted"*.) *[excerpt below]*

Capital Planning and Management

Metrics to Support Assessment

• Fitch calculates a ratio to measure the status of a utility's life cycle based on information from a utility's financial statements and typically over the most recent five-year period. The life cycle ratio is calculated as age of plant as the numerator divided by the sum of age of plant plus remaining useful life. Age of plant is calculated as accumulated depreciation divided by annual depreciation expense, while remaining useful life is calculated as net capital assets divided by annual depreciation expense. In cases where accumulated depreciation is not available, Fitch will calculate age of plant as follows: 45 – (remaining useful life).

Thus, the approach described below builds upon established industry and governmental concepts and techniques, extending them into a normative benchmark for required infrastructure capital reserves. Determining the Reserve Adequacy Rating merely requires comparing the reserves on hand to the current replacement cost of assets already needing replacement. The calculations follow.

B. F.A.I.R. Calculation Methodology

The approach described below is intended to produce a Note to the Financial Statements regarding the adequacy of Capital Reserves in an entity. At this time, it is not expected to appear directly in the Financial Statements, although unfunded pension liabilities did eventually progress thereto.

1. Data Collection Required

Obtain the following numbers from the entity's most recent annual financial report:

1. The as-of date of the financial statements
2. Original cost of capital assets[20]
3. Current book value of capital assets
4. Current annual depreciation
5. Operating margin (recurring)[21]
6. Current Assets

[18] Fiscal Assessment: Infrastructure Reserves – FAIR – used as a provisional acronym herein until GASB opines on terminology.
[19] Fitch Ratings: U.S. Water and Sewer Rating Criteria, March 18, 2021; page 9
[20] Exclude Land from capital assets. Refer to item 2 under II-B-3, Limitations for rationale.
[21] Exclude non-recurring revenues and expenses

7. Current Liabilities
8. Annual Debt Principal paid[22]

2. Calculations Required

To approximate the entity's capital reserves, calculate:

Reserves = Net Current Assets = Current Assets – Current Liabilities[23]

Extending the Fitch approach, one can calculate the aggregate average age of an entity's assets as follows, keeping in mind that the numbers will represent aggregate averages for all capital assets:

Asset Lifetime = Original Cost ÷ Annual Depreciation
Remaining Lifetime = Book Value ÷ Annual Depreciation

Thus, the current Age of those assets is:

Asset Age = Asset Lifetime – Remaining Life

Using that Asset Age, we can then backdate from the as-of financial statement date to determine the average original date of purchase of all assets:

Date of Purchase = As of Date from the Financial Statements – Asset Age

With the average age of the assets, we can calculate the amount of inflation which has occurred since the original date of purchase. For most inflation indices[24] this results in a multiplier which is simply:

Inflation Factor = Inflation Index $_{Now}$ ÷ Inflation Index $_{Date\ of\ Service}$

Finally, we can calculate the current replacement cost of the entire asset inventory as:

Replacement Cost = Original Cost × Inflation Factor + Estimated replacement cost for fully depreciated assets.[25]

Now that we know the replacement cost and the age of the assets, we can determine what percentage they have 'aged out', which is the ratio of their age and their original lifetime:

Life Cycle Ratio = Asset Age ÷ Asset Lifetime

And knowing to what degree the assets are exhausted, we can calculate the reserves required today, should we desire to replace those assets without borrowing at extra cost:

Required Reserves = Replacement Cost × Life Cycle Ratio

Finally, we can assess the adequacy of reserves by calculating a metric showing how today's capital reserves compare to those required for today's aged assets:

Reserve Adequacy Rating (%) = Reserves ÷ Required Reserves *(expressed as a %)*

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[22] If this figure is not disclosed it can be calculated as = Debt Service Paid – Interest on Debt.
[23] Refer to item 1 under II-B-3, Limitations, for a discussion of why this approach is used for Reserves.
[24] **Inflation Index:** For our inflation calculations, we use the US Army Corps of Engineers CWCCIS Indices for plants (#13), buildings (#19) and permanent operating equipment (#20), which are free, as opposed to the Engineering News Record Construction Cost Index. Fortunately, those three codes have identical index values, and go back to 1967, which has been sufficient duration for our purposes.
[25] See also the comment on Chapter 6 items 19-21. This multiplication only applies for assets still under depreciation, because fully depreciated assets are "invisible" on the financial statements. The estimated current replacement cost for fully depreciated assets must be added to this calculation to calculate the full replacement cost burden.

There will, of course, be many unique situations across the nation-wide assortment of special districts, municipalities, joint powers authorities, and entities that govern our public works infrastructure.

Below are situations and issues which affect the accuracy of the FAIR Method described above, and on which further GASB discussion and research might refine going forward.

3. Limitations, Potential Sources of Error, and Useful Additional Metrics

1. Determining Capital Reserves:

Not every entity has explicitly disclosed capital reserves on its balance sheet. Even those that show a figure for "Reserves" may include working capital, emergency, and/or debt repayment reserves in the total – thus overstating the amounts designated for infrastructure (capital) asset replenishment. Further, an entity might have other liabilities or practices which undermine the full use of reserve funds for capital. For example, cities often transfer public works enterprise reserve funds to other purposes. For both ease of calculation and broader comparability across different accounting practices, we have chosen the simplification of using the Net of Current Assets minus Current Liabilities as a generous, but widely available, surrogate for Capital Reserves. This approach to calculating required reserves is likely a generous overstatement of the funds available for capital replenishment, but is easily applied when specific capital reserves are not stated, or are subject to diversion to other uses.

