Introduction to Municipal Bonds

Session One: Bond Concepts

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CALIFORNIA DEBT AND INVESTMENT ADVISORY COMMISSION

Overview of Presentation

1. Introduction to Bonds
    - Purpose for issuing
        - Funding Projects
        - Refinancing
    - Key terms

2. Process of Issuing
    - Types of Bonds
    - Key participants
    - Timing and Process
    - Structuring and Pricing Bonds
    - Credit Ratings
    - Costs of Issuing
    - Debt Policies & Considerations

3. Basic Bond Math
    - Present Value Calculations
    - Calculating Yield and Yield Curve
    - PMT Calculations
    - True Interest Cost Calculations

4. Real Life Example:
    Golden 1 Center, Sacramento

- What is a Municipal Bond?
  - A Promise of a Borrower (Issuer) to repay a Lender (Bondholder)
  - Issuer receives upfront cash payment and owes annual payments at a fixed interest rate
  - Bondholder receives future repayment with interest

- Personal Example – Home Mortgage
  - Homeowner gets upfront cash from Bank to buy home
  - Bank gets homeowner's promise to make payments with interest

Government Bond Issuers

Corporate Bond Issuers

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Purpose of Municipal Bonds

- Typically issued for infrastructure (water, sewer, streets, bridges, utilities) and capital improvement projects (libraries, fire/police stations, community centers, stadiums, parks)
    - Used as an alternative to cash or bank loans
- Tax-exempt bonds cannot be used to pay for operating expenses

Source: City of San Dimas


Source: MTC.ca.gov


Source: OC Register


Source: Charles O'Rear

Ways to Fund Projects

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Cash ("Pay-As-You-Go")

- Small and recurring capital projects
- Projects built slowly over time
- Future Council flexibility
- Opportunity cost of funds
- Easiest source of money

Bond Financing

- Large capital expenditures
- Acquisition Projects
- Future revenues from Project available for debt service
- Interest and financing costs
- Staff resources required for financing

Federal and State Grants or Loans

- "Free" money with strings attached
- May require oversight or thorough review
- Application process can be drawn-out and competitive
- Timing of funds can be uncertain

Basic Reasons for Issuing Bonds

New Money

Capital Improvement Projects

Infrastructure Development

Refund/Refinance

Take advantage of lower interest rates to lower debt repayments

Simplify debt structure

Short-term Notes

Tax Revenue Anticipation Notes

(TRANs)

Bond Anticipation Notes

(BAN)

- Project Funding
- Restructuring/Refinancing Existing Debt
  - Some bonds can be redeemed prior to maturity (**called**)
    - If current market interest rates are lower now than when the bond was issued, it may make financial sense to issue new bonds at the lower interest rate to refund the outstanding bonds.
    - Responsible practices dictate refunding should result in minimum 3-5% present value savings, barring extenuating circumstances
- Working Capital or Cash Flow Management (short-term notes)

Tax Exempt Nature of Municipal Bonds

- Most municipal bonds are **tax-exempt**
  - Bondholders do not pay State of Federal income tax on interest earnings from municipal bond
  - Investors are willing to purchase bond at lower interest rate
  - IRS reprieve to help local governments fund projects and compete in the capital market for investors against corporate bond issuers
- Issuers are not allowed to earn "Arbitrage"
  - General rule – Issuers can invest bond proceeds and earn yield no higher than weighted average cost of funds on bond (known as **Arbitrage Yield**)
  - All excess earnings must be "Rebated" to IRS – 100% tax
- Government gives up income tax revenues from bondholders on the interest of the bond

Introductory Vocabulary

Issuer: Legal authority to approve and issue Bond

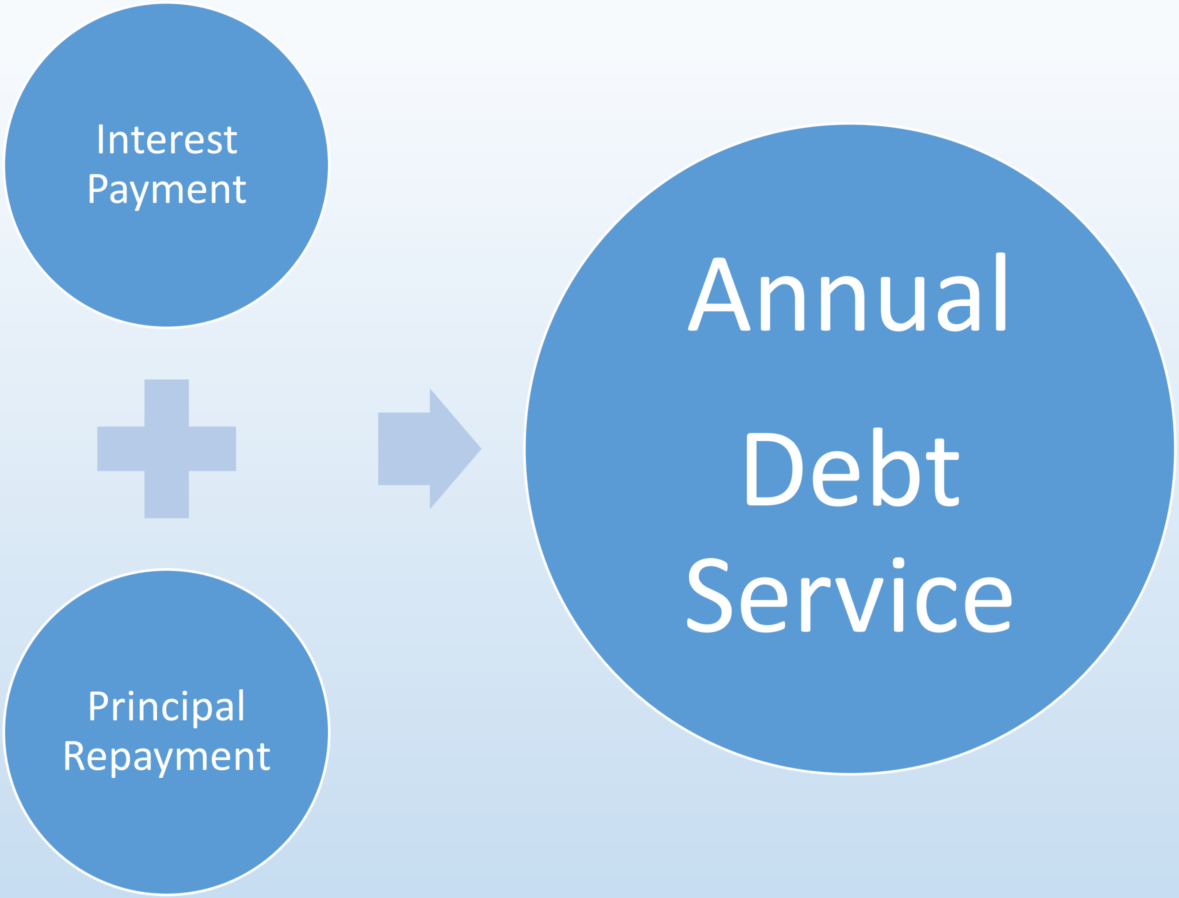
Principal: Total amount borrowed (also known as **par value**)

Coupon: Nominal interest rate charged on the Principal

Interest: Additional amount paid on Principal (calculated with Principal times **Coupon**)

