



# School of Public Affairs

UNIVERSITY OF COLORADO **DENVER**

## Financing Capital Projects: Equity Considerations for the Use of Long-Term Revenue Bonds

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*Background:* Historically, the dominant approach local governments in the United States used to finance capital projects varied in response to major events like the Civil War, progressive reform movement, Great Depression, and World War II. Following World War II, local governments generally shifted to the “pay-as-you-use” (long-term borrowing) approach out of necessity and in response to deferred capital needs, growing populations, a shift to less concentrated single-family housing, an expanding economy, new demands for public facilities, and an increasing belief that equity is promoted by ensuring that those who ultimately benefit from capital projects should help with the costs. Water projects, in particular, shifted to the use of long-term revenue bond financing as projects grew bigger and more complicated in response to population growth, environmental mandates, aging infrastructure, and rising municipal debt burdens.

Today, local governments continue to finance needed infrastructure through a blend of “pay-as-you-use” (borrow to purchase) and “pay-as-you-go” (save up over time for purchase) approaches specific to their community’s capacity and needs. Academic research agrees that the “pay-as-you-use” approach using long-term debt is appropriate for financing capital projects, with the caveats that debt incurred should not have a maturity exceeding the project’s useful life and that the financing demands are within the jurisdiction’s fiscal capacity. Local long-term debt outstanding of \$2.1 trillion and \$47.3 billion in 2021 reflects the dominance of the “pay-as-you-use” approach nationally and in Colorado, respectively.

*Equity Considerations for Financing Capital Projects:* From an equity and fairness perspective, “pay-as-you-use” financing spreads the cost of the long-lived capital assets into the future when the associated benefits will be received. “Pay-as-you-use” financing supports intergenerational equity across beneficiaries of the infrastructure, while also avoiding outsized current budget demands and delays to needed projects. Increased population mobility reinforces the potential inequities resulting from having past and current tax and fee payers provide the upfront resources for capital assets that they may never fully benefit from. While there are some advantages to the “pay-as-you-go” approach, using funds retained from past and current surpluses for an asset serving future residents may be considered inherently inequitable. The table, below, provides a more detailed comparison of the advantages and disadvantages of the two primary financing approaches.

Revenue bonds, as one approach to “pay-as-you-use” financing, directly tie a capital project’s operations to the repayment of the debt incurred to complete the project. When revenue bonds are repaid with charges and fees generated from the consumption of water, revenue bonds guarantee that the cost of the associated public service is distributed to the users of the service and in proportion to use, rather than based on potentially mismatched general revenue sources. Such long-term revenue bond financing is a common way to generally align the useful life of the project with the debt repayment. For example, since 2021 there have been 21 revenue bond issuances averaging \$83.6 million with 30-year bond maturities for Water and Wastewater infrastructure by Colorado’s municipalities, like Arvada and Grand Junction, and special districts. Nationally, more than 7,000 bond issues raising \$240.5 billion supported non-electric utility projects from 2018 to 2022.

Table 1: Advantages and Disadvantages of “Pay-as-You-Go” and “Pay-as-You-Use” Financing Approaches

	<b>Advantages</b>	<b>Disadvantages</b>
<b>Pay-as-you-go financing (retained revenues allocated for the purpose of funding capital projects)</b>	<p>Avoids debt and associated costs of issuance, including interest payments</p> <p>Imposes fiscal discipline and responsible spending decisions through the need to pay upfront</p> <p>Potentially more politically palatable depending on constituents’ preferences</p> <p>Pays forward benefits of infrastructure to future generations, especially when resources are plentiful</p> <p>Can provide future budget flexibility due to smaller annual debt service obligations</p> <p>Conserves debt capacity and may bolster credit quality in a counter-cyclical manner</p>	<p>Costs of capital projects borne directly by past and current residents, although likely capitalized into property values</p> <p>Lack of scalability for large projects with lumpy expenditures due to limited current revenue availability</p> <p>Discourages needed investments and potentially results in higher-cost future projects</p> <p>More feasible during “boom” times</p> <p>Can result in uneven tax or fee rates during acquisition or construction phases</p>
<b>Pay-as-you-use financing (funds raised through long-term borrowing for the purpose of financing capital projects)</b>	<p>Avoids delay of needed projects while saving up for purchase</p> <p>Smooths needed cash flows for capital outlays</p> <p>Improves intergenerational equity by spreading costs out to individuals benefitting from the project in the future rather than past residents shouldering the entire burden</p> <p>Tax-exempt municipal bonds benefit from lower interest rates subsidized by the federal and state income tax systems</p> <p>Imposes fiscal discipline through regular annual debt service obligations</p> <p>Considering the time-value-of-money and inflation, borrowing may become a cheaper alternative compared to upfront payment, especially when interest rates are low</p> <p>Stabilizes tax and fee rates</p> <p>In the presence of a growing revenue base and economy, fixed annual debt-service charges decline relatively over time</p> <p>Option to refinance if interest rates decrease</p>	<p>Incurs debt and associated costs of issuance, including interest payments</p> <p>Potentially less politically palatable depending on constituents’ preferences</p> <p>Limits future budget flexibility due to annual debt service obligations</p> <p>Limits future debt capacity and may affect credit quality</p> <p>Potentially incentivizes overinvestment in capital projects, although capitalization of debt service liabilities into property values counters this tendency</p>

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