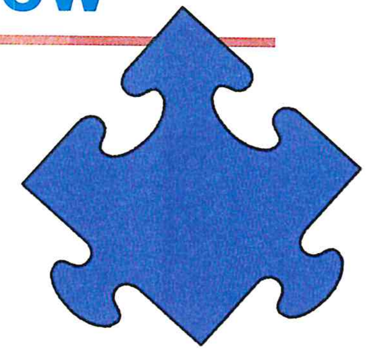
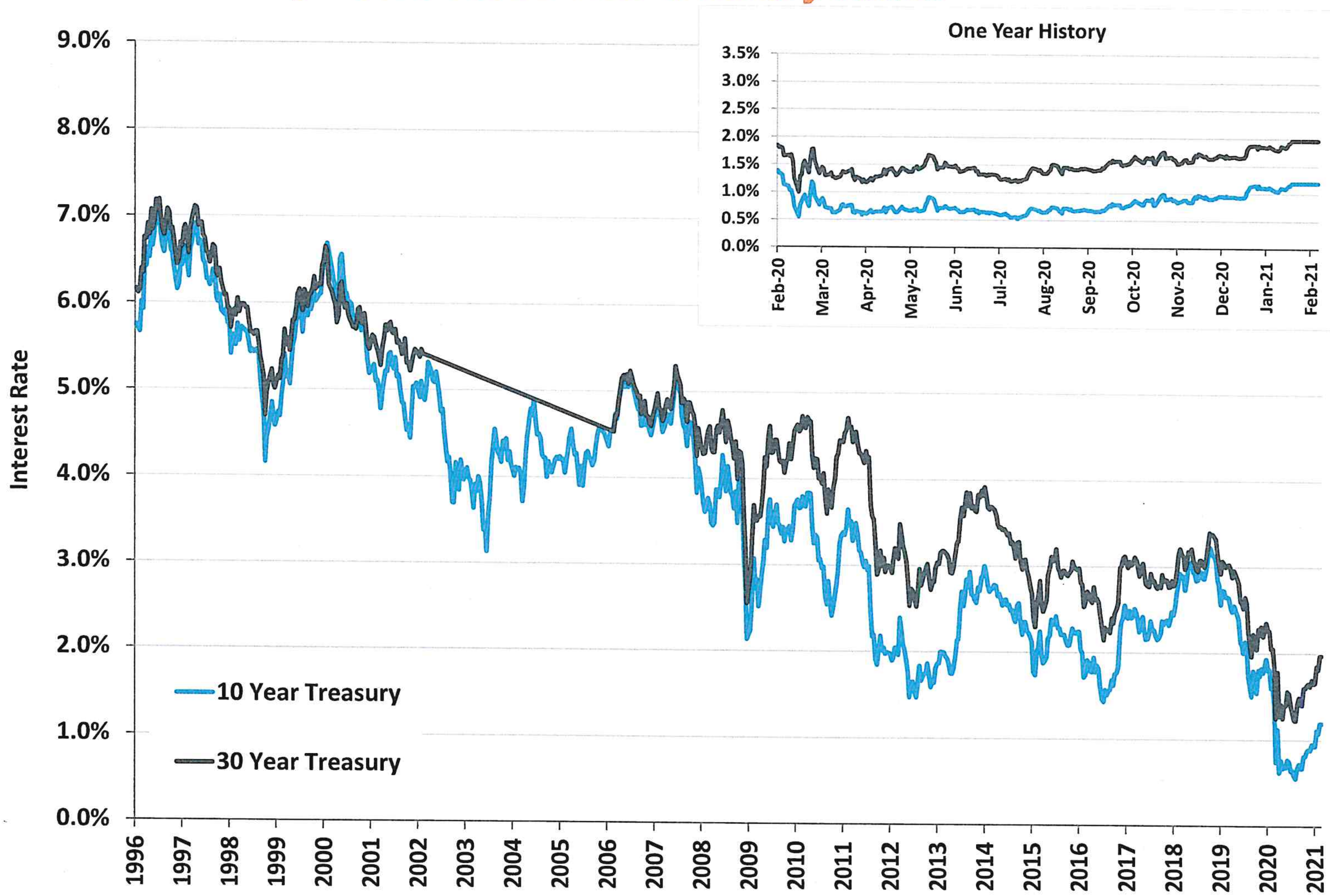
# Puzzle Piece 1:  Now is a good time to borrow