Debt Service: Annual Principal and Interest payments on the Bond

Maturity: Date Principal is due



Bond Structures

- Bonds are secured by different revenue sources
- Some require voter approval

Bonds Repaid With Dedicated Taxes	Bonds Repaid From General Fund	Special Revenue Fund Bonds
• General Obligation (GO) (Local) • Sales Tax Revenue • Special Tax • Assessment • Tax Allocation (Redevelopment)	• Lease Revenue (LRB) • Certificates of Participation (COP) • Pension Obligation • GO (State level only)	• Enterprise Revenue ✓ Water/Sewer ✓ Parking ✓ Refuse ✓ Airport ✓ Golf Course

Voter Approval Required for Certain Types of Bonds

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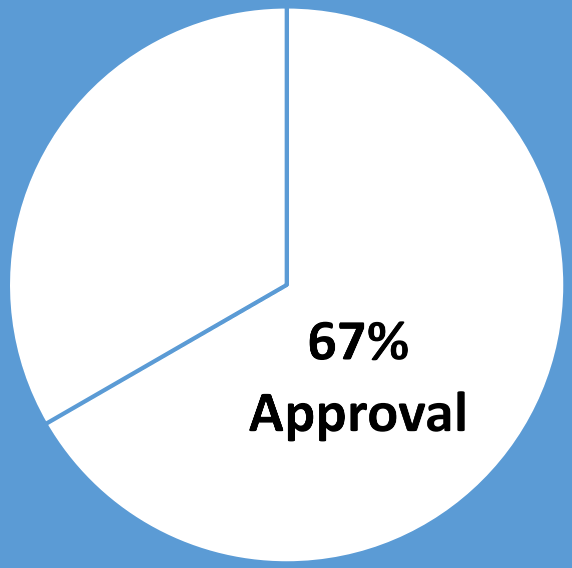
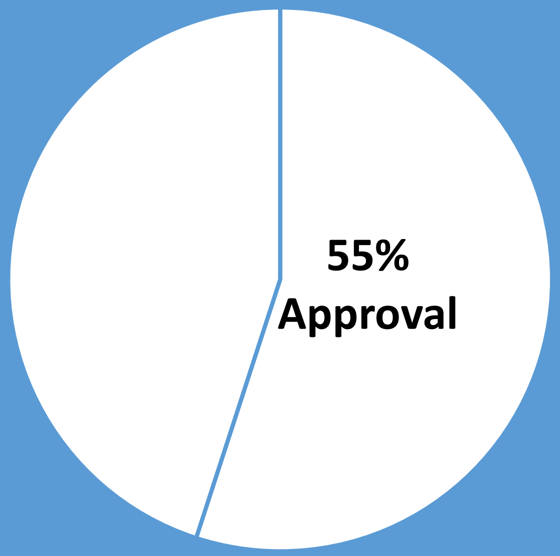
- Once a municipality has decided to issue bonds, it may require voter approval to proceed
- Typically includes general obligation bonds or special tax type obligations

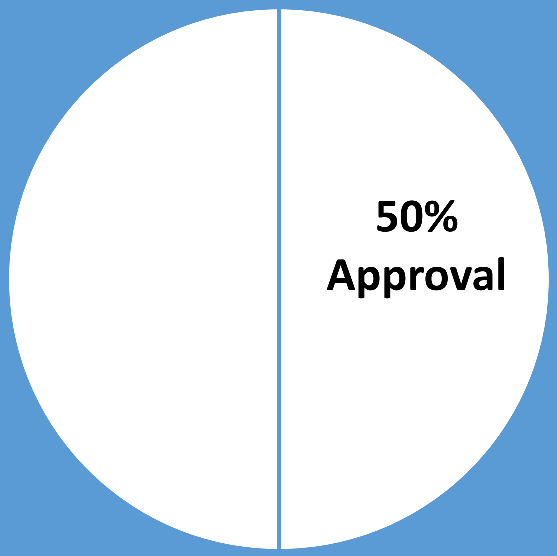
REQUIRED VOTER APPROVAL FOR LOCAL AGENCIES



REQUIRED VOTER APPROVAL FOR SCHOOL DISTRICT BONDS



REQUIRED VOTER APPROVAL FOR STATE BONDS



Major Exceptions to Voter Approval Requirement

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1. General Fund Lease Bonds
   - Secured by lease payments for use of an asset
   - Example: Financing Authority leases City Hall to City in exchange for “rent” payments which equal debt service on Bonds
     - Similar to equipment or vehicle lease

2. Special Revenue Funds
   - Debt service comes from specific revenue source
   - Utility rates may be subject to approval process (Prop 218)
   - Example: Water, sewer, parking, refuse, airport, convention center and golf course

3. Obligation Imposed by Law
   - Involuntary debt obligations, enacted by a court
   - Example: Pension Obligation or Bankruptcy

Process of Issuing a Bond

From Start to Finish

Financing Plan

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Identify Project Needs and Cash Flow

- Timing of expenditures

Quantify Available Cash Resources to Apply towards Project

Project Repayment Resources for ongoing Debt Service

Develop Financial Model

- Sources of Project Funding (Bonds and/or Cash)
- Bond Debt Service
- Available Annual Revenues
- Coverage (Revenues/Debt Service)

Debt Policy Considerations

- Essentiality of Project
- Reserve levels to be maintained
- Available cash to be applied towards Project
- Financing structure
  - Limit financial exposure to critical services (general fund)
- Financial Assumptions
  - Conservative revenue growth assumptions
  - Drought impact on water revenues
  - Credit rating implications and impact on market interest rates
- Continuing Disclosure Obligation

Assemble Financing Team

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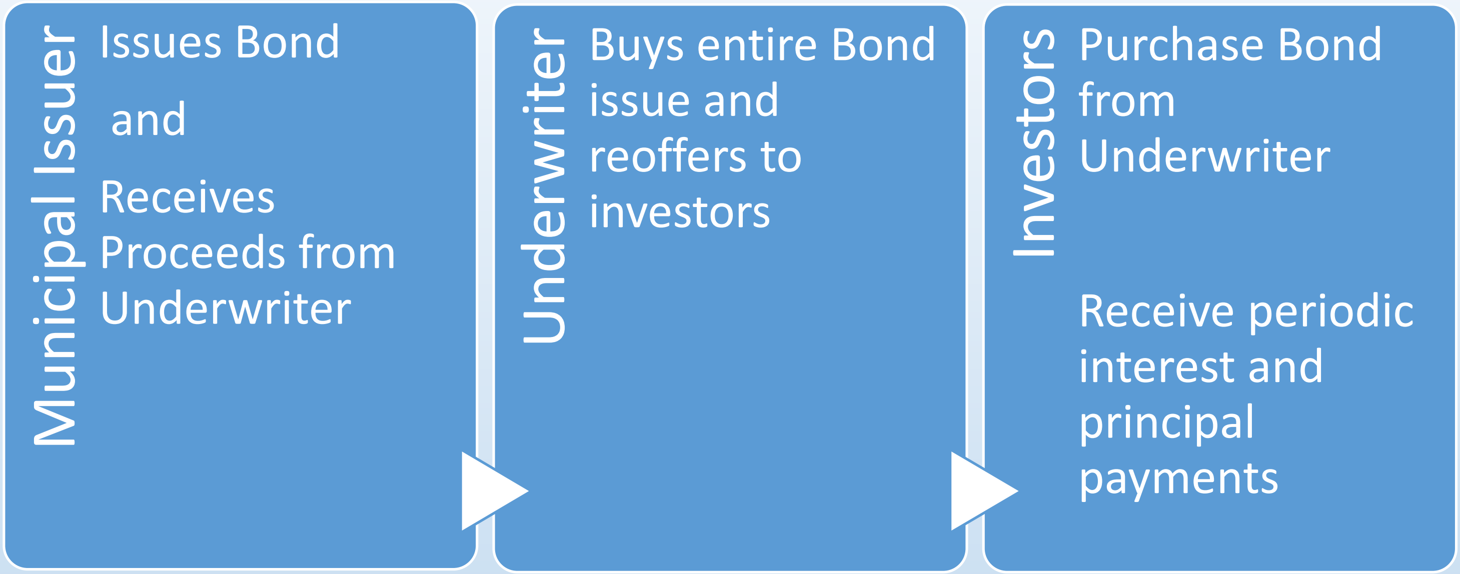
- **Issuer/Borrower**: Public agency responsible for approval and repayment obligation
- **Municipal Advisor**: Project manager who develops and implements financing plan on behalf of issuer
- **Bond Counsel**: legal representation regarding the tax-exempt status and legitimacy of the Bonds
- **Disclosure Counsel**: legal representation to Issuer & Bondholders on disclosure of credit - Official Statement (**OS)**
- **Bond Underwriter**: serves as a middle-man to aggregate bondholders to sell Issuer Bonds
  - Makes an offer to the Issuer to purchase Bonds and resell to bondholders (individual, institutional)
  - If Bonds are not all pre-sold, underwriter "holds" the balance for future resale
- **Trustee**: Administrative duties related to protecting bondholders including collecting payments from Issuer and disbursement to bondholders
- **Rating Agency**: 3rd party credit review firm responsible for assigning rating based on creditworthiness of Issuer and Bond structure (relied on by Bondholders)

