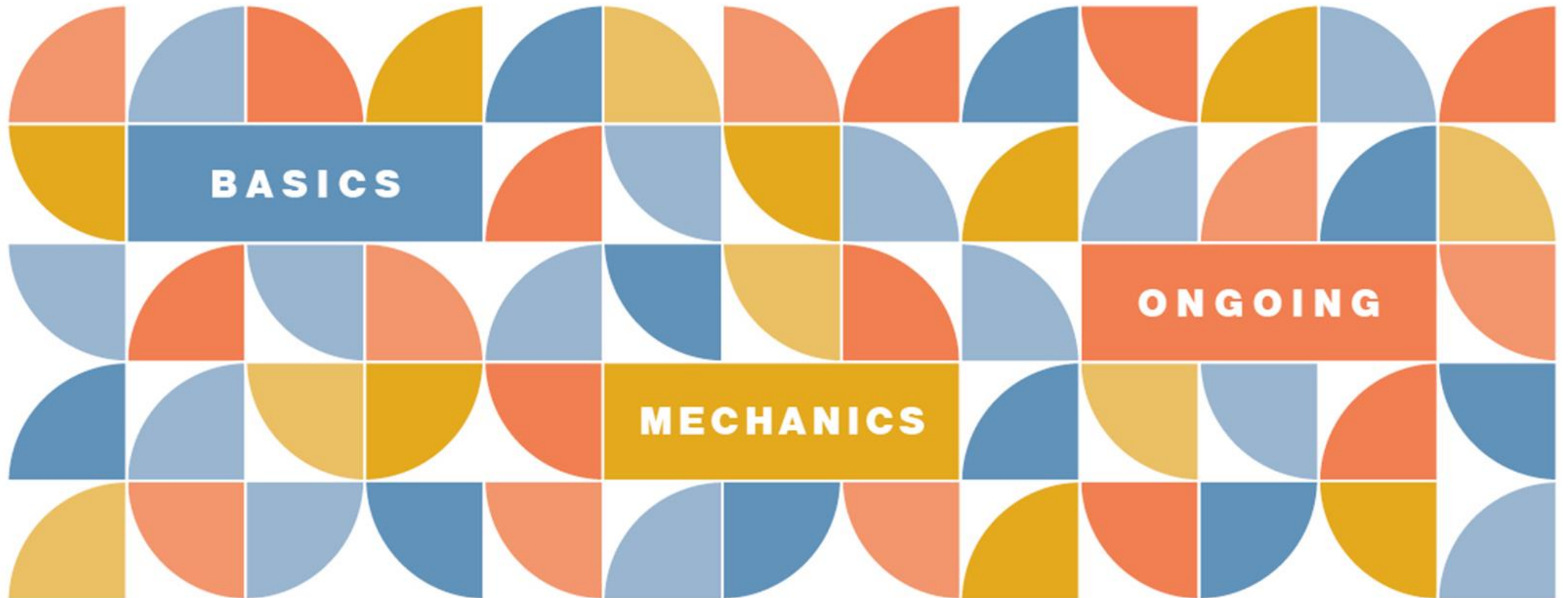


# MUNICIPAL DEBT ESSENTIALS



# Issuer's Role in Planning a Debt Issuance

*Nikolai J. Sklaroff, Capital Finance Director, San Francisco Public Utilities Commission*

*Sarah Hollenbeck, Managing Director, PFM Financial Advisors LLC*



# Section 1: Key Financial Policies and Practices



# Why Have a Debt Policy?

- Creates tool to reconcile capital needs with available resources
- Establishes basic parameters and principles of issuer's approach to borrowing
  - When, why, how debt can be issued
  - Promotes discipline in the decision-making process
- Educates stakeholders
  - Exposes elected officials, non-finance staff, and the public to fundamental elements of the debt issuance process
  - Provides an opportunity to discuss policy elements
  - Enhances credibility and transparency, and ensures that there is a common understanding among elected officials and staff regarding the approach to debt financing
- Favorably viewed by rating agencies
- Required by State law



# CA Government Code Section 8855<sup>1</sup>

- SB 1029, which became effective Jan. 1, 2017, requires local issuers to adopt a debt policy prior to the issuance of debt
- A local debt policy must include the following:
  - (A) The purposes for which the debt proceeds may be used
  - (B) The types of debt that may be issued
  - (C) The relationship of the debt to, and integration with, the issuer's capital improvement program or budget, if applicable
  - (D) Policy goals related to the issuer's planning goals and objectives
  - (E) The internal control procedures that the issuer has implemented, or will implement, to ensure that the proceeds of the proposed debt issuance will be directed to the intended use



# Benefits of a Strong Debt Policy

- Board approved policies encourage consistency and provide protection against political expediency
- Regulators and rating agencies favor written policies adopted by the governing body
  - Signals to rating agencies and investors that a government is well managed
- GFOA Best Practice – “A debt management policy should improve the quality of decisions, articulate policy goals, provide guidelines for the structure of debt issuance, and demonstrate a commitment to long-term capital and financial planning.”<sup>2</sup>

# Elements of a Debt Policy

- Minimum requirements set forth in Gov't Code Section 8855
- Varying approaches to level of detail
  - Policies may be 4 pages long, or 24 pages long...
    - Pros and cons to having a more specific, prescriptive policy vs. a more general policy
    - Per GFOA: “Debt management policies should be written with attention to the issuer's specific needs and available financing options and are typically *implemented through more specific operating procedures*”<sup>3</sup>
- Common elements of a debt policy include:
  - Debt Objectives
  - Debt Capacity
  - Debt Issuance Process
  - Debt Instruments
  - Debt Structure
  - Refunding Parameters



# Debt Objectives

- How will the agency determine whether to issue debt?
  - Integration of capital planning and debt financing activities
  - Funding options, including debt, evaluated on case-by-case basis
- Type of debt authorized and the authorization process
- Striking the balance
  - Current resources (pay-as-you-go) vs. future resources (debt)
  - Current users vs. future users (generational equity)
- Limits on indebtedness
  - Imposed by State and/or federal law
  - Affordability constraints
  - Limits imposed by parity debt covenants





# Debt Instruments

- Direct debt
  - General Obligation Bonds
  - Appropriation debt (e.g., lease revenue obligations)
- Revenue debt
- Short-term borrowings – TRANs, Bond Anticipation Notes (BANs), etc.
- Variations on the theme
  - Fixed-rate and variable-rate
  - Publicly offered and privately placed
- Other debt to consider
  - Conduit Debt
  - State and Federal subsidized borrowing programs
  - Interfund Borrowing



# Debt Structure

- Term
  - Should not exceed useful life of asset
  - More rapid amortization creates future capacity
- Repayment pattern
  - Level debt service
  - Escalating debt service
  - Wrapping around existing debt
- Deferral of principal
  - Capitalized interest until completion of project
- Redemption features
- Variable vs. fixed interest rates



# Debt Issuance Process

- Types of offerings - public offering vs. private placement - and selection of method of sale
- Selection of professional team
- Credit ratings
- Credit enhancement
- Disclosure – primary and continuing
  - Disclosure policies and practices may be addressed in a separate standalone policy or as part of a debt policy



# Refunding Parameters

- Refundings usually undertaken for savings, but can also be used to restructure debt or change legal covenants
- Debt policies typically include a Net Present Value savings minimum for refundings
  - Between 3% and 5% minimum NPV savings is common
  - Generally measured on an aggregate basis
    - Individual maturities may not meet threshold but still be desirable to include in refunding
- Tax-exempt advance refundings no longer permitted,<sup>4</sup> but there are still alternative techniques such as forward delivery and taxable refunding
  - Minimum savings policy would still apply
  - Some issuers target higher savings to compensate for additional risk