## Interest rates are at all time lows

### 10 Year Treasury Rates vs. 30 Year Treasury Rates



# PERS Investments

| | | Distributions (%) | | | |
|---|---|---|---|---|---|
| Year | Earnings (%) | Tier One | Tier Two | Variable Account | IAP |
| 1970 | 5.09 | 5.09 | | 7.47 | |
| 1971 | 6.27 | 6.27 | | 9.47 | |
| 1972 | 7.46 | 7.46 | | 13.87 | |
| 1973 | 0.00 | 0.00 | | -16.39 | |
| 1974 | 0.00 | 5.50 | | -18.16 | |
| 1975 | 9.19 | 7.50 | | 18.94 | |
| 1976 | 10.38 | 7.75 | | 18.58 | |
| 1977 | 4.79 | 7.00 | | -2.62 | |
| 1978 | 7.37 | 7.00 | | 7.03 | |
| 1979 | 12.32 | 11.09 | | 20.40 | |
| 1980 | 16.92 | 13.00 | | 29.94 | |
| 1981 | 4.37 | 7.50 | | -2.25 | |
| 1982 | 15.31 | 11.50 | | 22.39 | |
| 1983 | 18.37 | 13.00 | | 23.12 | |
| 1984 | 7.33 | 7.50 | | 4.00 | |
| 1985 | 21.38 | 15.00 | | 27.99 | |
| 1986 | 22.70 | 18.37 | | 18.98 | |
| 1987 | 9.00 | 7.50 | | 4.54 | |
| 1988 | 16.86 | 13.50 | | 18.62 | |
| 1989 | 19.74 | 14.50 | | 26.84 | |
| 1990 | -1.53 | 8.00 | | -7.84 | |
| 1991 | 22.45 | 15.00 | | 35.05 | |
| 1992 | 6.94 | 8.00 | | 10.54 | |
| 1993 | 15.04 | 12.00 | | 12.65 | |
| 1994 | 2.16 | 8.00 | | -1.76 | |
| 1995 | 20.78 | 12.50 | | 29.92 | |
| 1996 | 24.42 | 21.00 | 24.42 | 21.06 | |
| 1997 | 20.42 | 18.70 | 20.42 | 28.87 | |
| 1998 | 15.43 | 14.10 | 13.63 | 21.45 | |
| 1999 | 24.89 | 11.33* | 21.97 | 28.83 | |
| 2000 | 0.63 | 8.00 | 0.54 | -3.24 | |
| 2001 | -7.17 | 8.00 | -6.66 | -11.19 | |
| 2002 | -8.93 | 8.00 | -8.93 | -21.51 | |
| 2003 | 23.79 | 8.00 | 22.00 | 34.68 | |
| 2004 | 13.80 | 8.00 | 13.27 | 13.00 | 12.77 |
| 2005 | 13.04 | 8.00 | 18.31** | 8.29 | 12.80 |
| 2006 | 15.57 | 8.00 | 15.45 | 15.61 | 14.98 |
| 2007 | 10.22 | 7.97*** | 9.47 | 1.75 | 9.46 |
| 2008 | -27.18 | 8.00 | -27.18 | -43.71 | -26.75 |
| 2009 | 19.12 | 8.00 | 19.12 | 35.57 | 18.47 |
| 2010 | 12.44 | 8.00 | 12.44 | 15.17 | 12.13 |
| 2011 | 2.21 | 8.00 | 2.21 | -7.80 | 2.15 |
| 2012 | 14.29 | 8.00 | 14.68 | 18.43 | 14.09 |
| 2013 | 15.76 | 8.00 | 15.62 | 25.74 | 15.59 |
| 2014 | 7.29 | 7.75 | 7.24 | 4.29 | 7.05 |
| 2015 | 2.21 | 7.75 | 1.87 | -1.61 | 1.85 |
| 2016 | 6.9 | 7.50 | 7.15 | 8.76 | 7.13 |
| 2017 | 15.3 | 7.50 | 15.23 | 26.48 | 14.72 |
| 2018 | 0.19 | 7.20 | 0.23 | -10.03 | **** |

**OIC is responsible for PERS' investments; has long history of strong performance.**

**49-Year Average**

**Rates of Return (1970-2018): 10.6%**

**Avg. return on SAs 2004-2015: 8.16%**

**1-year earnings through 01/31/2021: 8.20%**

*The PERS Board originally credited these accounts at 20%. That allocation was later reduced to 11.33% to comply with subsequent court decisions and legislative findings.