2. Defining Capital Assets:

For many organizations, Land is NOT included as a depreciable and replenishable capital asset, and we have honored that distinction here. Land is not depreciated, but it clearly has inflated in replacement cost. Given sea level rise and climate change, it is possible that Land should be viewed as a capital asset needing eventual replacement, especially for public works near the water line. That of course would require a detailed asset condition assessment not obtainable easily from public financial statements for comparability. Our exclusion of Land from this calculation is thus likely a generous understatement of the asset replenishment requirements for some entities.

3. Improperly or Informally Valued Assets:

There are situations where assets are valued at zero, or were acquired for $1, or donated by real estate developers, and are not shown at their true cost on the balance sheet. Such under-valued assets will cause this method to understate both the depreciation on, and the replacement cost of, those assets. The approach described above for calculating required reserves is thus a generous understatement of the funds needed for capital replenishment when these situations are present, UNLESS GASB obtains disclosures for fully depreciated assets containing the information specified in our comments on Chapter 6, items 19-20. If that disclosure is obtainable, then the replacement cost of fully depreciated assets can be calculated and added into the calculation of Replacement Cost (above), and this concern becomes moot.

4. Real-world Extended Asset Lifetimes:

The duration or lifetime used for accounting depreciation is typically shorter than the extended asset lifetimes obtained by entities in the field. Typically, stretching an asset's useful life involves both additional risks and costs[26], but it is done frequently. There is no way any summary approach such as the FAIR Method using only financial statement data can approximate how much longer an asset inventory can be patched in service, nor the extra O&M costs attendant thereto. The approach described above for calculating required reserves likely overstates the funds needed for capital replenishment in the face of this practice. One can however, use the FAIR Method numbers above to calculate a Lazarus, or Rebirth, Factor reflecting: *"How much longer would you have to stretch the lives*

[26] And that risk can turn into a million-dollar extra expense, as happened recently near here when a bus duct exploded due to water corrosion.

of your assets in order for the reserves you have today to be adequate?". We have done so in an example in item 6 below, with an accompanying flowchart of the calculations.

5. Entities With Shared Resources

It is common for smaller entities to partner with others in funding and operating shared resources such as wastewater treatment plants, outfalls, reservoirs, etc. In these situations, the financials from the shared entity need to be allocated to the member entities, and then the metrics for the subject reporting entity to be calculated based upon the allocated asset, liability, revenues and expenses. The allocation basis will be determined by the JPA[27] agreement, typically either ownership % or usage %. Failure to allocate all shared ownership financial data will understate capital reserve requirements, as JPA's are often not given custody of reserves, but are reimbursed as needed. Thus, it is likely only the asset burden, and not significant reserves, would be allocated – thus reducing the Reserve Adequacy Rating.

6. Confirming Validity of These Estimates:

When we reviewed these metrics with a local entity, 10 months after their financials were published, they had gone through a new budget and assessment process. Their response when we told them they needed $75M in reserves (as opposed to the $23M on hand) was *"Actually, it's closer to $85M based on our latest budget assessment"*. So, one method of confirming the reasonableness of the FAIR Method is to review the data with the entities involved. Another way is to obtain the entity's Asset Inventory spreadsheet, and calculate the Current Asset Replacement Cost item by item *(the Detailed Method described above),* and to then compare that to the implied Replacement Cost calculated above. *[We have done this for a few dozen entities in our County.]*

7. Amplifying The Message:

Some audiences may relate better to metrics that are not sterile ratios or percentages. Here are some alternative metrics derived from the above FAIR Method numbers which GASB may find useful. It is possible to calculate the *"Implied lifetime of your assets that your current reserves and operating margin are sufficient to fund."*; we call this the **"Implied Remaining Life"** of an entity's assets. In a recent example, the entity had a Reserve Adequacy Ratio of 30.6%. The Replacement Cost was $112M and the Reserves were $22.9M on assets with original average lives of 41.5 years. What useful life of those assets would justify having only 20.4% of replacement costs currently reserved? The assets averaged 27.7 years old, so that reserve level implied a useful asset life of 135.5 years, which means a Remaining Lifetime of 107.9 years. Stakeholders can readily understand if the remaining life of their assets is close to that implied by their current reserves. The calculations required follow:

Reserve Coverage % = Reserves ÷ Replacement Cost
[$22.9M ÷ 112.1M = 20.4%]
Implied Asset Lifetime = Asset Age ÷ Reserve Coverage %
[27.7 years ÷ 20.4% = 135.5 years]
Implied Remaining Life = Implied Asset Lifetime – Asset Age
[135.5 – 27.7 = 107.9 years]

We can also calculate a "Lazarus Ratio" or "Rebirth Factor", which is the number of times the assets would have to be magically reborn to justify the current level of reserves, as follows:

Lazarus Ratio = Implied Asset Lifetime ÷ Asset Lifetime
[135.5 ÷ 41.5 = 3.3x]

In our experience, these alternative metrics make the point about reserve deficiency very clearly.

[27] We use JPA or Joint Powers Agreement for the name of a business agreement affecting the assets.

8. Considering Ability to Recover from a Reserve Deficit:

As rating agencies well know, some entities have more “financial horsepower” than others, and can handle larger amounts of debt and/or recover from downturns more readily. To assess ‘Reserve Recovery Time’ for deficient reserve levels, we can calculate a recovery metric from the annual financial statements as follows:

Operating Margin = As reported
Implied Cash Flow = Annual Depreciation + Operating Margin - Debt Principal repaid[28]
Reserve Deficiency = Reserves Required – Current Reserves
Reserve Recovery Time = Reserve Deficiency ÷ Implied Cash Flow

This recovery time is of course an understated time estimate, because each year every asset’s replacement cost will increase by inflation, and most assets will become an additional year older – while a few will be replenished anew. Thus, if the calculated recovery time is, say 14 years, by the time 14 years have elapsed, the required reserves will likely be much higher and a deficit will persist. Nonetheless, entities with lower Reserve Recovery Times are in better financial condition than those with longer ones, and this metric is an indication of that better fiscal resilience. As a conceptual aid to readers, we provide the following flowcharts depicting the derivation of the terms used above from the source financial statement data. Green colored shapes are direct from financial statements. Blue shapes are primary FAIR Method calculations. Pink shapes are supplemental statistics.