The Underwriting Process

- The underwriter has a unique role: they act as the middle-man, buying bonds wholesale from the issuer and selling them on the market.
- Involved in pricing the bond and determining market-appropriate interest rates
- Solicits investor interest



The Underwriting SELECTION Process

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Competitive Sale

- Financing Structure created with Issuer, Bond Counsel and Municipal Advisor
- Underwriter services bid like construction project
- Typically, traditional Bond structure or higher rated credits

Negotiated Sale

- Underwriter selected early to assist in creation of Financing Structure
- Allows Underwriter to better understand the credit to improve sale of bonds
- Typically used on weaker rated credits

Bond Sources and Uses

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- Sources
  - **Principal/Par Amount –** Total obligation amount (face value of Bond)
  - **Purchase Premium** – Amount generated from bondholders when Coupon is higher than market rate for similar maturity
- Uses
  - **Project Fund –** Project requirement
  - **Capitalized Interest Fund –** Proceeds used to make interest payments while Project is being completed
  - **Debt Service Reserve Fund –** Proceeds set aside in trust account to protect bondholders and make debt service payment if Issuer is unable to make payment. Typically the lesser of 3 tests
    1. Maximum annual debt service
    2. 10% of par value
    3. 125% of average annual debt service
  - **Cost of Issuance**: Financing costs for bond & disclosure counsel, municipal advisor, rating agency, trustee, title or property insurance, official statement distribution
  - **Underwriter's Discount**: Fee paid to underwriter to sell Bonds

Sources	
Bond Principal	$10,000,000
Purchase Premium	$500,000
Total Proceeds	$10,500,000

Uses of Funds	
Project Fund	$8,000,000
Capitalized Interest	1,500,000
Debt Service Reserve	$800,000
Costs of Issuance	$150,000
Underwriter Discount	$50,000
Total Proceeds	$10,500,000

Serial and Term Bonds

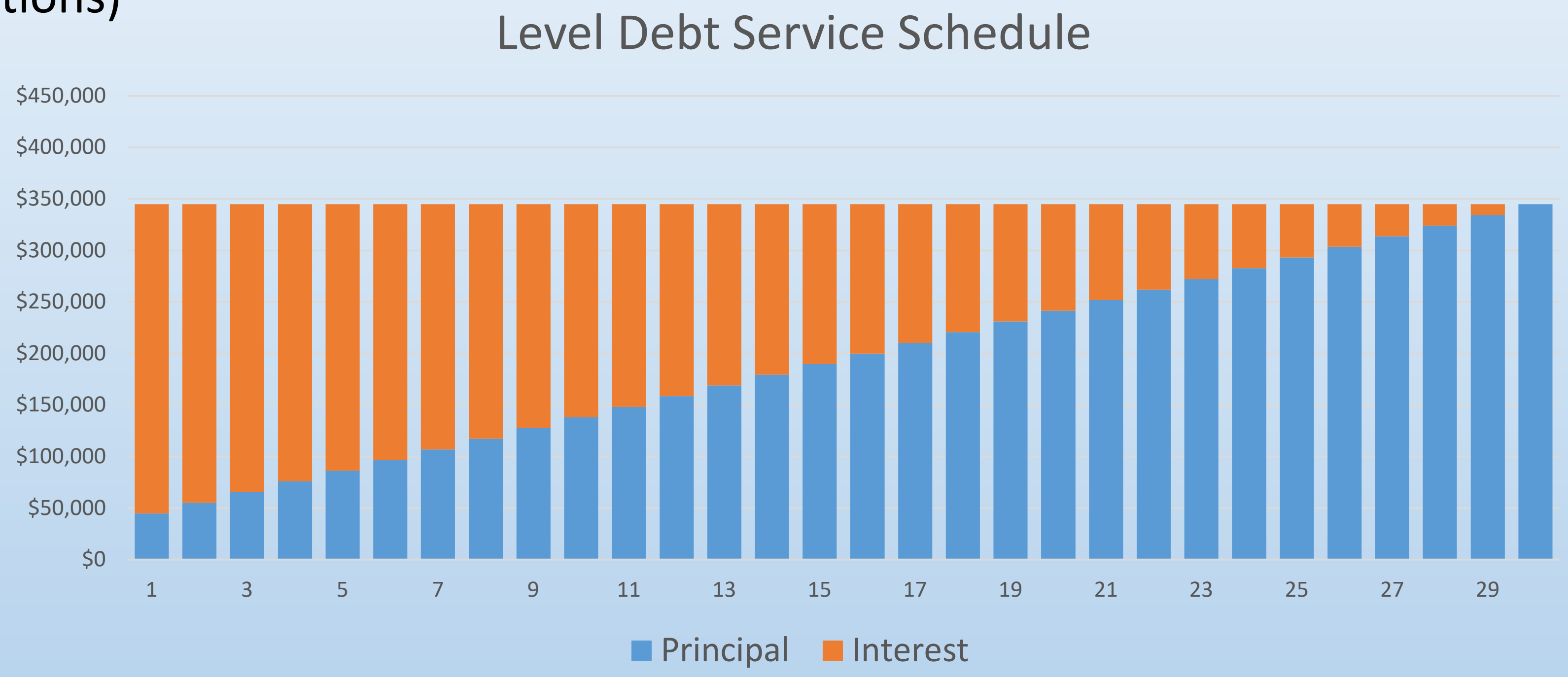
- **Bond issue will include multiple maturities that can be either Serial or Term Bonds**
- **Serial Bonds –** Single bond with one maturity
- **Term Bonds –** Single Bond with annual redemption of identified portion of Principal prior to final maturity
  - **Sinking Fund provision** ensures that the municipality pays off portions of the term bond each year
  - Bondholder does not know if their portion of Term Bond will be paid on sinking date or at final maturity (trustee uses lottery to determine who is paid early)
- Bond amortization similar to mortgage schedule with portion including interest and principal

