DRAFT: DO NOT CIRCULATE

Energy Efficiency Financing Foundations

Training for Public Sector Facilities Managers and Finance Officers

This work was funded by the U.S. Department of Energy Office of State and Community Energy Programs, under Contract No. DE-AC02-05CH11231.

Module 2

Comparing Funding and Financing

Financing vs. Funding

- **Financing**: A contractual arrangement in which a borrower repays a third-party investor over time, typically with interest, in exchange for the investor covering the upfront costs of a project.
  - Examples: Bonds, leases, loans, energy savings performance contracts, energy as a service agreements

- **Funding**: Money that can be can used for capital projects or operating expenses without having to pay it back to a third party
  - Examples: Internal funds, external grants

	Option A (Fast Track Financing)				Option B (Waiting for Cash)			
Year	Savings	Project Cost including financing	Annual Cash Flow	Cumulative Cash Flow	Savings	Project Cost	Annual Cash Flow	Cumulative Cash Flow
1	$416,250	($516,453)	($100,203)	($100,203)	$0	$0	$0	$0
2	$566,100	($516,453)	$49,647	($50,556)	$424,575	($3,302,250)	($2,877,675)	($2,877,675)
3	$580,253	($516,453)	$63,799	$13,243	$580,253	$0	$580,253	($2,297,423)
4	$594,759	($516,453)	$78,306	$91,549	$594,759	$0	$594,759	($1,702,664)
5	$609,628	($516,453)	$93,175	$184,724	$609,628	$0	$609,628	($1,093,036)
6	$624,868	($516,453)	$108,415	$293,139	$624,868	$0	$624,868	($468,167)
7	$640,490	($516,453)	$124,037	$417,176	$640,490	$0	$640,490	$172,323
8	$656,502	$0	$656,502	$1,073,679	$656,502	$0	$656,502	$828,825

Source: ENERGY STAR Cash Flow Opportunity Calculator

Learning Objectives

- Contrast pros and cons of funding and financing
- Understand key elements of financing
- Consider ways of combining financing and funding
- Explore potential barriers to financing public-sector energy efficiency projects

Funding

Overview

"Funding"

Money that can be can used for capital projects or operating expenses without having to pay it back to a third party

"Internal Funding"

Money that is part of an agency's regular operating or capital budget

Examples:

- Capital budget: typically for larger projects with longer paybacks
- Operating budget: typically for more routine maintenance projects
- Internal revolving loan fund: dedicated fund replenished over time with project savings

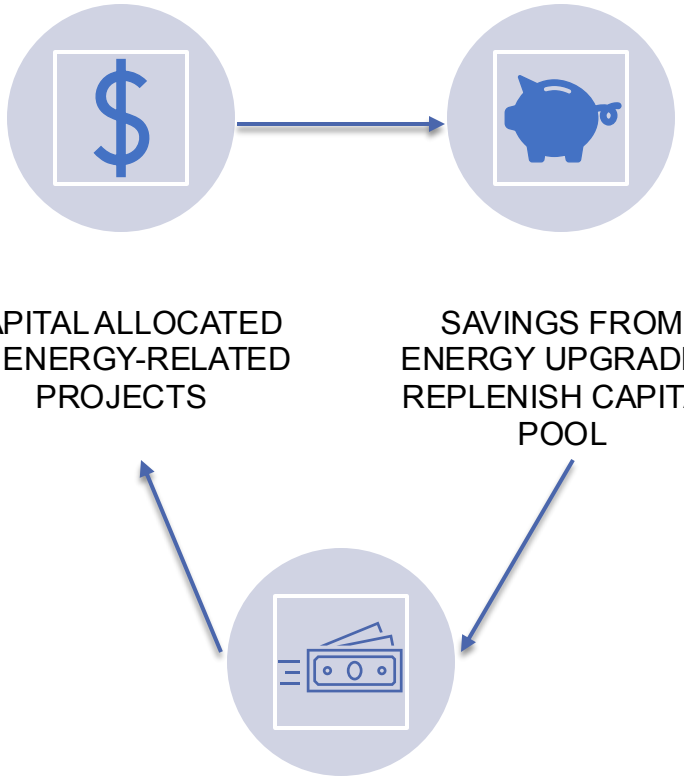
"External Funding"

Money received from a third party that does not need to be repaid

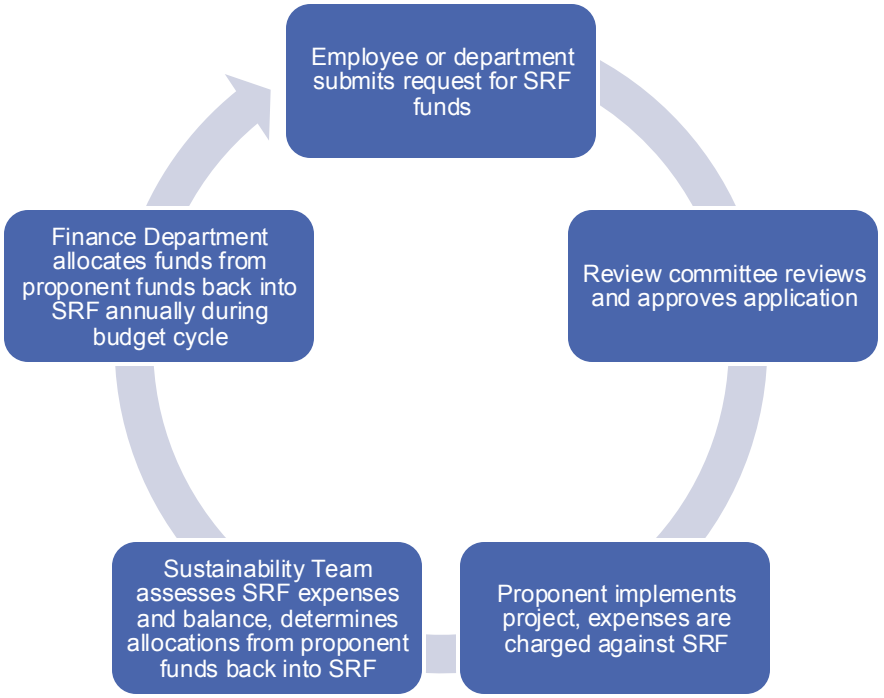
Examples:

- Federal, state and local government grants
- Utility incentives/rebates
- Philanthropic grants

Funding Options: Internal Revolving Loan Fund



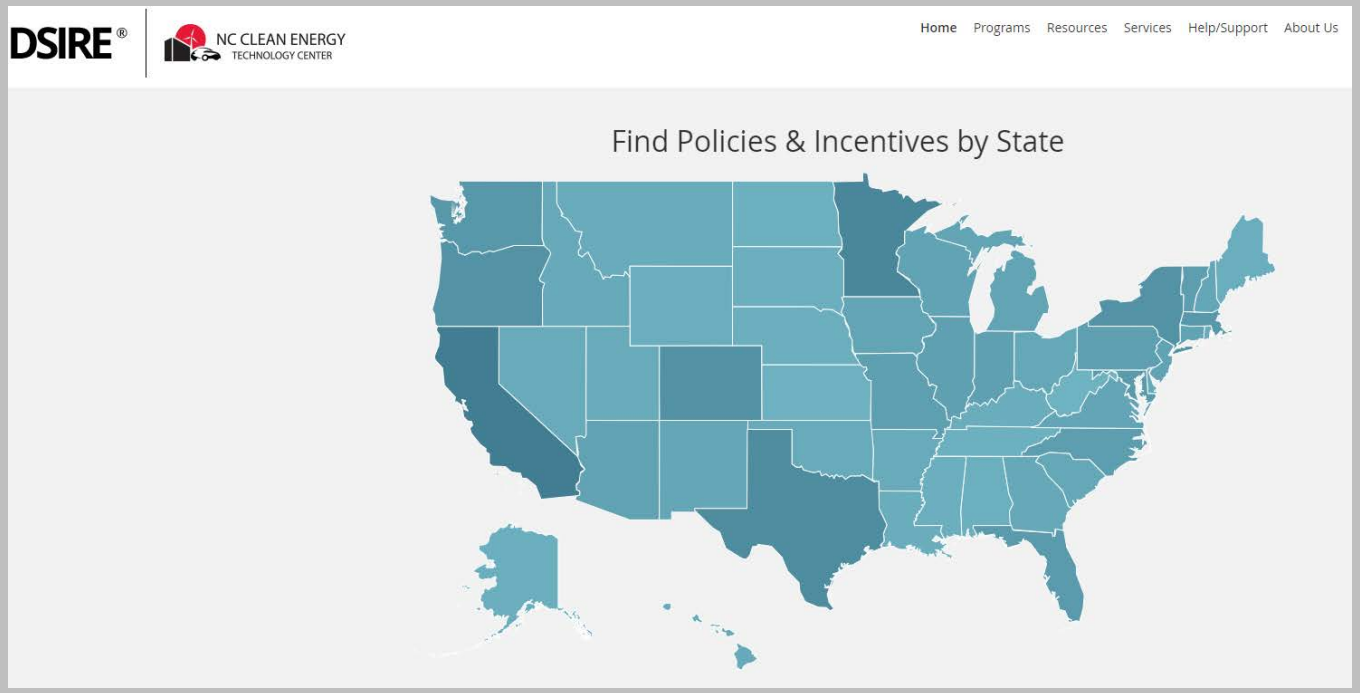
Example:
Sustainability Revolving Fund (SRF)
Hillsboro, OR



Source: U.S. Department of Energy, Better Buildings Solution Center

Funding Options: Utility and Government Incentives

- Reduces internal budgetary impact and amount that needs to be financed
- Availability and amounts may fluctuate
- Check with local utilities and national DSIRE database for available programs and incentives



Source: NC Clean Energy Center, DSIRE Database

Public Sector Funding & Technical Assistance Programs

State and Local Solution Center

SCEP Funding & Technical Assistance Programs

OPPORTUNITY NAME	SOURCE	TYPE OF ASSISTANCE	RECIPIENTS	CLOSING DATE	STATUS

Other Federal Funding & Technical Assistance Programs

OPPORTUNITY NAME	ADMINISTERING AGENCY	TYPE OF ASSISTANCE	RECIPIENTS	CLOSING DATE	STATUS

https://www.energy.gov/scep/slsc/public-sector-funding-technical-assistance-programs

Funding: Pros and Cons

Advantages

Internal/External

- No additional financing costs (i.e., interest payments)
- No credit underwriting
- No risk of nonpayment consequences

Internal Only

- Familiar and routine
- No external application process
- No eligibility requirements

Internal/External

- Budget constraints and limited external funding availability
- Timing required to accumulate sufficient upfront funding