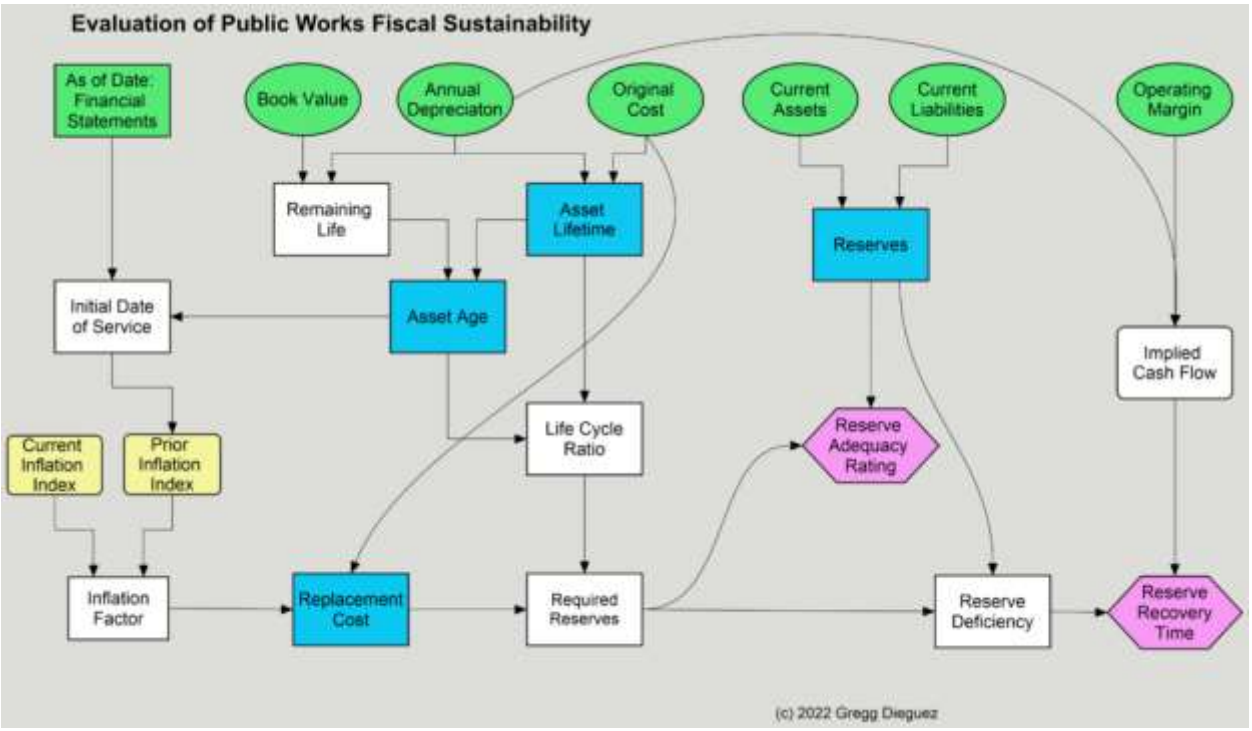

Figure 2 Flow of Calculations Described Above

[28] Because interest is included in Operating Margin, only principal payments need be deducted here.