**Tier Two regular account crediting, based solely on earnings, was 13.74%. However, the PERS Board deployed $9 million from the Capital Preservation Reserve and $17 million from the Contingency Reserve that was added to Tier Two earnings. As a result, Tier Two was credited with a total of 18.31%. The dollars allocated from the reserves were originally withheld from Tier Two regular account earnings.

***After crediting Tier One accounts with the assumed rate of 8%, member attorney fees in the Strunk case were deducted by order of the Oregon Supreme Court, resulting in an effective crediting rate of 7.97%.

****Various Target-Date Fund returns.

## Morrow County School District
### Pension Obligation Bonds

| | | Historical Reference |
|---|---|---|
| Issuance Date | | 10/31/2002 |
| Unfunded Actuarial Liability | | |
| Original Bond Issuance | $ | 7,434,060 |
| Interest Rate | | 2.06%-6.10% |
| 2021 Debt Service | $ | 812,692 |
| Maturity | | 2028 |
| Debt Balance 06/30/2020 | $ | 5,550,000 |
| Current Side Account Balance | $ | 6,964,658 |

| | | | |
|---|---|---|---|
| 2019-2021 School District PERS rates | 32.03% Tier 1/2, 26.58% OPSRP | | |
| 2019-2021 MCSD PERS rates | 19.30% Tier 1/2, 16.19% OPSRP | | |
| 2019-2021 MCSD PERS rate savings | 12.73% | | |
| *Approximate difference between PERS and bond payments* | | *$* | *899,449* |

| | | District | | Estimated Debt Service |
|---|---|---|---|---|
| Unfunded Actuarial Liability | $ | 24,615,876 | | |
| Current 10-30 Year Bond Rates | | <2.5% | | |
| Potential Bond Issuance at 50% | $ | 12,307,938 | $ | 662,586 |
| Potential Bond Issuance at 60% | $ | 14,769,526 | $ | 795,103 |
| *Potential Bond Issuance at 75%* | *$* | *18,461,907* | *$* | *993,878* |

Notes:

*The pension obligation bonds are a replacement of the unfunded actuarial liability
*(actuarial liability vs bonds)*

*The District will have two bond payments for seven years, after 2028 there will be one payment.

# Morrow County School District No. 1

**Pension Obligation Bonds - Sensitivity Analysis Summary**

PERS Unfunded Actuarial Liability and Pension Bond Analysis
February 24, 2021

| Scenario: | 1 | 2 | 3 |
|---|---|---|---|
| | Base Case: 7.20% Earnings | Assume actual earnings from 2002-2019, then 7.20% for remainder | Assume actual earnings from 2007-2019, then 7.20% for remainder |
| **T1/T2 UAL Payoff** | $ 28,451,895 | $ 28,451,895 | $ 28,451,895 |
| **OPSRP UAL Payoff** | 2,157,784 | 2,157,784 | 2,157,784 |
| **Less: Existing Side Account** | (5,993,803) | (5,993,803) | (5,993,803) |
| **Total Payoff (projected as of 8/1/2021)** | $ 24,615,876 | $ 24,615,876 | $ 24,615,876 |
| | | | |
| **Years where Net Rate Credit is negative** | 0 | 0 | 2 |
| **Years where Net Rate Credit is positive** | 19 | 19 | 17 |
| | | | |
| **T1/T2/OPSRP Average Rate Credit** | 12.57% | 14.63% | 10.74% |
| **Debt Cost (%)** | 9.54% | 9.54% | 9.54% |
| **Net Savings (%)** | 3.03% | 5.09% | 1.20% |
| | | | |
| **T1/T2/OPSRP UAL Payoff Savings (in millions)** | $11.2 | $19.2 | $4.5 |
| **PV Savings (in millions)** | $7.9 | $13.2 | $3.1 |
| **PV Savings %** | 31.96% | 53.75% | 12.68% |