# Other Key Financial Policies and Practices

- Reserve Policy
- Pension Funding Policy (as applicable)
- Capital Improvement Plan
- Multi-year Financial Planning

*“When evaluating a credit, we seek to understand the probable impact of fund balance policies, multi-year financial or capital planning, liquidity management, accuracy of budget forecasts, and willingness to make mid-year adjustments.”*

*Moody's Rating Methodology, "US Local Government General Obligation Debt," 1/26/21*



# S&P's Financial Management Assessment

- S&P's Financial Management Assessment evaluates **“management practices and policies in the seven areas most likely to affect credit quality”** <sup>5</sup>
  - Revenue and expenditure assumptions
  - Budget amendments and updates
  - Long term financial planning
  - Long term capital planning
  - Investment management policies
  - Debt management policies
  - Reserve and liquidity policies



# Favorable Management Practices

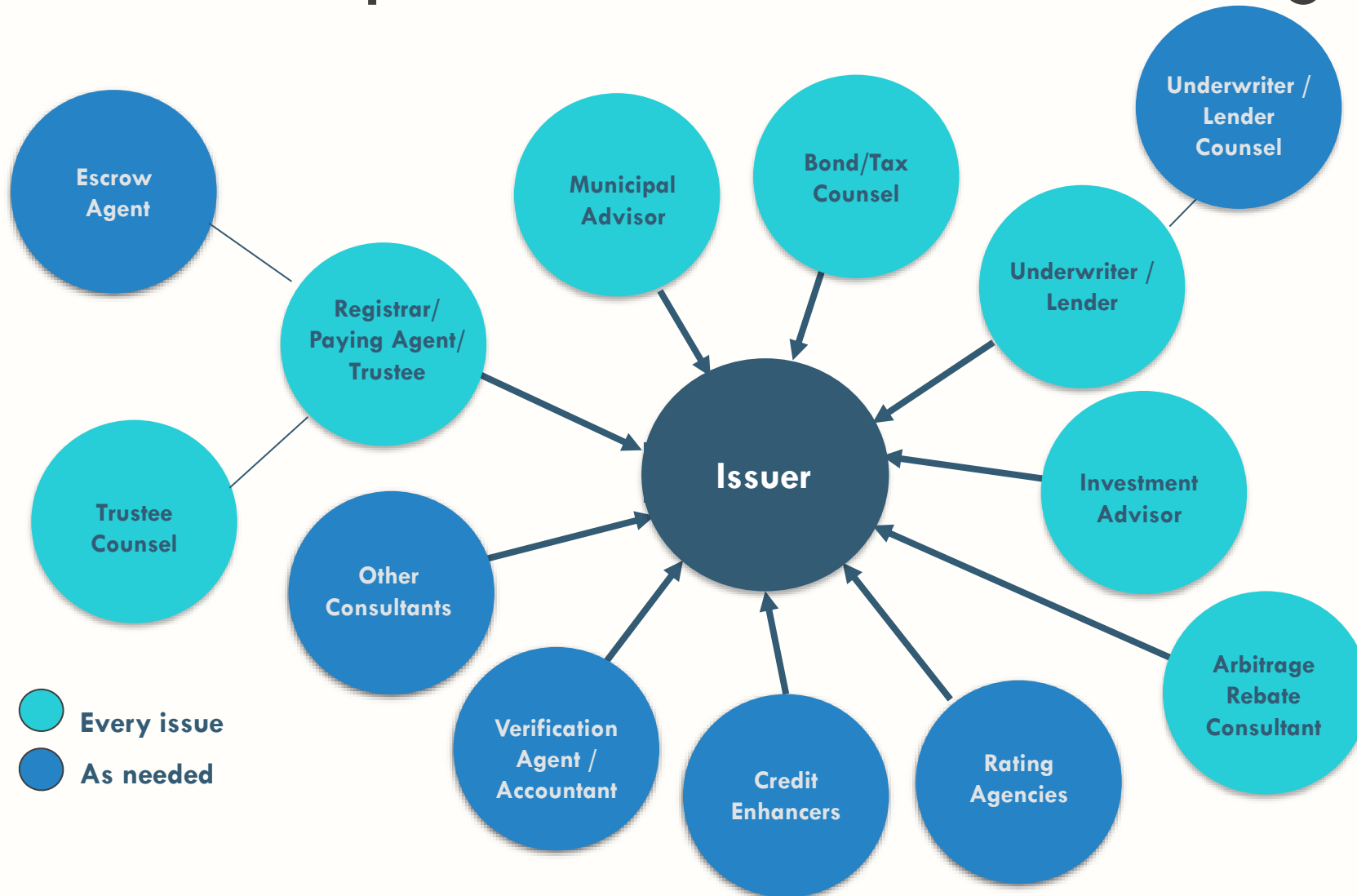
- ✓ Established budget reserve
- ✓ Regular economic and revenue reviews
- ✓ Prioritized spending plans and established contingency plans
- ✓ Formal capital improvement plan
- ✓ Long-term planning
- ✓ Debt affordability model
- ✓ Pay-as-you-go financing
- ✓ Multi-year financial plan
- ✓ Effective management and information systems
- ✓ Well-defined and coordinated economic development plan



# Section 2: Selection of Financing Team



# Typical Participants in a Bond Financing Team





# Issuer and Their Counsel

- Issuer – Issuing body with the authority to issue bonds
- Bond Counsel – Every bond issue must be reviewed by a lawyer or law firm
  - The legal opinion is authorization of the debt and covers two main issues:
    - Ensures that the bonds are legal, valid, and binding obligations of the issuer
    - Verifies the tax status of the debt (if interest is exempt from federal, state, or local taxes)
- Other Counsel – may include special tax counsel, disclosure counsel, and issuer's counsel. Such special counsel may be necessary for specific issues that are more complex and diverse than standard offerings



# Municipal Advisor

- Advises the Issuer throughout the planning and bond issuance process
  - Provides advice on all aspects of process including development of the plan of finance, identifying financing options, structuring the debt, determining the method of sale, obtaining ratings, and supporting the issuer in pricing negotiations
- Acts as the Issuer's fiduciary



# Underwriter/Underwriter's Counsel

- Underwriter – Securities dealer who purchases bonds from the issuer and resells them to investors
  - In doing so, the Underwriter assumes a financial risk and expects to make a profit on the transaction
  - The Underwriter does not have a fiduciary responsibility to the issuer, but rather works both for the Issuer and for the investors
- Underwriter's Counsel – Represents the underwriter(s) in a negotiated issue
  - Performs a due diligence review of the issuer ensuring that the issuer's financial condition and all other pertinent information are accurately disclosed



# Trustee/Paying Agent

- Trustee – Financial institution that is given fiduciary powers by a bond issuer to enforce the terms of a bond indenture.
  - Ensures that bond payments are made as scheduled, and protects the interests of the bondholders if the issuer defaults
- Paying Agent – Agent who accepts payments from the issuer of a security and distributes the payments to the holders of the security



# Escrow and Verification Agents

- Roles specific to refunding bonds:
  - Escrow Agent – Serves as custodian of the funds and holds securities to pay debt service on refunded bonds
  - Verification Agent – Verifies cash flow sufficiency to the call date of the escrowed securities



# Other Consultants

- Engineering Consultants
- Feasibility Consultants
- Rate Consultants
- Special Tax Consultants
- Arbitrage Rebate Consultant
- Printer/Document Hosting Platforms