	Matures	Principal	Coupon	Interest	Debt Service
Serial	6/30/2017	$ -	1.50%	$ 150,000	$ 150,000
Serial	6/30/2018	$ 500,000	1.75%	$ 168,966	$ 668,966
Serial	6/30/2019	$ 550,000	1.80%	$ 167,586	$ 717,586
Serial	6/30/2020	$ 560,000	2.00%	$ 179,310	$ 739,310
Serial	6/30/2021	$ 575,000	2.25%	$ 193,966	$ 768,966
Serial	6/30/2022	$ 590,000	2.50%	$ 206,897	$ 796,897
Serial	6/30/2023	$ 600,000	2.75%	$ 218,103	$ 818,103
Term	6/30/2026	$ 2,000,000	4.00%	$ 303,448	$ 2,303,448
[illegible]	[illegible]	[illegible]	[illegible]	[illegible],759	$ 2,707,759

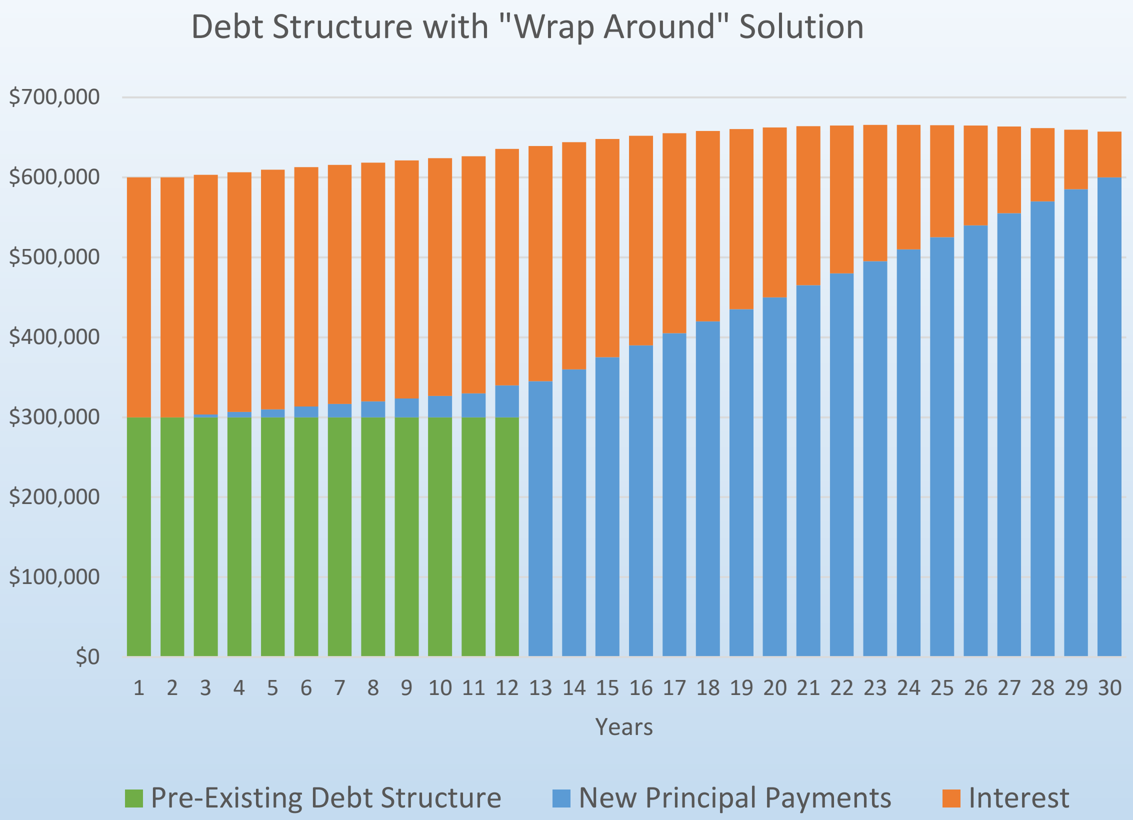
Mandatory Sinking Fund Prepayment for 6/30/2026 Term Bond	
Payment Date	Principal Amount
6/30/2024	$ 600,000
6/30/2025	$ 650,000
6/30/2026 (maturity)	$ 750,000

Determining Debt Service Schedule

- Structure the debt service according to the unique needs and situation of Project
  - **Amortization** refers to payment of Principal and the Interest due on the outstanding Principal balance each year
  - Level Debt service characterized by increasing Principal payments and decreasing Interest payments over time
  - **Current Interest Bonds** pay semi-annual Interest throughout the life of the Bond
  - **Capital Appreciation Bonds** pay accrued Interest at maturity (**Zero Coupon**)
  - Part of the financing costs can be defrayed using investment earnings on bond proceeds (with restrictions)



Alternative Debt Structures



Credit Rating Agencies

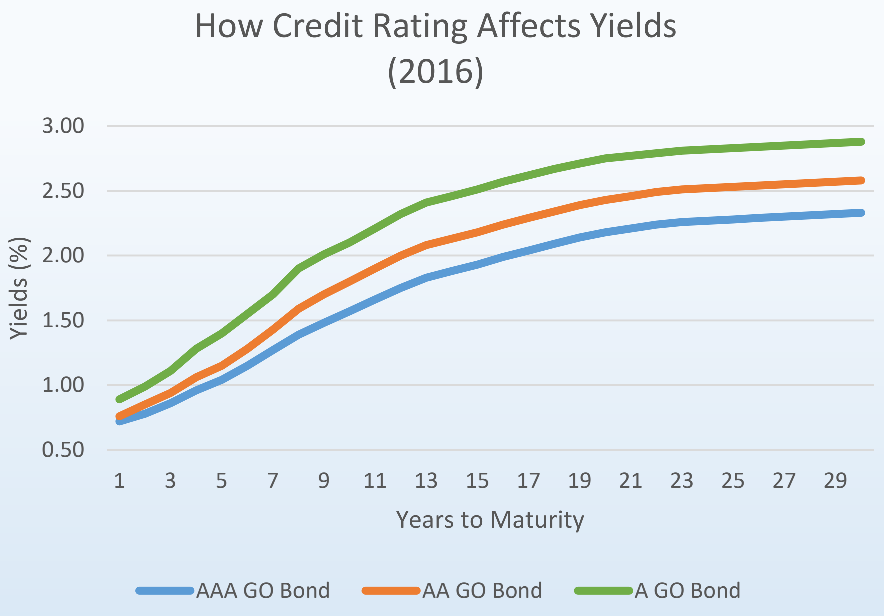
- Three Big Agencies are 3rd party assessors of credit quality
  - Standard & Poor’s
  - Moody’s Investors Service
  - Fitch Ratings
- Credit rating reflects likelihood that the Issuer will repay Bond
  - Rating reflects the security of the bond and the ability of the issuer to make debt service payments
  - Higher rated Bonds are considered safer and will have lower required interest rates
  - “AAA” rated agencies like Beverly Hills can issue Bonds at lower rates than “A” rated agencies
- Municipalities may issue non-rated bonds as an alternative to paying for a credit rating
  - Investor require higher interest rate
  - If the issue is small or if the municipality expects a sub-BBB rating, a non-rated bond may be the financially wiser option