*Notes:*

1. *Scenarios 1-3 assumed borrowing rate of 3.50%.*
2. *"Average" Net Rate Credit may include years of both positives and negatives and does not take the time value of money into account.*
3. *"Net Rate Credit" is effective payroll rate credit after payment of debt.*
4. *Assumes District payroll grows at 3.50% annually. To the extent higher or lower growth is experienced, results will differ.*

**Morrow County School District No. 1**
**New Payoff Rate Credits and Pension Bond Savings (T1/T2/OPSRP UAL)**
**Investment Earnings Scenario: Base Case**

PERS Unfunded Actuarial Liability and Pension Bond Analysis
February 24, 2021

## Morrow County School District No. 1 - Projected Rate Credits and Pension Bond Savings

(New Payoff Date: 08/01/21, Payoff Amount: $24,615,876)

| | Side Account | | | | Earnings [1] | | Side Account | Bond Debt Service | | Savings | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Fiscal Year | Balance July 1 | Deposit 8/1/21 | Rate Credit | Rate Credit ($) | Investment Earnings ($) | Investment Returns (%) | Balance June 30 | Debt Service ($) [2] | Debt Cost (%) | Savings ($) | Savings (%) |
| 2022 | - | 24,615,876 | 11.90% | 1,685,564 | 1,560,267 | 7.20% | 24,490,579 | 1,277,587 | 9.02% | 407,977 | 2.88% |
| 2023 | 24,490,579 | - | 12.97% | 1,900,444 | 1,690,382 | 7.20% | 24,280,517 | 1,443,650 | 9.85% | 456,794 | 3.12% |
| 2024 | 24,280,517 | - | 12.97% | 1,966,960 | 1,672,705 | 7.20% | 23,986,262 | 1,493,000 | 9.84% | 473,960 | 3.12% |
| 2025 | 23,986,262 | - | 12.97% | 2,035,803 | 1,648,876 | 7.20% | 23,599,335 | 1,544,900 | 9.84% | 490,903 | 3.13% |
| 2026 | 23,599,335 | - | 12.97% | 2,107,056 | 1,618,283 | 7.20% | 23,110,562 | 1,599,175 | 9.84% | 507,881 | 3.13% |
| 2027 | 23,110,562 | - | 12.97% | 2,180,803 | 1,580,261 | 7.20% | 22,510,020 | 1,655,650 | 9.84% | 525,153 | 3.12% |
| 2028 | 22,510,020 | - | 12.97% | 2,257,131 | 1,534,092 | 7.20% | 21,786,980 | 1,714,150 | 9.85% | 542,981 | 3.12% |
| 2029 | 21,786,980 | - | 12.97% | 2,336,131 | 1,479,001 | 7.20% | 20,929,851 | 1,774,500 | 9.85% | 561,631 | 3.12% |
| 2030 | 20,929,851 | - | 12.97% | 2,417,895 | 1,414,150 | 7.20% | 19,926,105 | 1,836,525 | 9.85% | 581,370 | 3.12% |
| 2031 | 19,926,105 | - | 12.97% | 2,502,522 | 1,338,632 | 7.20% | 18,762,216 | 1,900,050 | 9.84% | 602,472 | 3.12% |
| 2032 | 18,762,216 | - | 12.97% | 2,590,110 | 1,251,470 | 7.20% | 17,423,576 | 1,964,900 | 9.84% | 625,210 | 3.13% |
| 2033 | 17,423,576 | - | 12.97% | 2,680,764 | 1,151,609 | 7.20% | 15,894,421 | 2,035,900 | 9.85% | 644,864 | 3.12% |
| 2034 | 15,894,421 | - | 12.97% | 2,774,591 | 1,037,909 | 7.20% | 14,157,739 | 2,107,700 | 9.85% | 666,891 | 3.12% |
| 2035 | 14,157,739 | - | 12.97% | 2,871,701 | 909,141 | 7.20% | 12,195,179 | 2,180,125 | 9.84% | 691,576 | 3.12% |
| 2036 | 12,195,179 | - | 12.97% | 2,972,211 | 763,979 | 7.20% | 9,986,947 | 2,258,000 | 9.85% | 714,211 | 3.12% |
| 2037 | 9,986,947 | - | 12.97% | 3,076,238 | 600,993 | 7.20% | 7,511,702 | 2,335,975 | 9.85% | 740,263 | 3.12% |
| 2038 | 7,511,702 | - | 12.97% | 3,183,907 | 418,643 | 7.20% | 4,746,438 | 2,413,875 | 9.83% | 770,032 | 3.14% |
| 2039 | 4,746,438 | - | 12.97% | 3,295,343 | 215,268 | 7.20% | 1,666,363 | 2,501,525 | 9.84% | 793,818 | 3.12% |
| 2040 | 1,666,363 | - | 6.43% | 1,690,674 | 24,311 | 7.20% | 0 | 1,283,400 | 4.88% | 407,274 | 1.55% |
| TOTAL FY 2018-2038 | | $ 24,615,876 | | $ 46,525,849 | $ 21,909,973 | | | $ 35,320,587 | | $ 11,205,262 | |
| | | | | | | | | PRESENT VALUE SAVINGS [3]: | | $ 7,867,819 | 31.96% |