Internal Only

- Competition with other capital needs
- Upfront budget impact

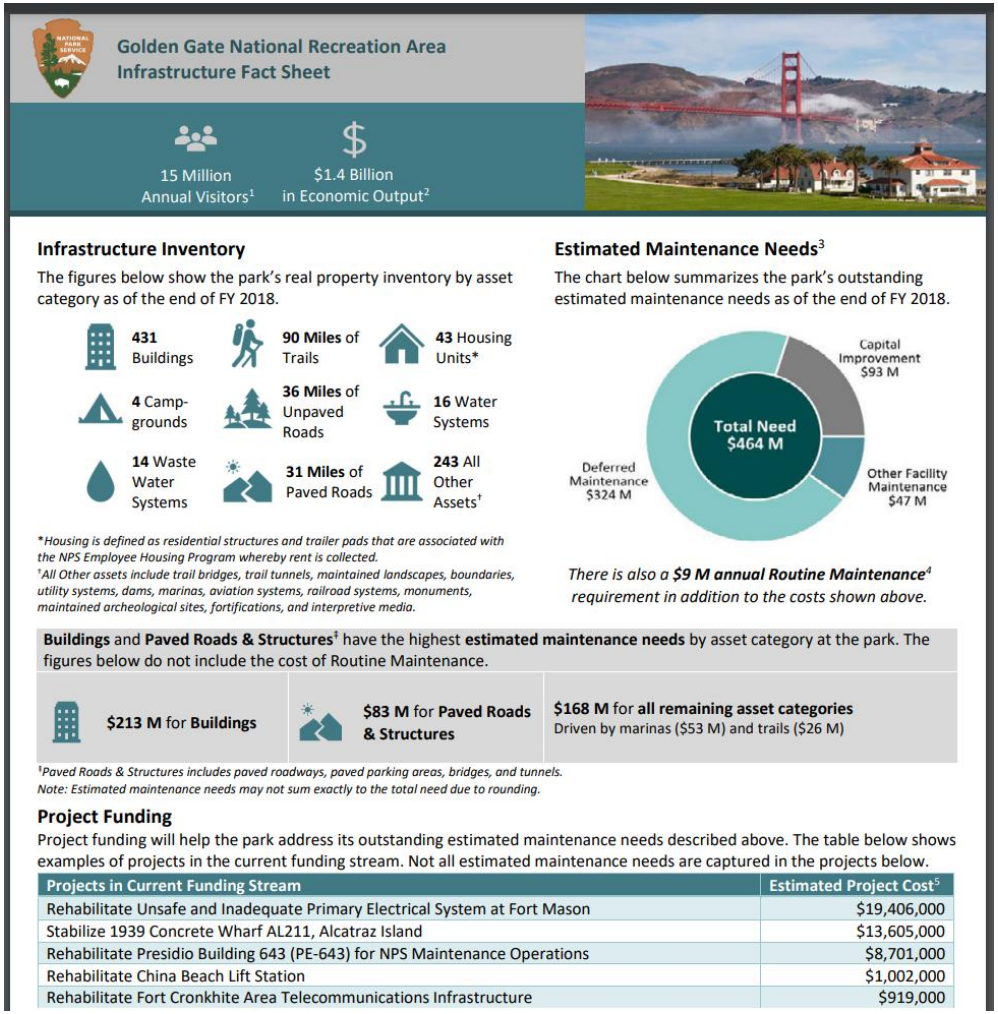
Disadvantages

Budget Approval: Competing Priorities

Competing priorities within the capital budget may include:

- Deferred maintenance
- Health and safety issues
- Other capital improvements

Capital budgets overall may also face pressure from other public funding priorities.



Golden Gate National Recreation Area Infrastructure Fact Sheet

15 Million Annual Visitors[1]

$1.4 Billion in Economic Output[2]

Infrastructure Inventory

The figures below show the park's real property inventory by asset category as of the end of FY 2018.

- **431** Buildings
- **90 Miles** of Trails
- **43** Housing Units*
- **4** Camp-grounds
- **36 Miles** of Unpaved Roads
- **16** Water Systems
- **14** Waste Water Systems
- **31 Miles** of Paved Roads
- **243** All Other Assets†

*Housing is defined as residential structures and trailer pads that are associated with the NPS Employee Housing Program whereby rent is collected.

†All Other assets include trail bridges, trail tunnels, maintained landscapes, boundaries, utility systems, dams, marinas, aviation systems, railroad systems, monuments, maintained archeological sites, fortifications, and interpretive media.

Estimated Maintenance Needs[3]

The chart below summarizes the park's outstanding estimated maintenance needs as of the end of FY 2018.

*There is also a **$9 M annual Routine Maintenance**[4] requirement in addition to the costs shown above.*

Buildings and **Paved Roads & Structures**‡ have the highest **estimated maintenance needs** by asset category at the park. The figures below do not include the cost of Routine Maintenance.

- **$213 M** for **Buildings**
- **$83 M** for **Paved Roads & Structures**
- **$168 M** for **all remaining asset categories** Driven by marinas ($53 M) and trails ($26 M)

‡Paved Roads & Structures includes paved roadways, paved parking areas, bridges, and tunnels.

Note: Estimated maintenance needs may not sum exactly to the total need due to rounding.

Project Funding

Project funding will help the park address its outstanding estimated maintenance needs described above. The table below shows examples of projects in the current funding stream. Not all estimated maintenance needs are captured in the projects below.