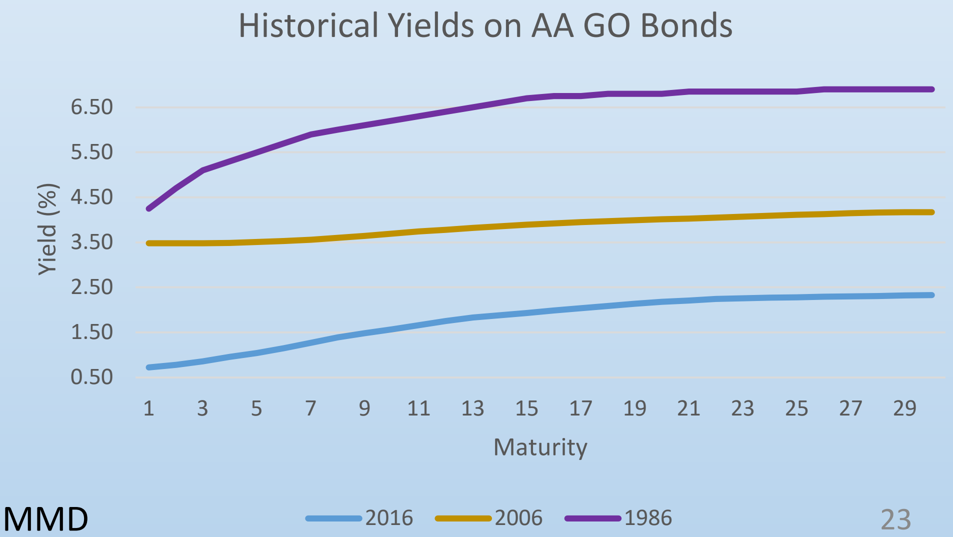
S&P	Moody's	Fitch	
AAA	Aaa	AAA	Highest Grade
AA+	Aa1	AA+	
AA	Aa2	AA	
AA-	Aa3	AA-	
A+	A1	A+	Upper Mid Grade
A	A2	A	
A-	A3	A-	
BBB+	Baa1	BBB+	Lower Mid Grade
BBB	Baa2	BBB	
BBB-	Baa3	BBB-	
BB+	Ba1	BB+	Non-Investment Grade
BB	Ba2	BB	
BB-	Ba3	BB-	
B+	B1	B+	Highly Speculative
B	B2	B	
B-	B3	B-	
CCC+	Caa1	CCC+	
CCC	Caa2	CCC	
CCC-	Caa3	CCC-	
CC	Ca	CC+	
C		CC	In Default
		CC-	
D	D	D	

Credit Ratings and Yields

- Currently, required yield on a “A” rated GO bond with 30 years to maturity is **about 0.55% higher** than the required Yield on a “AAA” rated GO bond with the same maturity
  - Compensate investors for the higher risk of purchasing a bond with a lower credit rating (i.e. a higher chance of default)
  - An issuer that pays for bond insurance and effectively increases their rating from an “A” rating to an “AA” rating can save up to 0.25% on interest payments

- From a historical perspective, required yields on GO bonds are lower than they have been in the past 30 years
  - Implication is that refinancing done now will save money for the municipality in the long run (i.e. amount saved is equivalent to the difference in yields multiplied by time)





Sources: MMD

Credit Enhancements

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- Bond insurance companies can “credit wrap” an Issuer’s Bonds
- Guarantees the Bondholder/Investor additional protection in the event Issuer cannot make the payment
- Issuer pays a one-time premium to Bond Insurance Company for “insured Rating”
  - Rating agencies assign rating to Bond Insurance Company based on financial reserves, credit exposure
- Issuer Bond rating becomes rating of Bond Insurance Company
  - Could change over time if financial position of Bond Insurance Company improves or becomes weaker

Determine Market Interest Rates

- Market rates based on Bond rating and Issuer credit qualities
- Principal amount will also determine bondholder interest
  - Too small and institutional investors will ignore regardless of credit rating
- Market transparency makes finding comparable bond issues easy (TM3 database)
- Special Bond Characteristics
  - Green Bonds – Special class of investors
  - Bank Qualified – Smaller Issuers provide traditional banks with tax credits if invested in “Bank Qualified Bonds” – typically under $10,000,000 in a single year

$26,165,000				$23,710,000				$95,240,000			
OAKDALE IRRIGATION DISTRICT				MADERA IRRIGATION DISTRICT				MODESTO CALIF IRR DIST			
WATER REVENUE REFUNDING BONDS, SERIES 2016				WWATER REVENUE REFUNDING BONDS, SERIES 2016				ELECTRIC SYSSTEM REFUNDING REVENEU BONDS, SERIES 2016			
S&P: AA				S&P: AA (AGM), A (UNDERLYING)				S&P: A+, FITCH: A+			
N/A				AGM				N/A			
August 1				September 1				October 1			
8/1/2023 @ PAR				9/1/2026 @ PAR				10/1/2026 @ PAR			
WELLS FARGO SECURITIES				CITIGROUP GLOBAL MARKETS INC				CITIGROUP GLOBAL MARKETS INC			
8/23/2016				8/24/2016				9/8/2016			
8/23/16 MMD	Coupon	Yield	Spread to MMD	8/24/16 MMD	Coupon	Yield	Spread to MMD	9/8/16 MMD	Coupon	Yield	Spread to MMD
0.460	3.000	0.460	0.000	0.600	3.000	0.630	0.030	0.600	2.000	0.640	0.040
0.520	4.000	0.560	0.040	0.700	3.000	0.600	-0.100	0.700	5.000	0.730	0.030
0.600	4.000	0.670	0.070	0.770	4.000	0.710	-0.060	0.770	5.000	0.810	0.040
0.710	4.000	0.780	0.070	0.860	4.000	0.870	0.010	0.860	5.000	0.900	0.040
0.840	2.000	0.940	0.100	0.950	5.000	1.050	0.100	0.950	5.000	1.010	0.060
1.020	5.000	1.130	0.110	1.080	5.000	1.280	0.200	1.080	5.000	1.170	0.090
1.130	2.000	1.260	0.130	1.190	5.000	1.440	0.250	1.190	5.000	1.320	0.130
1.220	5.000	1.350	0.130	1.280	5.000	1.560	0.280	1.280	5.000	1.460	0.180
1.310	5.000	1.460	0.150	1.360	5.000	1.670	0.310	1.360	5.000	1.570	0.210
1.400	5.000	1.550	0.150	1.450	5.000	1.780	0.330	1.450	5.000	1.710	0.260
1.490	5.000	1.640	0.150	1.530	5.000	1.900	0.370	1.530	5.000	1.820	0.290
1.570	5.000	1.720	0.150	1.610	5.000	1.990	0.380	1.610	5.000	1.900	0.290
1.640	5.000	1.790	0.150	1.680	5.000	2.070	0.390	1.680	5.000	1.980	0.300
1.700	5.000	1.850	0.150	1.730	4.000	2.380	0.650	1.730	5.000	2.030	0.300
1.750	5.000	1.900	0.150	1.780	4.000	2.420	0.640	1.780	5.000	2.080	0.300
1.800	5.000	1.950	0.150	1.840	4.000	2.450	0.610	1.840	5.000	2.130	0.290
1.850	5.000	2.000	0.150	1.890	4.000	2.500	0.610	1.890	5.000	2.180	0.290
1.900	5.000	2.020	0.120	1.940	3.000	3.000	1.060	1.940	5.000	2.210	0.270
1.950	5.000	2.100	0.150	1.990	3.000	3.020	1.030	1.990			
1.990				2.030	3.000	3.030	1.000	2.030			
2.010				2.050	3.000	3.040	0.990	2.050			
2.030	3.000	3.020	0.990	2.070				2.070			
2.040				2.080				2.080			
2.050				2.090				2.090			
2.060				2.100				2.100			
2.070				2.110				2.110			
2.080				2.120				2.120			
2.090				2.130				2.130			
2.100				2.140				2.140			
2.110				2.150				2.150			