# Rating Agencies and Credit Enhancement

- Rating agencies rate municipal bond issuers in order to categorize their credit worthiness and likelihood of default
  - Credit ratings play a significant role in broadening the investor base for an issuer and generally having a strong rating enhances an issuer's access to investors, helping to lower their cost of capital
- Credit Enhancement – Supports an issuer's credit in exchange for a fee or a premium, in the form of enhancement such as bond insurance or a letter of credit



# Selecting the Financing Team

**Procurement process**

**Decision makers**

**Formal approval**

**Method of Sale**

**Requests for Qualifications, Requests for Proposals, Mini RFPs**

**Interviews**

**Individual selections, pools**

**DEIB Considerations**

**What to consider**

**What to avoid**



# Section 3: Creating the Financing Plan



# Plan of Finance

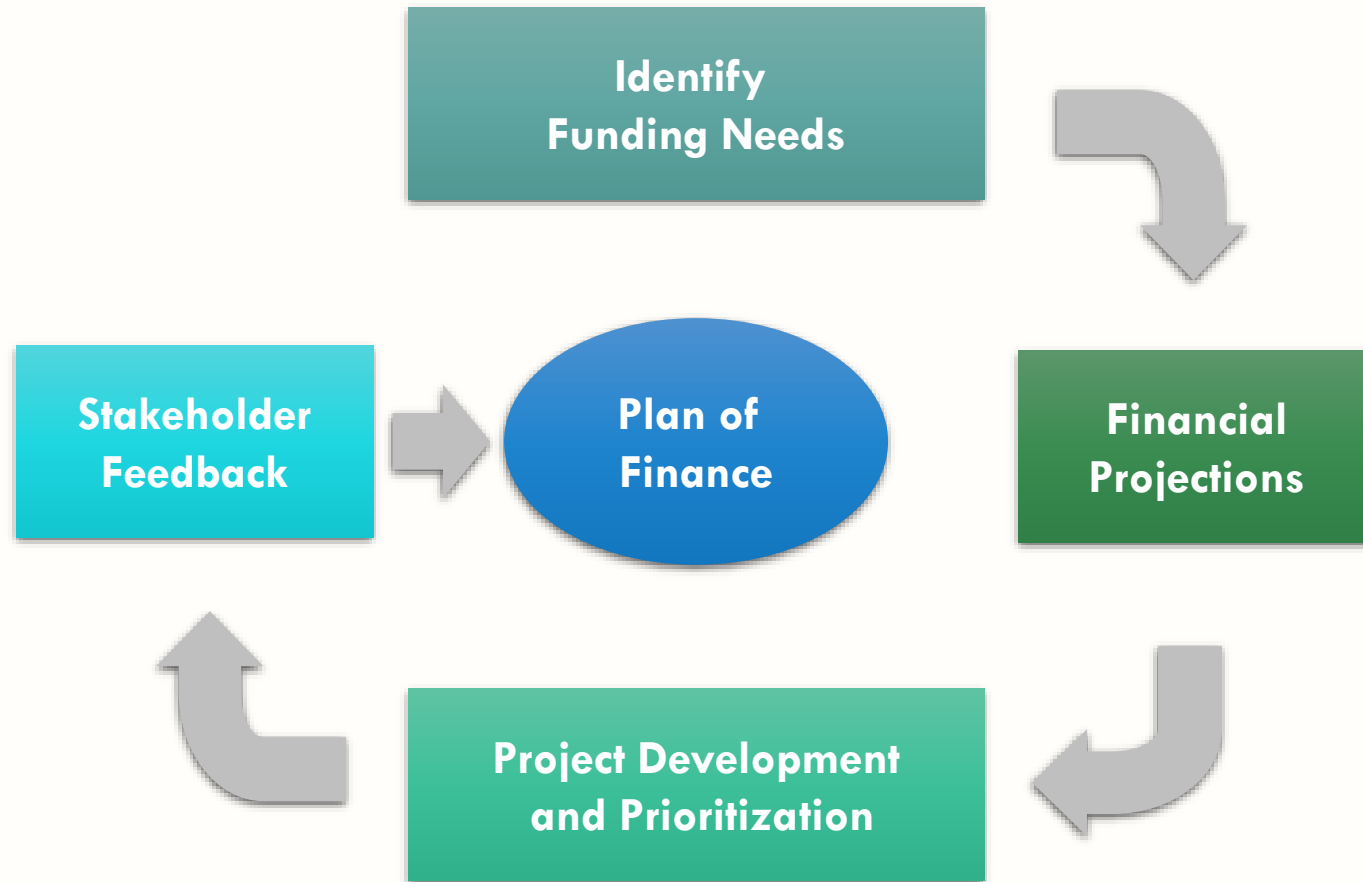
- What is it?
  - A long-term planning tool to balance scarce resources among ongoing expenditures and capital needs
- What does it do?
  - Identifies capital needs and available sources of revenue to fund them
    - Helps control revenue streams/expenditures and develops a rate-setting/budgeting plan to meet funding objectives
  - Determines the feasibility of various funding options
    - Helps develop strategies for minimizing borrowing costs over time



# Basic Options for Funding Capital Projects

- **Pay As You Go: Utilize reserves or ongoing revenues**
  - Requires ample cash reserves and manageable capital program
  - Policy objectives may favor
- **Beg: Secure state or federal grants or low-interest loans**
  - Requires available funding on attractive terms
  - Timing uncertainties and program restrictions can offset subsidy benefit
- **Borrow: Issue debt**
  - Spreads cost over useful life of asset, current and future users pay
  - Can accelerate phased projects, capture cost savings
  - Preserves cash reserves for other things

# Developing a Plan of Finance





# Key Elements of a Plan of Finance

- **Projects**
  - Capital improvement plan that identifies and prioritizes projects
  - Reliable cost estimates that incorporate future capital costs and O&M of the project to be financed
- **Revenue**
  - Realistic revenue forecasts
  - Address the longevity, availability, reliability and flexibility of future revenue sources
- **Financial Policies and Targets**
  - Debt Policy
  - Coverage target
  - Ratings target
  - Tax/Fee target
  - Reserve target
- **Legal Framework**
  - Authorization to levy taxes or fees
  - Authorization to issue debt
  - Tax law governing the issuance of debt and use of proceeds



# Plan of Finance Must Be Flexible

- A plan of finance is not meant to remain static, but should be revisited and be flexible
  - It should allow for continuous feedback and should be responsive to the needs of the various stakeholders
- It should be flexible, in order to respond to any unforeseen circumstances or capitalize on any unique market opportunities
  - Rate increases approved or not
  - New environmental/legislative mandates
  - New funding programs
  - New management/elected officials
  - Economic environment changes
  - Tax law changes
  - Credit rating downgrade/upgrade



# Section 4: Debt Capacity





# Constraints on Debt Capacity

- Restrictions imposed by law
- Restrictions imposed by contract
- Restrictions influenced by rating agency and investor reaction
- Restrictions imposed by affordability and fiscal discipline

# Restrictions Imposed by Law

- The State Constitution limits “indebtedness” <sup>6</sup>
  - “Indebtedness” (General Obligation Bonds - paid out of property taxes, require 2/3 vote; schools can issue GOs with 55% approval)
  - Statutory restrictions on the amount of debt as a percent of assessed valuation
- Various court decisions have carved out key exceptions for leases, revenue bonds paid out of “special funds,” and obligations imposed by law
- More significant than the restrictions on debt are the restrictions on the revenues that can be raised to repay debt
  - Proposition 13 (1978) limited property taxes and instituted the need for voters to approve special taxes <sup>7</sup>
  - Proposition 218 (1996) closed judicially-defined exceptions to Prop 13, requiring votes for all taxes, and restricted fees and assessments <sup>8</sup>