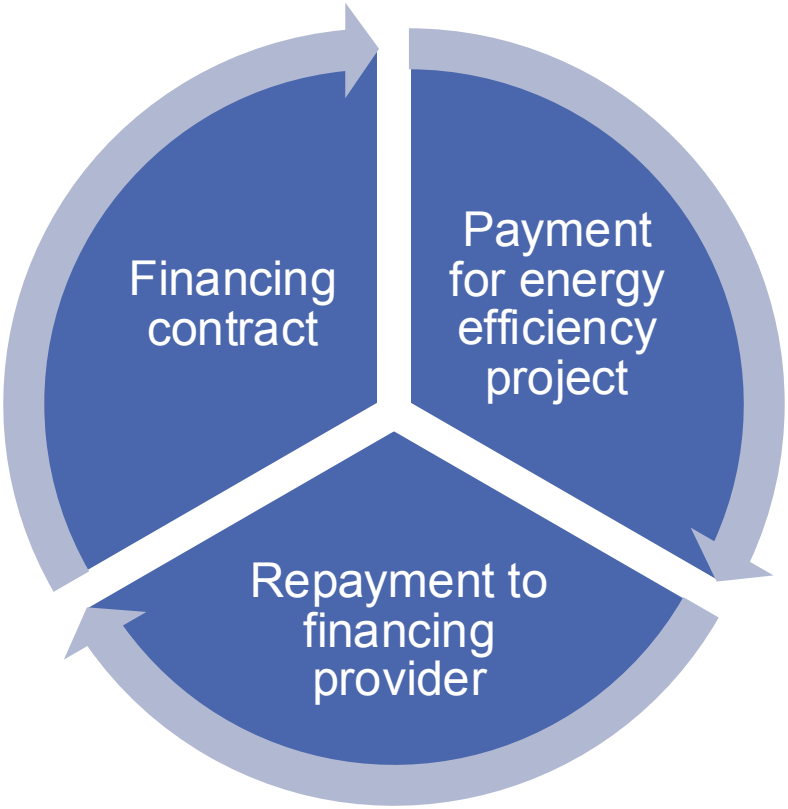
Projects in Current Funding Stream	Estimated Project Cost[5]
Rehabilitate Unsafe and Inadequate Primary Electrical System at Fort Mason	$19,406,000
Stabilize 1939 Concrete Wharf AL211, Alcatraz Island	$13,605,000
Rehabilitate Presidio Building 643 (PE-643) for NPS Maintenance Operations	$8,701,000
Rehabilitate China Beach Lift Station	$1,002,000
Rehabilitate Fort Cronkhite Area Telecommunications Infrastructure	$919,000

Source: National Park Service, Pacific West Region Infrastructure Fact Sheets

Financing

Financing Definition

- **Financing**: A contractual arrangement in which a borrower repays a third-party investor over time, typically with interest, in exchange for the investor covering the upfront costs of a project.



Financing: Pros and Cons

Advantages

- Access to fast, potentially larger sources of funds relative to internal capital
- Significant reduction in upfront capital budget outlay
- Financial savings can potentially create cash-flow-neutral or positive budgeting scenarios

- Financing costs
- Application and underwriting
- Ongoing payment obligation and potential nonpayment consequences
- May come with restrictive debt covenants
- Competition with other prioritized projects, particularly if there are debt caps

Disadvantages

Four Key Elements of Financing

Rate

The cost of borrowing, as a percentage of the amount borrowed.

Term

The length of a financing agreement.

Repayments

The amount a borrower must pay and the schedule over which they repay it.

Security

Lender protection against borrower nonpayment.

Elements of Financing by Product

	Loans	Leases	Bonds
Rate	Interest rate	Interest rate ("implied" outside public sector)	Yield to Maturity
Term	Term	Lease Period	Maturity
Payment	Loan Payment	Lease Payment	Coupon
Security	Lien	Security Interest	Obligation

For more on each of these concepts in the context of the products listed above, see Module 3.

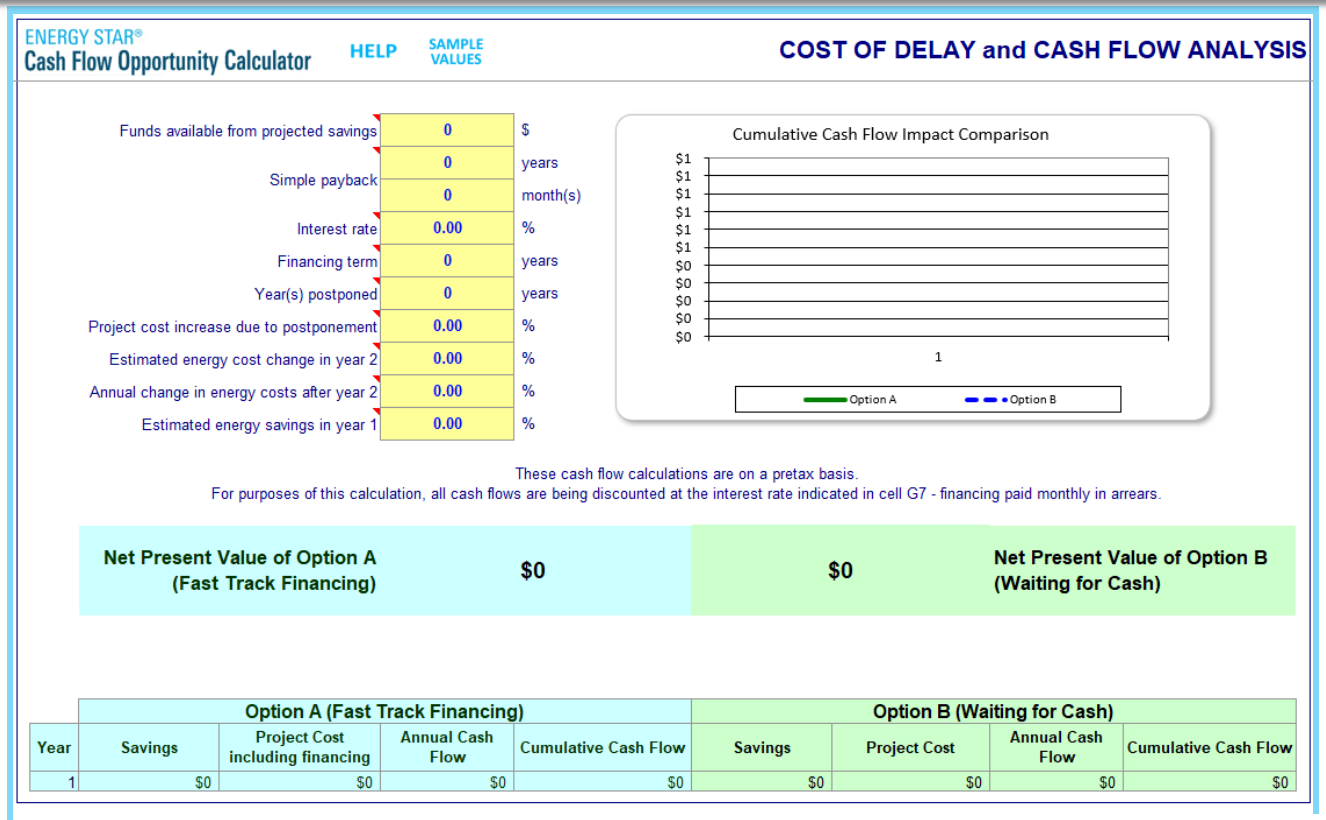
Funding and Financing: Comparing and Combining

