Public Works Fiscal Sustainabilty

… with discussion Focus on **SMC Harbor District**

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May 12, 2022

Discussion Outline

- Concern over the financial condition of public works agencies, here, and nationwide
  - Intend paper at AWWA and articles
- Concept of Fiscal Sustainability (FS)
  - Hidden by traditional accounting: depreciation is yesterday's $$$
  - Counter to short term stakeholder interests
- Methods of assessing FS
- Methods of funding capital assets
- Discussion about Harbor District, before publication

Methods of Funding Capital Assets

- Reserve funds from operations, then replenish
- Borrow funds…
- Bail-out from governmental agencies...
  - e.g. Clean Water Act in 1973

"We got 7/8ths of the money from the Clean Water Act, then we forgot we'd have to replace the plant"

Borrowing Costs

- In recent years, interest rates were at all-time lows.
- Recently, rates have risen modestly:
  - Pacifica citing 4% 30-year bond with 1.5% issuance costs
- Pacifica's terms add 73% to the cost of each asset financed.

Inflation

- For the past couple of decades, public works construction costs inflated at about 3.5%
- In California, recently inflation has spiked...

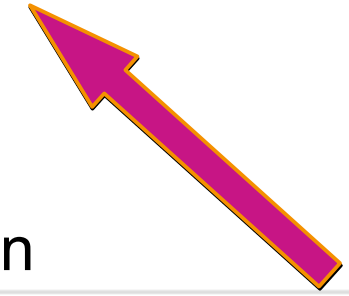
California Construction Cost Index 2021-2025

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.*

Key Concepts Proposed

- Must assess reserves against current replacement costs
- Must reserve annually based on replacement costs
  - (AWWA 2018 guidelines)
- Fitch Rating methods on use of depreciation
- Avoid borrowing costs, unless desperate
- Each ratepayer generation 'pays as it goes'
- Establish benchmark database for comparison



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).

Determining Replacement Cost

Three Methods:

- Summary or "birds-eye view" method, described herein
- Detailed method
  - Update asset inventory values from when-purchased to current using public inflation indices for public works
- Thorough method
  - Update asset inventory values from when-purchased to current using public inflation indices for public works
  - Adjust remaining life based on condition audit and technology assessment, considering cost/benefit of replacement

Summary FS Assessment

- Use public financial statement data...
- Calculate implied assets life, age...
- Estimate current replacement cost:
  - Inflate original asset cost based on age, inflation index
- Compare reserves to asset-aged requirement
- Can compare across districts and agencies

Numbers from Harbor District

($000) as of 6/30/21

- Original Capital Cost: $47,197
- Recent Annual Depreciation: 1,138
- Current Book Value: 15,725
- Operating Margin: 2,013
- Net Liquid Assets: 22,880 *(24,032-1,152)*

- *Inflation Indices from US Army Corps of Engineers CWCCIS Indices*
  https://usace.contentdm.oclc.org/digital/collection/p16021coll9/id/2550

Derivation of Terms

- Annual Cash Flow = Operating Margin + Depreciation
- Asset Lifetime = Original Cost ÷ Annual Depreciation
- Remaining Life = Book Value ÷ Annual Depreciation
- Asset Age = Asset Lifetime – Remaining Life
- Date of Service = as of date, Fin'l Stmts – Asset Age
- Inflation Factor = Inflation Index $_{\text{today}}$ ÷ Inflation Index $_{\text{date of service}}$
- Replacement Cost = Original Cost × Inflation Factor
- % Assets Aged = Asset Age ÷ Asset Lifetime
- Required Reserves = Replacement Cost × % Asset Aged
- Reserve Adequacy Score = Net Liquid Assets ÷ Replacement Cost