*(1) Preliminary, based on market conditions as of February 24, 2021. Reflects a True Interest Cost (TIC) of 3.50%.*

*(2) Estimated present value savings discounted at the TIC on a monthly discounting of side account payments and semiannual discounting of bond payments. Percent savings shown at far right are Net PV Savings as a percentage of the payoff amount.*

Prepared by Piper Sandler Co.

# Morrow County School District No. 1

**New Payoff Rate Credits and Pension Bond Savings (T1/T2/OPSRP UAL)**
**Investment Earnings Scenario: 2002 Scenario**

PERS Unfunded Actuarial Liability and Pension Bond Analysis
February 24, 2021

## Morrow County School District No. 1 - Projected Rate Credits and Pension Bond Savings

(New Payoff Date: 08/01/21, Payoff Amount: $24,615,876)

| | Side Account | | | | Earnings (1) | | Side Account | Bond Debt Service | | Savings | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Fiscal Year | Balance July 1 | Deposit 8/1/21 | Rate Credit | Rate Credit ($) | Investment Earnings ($) | Investment Returns (%) | Balance June 30 | Debt Service ($) (2) | Debt Cost (%) | Savings ($) | Savings (%) |
| 2022 | - | 24,615,876 | 11.90% | 1,685,564 | 4,744,072 | 22.00% | 27,674,383 | 1,277,587 | 9.02% | 407,977 | 2.88% |
| 2023 | 27,674,383 | - | 12.97% | 1,900,444 | 3,539,110 | 13.27% | 29,313,049 | 1,443,650 | 9.85% | 456,794 | 3.12% |
| 2024 | 29,313,049 | - | 13.69% | 2,077,239 | 3,876,871 | 13.74% | 31,112,681 | 1,493,000 | 9.84% | 584,239 | 3.85% |
| 2025 | 31,112,681 | - | 13.69% | 2,149,942 | 4,631,885 | 15.45% | 33,594,624 | 1,544,900 | 9.84% | 605,042 | 3.85% |
| 2026 | 33,594,624 | - | 16.21% | 2,634,898 | 3,048,833 | 9.47% | 34,008,558 | 1,599,175 | 9.84% | 1,035,723 | 6.37% |
| 2027 | 34,008,558 | - | 16.21% | 2,727,120 | (8,824,682) | (27.18%) | 22,456,756 | 1,655,650 | 9.84% | 1,071,470 | 6.37% |
| 2028 | 22,456,756 | - | 18.76% | 3,265,526 | 3,966,357 | 19.12% | 23,157,587 | 1,714,150 | 9.85% | 1,551,376 | 8.91% |
| 2029 | 23,157,587 | - | 18.76% | 3,379,819 | 2,658,341 | 12.44% | 22,436,109 | 1,774,500 | 9.85% | 1,605,319 | 8.91% |