# Restrictions Imposed by Contract

- Many bond and/or loan documents impose limits on additional “parity” debt: the Additional Bonds Test (ABT)
  - An ABT requires the issuer to meet a minimum coverage level in order to incur additional debt secured by the same revenues at the same lien level
  - Typically, limited restrictions on subordinate lien obligations
- Established based on feedback from rating agencies, bond insurers, investors
  - Can affect rating and insurance premium (if any)
  - 1.25 coverage of debt service by “net revenues” (after payment of O&M expenses) is common for revenue bonds

# Rating Considerations

- Moody's, Standard & Poor's, Fitch, and Kroll publish rating methodologies for all types of debt they rate
  - How they evaluate debt metrics factors into their ratings
  - Certain key ratios are associated with specific rating levels
- Helpful in understanding expected credit impacts of decision to issue debt
  - Credit ratings are only one factor in making a public policy decision

S&P Global Ratings <sup>9</sup>

Total Governmental Funds Debt Service as % of Total Governmental Funds Expenditures		Debt & Contingent Liabilities (10% of Indicative Rating)				
		Net Direct Debt as % of Total Governmental Funds Revenue				
		< 30	30 to 60	60 to 120	120 to 180	≥ 180
< 8	1	2	3	4	5	
8 to 15	2	3	4	4	5	
15 to 25	3	4	5	5	5	
25 to 35	4	4	5	5	5	
≥ 35	4	5	5	5	5	

Moody's <sup>10</sup>

Factor 4: Debt/Pensions (20%)

	Aaa	Aa	A	Baa	Ba	B & Below	Weight
Net Direct Debt / Full Value	< 0.75%	0.75% ≤ n < 1.75%	1.75% ≤ n < 4%	4% ≤ n < 10%	10% ≤ n < 15%	> 15%	5%
Net Direct Debt / Operating Revenues	< 0.33x	0.33x ≤ n < 0.67x	0.67x ≤ n < 3x	3x ≤ n < 5x	5x ≤ n < 7x	> 7x	5%



# Affordability and Fiscal Constraints

- Appropriation debt (lease revenue bonds, certificates of participation) is probably the most important for defining limits
  - Usually no new revenue source, unlike GO Bonds
  - Must be able to afford debt payments along with all other costs supported by the pledged revenues (typically the General Fund)
  - Rating metrics less likely to be a real constraint in this context than the ability to pay
- Total debt
  - Some agencies combine voter-approved and appropriation debt
  - Overlapping debt of other agencies is virtually impossible to control, but may be a factor in ratings



# Key Considerations for Issuing Bonds

- Issuer's Objectives
  - What kind of projects are planned? When are funds needed?
  - What revenues are available - or could be raised - to repay debt?
  - How much payment flexibility does the issuer need?
- Legal and Policy Constraints
  - What kind of debt can be issued?
  - What kind of approvals by legislative body or electorate are required?
  - Are there any other policy constraints to consider?
- Can you afford the debt?
  - Adequate revenues?
  - Adequate reserves?
  - Adequate coverage cushion?
  - What could go wrong?



# Section 5: The Rating Process

# Rating Agencies

- Who are they, what do they do, and how do they do it?

The logo for S&P Global Ratings, featuring the text "S&P Global" in red and "Ratings" in grey below it, with a thin horizontal line above "S&P Global".

The logo for KBRA, consisting of a yellow square with a black triangle pointing up and to the right, followed by the letters "KBRA" in white on a black rectangular background.

The logo for Moody's, featuring the word "MOODY'S" in a blue, serif font.





The logo for Fitch Ratings, featuring the word "Fitch" in red and "Ratings" in grey, both in a serif font.

- Rating Methodologies: Ratings are assessed and assigned in accordance with published rating methodologies <sup>11</sup>










# Rating Examples: SFPUC

## SFPUC Ratings\*

-  Water Enterprise
-  Wastewater Enterprise
-  Power Enterprise
-  CleanPowerSF

\*As of June 30, 2022

		MOODY'S	STANDARD & POOR'S	FITCH	KBRA	THE RATINGS MAP*
LONG-TERM RATINGS	INVESTMENT GRADE	Aaa	AAA	AAA	AAA	High Grade
		Aa1	AA+	AA+	AA+	
		  Aa2	  AA	AA	AA	
		Aa3	 AA-	 AA-	AA-	
		A1	A+	A+	A+	
		 A2	A	A	A	Upper Medium Grade
		A3	A-	A-	A-	
		Baa1	BBB+	BBB+	BBB+	
		Baa2	BBB	BBB	BBB	Lower Medium Grade
		Baa3	BBB-	BBB-	BBB-	
	NON-INVESTMENT GRADE	Ba1	BB+	BB+	BB+	
		Ba2	BB	BB	BB	
		Ba3	BB-	BB-	BB-	
		B1	B+	B+	B+	
		B2	B	B	B	Highly Speculative
		B3	B-	B-	B-	
		Caa1	CCC+	CCC	CCC+	
		Caa2	CCC		CCC	Extremely Speculative
		Caa3	CCC-		CCC-	Default
		Ca	CC		CC	
			C			
	D	DDD	D			
		DD				
		D				

Source of table: <https://www.treasurer.ca.gov/cdiac/debtpubs/financing-guide.pdf>

# Rating Agencies Assign Outlooks

- Direction – Positive, Stable, Negative

As of June 30, 2022

	Moody's		Standard & Poor's		Fitch	
	Long-Term	Outlook	Long-Term	Outlook	Long-Term	Outlook
<b>Water Enterprise</b>	Aa2	Stable	AA-	Stable	--	--
<b>Wastewater Enterprise</b>	Aa2	Stable	AA	Stable	--	--
<b>Power Enterprise</b>	--	--	AA	Stable	AA-	Stable
<b>CleanPowerSF*</b>	A2	Stable	--	--	--	--

Source: moodys.com, spglobal.com, and fitchratings.com

*\*On December 9, 2020, Moody's Investors Service, ("Moody's") assigned a first-time A2 Issuer Rating to CleanPowerSF, with a stable outlook.*



# The Typical Rating Process, Step-by-Step

- Determine how many ratings are needed
- Determine format for meetings with rating analysts: on-site vs. remote
- Develop the credit presentation
- Send advance information to rating analysts
- Hold meetings and respond to follow up requests as needed
- Credit Committee assigns the rating
- Ratings are published with a report explaining rationale
- On-going surveillance



# Determining How Many and Which Rating(s)

- Market considerations / size of transaction
- Historic relationships
- Differences in criteria and market recognition
- Preliminary credit determinations based on scorecards

# Scorecards and Metrics

<b>Factor</b>	<b>Factor Weighting</b>	<b>Sub-factor</b>	<b>Sub-factor Weighting</b>
System Characteristics	30%	Asset Condition (Remaining Useful Life)	10%
		System Size (O&M)	7.5%
		Service Area Wealth (Median Family Income)	12.5%
Financial Strength	40%	Annual Debt Service Coverage	15%
		Days Cash on Hand	15%
		Debt to Operating Revenues	10%
Management	20%	Rate Management	10%
		Regulatory Compliance and Capital Planning	10%
Legal Provisions	10%	Rate Covenant	5%
		Debt Service Reserve Requirement	5%
<b>Total</b>	<b>100%</b>	<b>Total</b>	<b>100%</b>