Pricing the Bonds

- **Reoffering Yield**: Return to Bondholder after adjusting Coupon for initial purchase premium or discount
  - “Return on investment” from the perspective of the investor.
  - As price increases, yield (return) decreases
  - **Premium Bonds** have a Coupon higher than the current market rates; Purchase price above 100
    - Premium bond prices typically less volatile but have higher risk of being called later
  - **Par Bonds** have a Coupon rate that matches current market rates; Purchase price 100
  - **Discount Bonds** have a Coupon lower than the current market rates; Purchase price below 100
    - Discount Bonds less likely to be called

Settlement Date	Maturity Date	Coupon	Market Yield	Price
12/1/2016	12/1/2021	5.00%	4.00%	104.452
12/1/2016	12/1/2021	5.00%	4.25%	103.316
12/1/2016	12/1/2021	5.00%	4.50%	102.195
12/1/2016	12/1/2021	5.00%	4.75%	101.090
12/1/2016	12/1/2021	5.00%	5.00%	100.000
12/1/2016	12/1/2021	5.00%	5.25%	98.925
12/1/2016	12/1/2021	5.00%	5.50%	97.865
12/1/2016	12/1/2021	5.00%	5.75%	96.819
12/1/2016	12/1/2021	5.00%	6.00%	95.788

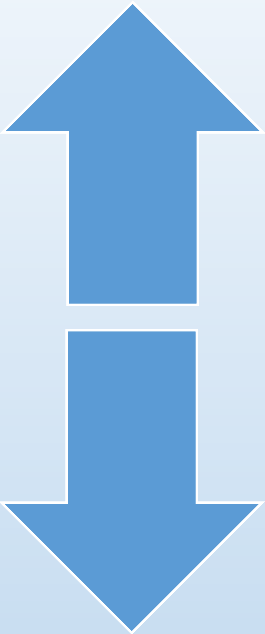
Effect of Price on Bond Size

- Issuing a premium Bond can decrease need to issue as many Bonds
  - Increasing the coupon by 100 basis points (bps) or 1.00% has a big effect on bond price.
- In the example, both the premium Bonds and the discount Bonds raised the same amount of money

<u>Example</u>

Issue $10MM in 30-yr bonds
Market Yield is 3.50%

1. Issue Premium Bonds at 4.50% price at $118.39. Need to issue **<u>8,500</u>** bonds to reach $10MM
2. Issue Par Bonds at 3.50% results in a price of $100. Need to issue **<u>10,000</u>** bonds to reach $10MM
3. Issuing Discount Bonds at 2.50% results in a price of $81.61. Need to issue **<u>12,250</u>** bonds to reach $10MM



As price increases

Size of the issue decreases

Calculating Purchase Premiums

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- Purchase premium is a function of the difference between the Underwriter's purchase price and the re-offer price to the public.
  - It depends on yields, bond maturity, and coupon rates
  - Total premium is an aggregate of premiums on individual issues.

Maturity	Par Amount	Coupon	Market Yield	Underwriter Purchase Price	Reoffering Price	Premium
12/1/2017	$100.00	5.00%	4.75%	$99.00	$100.24	$1.24
12/1/2018	$100.00	5.13%	5.00%	$99.00	$100.23	$1.23
12/1/2019	$100.00	5.25%	5.13%	$99.00	$100.34	$1.34
12/1/2020	$100.00	5.25%	5.25%	$99.00	$100.00	$1.00
12/1/2021	$100.00	5.25%	5.50%	$99.00	$98.93	**-$1.07**
					Total Premium	**$4.74**

The Official Statement

- Document created by Disclosure Counsel
- Securities document required to educate bondholders prior to purchasing Bond
- Preliminary Official Statement (POS) must include:
  - Issuer Profile and Legal Authority
  - Tax-Exempt or Taxable Bond Status
  - Principal Amount, Maturity Dates
  - Redemption/Call Provisions
  - Source of Repayment/Security for Bondholders
  - Remedies of Delinquency
  - Issuer Credit and Community Demographics and Description
  - Credit Enhancement/Bond insurance information (if applicable)
  - Finance team players
  - Continuing Disclosure requirements
- Final Official Statement (FOS)
  - Will include final Principal Amounts and Interest Rates/Coupons

Continuing Disclosure Requirements

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- Continuing Disclosure Certificate in the Official Statement (OS) requires the issuer to
  1. Post Financial Information and Operating Data to MSRB's EMMA system annually
     - Generally due 9 months after end of public agency's fiscal year
  2. Provide notices of significant events
     - Principal and interest payment delinquencies
     - Unscheduled draws on DSRF
     - Unscheduled use of Credit enhancement
     - Substitution of credit/liquidity providers
     - Rating changes
     - Adverse tax opinions by IRS
     - Bond calls and tender offers
     - Defeasances
     - Bankruptcy, insolvency, receivership

- Continuing Disclosure Certificate is legally binding
- SEC has heightened scrutiny of Continuing Disclosure compliance
- Failure to comply could lead to the SEC taking action against an issuer and/or underwriter

Bond Covenants

- Promise to repay principal and interest
- Promise to take necessary action to ensure payment
- Promise to maintain tax exempt status

- These promises commit the municipality to take action to preserve investor interests
- Underscores the importance of maintaining documentation at the Issuer level to assure that these covenants are being honored.

Basic Bond Math

Price

Yield

TIC (Total Interest Cost)

Debt Service Payments

Basic Bond Math

- Municipal Finance Professionals typically use customized financial software or complex Excel spreadsheets to make their calculations
- Excel functions provide a fairly accurate approximation
  1. Bond Price
  2. Yield to Maturity
  3. Annual Debt Service Payments
  4. True Interest Cost

Calculating Price on a Bond

- You can use the equation:

$$\text{Bond Price} = \frac{C}{(1+i)} + \frac{C}{(1+i)^2} + \ldots + \frac{C}{(1+i)^n} + \frac{M}{(1+i)^n}$$

C=coupon payments, i=interest rate, M=payment at maturity, n=number of periods

- Excel function:

=PRICE(delivery date, maturity date, coupon, yield, value at maturity, coupon payments per year, day count basis)

Example:

Delivery Date: 12/1/2016

Maturity Date: 12/1/2026

Coupon (Interest Rate): 5.00%

Purchase Yield: 4.50%

Maturity Value: $100

Coupon Payments per Year: 1

Day Count Basis: 0 (0 = 360 days/year)

Price: $103.96

Calculating Yield to Maturity

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- Equation

  Back-solves using bond price to determine yield

$$\text{Bond Price} = \frac{\text{Cashflow 1}}{(1+\text{yield})^1} + \frac{\text{Cashflow 2}}{(1+\text{yield})^2} + \ldots + \frac{\text{Last Cashflow}}{(1+\text{yield})^n}$$

- Excel Function

=YIELD(delivery date, maturity date, coupon, price, value at maturity, coupon payments per year, day count basis)

<u>Example</u>

Delivery Date: 12/1/2016

Maturity Date: 12/1/2026

Coupon (Interest Rate): 5.00%

Purchase Price: $110.00

Maturity Value: $100.00

Coupon Payments per Year: 1

Day Count Basis: 0 (0=360 days/yr)

YTM: 3.78%

Calculating Debt Service Payments

- If public agency needs to issue Bonds to pay for a police station, knowing the expected cost of the station, how can you approximate the yearly debt service?