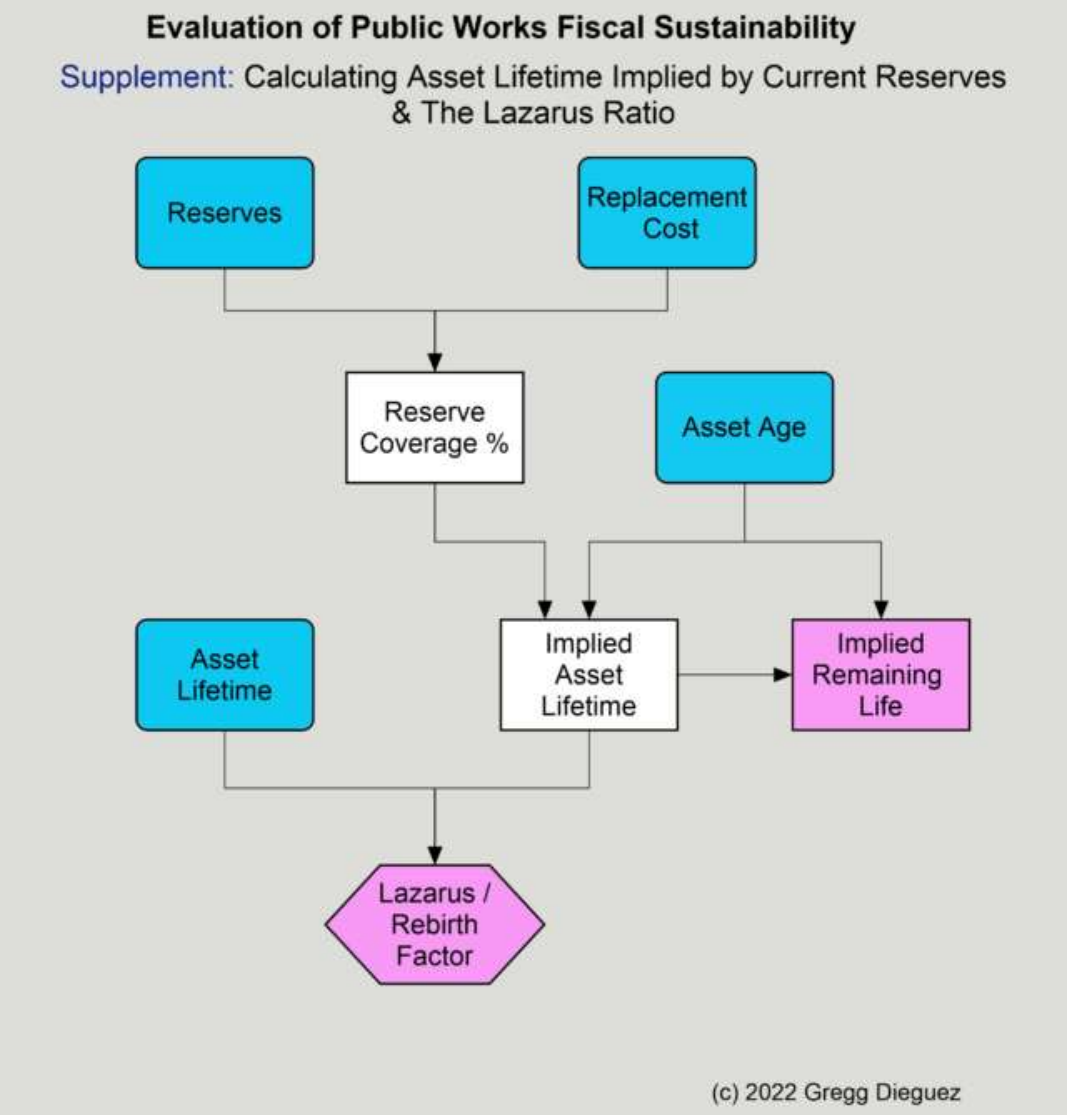

Figure 3 Calculation of Supplemental Fiscal Sustainability Metrics

4. Implications of the FAIR Method

This methodology provides an estimate of the reserves required to replenish assets WITHOUT BORROWING. If an entity kept 100% of the reserves we calculate as required, it would likely never need to borrow for capital replenishment, and would avoid those extra expenses for its tax/ratepayers. However, as one industry expert told us: *"The industry is addicted to debt."* Thus, under current practices it is more likely that an entity will saddle future ratepayers with the extra costs of borrowing, in addition to the cost of the replacement assets. The causes of this 'kick the can down the road' funding ethos and the implications for long term costs and rates are several, and beyond the scope of these GASB comments, but a future paper can cover those topics and propose legal and governance remedies thereto. One benefit of the proposed **FAIR Method** is that it will show the "unfunded capital needs" for each entity, which is a surrogate for the loan/bond principal required to close the immediate reserve funding gap – though that gap will widen in the future when borrowing costs ensue. Another benefit of this method is that it uses readily available public financial information to provide both normative and comparative statistics for water, sewer, and other public works and government entities.[29]

[29] Perhaps for even condominium and homeowners' associations, to consider the recent events related to unfunded maintenance in Florida…

5. Recommendations & Next Steps

The iceberg of Infrastructure Capital Replenishment Costs yet to be disclosed is currently unknown. New disclosures adopted by GASB will likely show it to be our third major inter-generational injustice issue after the Climate Crisis and Unfunded Pension Liabilities. We recommend that GASB revise accounting policies to handle asset cost inflation by requiring supplemental notes to financial statements analogous to those now mandated for Unfunded Pension Liabilities. Further, after suitable refinement of this proposed technique by GASB and other professional analysts, we recommend that the GASB and/or professional organizations in each industry (thus, AWWA for water and sewer) begin publishing benchmarks on Reserve Adequacy (e.g. for AWWA in its Utility Benchmarking Manual). Hopefully fiscal sustainability metrics such as these will provide rate consultants and public works management firmer grounds for establishing rates and connection-impact fees in order to ensure the fiscal sustainability and ongoing operation of the infrastructure.

C. Implementation and Cost Considerations

Determination of Unfunded Pension Liabilities requires the services of an Actuary, at cost to the statement filer, and with delays in the release of the financial statements. The approach described above should not require such external costs. However, the accountant engaged will need access to the inflation index which GASB determines is most appropriate. Also, in cases where an entity shares ownership of the assets of another entity (e.g. a Sewer Joint Powers Authority), then the allocation basis and the financial statements of the other entity must be analyzed as part of this process. We submit this is not an undue burden for the important contribution made by understanding the adequacy of capital reserves, which is now invisible to financial statement analysts.

D. Conclusion

This comment recommends the addition of a Note to the financial statements quantifying the unfunded capital reserves for infrastructure assets – based on identification of the current replacement cost of capital assets. While authored with a focus on governmental public works assets, this approach would also be useful in preventing the collapse of condominium buildings due to underfunded asset replenishment, and in assessing true shareholder value in all businesses.

This approach can further extend the basic calculation of required reserves into optional additional metrics for assessing reserve adequacy. In particular, the assumption that “we can stretch the useful lives of our assets” can be tested by calculating how long – at current levels of reserve accumulation – assets would have to last in order for them to be replaced without the extra costs of borrowing.

This approach, and emphasis on this methodology rests on this belief: **"the objective of accounting is to depict the financial condition of an entity"**. As we have seen with Unfunded Pension Liabilities and GASB 67 & 68, some liabilities can be off-balance sheet, but GASB was willing to address those. Similarly, the hidden chasm between current replacement costs, current book values, and the reserves required to remain fiscally sustainable is huge, and is a major problem preventing accurate depiction of the financial condition of any entity.