Source: Moody's Investors Service "Rating Methodology, US Municipal Utility Revenue Debt" April 2022

# Using Published Medians

- Municipal Advisors and Underwriters can use published rating medians to guide understanding of likely rating

		Water + Wastewater Aa Rated Medians	SFPUC			
			Water		Wastewater	
			FY 2020	FY 2021	FY 2020	FY 2021
Annual Debt Service Coverage	15%	2.00x - 1.70x	1.61	1.21	2.41	1.79
Days Cash on Hand	15%	150 - 35 days	618	570	635	454
Debt to Operating Revenues	10%	2.00x - 4.00x	7.75	8.29	4.76	4.99
Rate Covenant	5%	1.30x - 1.20x	1.25	1.25	1.25	1.25
Debt Service Reserve Requirement	5%	Funded Reserve	No DSRF	No DSRF	No DSRF	No DSRF
Maximum Annual Debt Service Coverage			1.24	0.93	0.47	0.32

Source: Moody's Investors Service Medians and Montague DeRose & Associates

# Understanding How Peers Compare

Utility	System	Ratings (Moody's, S&P, Fitch)	Senior Lien Bond Covenant DSC Minimum	Internal Policy/Financial Planning DSC Target
City and County of Denver (Denver Water)	Water	Aaa/AAA/AAA	1.10	1.80
City of San Diego, CA	Water	Aa2/NR/AA	1.20	1.50
City of Seattle, WA*	Water	Aaa/AA+/NR	1.25	1.70
District of Columbia Water and Sewer Authority	Water	Aa1/AA+/AA	1.20	1.40
East Bay Municipal Utility District	Water	Aaa/AAA/AA+	1.10	1.60
East Bay Municipal Utility District	Wastewater	Aa1/AAA/AA+	1.10	1.60
Los Angeles Department of Water and Power*	Water	Aa2/AA+/AA	1.00	1.70
New York City Municipal Water Finance Authority*	Water and Sewer	Aa1/AAA/AA+	1.15	1.15
San Diego County Water Authority	Water	Aa2/AAA/AA+	1.20	1.50
<b>San Francisco Public Utilities Commission</b>	<b>Water</b>	<b>Aa2/AA-/NR</b>	<b>1.00 (Current) 1.25 (Indenture)</b>	<b>1.10 (Current) 1.35 (Indenture)</b>
Santa Clara Valley Water District	Water	Aa1/AA-/AA+	1.25	2.00

Source: moodys.com, spglobal.com, fitchratings.com, and Montague DeRose & Associates



# Presenting the Credit

- Meetings format: on-site vs. remote
  - Nature of the credit or project – would it be better understood a tour
  - Availability of rating analysts (locally based vs. out of town)
- Developing the credit presentation
  - What is the purpose?
  - What is the message?
  - What should the presentation contain?
  - Who should be included and who should do the talking?
- How to prepare for the meeting
  - Provide materials to analysts in advance
    - Prior year and current ACFRs, budgets, CIP, key financial policies, bond documents
  - Rehearse the presentation





# What Happens After the Meeting?

- Follow-through is important
  - Respond promptly and thoroughly to questions and follow-up requests
  - Yes, you are being graded!
- Behind the curtain: The Credit Committee meeting
- Reviewing the draft rating report
  - Do's and Don'ts
- Ongoing rating surveillance



# Section 6: Working with the Governing Body



# Working with the Governing Body

- Approve Debt and Financial Policies
- Approve issuance of RFP for financing team members
- Approve selection of team
- Approve CIP
- Staff report
  - Important communication tool
  - Good faith estimates per State law
- Approve plan of finance and debt issuance



# Considerations

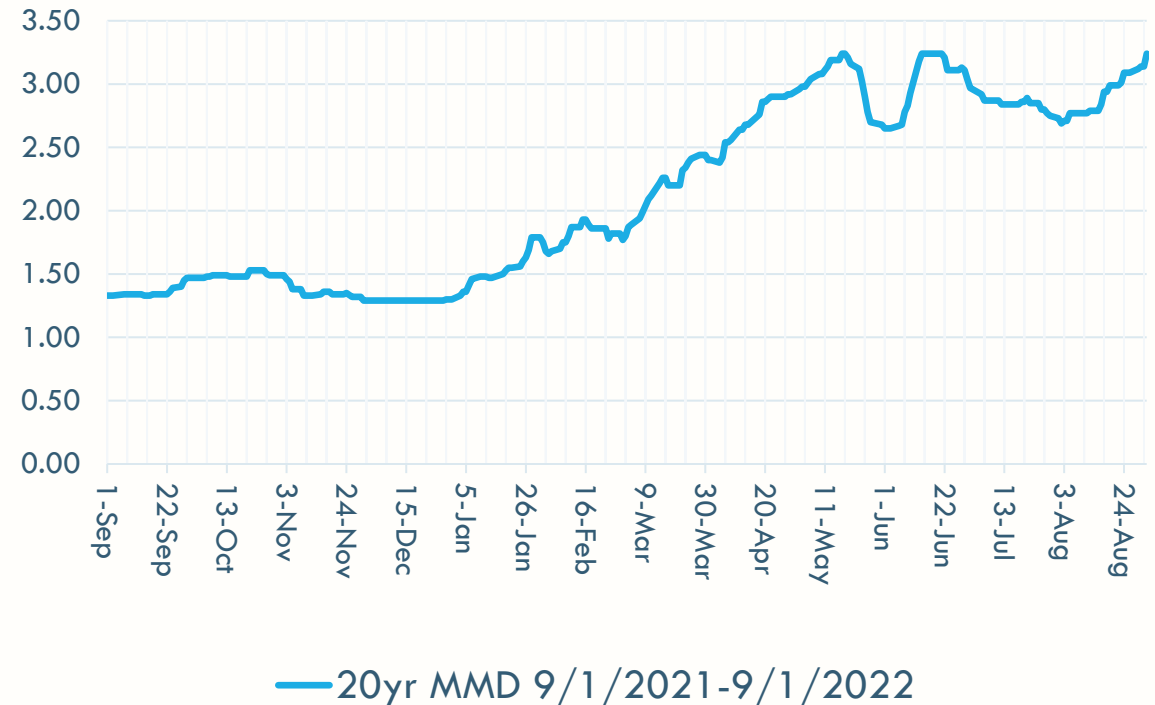
- Educating decision makers
- Understanding internal process AND understanding market
- Brown Act (California Government Code sections 54950-54963)
- Good Faith Estimates vs. Estimates vs. Results
- Plain English versus acronyms and jargon
- Project issues vs. Financing issues