Comparing Funding and Financing

	Funding		Financing
	Internal Only	Internal/External	
Pro	• Familiar and routine • No external application process • No eligibility requirements	• No additional financing costs (i.e., interest payments) • No credit underwriting • No risk of nonpayment consequences	• Reduces or eliminates capital outlay • Access to fast, potentially larger sources of funds relative to internal capital • Financial savings can potentially create cash-flow-neutral or positive budgeting scenarios
Con	• Upfront budget impact • Competition with other capital needs	• Budget constraints and limited external funding availability • Timing required to accumulate sufficient upfront funding	• Financing costs • Application and underwriting • Ongoing payment obligation and nonpayment consequences • May come with restrictive debt covenants • Competition with other prioritized projects, particularly if there are debt caps

Comparing Funding and Financing: Investment Horizon

- Typical investment framework:
  - Focus on short payback periods to recoup upfront cash outlays
  - May wait to invest until sufficient cash is available
- Tools like ENERGY STAR Cash Flow Opportunity Calculator:
  - Reframe investment decisions, comparing cash flows from energy savings with financing payments
  - Estimate cost of delaying investment while building up cash



ENERGY STAR®
Cash Flow Opportunity Calculator

HELP SAMPLE VALUES

COST OF DELAY and CASH FLOW ANALYSIS

Funds available from projected savings	0	$
Simple payback	0	years
	0	month(s)
Interest rate	0.00	%
Financing term	0	years
Year(s) postponed	0	years
Project cost increase due to postponement	0.00	%
Estimated energy cost change in year 2	0.00	%
Annual change in energy costs after year 2	0.00	%
Estimated energy savings in year 1	0.00	%

Cumulative Cash Flow Impact Comparison

$1 $1 $1 $1 $1 $1 $0 $0 $0 $0 $0

1

Option A Option B

These cash flow calculations are on a pretax basis.
For purposes of this calculation, all cash flows are being discounted at the interest rate indicated in cell G7 - financing paid monthly in arrears.

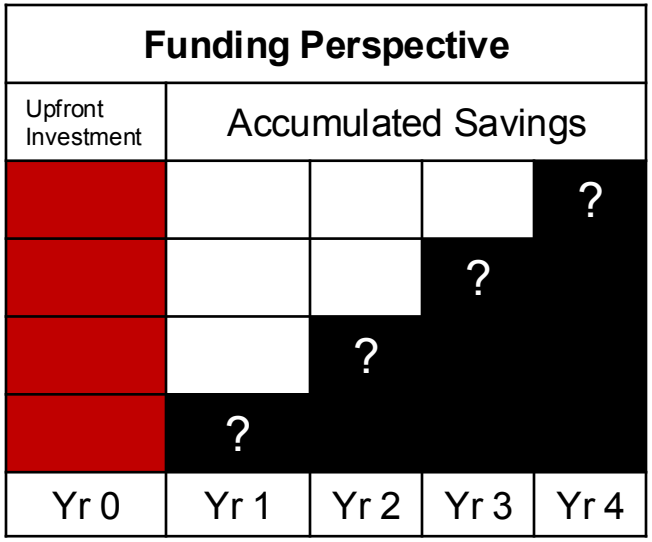
Net Present Value of Option A (Fast Track Financing)	$0	$0	Net Present Value of Option B (Waiting for Cash)

	Option A (Fast Track Financing)				Option B (Waiting for Cash)			
Year	Savings	Project Cost including financing	Annual Cash Flow	Cumulative Cash Flow	Savings	Project Cost	Annual Cash Flow	Cumulative Cash Flow
1	$0	$0	$0	$0	$0	$0	$0	$0

Intro | Instructions | Data Entry | Investment Values | Cash Flow | Interest Rates | Summary

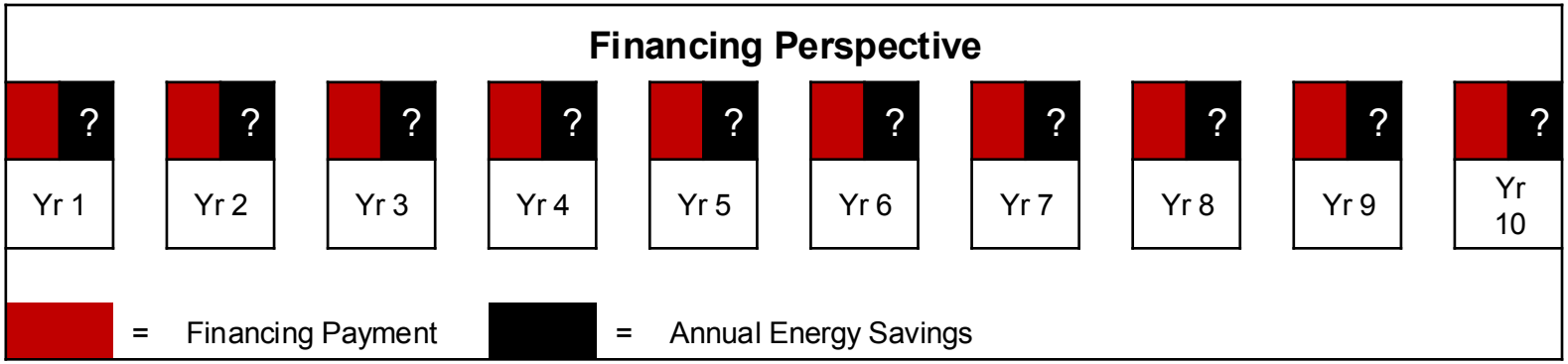
Source: ENERGY STAR Cash Flow Opportunity Calculator

Comparing Financing and Funding: Performance Risk Perspectives



Funding	Financing
Will accumulated savings equal or exceed upfront investment within a desired "payback period" (typically a few years)?*	Will annual savings materialize and be sufficient to offset or exceed annual financing payments?