- Excel Function

=PMT(Rate, Number of periods, Present Value, Future Value, when payment due)

<u>Bond Issue Size: $25,000,000</u>

PV: $25,000,000

FV: $0.00

Coupon: 3.500%

Years to Maturity: 30

When Payment Due: 0 (0= end of period)

Approximate Yearly Debt Service:

$1,359,283

Calculating True Interest Cost

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- Calculation of effective rate representing the present value of payments made on Bond to the NET price from Bond
  - All-inclusive borrowing rate on Bond

Excel function

=IRR(values, guess)

Values are a series of payments (cash outflows must have negative number, cash inflows are positive)

Guess gives Excel a place to start solving

Example

$10,000,000 Bond with a 10 year maturity. Knowing the Debt Service Schedule, what is the TIC?

Note: Annual Debt Service as negative cash flows (money going out)

TIC: 3.727%

Cash Flow Date	Annual Debt Service Amount
12/1/2016	$ 10,000,000
12/1/2017	$ (1,050,000)
12/1/2018	$ (1,050,000)
12/1/2019	$ (1,050,000)
12/1/2020	$ (1,050,000)
12/1/2021	$ (1,150,000)
12/1/2022	$ (1,150,000)
12/1/2023	$ (1,150,000)
12/1/2024	$ (1,250,000)
12/1/2025	$ (1,250,000)
12/1/2026	$ (2,250,000)

What is Arbitrage?

- Internal Revenue Service defines “Arbitrage” as the earnings on bond proceeds that exceed the allowable yield
- The Arbitrage Yield is the rate the Issuer is paying for the Bonds
  - Includes principal, interest and any reoffering premium or discount
  - Also includes any credit enhancement premium
  - Does NOT include underwriter discount or costs of issuance
- Issuer must “Rebate” 100% of excess earnings on Bonds back to the Federal Government
- IRS does not want Issuers making money on the money they borrow

Real life Example

Sacramento Golden 1 Center

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Recent Example: Golden 1 Center Financing

Future Sports and Entertainment Complex **Cost: $299,995,000**

- Sacramento Public Financing Authority issued Lease Revenue Bonds (LRB)
  - Security: Lease agreement with the City of Sacramento
  - Repayment Source: Net Parking Revenues and Rent Payments from the Kings)
  - Exempt from State income tax, Federally taxable
  - Final Maturity 2050
    - Serial Bonds: 2016-2023
    - Term Bonds: 2050 (Sinking Fund Provision)
  - Credit Rating “A” (Fitch), “A+” (S&P)

Image Source: www.golden1center.com

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Rent from Kings Basketball Team

Parking Revenues Collected by City

Double-Barrel Pledge

Bond Investors

Assemble Financing Team

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- **Issuer/Borrower**: Public agency responsible for approval and repayment obligation
- **Municipal Advisor**: Project manager who develops and implements financing plan on behalf of issuer
- **Bond Counsel**: legal representation regarding the tax-exempt status and legitimacy of the Bonds
- **Disclosure Counsel**: legal representation to Issuer & Bondholders on disclosure of credit - Official Statement (**OS)**
- **Bond Underwriter**: serves as a middle-man to aggregate bondholders to sell Issuer Bonds
    - Makes an offer to the Issuer to purchase Bonds and resell to bondholders (individual, institutional)
    - If Bonds are not all pre-sold, underwriter "holds" the balance for future resale
- **Trustee**: Administrative duties related to protecting bondholders including collecting payments from Issuer and disbursement to bondholders
- **Rating Agency**: 3rd party credit review firm responsible for assigning rating based on creditworthiness of Issuer and Bond structure (relied on by Bondholders)

Golden 1 Center Debt Service and Sources and Uses Tables

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Level Annual Debt Service

Year Ending June 30	Principal	Interest*[1]	Total
2016		$11,703,804.93	$11,703,804.93
2017		18,479,692.00	18,479,692.00
2018	$2,985,000	18,479,692.00	21,464,692.00
2019	3,170,000	18,295,816.00	21,465,816.00
2020	3,365,000	18,100,544.00	21,465,544.00
2021	3,570,000	17,893,260.00	21,463,260.00
2022	3,790,000	17,673,348.00	21,463,348.00
2023	4,025,000	17,439,884.00	21,464,884.00
2024	4,275,000	17,191,944.00	21,466,944.00
2025	4,535,000	16,928,604.00	21,463,604.00
2026	4,815,000	16,649,248.00	21,464,248.00
2027	5,115,000	16,352,644.00	21,467,644.00
2028	5,430,000	16,037,560.00	21,467,560.00
2029	5,765,000	15,703,072.00	21,468,072.00
2030	6,120,000	15,347,948.00	21,467,948.00
2031	6,495,000	14,970,956.00	21,465,956.00
2032	6,895,000	14,570,864.00	21,465,864.00
2033	7,320,000	14,146,132.00	21,466,132.00
3034	7,770,000	13,695,220.00	21,465,220.00
2035	8,250,000	13,216,588.00	21,466,588.00
2036	8,755,000	12,708,388.00	21,463,388.00
2037	9,295,000	12,169,080.00	21,464,080.00
2038	9,870,000	11,596,508.00	21,466,508.00
2039	10,475,000	10,988,516.00	21,463,516.00
2040	11,120,000	10,343,256.00	21,463,256.00
2041	11,805,000	9,658,264.00	21,463,264.00
2042	12,535,000	8,931,076.00	21,466,076.00
2043	13,305,000	8,158,920.00	21,463,920.00
2044	14,125,000	7,339,332.00	21,464,332.00
2045	14,995,000	6,469,232.00	21,464,232.00
2046	15,920,000	5,545,540.00	21,465,540.00
2047	16,900,000	4,564,868.00	21,464,868.00
2048	17,940,000	3,523,828.00	21,463,828.00
2049	19,045,000	2,418,724.00	21,463,724.00
2050*	20,220,000	1,245,552.00	21,465,552.00

[1] Interest through October 1, 2017, is expected to be paid from proceeds of the Series 2015 Bonds deposited in the Capitalized Interest Fund.

* See "THE SERIES 2015 BONDS — Index Floating Rate Period" for a description of the calculation of the Index Floating Rate during the Index Floating Rate Period.

Sources:	
Principal Amount of Series 2015 Bonds	$ 299,995,000.00
Additional City Moneys	2,703,451.00
Total Sources	$ 302,698,451.00
Uses:	
Deposit to Project Fund (1)	$ 223,130,100.00
Deposit to Capitalized Interest Fund (2)	54,156,106.67
Deposit to Reserve Fund (3)	21,468,072.00
Deposit to Costs of Issuance Fund (4)	3,944,172.33
Total Uses	$ 302,698,451.00

Uses

- Project Fund
- Capitalized Interest: to make interest payments until project completion (October 2016)
- Reserve Fund (MADS)
- COI Fund (costs of financing)

Golden 1 Center OS

- Par Amount, Issuer, Issue Type, Credit Rating
- Date of Issuance
- Purpose of the Bonds
- Project Description/Obligations of Issuer
- Security for Bonds
- Tax Status
- Underwriters

REMARKETING – NOT A NEW ISSUE—BOOK ENTRY ONLY

RATINGS:
See "RATINGS" herein.