III. Additional comments on Project No. 3-43P

Detailed condition assessments could improve the quality of the estimated infrastructure reserves required, but are costly and laborious to perform and difficult to schedule in coordination with a fiscal year end. There are also no cross-comparable standards for condition assessment across the myriad of infrastructure asset classes and industries involved. The FAIR Method proposed above operates only on summary financial data, but is much easier and faster to implement and likely would yield more standardized comparable results across reporting entities. A focus on depreciation is misguided when the replacement costs are multiples of the original costs of those assets.

Neither the historical cost nor the modified method provides an assessment of capital reserve adequacy. While condition assessments and maintenance costs are of interest, they bear largely on an entity's decision on whether or not to REPLACE an asset, for safety or for more efficient operation, or for reduced maintenance costs. Those are detailed internal analyses, and of value, but overlook the issue of what the looming burden is from assets needing replacement, and at what costs and/or debt service.

The proposed detailed new GASB requirements will entail additional costs but will not: (a) improve comparability across governments and consistency over time; (b) be useful for making decisions or assessing government accountability - without also requiring the related assessment of the fiscal sustainability of the enterprise, which the FAIR Method provides.

A. Chapter 2

The definition of infrastructure assets should be broadened to include all assets involved in the operation and management of the infrastructure. Trucks, including mobile generators and mobile repair/maintenance vehicles, while short-lived in comparison to pipes and pumps and buildings, are still essential to infrastructure - as are tools. They should be included. For that matter, the offices and computer equipment used to run a facility are also essential, though short-lived in comparison to roads and pipes. We see no benefit to a detailed partitioning of assets for reporting unless an asset is NOT UTILIZED in the primary service being delivered. Hence, we agree that "the requirement to provide (or support or manage) a particular type of public service" should be part of the definition of infrastructure assets.

B. Chapter 3

Item 3: The definition *that "assets are resources with present service capacity that the government presently controls"* leads to confusion regarding infrastructure assets which are partially owned by an entity, and which are part of service provision, but are not directly managed because they are owned and operated by a JPA or other mutual benefit organization. Note that ownership of JPA assets is typically valued at the time of creation, placed on the balance sheet and typically not updated to current costs. While additional requirements could be created to make JPA ownership more comparable to other assets on the entity's books, it would seem much simpler to implement the FAIR Method described above.

Item 6: This statement is incorrect: *"the use of historical cost to measure infrastructure assets 'generally results in a cost-of-services amount that is relevant for assessing interperiod equity'."* The fact that replacement costs will be multiples of original cost means clearly that *"… future taxpayers will be required to assume burdens for services previously provided."* We find that current accounting practices leads to under-charging current users who are exhausting assets while not providing replenishment reserves. The result is both depleted infrastructure assets AND a need to BORROW at extra cost passed on to future generations. Thus, there is clear inequity created by focusing exclusively on 40-year-old historical numbers in assessing the condition of infrastructure financial matters.

C. Chapter 4

Item 4: when an entity extends the useful life, will it be required to RESTATE all prior years so that the financial statements are comparable? This seems burdensome, and a lot of work for reporting numbers that are massively deficient in terms of representing the true financial burden (e.g. replacement cost) those assets will represent. Note also that assets depreciated to zero are likely very old, and requiring extra operations and maintenance costs which ARE reflected in the current period's financial statements – but in the reported expenses.

Item 6: the agencies whose financials we have analyzed maintain spreadsheets for every asset or asset class and those assets typically have different useful lives by type/class. Depreciation reported on the financial statements is already an amalgam of disparate asset details. Thus, for the agencies we have reviewed, this requirement adds no value and is already in practice.

Item 8: note that there will be considerable ambiguity and thus variance in applicability of these guidelines, thus jeopardizing comparability.

D. Chapter 5

Clearly the discussions around Asset Management Systems are relevant to any well-functioning entity. Also clearly, the cost and frequency of complete condition assessments are in tension with the 3-year requirement. Entities we have analyzed typically have a 5-year capital planning horizon. Even that exposes them to a "fiscal cliff" when – for example – a significant proportion of 60-year-old underground pipes begin to fail. Building reserves for pipes costing $2 million a mile needs to occur well ahead of failures. The Board's concern that "allowing a condition assessment to be performed over a longer period may result in the information presented not reflecting the current condition of those infrastructure assets" is valid. However, we recommend that the FAIR Method discussed herein as part of a workable and affordable immediate solution.

By implementing the FAIR Method, entities who discover their Reserve Adequacy Rating falls well below a designated threshold could then be required to do the level of condition inspections required in this GASB draft. In essence, if you fail a FAIR Method test of Capital Reserve Adequacy, then more disclosure is mandated.

The Board's concerns about the difficulty of establishing condition assessment methods and threshold targets are correct, and until engineering & science can provide better guidance, the accounting profession should refrain from detailed specification of those processes, which vary widely among types of infrastructure (roads to power lines, to water & sewer, etc.).

Regarding Item 12 in Chapter 5, the preliminary view abandons hope of providing a true picture of the burden of asset replenishment. We recommend adding a required note to the financial statements applying the FAIR Method. This does NOT require a balance sheet entry, but will be an important source of financial perspective.

Regarding Item 13, the Board describes a situation where an entity is in financial distress. In that case, abandoning any quantification of the risk or cost burden in the most concerning situations seems inappropriate, and applying the FAIR Method is most needed.

E. Chapter 6

We concur with the thrust of items 16-18, but ask what number of historical / prior time periods must be restated so that a meaningful assessment of trends in performance and accountability can be obtained?