# Section 7: Sale Timing Considerations

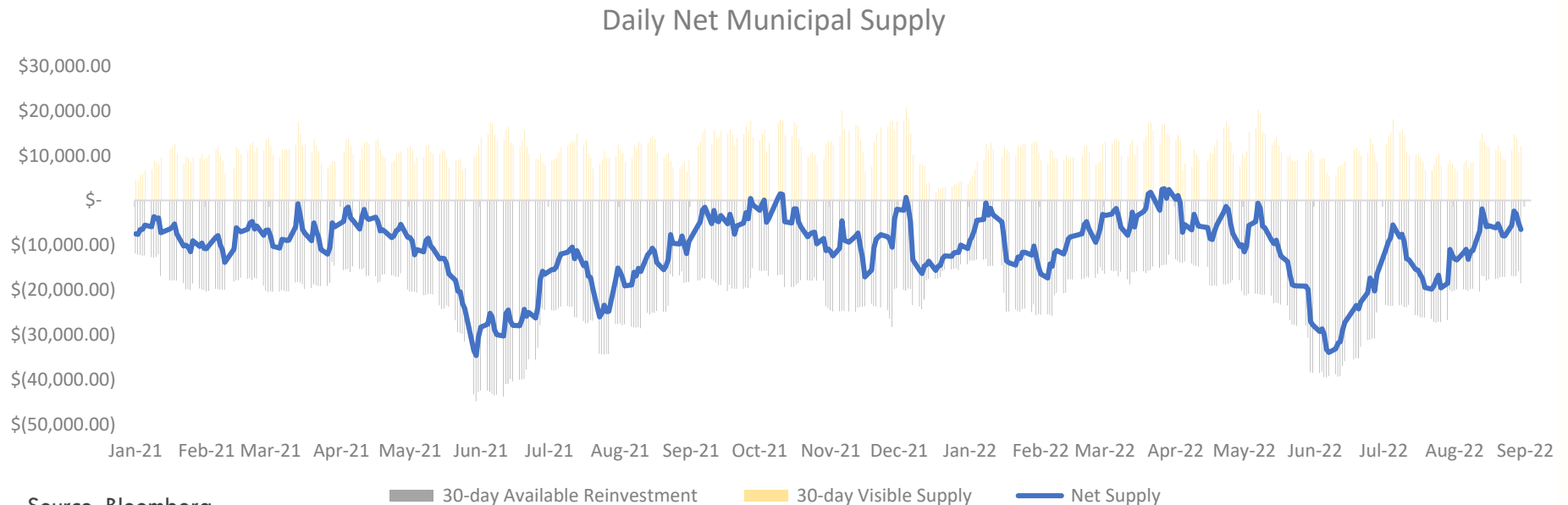
# Sale Timing Considerations – Internal

- Generally municipal issuers do not and should not try to time the market
  - Driving consideration for when to issue is project readiness and need for funds
- Within that context, issuers may also think about:
  - Financial disclosure timing
    - When available
    - Factors driving uncertainty in disclosure
  - Elected body considerations
    - Elections
    - Vacation periods



# Sale Timing Considerations – External

- Market considerations
  - Tax season (lack of investor cash)
  - Large coupon redemption months (lots of investor cash)
  - Fed meetings – especially important now with uncertainty and market volatility
  - Economic data releases





Questions?



# Contacts

Nikolai J. Sklaroff  
Capital Finance Director  
San Francisco Public Utilities Commission  
(415) 551-2973  
nsklaroff@sfwater.org



Sarah Hollenbeck  
Managing Director  
PFM Financial Advisors LLC  
(415) 269-7237  
hollenbecks@pfm.com



# Sources

<sup>1</sup> [https://leginfo.legislature.ca.gov/faces/codes\\_displaySection.xhtml?sectionNum=8855.&highlight=true&lawCode=GOV&keyword=8855](https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?sectionNum=8855.&highlight=true&lawCode=GOV&keyword=8855)

<sup>2</sup> <https://www.gfoa.org/materials/debt-management-policy>

<sup>3</sup> <https://www.gfoa.org/materials/debt-management-policy>

<sup>4</sup> “Municipal Securities Provisions of H.R. 1, the ‘Tax Cuts and Jobs Act,’” <https://www.msrb.org/Market-Topics/~media/20AB21E90C3E4103885B4E8670B1F1E8.ashx>

<sup>5</sup> S&P Criteria: U.S. Public Finance: Financial Management Assessment, June 27, 2006,  
<https://disclosure.spglobal.com/ratings/en/regulatory/article/-/view/sourceld/3731111>

<sup>6</sup> California Constitution Article XVI - Public Finance, Section 18.

<sup>7</sup> California Constitution Article XIII A - Tax Limitation, Section 1.

<sup>8</sup> California Constitution Article XIII C - Voter Approval for Local Tax Levies; California Constitution Article XIII D - Assessment and Property-Related Fee Reform

<sup>9</sup> “U.S. Local Governments General Obligation Ratings: Methodology And Assumptions, Sept. 12, 2013,”  
<https://disclosure.spglobal.com/ratings/en/regulatory/article/-/view/type/HTML/id/2735313>

<sup>10</sup> Rating Methodology: “US Local Government General Obligation Debt,” Jan. 26, 2021, <https://ratings.moodys.com/api/rmc-documents/70015>

<sup>11</sup> <https://www.kbra.com/understanding-ratings/methodologies/public-finance/in-use>  
<https://disclosure.spglobal.com/ratings/en/regulatory/ratings-criteria/-/articles/criteria/governments/filter/us-public-finance>  
<https://ratings.moodys.com/rating-methodologies>  
<https://www.fitchratings.com/criteria>



15-MINUTE

**BREAK**

## Debt Structuring & Method of Sale

*Brad Rockabrand, Eide Bailly, LLP*

*Jeff Land, Oppenheimer & Co. Inc.*

*Dmitry Semenov, Ridgeline Municipal Strategies, LLC*



# Legal Disclaimer and Disclosures

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# Presenters



Brad Rockabrand  
Partner  
Eide Bailly, LLP



Jeff Land  
Executive Director  
Oppenheimer & Co. Inc.



Dmitry Semenov  
Principal  
Ridgeline Municipal Strategies, LLC





# Topics

1. Current market environment
2. Financing team roles and responsibilities
3. Methods of sale and types of debt
4. Sizing the issue and debt service
5. Yield curve – how it informs the conversation
6. Reserves and insurance considerations
7. Conclusion and questions



# Introduction

- Purpose and necessity of debt
- Organizational type (Governmental, Enterprise or Other)
- Long-term strategic goals of organization
- Debt policy (SB 1029)
- Current debt burden and debt capacity
- Long-term financial planning
- Intergenerational equity considerations
- Fluid market conditions



# Current Market Environment

- Interest Rates have continued to rise in response to actions by the Federal Reserve to fight persistent inflation.
- Unexpectedly strong recent economic data has only strengthened the Federal Reserve's argument that the economy can continue to withstand these interest rate increases.
- The 10- and 30-Year MMD have risen by over 150 bps (1.5%) since the beginning of the year and over 40 bps (0.4%) in the month of August alone.

# Where We Are in the Process

- Decision to issue debt has been made:
  - Financing need established
  - Source of debt repayment identified
- It is now time to:
  - Assemble the financing team
  - Structure the debt



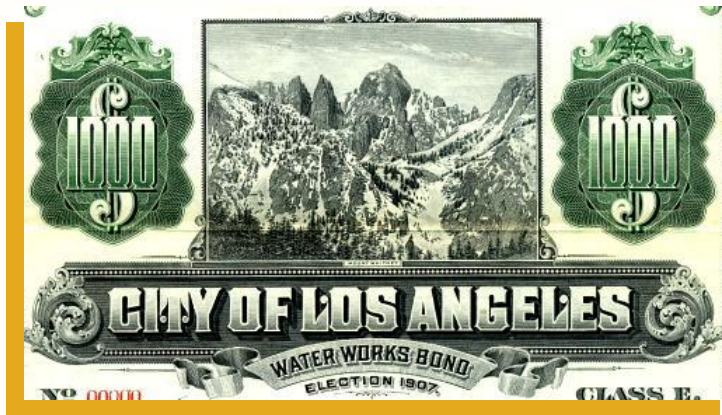
# Financing Team Roles & Responsibilities

- **Municipal Advisor**
  - Fiduciary to issuer
  - Must be licensed
  - Prepares financing plan
  - Makes financing recommendations
- **Broker-Dealer / Placement Agent**
  - Presents market info
  - Sources capital
  - Performs numerical analysis
  - Prices and sells bonds to investors
- **Bond Counsel / Disclosure Counsel**
  - Attorney to issuer
  - Prepares all legal documentation
  - Provides legal and tax opinions
  - In public sale, prepares Official Statement





# Types of Debt



Public Sale  
(Municipal Bonds)



Private Placement  
(Bank Loans)



Government Loans  
(USDA, SRF, WIFIA, etc.)