* Payback period is often used as a quick way to evaluate potential investments.
- "Net present value"(NPV) perspective can be used as an alternative, to evaluate whether equivalent to current value of all future cash flows would equal or exceed upfront investment.
- NPV analysis assumes cash is available for investment or can be borrowed; does not account for impact on available budgets.



Braiding Financing and Funding Streams

Key Points

- "Braiding": Combining different types of funding/financing streams in a single project for maximum impact (see example / highlights below).
- Financing and funding can each help expand the project to take advantage of all retrofit opportunities.
  - Financing can help make larger project scopes and longer-payback measures more affordable, by reducing the upfront cost, extending the repayment timeframe, and allowing savings to help cover repayments
  - Funding contributions can help bring down the principal amount financed, so that the remaining repayments better align with savings realization

Example: Centralia, WA School District

Organization Size: 7 schools (3,400 students in K-12)
Project Scope: Replaced boilers, water conservation, lighting system upgrades
Project Cost: $1.3 million
Type of Financing: Pooled tax-exempt lease purchase agreement
Other Sources of Funding: $500,000 state grant, $200,000 utility incentives
Simple Payback Period: 6.5 years (net project cost / savings per year)
Key Benefits: Energy savings, replacement of aging equipment

Source: U.S. Department of Energy, "Financing Energy Upgrades for K-12 School Districts"

Barriers to Financing Public Sector Energy Efficiency Projects

What Does "Non-Debt" Mean?

- Specialized financing products are often characterized as "**non-debt**," implying that they overcome barriers that may be inherent to traditional debt financing products

- The term "non-debt" is sometimes use interchangeably with "**off-balance-sheet**" meaning the financing arrangement does not need to be treated as part of an issuer's total long-term debt obligations, which are publicly disclosed to investors on the issuer's balance sheet

- Investor disclosure requirements are separate from:
  - Debt caps, defined by statute and/or agency policy
  - Voter approval requirements, defined by statute
  - Debt-related financial covenants, defined by contracts with lenders or other investors

- All of these barriers are relevant to public-sector financing, and overcoming them may require different product features

Defining "Debt" and "Non-Debt" in Multiple Contexts

- Stakeholders considering investments in public-sector energy efficiency projects are often concerned about potential debt limitations.
- "Debt" is not a monolithic concept in the public sector, nor only an accounting term. The term can have several different meanings in different contexts, each of which may create distinct barriers and require distinct solutions.

Context	Potential Barrier	Key question(s) to determine whether a particular financing solution overcomes the relevant barrier	Source needed to determine whether barrier applies to a particular financing structure
Capital Budgeting	Competition from other high-priority capital projects	For internal accounting purposes, can the financing structure be treated as an operating expense?	Internal accounting policies
Public Policy	State or locally imposed limitations on total outstanding debt	Would the financing structure be accounted for under public debt cap calculations?	State constitutions, state or local statutes, regulatory policy
Voter Approval	Public vote on whether to move forward	Can the financing structure be executed without requiring voter approval?	State or local statutes
Pre-Existing Debt Covenants	Pre-existing financing agreements may place restrictions on taking out new debt	Does the financing structure violate any pre-existing debt covenants? Would it be accounted for in any required financial ratios?	Pre-existing financing agreements
Investor Debt Tolerance	Investor perception of increased risk due to additional debt; credit rating impact	Is the financing arrangement required to be listed on the balance sheet of the issuer? If so, will it be quantified or just noted, and will it be listed as debt?	Generally Accepted Accounting Principals (GAAP), as published by Government Accounting Standards Board (GASB)

Competition for Limited Debt Capacity

Factors Impacting Competition for Debt Capacity

- Energy efficiency projects may compete with a wide range of other projects for available financing
- Some financing structures may not be required to go through the same centralized prioritization process
- The decision depends on the particular requirements of a given state or municipality
- It may also depend on the degree of autonomy or oversight in a given jurisdiction of agencies issuing their own debt or entering into other financing agreements

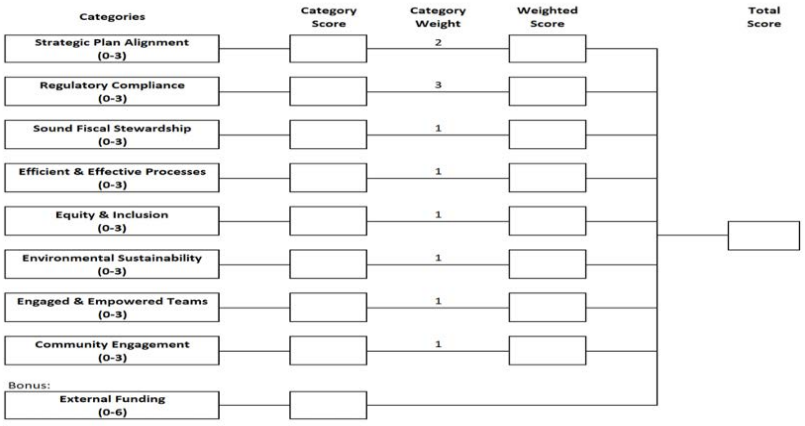
Example: Lawrence, KS Capital Improvement Project (CIP) Prioritization Process

Scheduling of Projects

Project schedules will be developed based on the available funding and project ranking. The schedules will determine where each project fits in the 5-year plan. This will be based on the priority of the project, funding availability and how it correlates with other projects included in and out of the CIP.