Harbor District Calculations

($000) as of 6/30/21

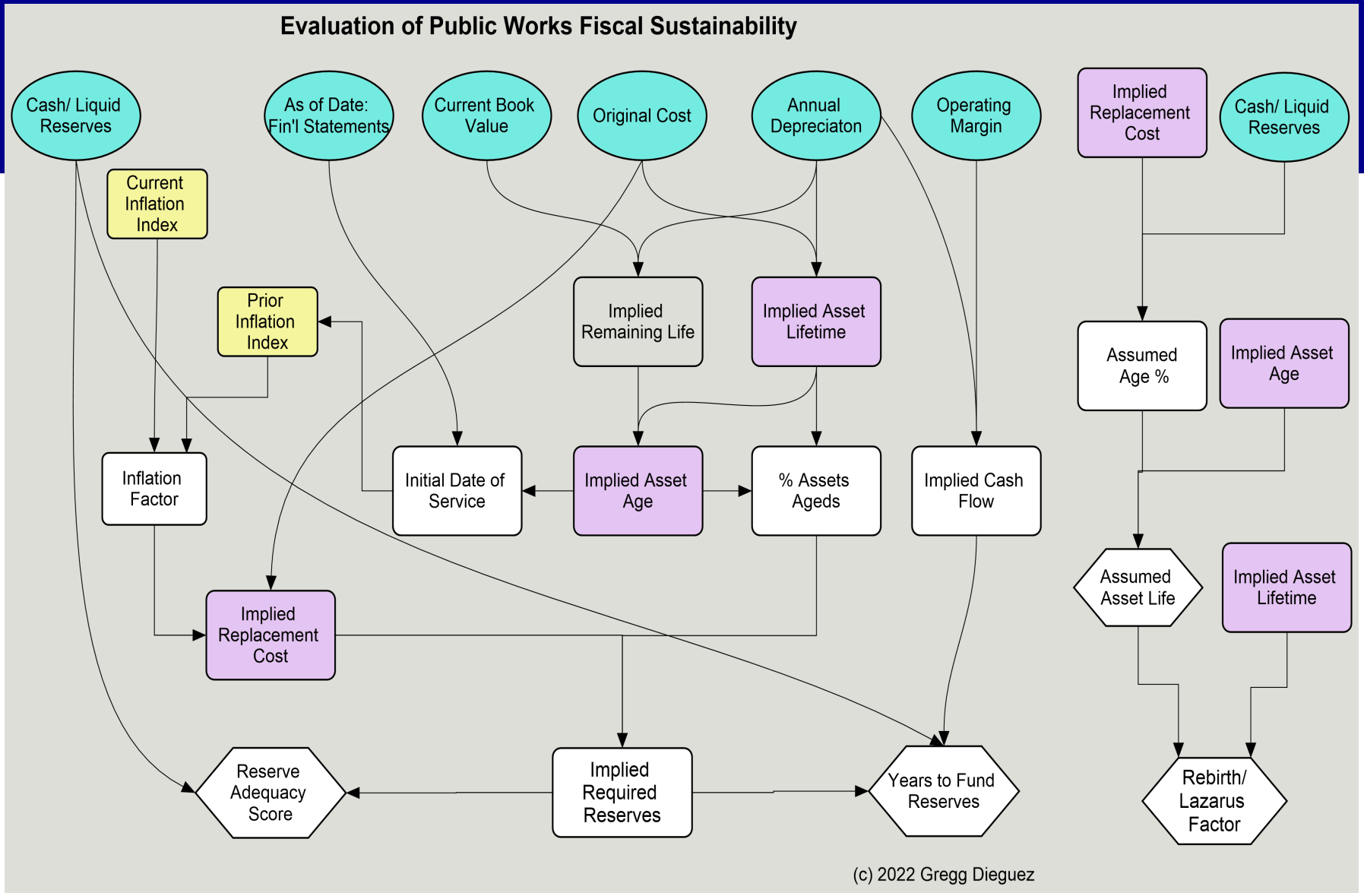
- Annual Cash Flow = $3,151
- Asset Lifetime = 41.5 years
- Remaining Life = 13.8 years
- Asset Age = 27.7 years
- Date of Service = 1993.8
- Inflation Factor = 975.48 ÷ 410.63 = 2.38x
- Replacement Cost = 112,120
- % Assets Aged = 66.7%
- Required Reserves = 74,764
- Reserve Adequacy Score = 30.6%

SMCHD FS Profile

Data Form

PW Entity	SMC Harbor District
Information As Of Date	06/30/21
Source	2021 FinStmt
Original Capital Cost	47,197
Recent Annual Depreciation	1,138
Current Book Value	15,725
Operating Margin	2013
Implied Cash Flow	3,151
Implied Lifetime	41.5
Implied Remaining Life	13.8
Implied Asset Age	27.7
% Aged	66.7%
Initial Date of Service	1,993.8
Inflation Index at Start	410.63
Inflation Index 2021	975.48
Inflation Factor	2.38
Implied Replacement Cost	112,120
Implied Reserves Required	74,764
Net Cash / Liquid Reserves	22,880
Reserve Adequacy %	30.6%
Years to Fund Req. Reserves	16.5
Assumed Age %	20.41%
Assumed Asset Lifetime	135.5
Lazarus / Rebirth Factor	3.3

Flowchart


Evaluation of Public Works Fiscal Sustainability
Cash/ Liquid Reserves
As of Date: Fin'l Statements
Current Book Value
Original Cost
Annual Depreciaton
Operating Margin
Implied Replacement Cost
Cash/ Liquid Reserves
Current Inflation Index
Prior Inflation Index
Implied Remaining Life
Implied Asset Lifetime
Assumed Age %
Implied Asset Age
Inflation Factor
Initial Date of Service
Implied Asset Age
% Assets Ageds
Implied Cash Flow
Assumed Asset Life
Implied Asset Lifetime
Implied Replacement Cost
Reserve Adequacy Score
Implied Required Reserves
Years to Fund Reserves
Rebirth/ Lazarus Factor
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Methodology Concerns

- Assets depreciated to Zero ($0)
- Assets gifted or acquired for minimal (e.g. $1)
- Use of Net Liquid Assets vs. Specific Capital Reserves
  - Overstates reserves; but the latter is not commonly detailed
- Land: not depreciated, but with SLR perhaps should be.
- Accounting duration << real-world extended lives
  - What asset lifetime is implied by your reserve position? = 135.5 years
  - Implies assets would have to last 3.3x longer than implied by depreciation
- Everyone borrows, regardless of cost: *"Industry is addicted to debt"*

Questions and Comments?

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