Attachment 1 – Example Annual Repayment

Table 1 provides an example simplified annual repayment obligation for an average sized allocation of AIA funds from FY22-25[1]. The interest rate of 4.75% corresponds to the current 30-year FY26 Treasury rate.

The example below demonstrates the largest impact on interest paid is when a non-Federal party requests a 50-year term rather than a 30-year term (difference between Scenario A and B). The annual repayment obligation is reduced by a little over $100k; however, interest paid over the life of the loan nearly doubles from Scenario A to B, with over $7 million more owed.

The difference from Scenario B and C is implementation of the proposed change to PEC 05-03 (i.e., rate increase of 20 basis points, no ATP study demonstrating a need, etc.). The annual repayment obligation increases by 3%, and the interest paid over the life of the loan increases by approximately $800k. Overall, the effect is negligible compared to increasing the term from 30 to 50 years.

Table 1 – Example Repayment

	A	**B**	**C**
	30 yr, FY26 rate	*30 to 50 yr, same r*	*1 BP increase per year*
Loan	$10,000,000	$10,000,000	$10,000,000
Term	30	50	50
Rate	4.75%	4.75%	4.95%
Annual Repayment	$632,094.54	$526,749.02	$543,541.18
Total Payment	$18,962,836.18	$26,337,451.16	$27,177,058.86
Interest Paid	$8,962,836.18	$16,337,451.16	$17,177,058.86

[1] The average AIA allocation from FY 22-25 to projects that have an obligation to repay costs was approximately $10 million.

Attachment 2 – Supplemental Discussion

RLAD explored various options to determine an appropriate interest rate for terms greater than 30 years in lieu of Treasury publishing an applicable product.

One option discussed was calculating a "best fit" line (or trend line) on the published rates to approximate rates up to 50 years. Although easily implementable, this approach has multiple mathematical deficiencies and was screened out due to lack of defensibility.

Another option was to look at comparable public products (e.g., High Quality Market Corporate Bond Par Yield) that have both a 30 year and 50 year rate, taking a rolling average over a specified number of years to approximate the year-to-year spread, add the average spread to the 30-year Treasury rate currently utilized by Reclamation, and then linearly interpolate between the difference to approximate rates for each year greater than 30 years, and up to 50 years. This approach is more defensible than a basic trend line, as it's rooted in a more robust regression analysis and is issued by Treasury, however it relies on one data set as a proxy, which is an inherent limitation for the purpose of extrapolation.

A subsequent option included contacting other Federal agencies to determine how they have addressed the determination of interest rates for terms greater than 30 years for similar programs. RLAD reached out to the administrators of the WIFIA program at EPA in January 2025 to discuss how they approach assessing interest rates for terms greater than 30 years. EPA shared that they are statutorily required to use the State and Local Government Series (SLGS) securities for determination of rates and the EPA adds a one basis point "transaction cost" to the published rate. As the WIFIA repayment term is only authorized up to a maximum of 35 years, the SLGS rates are oftentimes used for terms up to 40 years, and EPA already adds a one basis point transaction cost to published rates, they have not encountered a similar situation as Reclamation.

The United States has never issued 50-year bonds but has researched hypothetical yield curves. From the late 2010's through the early 2020's, interest rates worldwide were at near or below record lows for the modern era. There was significant interest in many countries (including the United States) in issuing 50 year (or greater) bonds due to the unique opportunity presented by the low rates.[1]. Issuing such bonds became infeasible in the United States as inflation began to rise in the second half of 2021.

As the United States was in the process of deciding whether to issue such bonds, a working paper was authored by the Federal Reserve Bank of San Francisco (Federal Reserve) which included the development of a dynamic yield curve model to extrapolate U.S. Treasury yields to 50 years[2]. The dynamic model utilizes evidence from several foreign markets to estimate "synthetic 30- and 50-year par yields, which can then be utilized to extrapolate the yield of a hypothetical 50-year U.S. Treasury bond. Specifically, the model allows for an estimate of the "added costs" of

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[1] S&P Global, 2021 (https://www.spglobal.com/market-intelligence/en/news-insights/articles/2021/1/yellen-faces-major-hurdles-to-issue-of-50-year-bond-that-mnuchin-passed-over-62228383)

[2] Christensen, Jens H. E., Jose A. Lopez, Paul L. Mussche. 2021 "International Evidence on Extending Sovereign Debt Maturities," Federal Reserve Bank of San Francisco Working Paper 2021-19. https://doi.org/10.24148/wp2021-19

issuing a 50-year bond instead of a 30-year bond – in other words, the spread between the two rates. The authors conclude that the first exercise implied "… these results imply with some confidence that a 50-year U.S. Treasury bond is likely to trade at a yield that will rarely exceed that of a 30-year bond by more than 0.2 percent, or 20 basis points…" which converts to a "… one basis point increase in the bond yield for each added year of maturity in excess of 30 years." The second exercise, which implemented the model and quantified the "added costs" based on long-term yield extrapolations and Treasury yield data, "… show that the difference almost entirely remains in the 0 to 0.2 percent range" and "the spread is near the top of this range when the yield curve is steep and very close to zero when the yield curve is flat or outright inverted, again pointing to a procyclical pattern in the cost difference."

Other agencies have utilized the findings of this paper for extended repayment programs. In looking further at other similar programs, RLAD discovered that P.L. 117-58 amended the Transportation Infrastructure Finance and Innovation Act (TIFIA Act) of 1998, which is administered by the Department of Transportation (DOT), to allow for repayment terms of up 75 years for authorized surface transportations projects. Due to the long repayment term, and in absence of an applicable Treasury rate, the DOT issued a Notice of Proposed Rulemaking in January 2024 to extrapolate appropriate interest rates for terms greater than 30 years.[3] DOT proposed a "1.4 basis points for each year of the loan term after year 40 to, but not including, year 51…" given the results of Christensen et al., as well as evidence from similar products such as the High Quality Market Corporate Bond Par Yield. The DOT carried forward this methodology in a Final Rule in June 2024 while noting that there was little to no public objection to the methodology[4].

In the early implementation of the Aging Infrastructure Account and development of revisions to PEC 05-03 which are currently in effect, a non-Federal entity can secure a 30-year rate for a term greater than 30 years to repay XM costs if the requirements of Paragraph 8.C.(1)(a) of PEC 05-03 are met. The requirement necessitates completion of an ability-to-pay study that results in justifying the need for a repayment term greater than 30 years. The practical purposes of doing so are discussed previously; however, this approach also still made economic sense during a time of lower interest rates and an inverted yield curve. Over the past year, the yield curve has continued to steepen, which implies an *increasing* subsidy to the party responsible for repayment. RLAD does not recommend removing the flexibility of securing a 30-year rate for a repayment term greater than 30 years, as it is a practical tool to assist the stewards of Federally-owned infrastructure; however, the need to demonstrate a need for such repayment terms has only increased.

Given the evidence from Christensen et al., precedent set by DOT, and recent steepening of the yield curve, RLAD recommends implementing a one basis point increase for each year greater than 30 years, up to a maximum of twenty additional basis points, to the published interest rate for average market yields on outstanding marketable obligations of the United States as determined by the Secretary of the Treasury. This approach is consistent with the results of Christensen et al., and, on a year-to-year basis, is more lenient than the approach currently implemented by DOT.

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[3] FR Doc. 2024-01243

[4] FR Doc. 2024-11139