Production of CIP Plan

The final plan will be produced based on the evaluation of the CIP score, project type, funding, and schedule. The CIP will be re-evaluated on an annual to align growth, needs and budgeting.



Source: City of Lawrence, KS, "Capital Improvement Plan Prioritization Summary"

Public Policy Debt Restrictions

Debt Limit Considerations

- Public policy debt limitations may include:
  - Statutory caps
  - Agency authorization requirements
  - Voter approval
- Treatment of financing as debt/ non-debt may dictate:
  - Relevance of statutory and/or agency debt caps
  - Requirement for voter approval before entering an agreement

Example Debt Limit Calculation

State of Oklahoma
Annual Debt Service Limit - FY'22

Fiscal Year	Actual General Revenue	Five-Year Average
2017	$ 5,044,394,000	
2018	5,854,400,000	
2019	6,859,924,396	
2020	6,273,129,664	
2021	7,008,000,000	6,207,969,612

Annual Debt Service Limit [1]	310,398,000
Current Net Tax-Supported Debt Service [2]	181,768,457
Additional Debt Service Capacity	128,629,543

[1] 62 O.S. Section 34.200 limits debt service to 5% of 5-year average of certified general revenue
[2] Fiscal Year 2022 Debt Service subject to the limitation

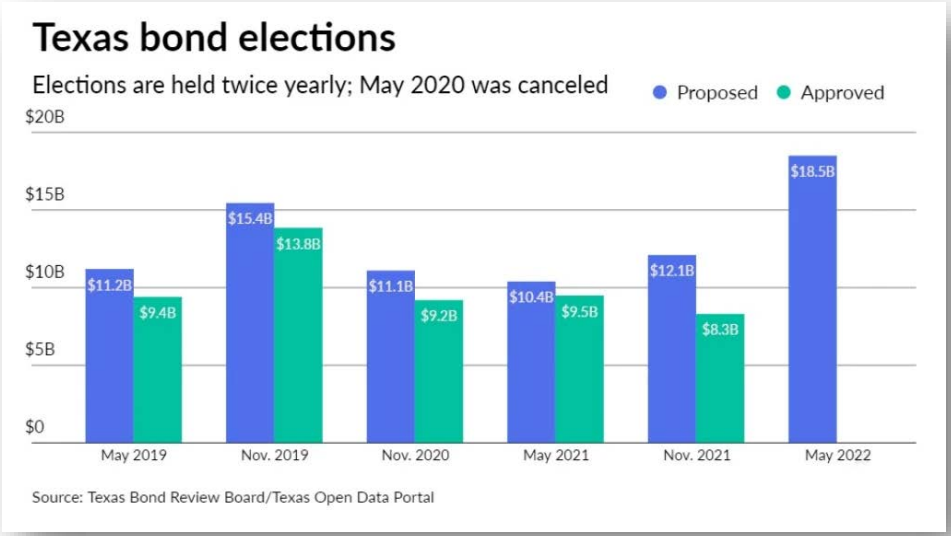
Source: State of Oklahoma, Office of the State Treasurer, Debt Report 2021

Voter Approval Requirements for Debt Issuance

Voter Approval Requirements

- Many states and local jurisdictions require voter approval of general obligation bond issuances.
- Voter approval may also be required for other types of long-term debt.
- Some jurisdictions may exempt financing from voter approval requirements if the agreement contains a "non-appropriation clause," meaning the issuer is not obligated to pay if jurisdiction does not appropriate funds in annual budget for financing payments.
- However, from an accounting standpoint, the accounting industry now requires disclosure of such arrangements as long-term debt, if it is reasonably certain that payments will be made, which is generally the case.
- Public policy may eventually "catch up" with these accounting standards.

Example: Texas Bond Vote Proposals and Voting Outcomes



Source: The Bond Buyer, "Texas Voters to Decide a Record $18.5 Billion of Bonds Saturday"