# Types of Municipal Debt

## Long-Term Debt

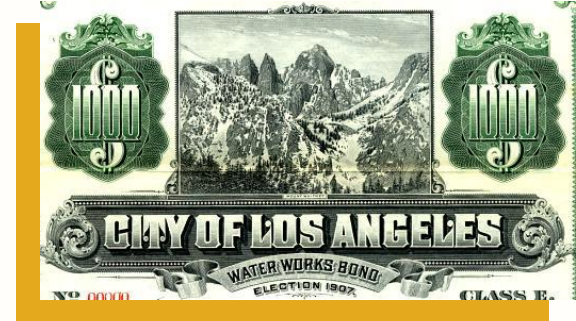
- General Obligation Bonds
- Revenue Bonds
- Lease Revenue Bonds
- Certificates of Participation
- Assessment & Special Tax Bonds
- Tax Allocation Bonds
- Sales Tax Bonds
- Pension Obligation Bonds

## Short-Term Debt

- Notes:
  - TANs
  - BANs
  - RANs
  - GANs
- Lines of Credit



# Method of Sale: Public Offering Overview



- Underwriter purchases bonds from Issuer, then sells to investors
- Preliminary Official Statement (POS) is produced and distributed to investors
  - Contains terms of financing and credit quality of issuer
  - Underwriter & Issuer are responsible for all due diligence
- Bonds typically rated by rating agency
  - Increased cost of issuance
  - Overall lower interest costs
- Typically 30-35 year maximum term



# Method of Sale: Private Placement Overview



- Became popular in the aftermath of Great Recession
- Financing provided by banks through RFP or negotiated sale process
- Specialized public finance divisions of banks
- Strong coverage by a dozen banks

# Public Sale vs Private Placement

	Public Sale	Private Placement
Credit Rating	Required	Not Required
Offering Statement	Required	Not Required
Due Diligence	Issuer, Counsel, Rating Agency	Bank
Time to Close	3+ Months (~45 days over private placement)	2+ Months
Issuer Involvement Level	High	Low to Moderate
Structure	Rigid and Standardized	More Flexible
Pricing	Lower Rate Higher Costs of Issuance (~2x of private placement)	Higher Rate Lower Costs of Issuance
Debt Service Reserve	More Often	Less Often
Relationship Pricing	Not available	Banks may offer lower rate with depository relationship



# Which Method is Appropriate?

	Public Sale	Private Placement
Credit Quality	Investment Grade, Limited “Story”	Investment Grade and “Storied” Credits
Size	Flexible	Up to \$30M
Term	Up to 40 years; typically 30	Up to 20 years
Rate Environment	Stable	Changing, Volatile
Interest Rate Lock	At pricing	Up to 60 days
Time Commitment at Issuance	Higher	Lower
Prepayment Flexibility	Limited without cost	Various Options
Draw Down Structure	Not available	Available
Continuing Disclosure	Strict	More Flexible Options

# Government Loans Overview



- Offered by various state and federal gov't agencies  
USDA, SRF, WIFIA, TIFIA, etc.
- Key advantages: subsidized rates, longer terms (up to 40 yrs), flexible repayment
- May come with grant funding for disadvantaged communities
- Key disadvantages: very long and complicated application process (6-18 months), competitive awards, could have high fees
- Make sure you understand covenant structure

# Sizing the Issue

- Bond proceeds uses vary and depend on debt and project type and financing plan.

Project / Construction Fund

Capitalized Interest Fund

Debt Service Reserve Fund

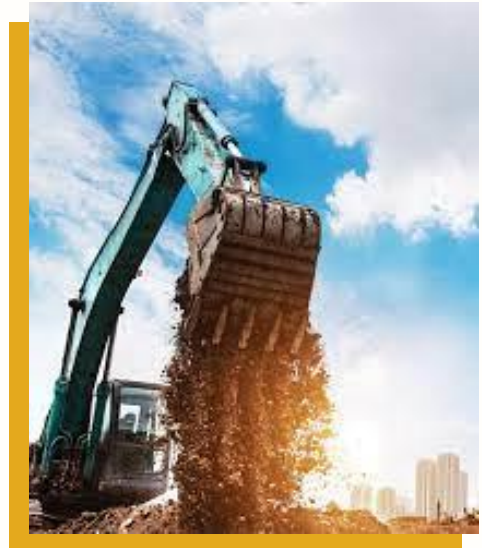
Costs of Issuance

Underwriter's Discount

Bond Insurance

# Project / Construction Fund

- Proceeds to fund project acquisition and/or construction
- Based on actual costs or detailed estimates
- Should include contingency funds
  - Gross funded – exact project amount
  - Net funded – less than project amount, made up with interest earnings during construction period





# Capitalized Interest Fund

- Proceeds to pay interest during project construction and/or revenue ramp-up / stabilization period
- Preserves issuer's reserves
- Increases overall interest costs



# Debt Service Reserve Fund

- Funds debt service payments in an event of payment default
- Provides additional security for investors
- Primarily used in revenue and land-secured bonds
- Recently used less, especially for higher-rated debt
- Tax code limits reserve fund to the lesser of:
  - Maximum annual debt service
  - 125% of average annual debt service
  - 10% of par amount
- Invested, with earnings used to help pay debt service
- May be replaced with Surety Policy



# Costs of Issuance

- Funds eligible issuance costs
  - Financing team fees
  - Trustee / paying agent
  - Rating agency fees
  - Special tax consultant
  - Title insurance
  - CDIAC fees
  - Appraisal, feasibility study, engineer's report
  - Other costs



# Underwriter's Discount

Underwriter's discount (compensation) includes 3 main components:

- Average Takedown
- Management Fee
- Expenses

Underwriter is compensated by underwriter's discount at closing.

- Underwriter pays for amount of bonds less underwriter's discount
- For Example:
  - \$10,000,000 PAR Amount
  - (\$85,000) Less Discount of \$8.50/Bond
  - \$9,915,000 Purchase price for Bonds

# Bond Insurance

- Bond Insurance guarantees the payment of principal and interest to bondholders.
- Insured bonds are assigned the credit rating of the bond insurer (AA rating, S&P).
- Can materially improve bond pricing and lessen the costs of borrowing to issuers.