Regarding items 19-21, the key issue is the assets which are fully depreciated and thus do not impact either the income statement or balance sheet, yet pose the most immediate potential need for asset

replacement/replenishment – at costs likely far in excess of their original cost. The disclosure required for fully depreciated assets should be:

1. Date of purchase: Note – NOT the date of service, because the inflation of replacement cost will arise from the time elapsed from purchase, not from the date of service, which can be delayed.
2. Original cost: Whatever value was capitalized for the asset, which might have included construction and installation work beyond the cost of the assets procured. The total installed cost is most relevant to estimating the funds it will take to replace the asset in service.
3. Depreciation period: the number of years from date of purchase until the asset declined to zero book value. This number will inform better future estimation of the useful life, when contrasted with what has actually occurred.

With items 1 and 2 above, and use of a standard inflation index, the replacement cost burden can be estimated. The replacement cost of fully depreciated assets should be added into the calculation of the Replacement Cost Burden as described in section II-B-2.

Again, regarding items 19-21, the same question applies: "what number of historical / prior time periods must be restated so that a meaningful assessment of trends in performance and accountability can be obtained?"

Note that all the recommended disclosures still omit the key factor affecting the fiscal sustainability of an entity: the current replacement costs.

Re item 22, we are surprised that this statement is considered possible: *"Maintenance expenses are considered expenses that allow infrastructure assets to continue to be used throughout their estimated useful lives but do not extend the estimated useful lives of those infrastructure assets or increase the capacity or efficiency of those infrastructure assets."* Maintenance in our experience almost ALWAYS extends the useful life of assets[30], and at least prevents reduction of capacity (though not increasing it beyond the original capacity), and similarly prevents reduction of efficiency. we recommend that the Board not attempt to sub-categorize Maintenance expenses as described. A combined tally of "maintenance and preservation expenses" is sufficient.

F. Chapter 7

The Board's concerns about the auditability of much of the information discussed is overarchingly valid. As a result, RSI is the best method of presentation. Re: items 9 and 10, 9 or 10 years is a sufficient, if not excessive, time period for such information. Re: item 12, we assert that discriminating between preservation and maintenance is next to impossible and should be removed from consideration: Maintenance Expense is sufficient reporting.

Items 15-17. Again, the difference between maintenance and preservation expenses is illusory at best, and more likely meaningless. It is sufficient to require disclosure of maintenance expenses. For smaller public works agencies, some of these RSI reporting requirements are burdensome, if not impossible. It is suggested that a size threshold is necessary to avoid compliance failures resulting from imposing a reporting burden that small agencies cannot hope to provide. Note that small sewer collection agencies typically do not have full-time accounting staffs.

G. APPENDIX A

A3: We concur that "fair value" is often meaningless for dedicated purpose infrastructure assets which are often entrenched, longstanding, and not marketable.

[30] And lack of maintenance shortens the useful life of assets.

A4: We strongly disagree that acquisition value or historical cost are more relevant than replacement cost. The former two are often 20 to 80 years old, and not remotely related to assessing the financial ability of an entity to continue operations going forward.

A5: The Board's concern over the costs that governments may incur to provide fair value or replacement cost of infrastructure assets is cited as a reason for NOT requiring such disclosure. We disagree with two arguments. First, in many industries there are benchmark data which help to identify such costs, making it non-burdensome to obtain and extrapolate to a specific agency's operational size.[31] Second, without having to research individual equipment replacement costs, the FAIR Method provides a quick summary analysis of replacement costs by means of applying an inflation index.[32] We assert that cost of compliance is no valid excuse for not estimating the critical financial burden faced by infrastructure-intensive entities – current replacement costs. However, the FAIR Method is an inexpensive approach to meeting that objective.

Deferred Maintenance: Items A6-12: We concur that deferred maintenance is often a problem or abuse in public works agencies. Whether that occurs because management omits the maintenance, or because the government does not adequately fund the entity charged with maintaining the assets, varies by situation. Further, quantifying the necessary amount of maintenance and assessing the cost/benefit of performing or not performing as planned, depends on a host of factors that financial statements cannot yet hope to capture. Thus, we concur with the limited approach the Board has recommended.

IV. Author's Background

Mr. Dieguez recently completed a term as elected Chair of the Midcoast Community Council in San Mateo County. He has been involved in local infrastructure issues there since 2012. In 1974 he created a financial modeling system, a precursor of today's spreadsheet programs, used at State Street Bank and sold to other large banks. He then moved to a startup (Saddlebrook) selling Financial Planning and Control Systems on DEC minicomputers, and ported that modeling system as an application in the FPCS, which was sold to hundreds of medium-sized banks and thrift institutions. While at State Street he pioneered the concept of Interest Sensitivity Analysis, to assess and control the Bank's exposure to interest rate fluctuations. That same analysis was formalized while at Saddlebrook in a series of 3 papers on "Spread Management" in the Savings and Loan Review in 1980 – papers which are still cited in banking textbooks today.[33] He also developed a method of standardized ratio performance analysis for banks, and developed a benchmark database of the banking industry.

Subsequently he developed the first real time, non-stop financial services processing system, a shareholder accounting system still used by Franklin Templeton and other mutual fund families, developed an Opinion Leader Management System[34] used by 17 of the top 25 bio-pharma firms worldwide, and mentored a series of start-ups as part of MIT's Venture Mentoring Service. He also co-founded an options trading firm in 1980. He has written hundreds of articles in both trade and local publications on matters ranging from finance and infrastructure to governance and COVID.

Mr. Dieguez holds two degrees from MIT: an SB in Management Science *(a degree program which he co-founded)* and an SM in Management with concentrations in computer science and finance.

Mr. Dieguez is not a CPA, but has a long history in financial management and analysis.

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[31] For example, the AWWA provides a periodic Utility Benchmarking guide for water and sewer agencies.
[32] Such as the Army Corps of Engineers decades-old Civil Works Construction Cost Index System (CWCCIS)
[33] And clearly, forgotten by Silicon Valley Bank in recent years.
[34] Think of it as Facebook for Pharma, where the data was provided by his firm and the MD profiles used by the firms in working with clinical researchers, speakers, and medical educators.