| 2030 | 22,436,109 | - | 13.34% | 2,487,873 | 466,312 | 2.21% | 20,414,549 | 1,836,525 | 9.85% | 651,348 | 3.49% |
| 2031 | 20,414,549 | - | 13.34% | 2,574,948 | 2,797,470 | 14.68% | 20,637,070 | 1,900,050 | 9.84% | 674,898 | 3.50% |
| 2032 | 20,637,070 | - | 13.60% | 2,716,079 | 2,996,169 | 15.60% | 20,917,160 | 1,964,900 | 9.84% | 751,179 | 3.76% |
| 2033 | 20,917,160 | - | 13.60% | 2,811,141 | 1,398,143 | 7.20% | 19,504,162 | 2,035,900 | 9.85% | 775,241 | 3.75% |
| 2034 | 19,504,162 | - | 14.88% | 3,183,234 | 338,085 | 1.90% | 16,659,013 | 2,107,700 | 9.85% | 1,075,534 | 5.03% |
| 2035 | 16,659,013 | - | 14.88% | 3,294,647 | 1,028,239 | 6.90% | 14,392,605 | 2,180,125 | 9.84% | 1,114,522 | 5.03% |
| 2036 | 14,392,605 | - | 15.59% | 3,574,199 | 1,913,863 | 15.30% | 12,732,268 | 2,258,000 | 9.85% | 1,316,199 | 5.74% |
| 2037 | 12,732,268 | - | 15.59% | 3,699,296 | 45,109 | 0.42% | 9,078,082 | 2,335,975 | 9.85% | 1,363,321 | 5.75% |
| 2038 | 9,078,082 | - | 15.86% | 3,895,038 | 951,965 | 13.56% | 6,135,009 | 2,413,875 | 9.83% | 1,481,163 | 6.03% |
| 2039 | 6,135,009 | - | 15.86% | 4,031,364 | 286,996 | 7.20% | 2,390,641 | 2,501,525 | 9.84% | 1,529,839 | 6.02% |
| 2040 | 2,390,641 | - | 9.22% | 2,425,519 | 34,878 | 7.20% | - | 1,283,400 | 4.88% | 1,142,119 | 4.34% |
| TOTAL FY 2018-2038 | | $ 24,615,876 | | $ 54,513,890 | $ 29,898,014 | | | $ 35,320,587 | | $ 19,193,303 | |
| | | | | | | | | PRESENT VALUE SAVINGS (3): | | $ 13,231,980 | 53.75% |

*(1) Preliminary, based on market conditions as of February 24, 2021. Reflects a True Interest Cost (TIC) of 3.50%.*

*(2) Estimated present value savings discounted at the TIC on a monthly discounting of side account payments and semiannual discounting of bond payments. Percent savings shown at far right are Net PV Savings as a percentage of the payoff amount.*

Prepared by Piper Sandler Co.

## Morrow County School District No. 1

**New Payoff Rate Credits and Pension Bond Savings (T1/T2/OPSRP UAL)**
**Investment Earnings Scenario: 2007 Scenario**



### Morrow County School District No. 1 - Projected Rate Credits and Pension Bond Savings
(New Payoff Date: 08/01/21, Payoff Amount: $24,615,876)