$272,870,000
SACRAMENTO PUBLIC FINANCING AUTHORITY
Lease Revenue Bonds, Series 2015
(Golden 1 Center)
(Federally Taxable)

Dated: Original Date of Issuance
(August 13, 2015)

Due: As shown on inside front cover

This Remarketing Circular is to be used for the limited purpose of providing information in connection with the conversion of the interest rate on $272,870,000 aggregate principal amount of Sacramento Public Financing Authority Lease Revenue Bonds, Series 2015 (Golden 1 Center) (Federally Taxable) (the "Series 2015 Bonds"). The Series 2015 Bonds are dated the date of their original issuance (August 13, 2015) and, assuming satisfaction of certain conditions, will be subject to mandatory tender and will be converted to bear interest at fixed interest rates on October 6, 2015 (the "Fixed Rate Conversion Date"). After the Fixed Rate Conversion Date, the Series 2015 Bonds will mature on the dates shown on the inside front cover page and, commencing on the Fixed Rate Conversion Date, will bear interest at the fixed rates set forth on the inside cover page. After the Fixed Rate Conversion Date, interest on the Series 2015 Bonds will be payable on each April 1 and October 1, commencing April 1, 2016.

The Series 2015 Bonds were originally issued in the aggregate principal amount of $299,995,000. On the Fixed Rate Conversion Date, $27,125,000 in aggregate principal amount of the Series 2015 Bonds will be cancelled, following their mandatory tender, using certain funds on deposit in certain funds and accounts under the hereinafter defined Indenture.

The Series 2015 Bonds were issued on August 13, 2015 by the Sacramento Public Financing Authority (the "Authority"), a joint-exercise-of-powers entity organized and existing under the laws of the State of California (the "State"), and an indenture, dated as of August 1, 2015 (the "Indenture"), between the City of Sacramento (the "City"), the Authority, and Wells Fargo Bank, National Association, as trustee (the "Trustee").

The Series 2015 Bonds were issued to (a) pay or reimburse a portion of the costs of the acquisition, construction, installation, and equipping of a multi-purpose entertainment-and-sports center to be located in the downtown area of the City and named the Golden 1 Center (the "Arena Facility"); (b) fund capitalized interest on the Series 2015 Bonds through and including October 1, 2017; (c) fund a reserve fund for the Series 2015 Bonds; and (d) pay or reimburse costs of issuance of the Series 2015 Bonds. See "THE ARENA." The Series 2015 Bonds are special limited obligations of the Authority payable solely from, and secured solely by, the Lease Revenues (defined herein) pledged therefor under the Indenture, together with amounts on deposit from time to time in the funds and accounts established under the Indenture. The Authority may issue additional bonds payable from the Lease Revenues on a parity with the Series 2015 Bonds as described herein. The Series 2015 Bonds and the additional bonds, if any, are referred to herein as "Bonds."

The Series 2015 Bonds will be available in denominations of $5,000 and any integral multiple of $5,000. See "THE SERIES 2015 BONDS."

The Series 2015 Bonds were delivered in fully registered form only, and are registered in the name of Cede & Co., as nominee of The Depository Trust Company, New York, New York ("DTC"). DTC will act as securities depository of the Series 2015 Bonds. Ownership interests in the Series 2015 Bonds may be purchased in book-entry form only. Principal of, and premium (if any) and interest on, the Series 2015 Bonds will be paid by the Trustee to DTC or its nominee, which will in turn remit the payment to its participants for subsequent disbursement to the Beneficial Owners of the Series 2015 Bonds. See "THE SERIES 2015 BONDS" and APPENDIX F — "BOOK-ENTRY ONLY SYSTEM."

The Series 2015 Bonds are subject to optional, mandatory, and extraordinary redemption as described herein. See "THE SERIES 2015 BONDS."

The City has leased the Arena Facility and the site on which it is located (the "Arena Site," and together with the Arena Facility, the "Arena") from the Authority under a Project Lease, dated as of August 1, 2015 (the "Project Lease"), between the Authority and the City. Under the Project Lease, the City is obligated to make Base Rental Payments (as defined herein) from legally available funds in amounts calculated to be sufficient to pay principal of, and interest on, the Series 2015 Bonds when due, as described herein. This obligation is subject initially to completion of construction of the Arena and the Plaza (as described herein) and is subject thereafter to abatement as provided in the Project Lease. All of the Authority's right, title, and interest in and to the Project Lease (except for the right to receive any Additional Payments (as defined herein) to the extent payable to the Authority and certain rights to indemnification), including the right to receive Base Rental Payments under the Project Lease, are assigned to the Trustee under the Indenture for the benefit of the Owners and Beneficial Owners of the Series 2015 Bonds. See "SECURITY FOR THE SERIES 2015 BONDS."

The Series 2015 Bonds are special limited obligations of the Authority payable solely from, and secured solely by, the Lease Revenues pledged under the Indenture and other moneys pledged thereto in the Indenture. The Series 2015 Bonds are not a debt of the Authority, the City, the State, or any of the State's political subdivisions, except the Authority to the extent described herein, and neither the Authority, nor the City, nor the State or any of its political subdivisions, except the Authority to the extent described herein, is liable thereon. In no event will the Series 2015 Bonds or any interest or redemption premium thereon be payable out of any funds or properties other than those of the Authority as set forth in the Indenture. The Series 2015 Bonds do not constitute an indebtedness within the meaning of any constitutional or statutory debt limitation or restriction. Neither the members of the Authority, nor the City, nor any persons executing the Series 2015 Bonds are liable personally on the Series 2015 Bonds by reason of their issuance or remarketing.

The purchase and holding of the Series 2015 Bonds involve risks that may not be appropriate for certain investors. See "RISK FACTORS" for a discussion of certain of these risks.

This cover page contains information for general reference only. It is not a summary of this issue. Potential purchasers must read the entire Remarketing Circular to obtain information essential to making an informed investment decision.

On the date of original issuance of the Series 2015 Bonds, Orrick, Herrington & Sutcliffe LLP, Bond Counsel to the Authority, delivered its opinion (the "Original Bond Counsel Opinion") that, based on an analysis of then existing laws, regulations, rulings, and court decisions, and assuming, among other matters, the accuracy of certain representations and compliance with certain covenants, interest on the Series 2015 Bonds is exempt from State of California personal income taxes. The Original Bond Counsel Opinion also observed that interest is not excluded from gross income for federal income-tax purposes under Section 103 of the Internal Revenue Code of 1986 (the "Code"). Bond Counsel expressed no opinion regarding any other tax consequences related to the ownership or disposition of, or the amount, accrual, or receipt of interest on, the Series 2015 Bonds. See Appendix D for a copy of the Original Bond Counsel Opinion. The Original Bond Counsel Opinion will not be updated in connection with the conversion and remarketing of the Series 2015 Bonds to fixed interest rates, and Bond Counsel will not be rendering any opinion on the current tax status of the Series 2015 Bonds. See "TAX MATTERS" herein.

Certain legal matters in connection with the remarketing of the Series 2015 Bonds will be passed upon for the City and the Authority by the Sacramento City Attorney and by Stradling Yocca Carlson & Rauth, a Professional Corporation, as Disclosure Counsel to the City. Certain legal matters will be passed on for the Remarketing Agents by Nixon Peabody LLP. First Southwest Company, LLC is serving as Financial Advisor to the City. The firms listed below are serving as Remarketing Agents and will remarket the Series 2015 Bonds on the Fixed Rate Conversion Date following their mandatory tender.

Goldman, Sachs & Co.

BofA Merrill Lynch | **Morgan Stanley**

Dated: September 24, 2015

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Summary of Presentation

CDIAC

- Understand Bond Basics
- Develop Financial Plan for Project
- Adopt Debt Policies and Procedures to Guide Process
- Work with Finance Team to Implement Best Financial Solution
- Understand and Prepare for ongoing Continuing Disclosure Requirements once Bonds are issued

Contact Information

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