Dear SFPUC Commissioners and Interested Parties: 6/23/24

Re: Fiscal UN-Sustainability at SFPUC, and the Implications

SFPUC is in dire financial condition, and requires an immediate audit to address the fiscal sustainability of the agency, and the sustainability and affordability of water supplies in the counties to which it provides water. Immediately below are highlights of our findings, followed by a more detailed explanation of the financial analysis leading to this conclusion, and a list of recommendations for immediate action.

SFPUC Fiscal Sustainability Highlights: – *taken from 6/30/23 financials*:

1. Has a reserve deficiency of over $6.7 billion.
2. Recent increases in debt service have driven ongoing operations cash flow negative, meaning the agency cannot accumulate the reserves needed to prevent even more costly borrowing.
3. Has assets 35.3% into their life cycle
4. Has replacement costs 77% higher than the original asset costs
5. Has asset replenishment reserves of 11.3% of those necessitated by the age and replacement cost of their assets.

Explanation:

The detailed statistics for this analysis are shown in Figure 1 below.

PW Entity	SFPUC					
	($000)	($000)				
Information As Of Date	2022	2023				
Current Assets	1,545,238	1,489,439				
Current Liabilities	1,240,030	625,987				
Original Cost	11,864,349	12,220,393				
Annual Depreciation	251,516	258,424				
Book Value	7,797,131	7,901,002		Note:	2022	2023
Operating Margin	292,765	380,558		Int. Long Term Debt	-288,605	-292,389
Implied Cash Flow	117,323	-254,059	Net Debt Service	Int. Comm'l Paper	-885	-15,171
Accumulated Depreciation	4,067,218	4,319,391		Principal Paid LTD	-137,468	-585,481
Asset Age (Years)	16.2	16.7		Debt. Service	-426,958	-893,041
Remaining Life	31.0	30.6				
Asset Lifetime	47.2	47.3				
Life Cycle Ratio %	34.3%	35.3%				
Avg. Date of Service	2,006.3	2,005.8				
Inflation Index (DoS)	645.52	605.47				
Inflation Index	1038.59	1070.78	*as of 20YY-March*			
Inflation Factor	1.61	1.77				
Replacement Cost	19,088,788	21,611,892				
Required Reserves	6,543,828	7,638,888	*<= 35.3% of replacement cost*			
Reserves *(Net Current Assets)*	305,208	863,452				
Reserve Adequacy Rating	4.7%	11.3%				
Reserve Deficiency	6,238,620	6,775,436				
Reserve Recovery Time	53.2	-26.7	<= recovery not possible, given debt service			
Reserve Coverage %	1.60%	4.00%				
Implied Asset Lifetime	1,011.4	418.4				
Implied Remaining Life	995.2	401.6				
Lazarus / Rebirth Factor	21.4	8.8				

Figure 1

The methodology used herein is described in "The Iceberg of Public Works Deficits". Figure 2 (below) conceptually illustrates that as assets age, they also grow in replacement cost – in this

illustration at a 20 year average of 3.5% annually *(recently, even higher)*. After 40 years at that inflation, the replacement cost is four (4) times the original cost of an asset (red curve). At the same time, the Book Value of the asset declines to zero (orange line), and accumulated depreciation (green line) grows to equal the original (very old) asset cost. SFPUC is at 35.3% of the Asset Life Cycle (x-axis), yet has only 11.3% of the reserves which would be actuarially required for the age of those assets. In fact, SFPUC has less reserves ($863k) than if it had just retained annual depreciation ($4,319k). Of course, with inflation, retaining asset replenishment reserves based on straight line depreciation is woefully inadequate.