Voter Approval Requirements: States Requiring Voter Approval for State GO Bonds

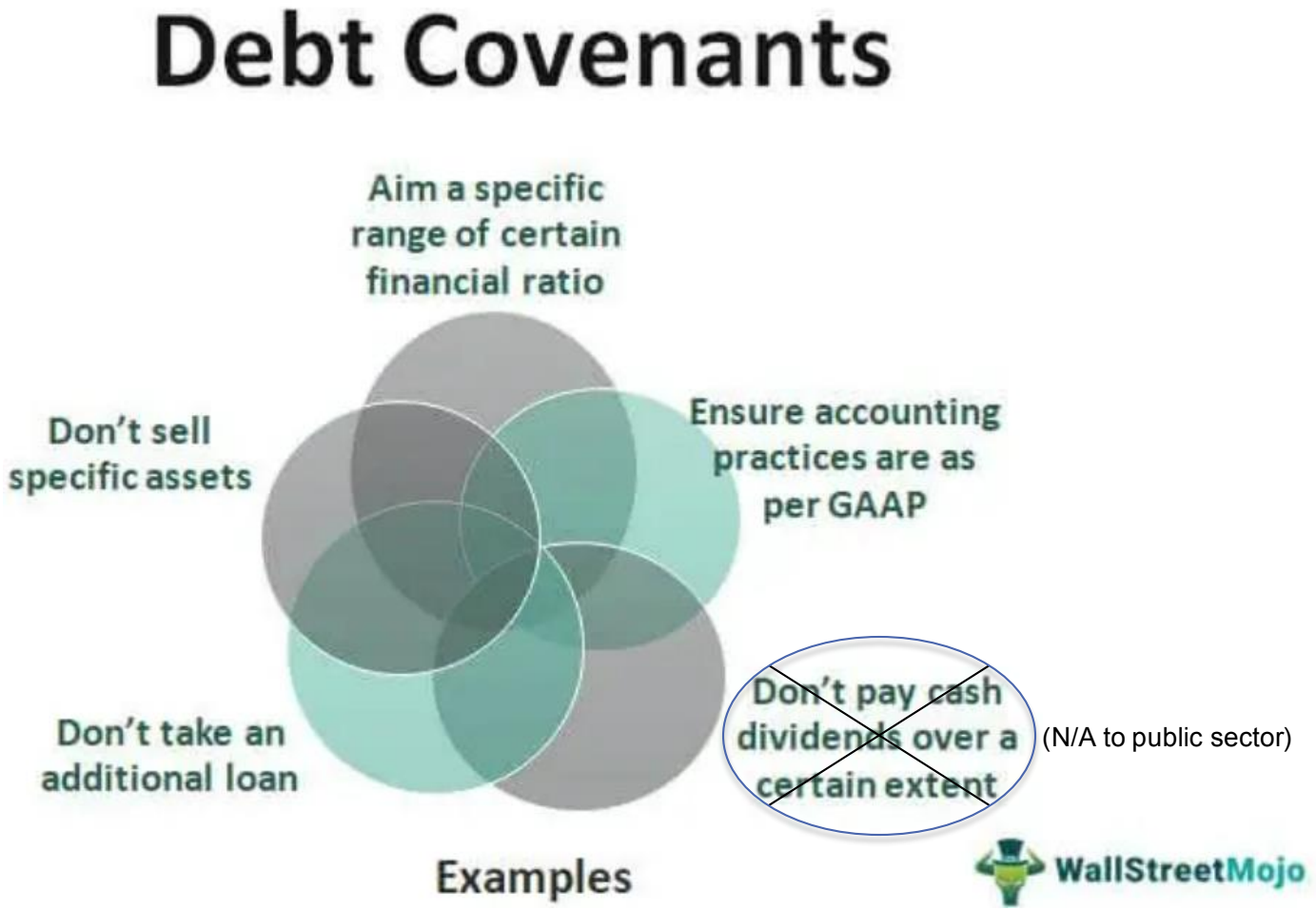
State	State requires Voter Approval Through a Statewide Referendum for General Obligation Debt Issuance
Alabama	X
Alaska	X
Arizona	
Arkansas	X
California	X
Colorado*	
Connecticut	
Delaware	
Florida	X
Georgia	
Hawaii	
Idaho	
Illinois	
Indiana	
Iowa*	
Kansas	X
Kentucky	X
Louisiana	
Maine*	X
Maryland	
Massachusetts	
Michigan	X
Minnesota*	
Mississippi	
Missouri	X
Montana	
Nebraska*	
Nevada	
New Hampshire*	
New Jersey	X
New Mexico	X
New York	X
North Carolina	X
North Dakota	
Ohio	X
Oklahoma	X
Oregon*	
Pennsylvania*	
Rhode Island	X
South Carolina	
South Dakota*	
Tennessee	
Texas*	X
Utah	
Vermont	
Virginia*	
Washington*	
West Virginia	X
Wisconsin	
Wyoming	
District of Columbia	
Total	**19**

Source: National Association of State Budget Officers, "Capital Budgeting in the States"

Debt Covenants in Financing Agreements

Types of financing covenants:

- Debt covenants can be ***positive*** or ***negative*** (i.e., require or prohibit certain things)
- They may also be ***financial*** (e.g., maximum debt ratios) or ***non-financial*** (e.g., no sale or transfer of certain assets)
- Treatment of an investment as debt/non-debt determines impact on financial debt covenants



Source: Wall Street Mojo, "What Are Debt Covenants?"

Investor Debt Tolerance

- Debt and Risk Tolerance:
  - As with any debt issuance, the addition of energy-related debt to an issuer's balance sheet will increase total outstanding debt and may increase investors' perceived risk of default.

- Balance Sheet Disclosure Requirements for Specialized Products:
  - Certain types of energy-related investments have not been specifically addressed under Generally Accepted Accounting Principles (GAAP), meaning there is no specific guidance as to whether they should be disclosed as long-term debt liabilities. Examples:
    - On-bill financing/on-bill tariffs
    - Efficiency as a Service (EaaS)
    - Shared savings agreements
  - Overall, GAAP standards generally take a "substance over form" approach.
    - For example, making on-bill financing payments out of an agency's operating budget to pay for the financing portion of a utility bill does not necessarily classify the arrangement as non-debt, if there is an underlying obligation to make payments over a multiyear term.
  - Consult with internal accounting department and/or external accounting experts regarding proper classification and disclosure requirements

Additional Resources

- Energy Upgrades at City-Owned Facilities:

  Understanding Accounting for Energy Efficiency Financing Options
- Financing Energy Upgrades for K-12 School Districts
- Energy Star Cash Flow Opportunity Calculator
- Green Revolving Funds Toolkit
- Database of State Incentives for Renewables & Efficiency (DSIRE)
- Better Buildings Financing Navigator
- Leveraging of Funds in Performance Contracting Projects
- Performance Contracting National Resource Center (PCNRC) Training Certificate Series
- ESPC MUSH report (when published)

Additional Resources

- Energy Upgrades at City-Owned Facilities:

  Understanding Accounting for Energy Efficiency Financing Options
- Financing Energy Upgrades for K-12 School Districts
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- Performance Contracting National Resource Center (PCNRC) Training Certificate Series

NEED LINKS/REFERENCE INFO:
- ESPC MUSH report (when published—indicate part focused on choice of financing option)

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Acknowledgements

This work was funded by the U.S. Department of Energy Office of Weatherization and Intergovernmental Programs, under Contract No. DE-AC02-05CH11231. We would like to especially thank […] for their support of this work. For comments and input on this analysis, we also thank […].