| | Side Account | | | | Earnings [1] | | Side Account | Bond Debt Service | | Savings | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Fiscal Year | Balance July 1 | Deposit 8/1/21 | Rate Credit | Rate Credit ($) | Investment Earnings ($) | Investment Returns (%) | Balance June 30 | Debt Service ($) [2] | Debt Cost (%) | Savings ($) | Savings (%) |
| 2022 | - | 24,615,876 | 11.90% | 1,685,564 | (5,969,411) | (27.18%) | 16,960,900 | 1,277,587 | 9.02% | 407,977 | 2.88% |
| 2023 | 16,960,900 | - | 12.97% | 1,900,444 | 3,052,401 | 19.12% | 18,112,857 | 1,443,650 | 9.85% | 456,794 | 3.12% |
| 2024 | 18,112,857 | - | 11.01% | 1,670,689 | 2,143,273 | 12.44% | 18,585,441 | 1,493,000 | 9.84% | 177,689 | 1.17% |
| 2025 | 18,585,441 | - | 11.01% | 1,729,164 | 390,217 | 2.21% | 17,246,494 | 1,544,900 | 9.84% | 184,264 | 1.17% |
| 2026 | 17,246,494 | - | 9.85% | 1,601,334 | 2,407,789 | 14.68% | 18,052,949 | 1,599,175 | 9.84% | 2,159 | 0.01% |
| 2027 | 18,052,949 | - | 9.85% | 1,657,381 | 2,680,052 | 15.60% | 19,075,620 | 1,655,650 | 9.84% | 1,731 | 0.01% |
| 2028 | 19,075,620 | - | 9.79% | 1,704,114 | 1,308,040 | 7.20% | 18,679,547 | 1,714,150 | 9.85% | (10,036) | (0.06%) |
| 2029 | 18,679,547 | - | 9.79% | 1,763,758 | 336,907 | 1.90% | 17,252,696 | 1,774,500 | 9.85% | (10,742) | (0.06%) |
| 2030 | 17,252,696 | - | 11.05% | 2,060,506 | 1,114,615 | 6.90% | 16,306,806 | 1,836,525 | 9.85% | 223,981 | 1.20% |
| 2031 | 16,306,806 | - | 11.05% | 2,132,623 | 2,322,977 | 15.30% | 16,497,159 | 1,900,050 | 9.84% | 232,573 | 1.20% |
| 2032 | 16,497,159 | - | 10.65% | 2,127,675 | 64,476 | 0.42% | 14,433,960 | 1,964,900 | 9.84% | 162,775 | 0.81% |
| 2033 | 14,433,960 | - | 10.65% | 2,202,144 | 1,799,493 | 13.56% | 14,031,310 | 2,035,900 | 9.85% | 166,244 | 0.80% |
| 2034 | 14,031,310 | - | 11.08% | 2,370,264 | 919,283 | 7.20% | 12,580,329 | 2,107,700 | 9.85% | 262,564 | 1.23% |
| 2035 | 12,580,329 | - | 11.08% | 2,453,223 | 811,628 | 7.20% | 10,938,734 | 2,180,125 | 9.84% | 273,098 | 1.23% |
| 2036 | 10,938,734 | - | 11.48% | 2,631,714 | 686,583 | 7.20% | 8,993,602 | 2,258,000 | 9.85% | 373,714 | 1.63% |
| 2037 | 8,993,602 | - | 11.48% | 2,723,824 | 542,998 | 7.20% | 6,812,776 | 2,335,975 | 9.85% | 387,849 | 1.63% |
| 2038 | 6,812,776 | - | 11.65% | 2,860,838 | 380,720 | 7.20% | 4,332,658 | 2,413,875 | 9.83% | 446,963 | 1.82% |
| 2039 | 4,332,658 | - | 11.65% | 2,960,967 | 198,309 | 7.20% | 1,570,000 | 2,501,525 | 9.84% | 459,442 | 1.81% |
| 2040 | 1,570,000 | - | 6.06% | 1,592,905 | 22,905 | 7.20% | - | 1,283,400 | 4.88% | 309,505 | 1.18% |
| TOTAL FY 2018-2038 | | $ 24,615,876 | | $ 39,829,134 | $ 15,213,258 | | | $ 35,320,587 | | $ 4,508,547 | |
| | | | | | | | | PRESENT VALUE SAVINGS [3]: | | $ 3,120,079 | 12.68% |

*(1) Preliminary, based on market conditions as of February 24, 2021. Reflects a True Interest Cost (TIC) of 3.50%.*

*(2) Estimated present value savings discounted at the TIC on a monthly discounting of side account payments and semiannual discounting of bond payments. Percent savings shown at far right are Net PV Savings as a percentage of the payoff amount.*

Prepared by Piper Sandler Co.

# Steps to Financing – SD Pool

- By March 22: Notify Piper and Hawkins if interested in proceeding and want Resolution. Provide Description of Assessment and whether hiring Municipal Advisor. Specify Maximum TIC.
- By April 23: Adopt Resolution/File Public Report. Send assessment to Treasury. Send payoff requests to PERS.
- April-June: Development of POS, Rating
- June 15: Final Opt In Forms due to Piper
- June 28-30: Bond Sale
- July 29: Closing, funds sent to PERS
- August 1: Payroll rates reduced.