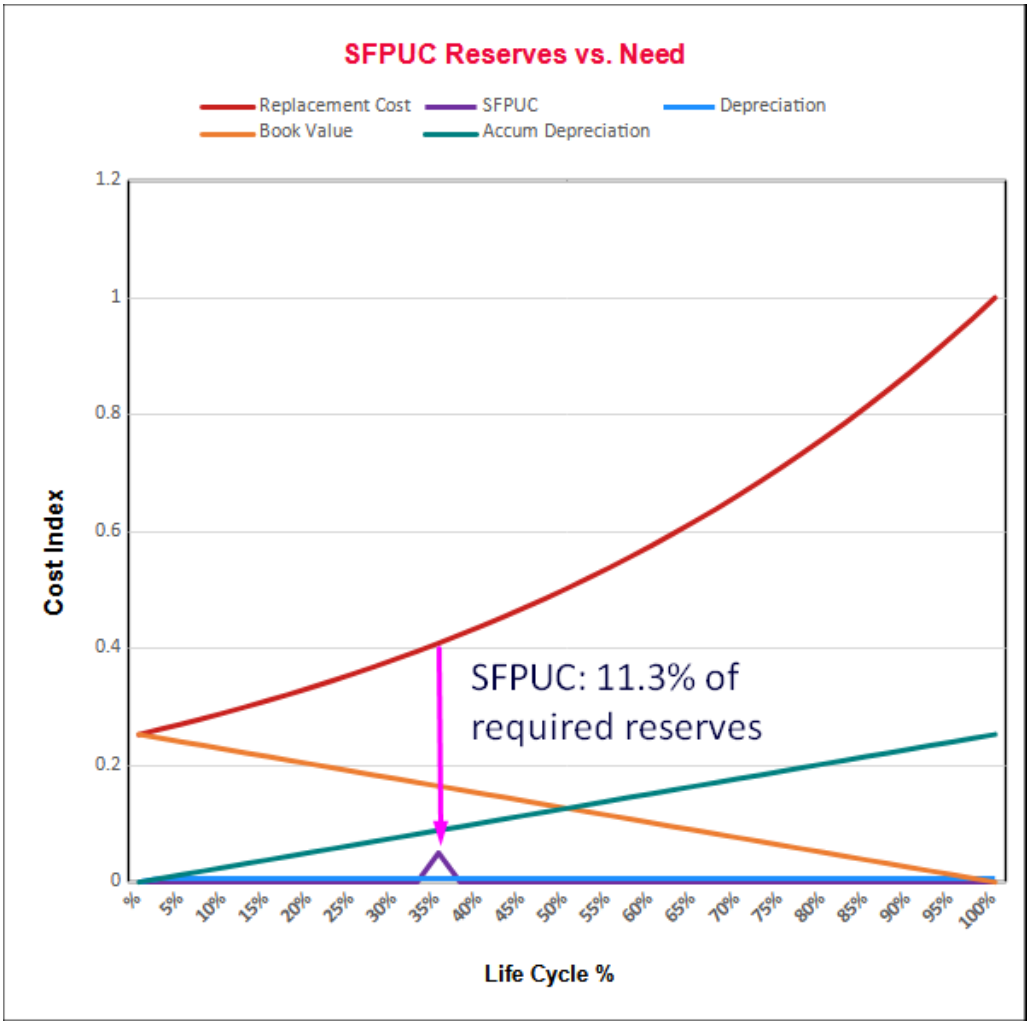

Figure 2

These financial reserve concepts are well understood by our federal government[1], by condominium and community associations[2], and even by realtors[3].

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[1] Physical vs. Economic Life:
https://www.hud.gov/sites/documents/DOC_35335.PDF

[2] https://www.reserveadvisors.com/resources/blog/are-your-reserves-fully-funded/
"…leaders in the reserve study industry developed the National Reserve Study Standards in conjunction with Community Associations Institute (CAI). The authors of the standards defined the term ***fully funded*** as being "100 percent funded when the actual (or projected) reserve balance is equal to the fully funded balance." The ***fully funded balance*** is the balance that is in direct proportion to the fraction of life "used up" for a given component. "

[3] Even realtors get this concept (if missing the inflation part):

https://www.century21.com/glossary/definition/replacement-reserve-fund

A critical byproduct of insufficient reserves is being what the head of the AWWA's Rates and Charges committee has called: "addicted to debt". At today's rates, borrowing adds about 75% to the cost of each asset financed.[4] Such debt burden is an Intergenerational Injustice, burdening our descendants with debt because we did not fund the replenishment of the assets we exhausted by our use. To avoid making things worse, as is shown by the SFPUC debt service in 2023 consuming all the operating cash flow, SFPUC must move to a non-borrowing regimen.

Recommendations:

While the analysis in this email is aggregate, I submit that the findings are dire enough to warrant more detailed audits, and then formulation of standards and practices to bring SFPUC into a Fiscally Sustainable condition. Follow-up actions should include:

1. A segregated Fiscal Sustainability Analysis for each operating franchise of SFPUC (e.g. water, sewer, etc.) – thus prioritizing the areas most in need of immediate attention.
2. A more detailed audit of the asset inventory, to calculate replacement costs and remaining lifetimes at a more tangible, granular level, and including inspection reports on high cost assets – followed by a more precise assessment of reserve requirements.
3. Changes to connection charges and/or impact fees so that New Joiners contribute a pro rata share of the replacement cost of the asset foundation serving their property.
4. Institution of a fixed (not volumetric) asset replenishment fee, because whether one uses a drop or a deluge, the same infrastructure is required to service a building.[5]
5. A Rate Study to include items 3, 4 as well as new water and sewer rates, which will bring SFPUC reserves to the "full funding" level described in footnote 2, and in this analysis. This must of course include BAWSCA agencies as well.
6. Notes to the annual financial statements for SFPUC (and hopefully BAWSCA and its member agencies) which report "reserve adequacy" comparable to what is done for Unfunded Pension Liabilities.
7. Financial management policy revisions to effect these changes, instill ongoing fiscal sustainability guardrails, and motivate compliance by SFPUC and its partners.

There are of course many related issues regarding the sustainability of SFPUC's water, the development of alternative water supplies, and other social justice and legal matters. However, without fiscal sustainability, hopes of addressing those concerns are doomed to fail.

I am available to meet with analysts in your organization, and could prepare a slide show to tutor them on the financial concepts underpinning these findings.

I hope you will treat SFPUC's fiscal sustainability as a Most Urgent Matter.

Most Sincerely,

Gregg A. Dieguez
Midcoast Community Council Vice Chair *(writing as an individual)*
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[4] But the forthcoming MTC/BAHFA $20B bond contains $48.3B in debt service, wasting 141.5% on interest, so perhaps 75% is too low an estimate.
[5] As we do down here, in Montara, at MWSD.

Mr. Dieguez is Vice Chair of the Midcoast Community Council, but the views expressed here are his, and not those of the Council. His constituency includes residents served by HMB's CCWD water, thus the supply and cost of water is of proximate interest to him.

cc:
Dennis Herrera, SFPUC General Manager
Steven Ritchie, SFPUC Assistant General Manager, Water Enterprise
Nancy Hom, SFPUC Chief Financial Officer
Laura Busch, SFPUC Deputy Chief Financial Officer
Erin Corvinova, SFPUC Financial Planning Director
Nicole Sandkulla, BAWSCA Chief Executive Officer and General Manager
SF Board of Supervisors
Bay Area Water Stewards
SFPUC Citizen's Advisory Committee
SFPUC Rate Fairness Board
SFPUC Revenue Bond Oversight Committee