

Dear SBAC - As you head into consideration of the public response to the 7 options, I have heard the concept of Net Present Value come up a couple of times. I think the concept being discussed is simply Present Value, or Time Value of Money (TVM), of which NPV and PV are both parts. NPV more commonly is used in reference to investments which include both a capital outlay and return - it is not often used in a project where the return quantification is not in dollars, but in educational value, size of classrooms, number of park benches, etc. For that reason, I think the references to NPV are really PV/TVM references. I'm sure the finance professional retained by the town will be able to discuss this in more detail during his presentations as we move forward.

The conclusion first, and anyone who cares to read the backup can: **Municipalities are unique in that they can borrow 100% of cost at or below inflation. Because of this, PV/TVM analyses are rarely used, and in most cases this unique borrowing capacity incentivizes maximal up-front investment, as there is positive value due simply to a town's cost of capital structure.**

When considering present value or TVM analyses, what we're trying to do is compare, on an apples to apples basis, the impact today on costs at some future date (or vice versa, the impact at some future date of costs incurred today.) To do that we need a few different variables:

1. The cost today of whatever outlay is made
2. The cost(s) in the future and the dates in the future of when outlays are made
3. The interest rate used to discount, or inflate, those costs

The cost today is what our estimates suggest. The costs and future dates are of course estimates and may vary widely, in both number and timing, however our design professionals have handily provided some estimates.

The interest rate (aka the discount rate), in a typical commercial setting, is an entity's weighted average cost of capital "WACC" less the rate of inflation. This is easier to express in table format. Note that I have compared Cape Elizabeth to a generic corporation that has a capital stack of 40% equity and 60% debt. The theoretical WACC is expressed well in Principals of Finance, chapter 17 (<https://open.umn.edu/opentextbooks/textbooks/1180>).

For a firm, WACC includes the cost of equity capital (the return required by the shareholders), the cost of any preferential equity, and the cost of debt. These "costs" are expressed in required returns, and although a corporate capital structure often includes dozens if not hundreds of inputs, it can be simplified into debt and equity. For equity, I have used a common in my experience 9% return over and above debt capital. For the debt component, I used an approximate 200 basis point spread over the 10 year US Treasury. While these numbers may change over time, these are both ranges one can see today in established corporate finance metrics.

For the cost of capital for Cape Elizabeth, there is no equity return, as capital projects are entirely funded through issuance of debt. The cost of that debt is expressed in AAA rated municipal bond rates, which can be found in multiple public places including Bloomberg, Raymond James, or FMS Bonds.

A conceptual 30 year WACC comparison would be:

Weighted Average Cost of Capital			
Corporation		Town of Cape Elizabeth	
Cost of Equity	15.00%	Cost of Equity	0.00%
Cost of Debt	6.00%	Cost of Debt	3.50%
Percentage Equity	40%	Percentage Equity	0%
Percentage Debt	60%	Percentage Debt	100%
WACC	9.60%	WACC	3.50%
Less: Inflation	3.50%	Less: Inflation	3.50%
Discount Rate	6.100%	Discount Rate	0.000%

In looking at an analysis that includes time to the next major project, one would have to use the appropriate term. A 20 year WACC could look as follows:

Weighted Average Cost of Capital			
Corporation		Town of Cape Elizabeth	
Cost of Equity	15.00%	Cost of Equity	0.00%
Cost of Debt	6.00%	Cost of Debt	2.50%
Percentage Equity	40%	Percentage Equity	0%
Percentage Debt	60%	Percentage Debt	100%
WACC	9.60%	WACC	2.50%
Less: Inflation	3.50%	Less: Inflation	3.50%
Discount Rate	6.100%	Discount Rate	-1.000%

I have not yet found a municipality that does a TVM analysis for a similar school project; I do wonder if that is because historical and current discount rates for such an analysis would be at, just above, or even just below 0. Of course, any time the rate is below zero, that would suggest the cost of borrowing today is superior because it is an inflation hedge to complete more capital needs today.

This present value situation, where municipalities can borrow BELOW the cost of inflation, is an inherent feature in municipal finance not available to any other kind of borrower, including the U.S. Government. This is done for the express public policy purpose of encouraging towns to complete necessary infrastructure and capital improvements, and to protect the local taxpayer from future unmet capital needs.

I am sure the town's municipal finance expert will weigh in on this discussion, as is proper. By way of background, I have undergraduate and graduate degrees in economics and finance and use TVM and WACC analyses in my job almost daily with respect to investment decisions. I have over 20 years of experience in utilizing private activity bonds and credit enhancements, which are priced using TVM models. I look forward to hearing Joe Cutera's analysis of how TVM should play a role, if any, in our community's analysis of current and future costs, especially for those of us who plan to live here through multiple capital projects and who have a vested interest in the long-term fiscal sustainability of our community.

With appreciation,
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