Final Pricing Insurance Comparison	Series 2021A		Series 2021B	
	Uninsured	Insured	Uninsured	Insured
Bond Insurance Cost:	\$0.00	<b>\$11,295</b>	\$0.00	<b>\$9,219</b>
Arbitrage Yield/Interest Rate:	2.1123%	<b>2.0596%</b>	2.1071%	<b>2.0535%</b>
Total Debt Service:	\$7,079,593	<b>\$7,059,548</b>	\$5,779,122.50	<b>\$5,762,156</b>
Savings from Insurance:		<b>\$20,044</b>		<b>\$16,967</b>

# Premium and Discount Bond Structure

**Premium Bond** - A bond selling above its face value, typically with a coupon rate higher than it's yield

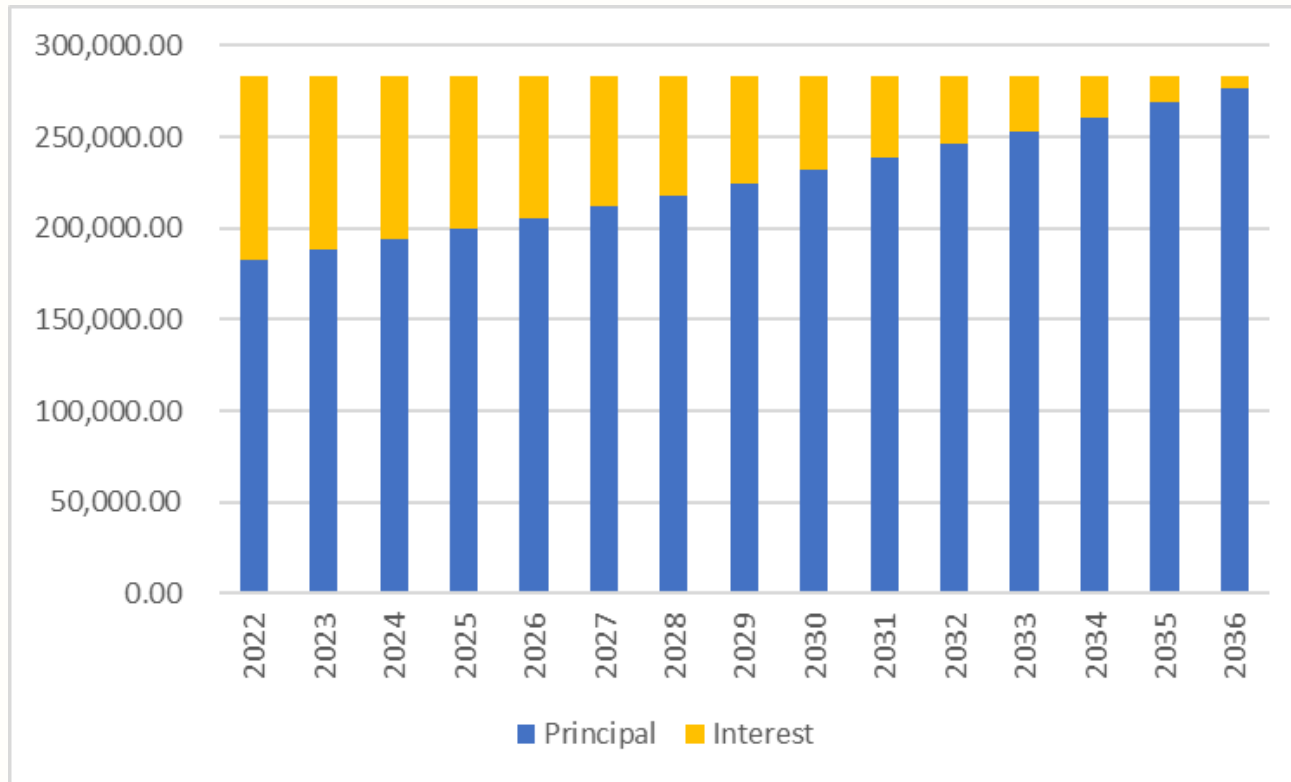
**Discount Bond** - A bond selling below its face value, typically with a coupon rate lower than it's yield

	Premium Bond Structure	Discount Bond Structure
Closing Date	10/7/2021	10/7/2021
Par Amount	9,050,000	10,095,000
Net Issue (Premium)	1,705,937	666,074
Cost of Issuance	255,937	261,074
Project Fund	10,500,000	10,500,000
True Interest Cost	2.66%	2.29%
All-In True Interest Cost	2.81%	2.43%
Final Maturity	5/1/2051	5/1/2051
Balance after 5/1/31 Payment	7,165,000	7,820,000
<b>TOTAL DEBT SERVICE</b>		
Average FY Debt Service	527,483	502,388
Total Debt Service	15,592,133	14,850,874

# Bond Sizing Example

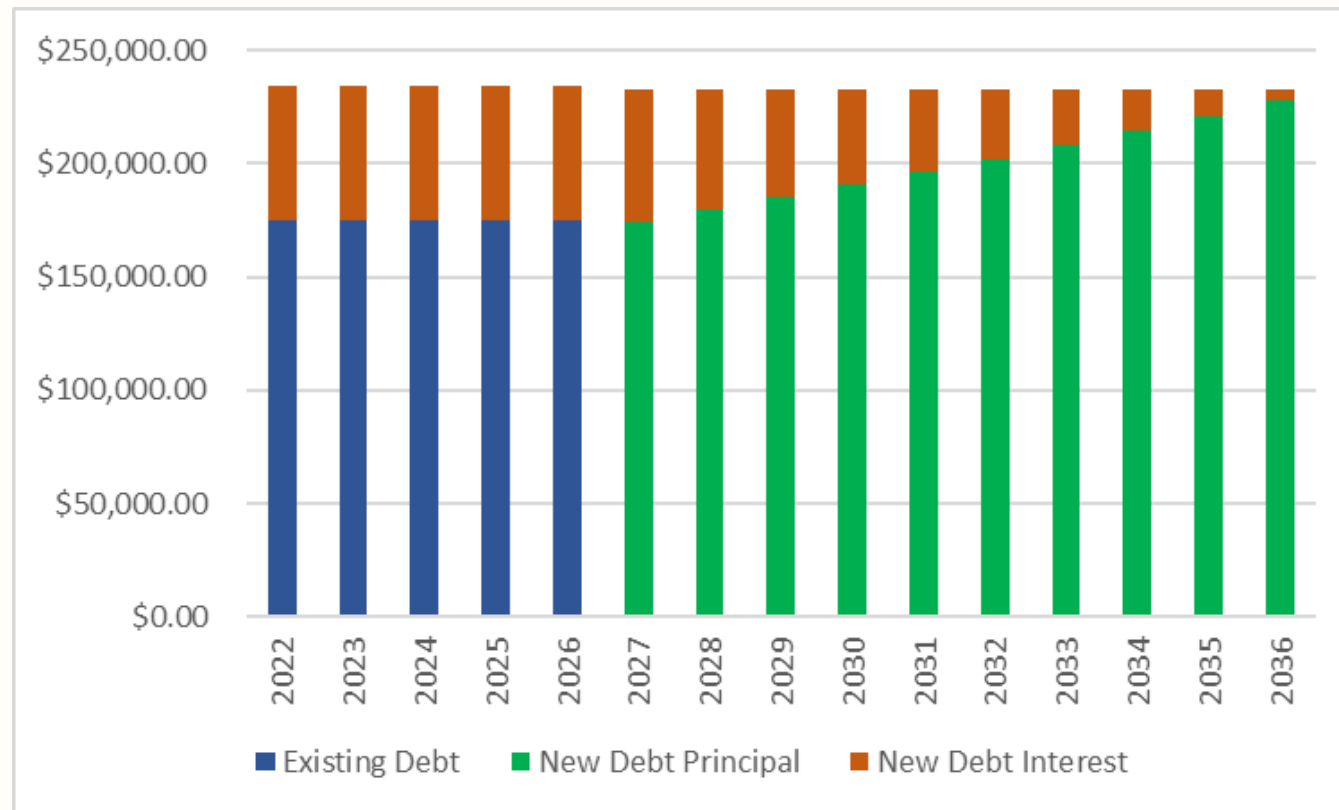
<u>Sources:</u>		
Bond Proceeds:		
Par Amount		9,000,000.00
Premium		887,784.50
		<hr/>
		9,887,784.50
		<hr/>
<u>Uses:</u>		
Project Fund Deposits:		
Project Fund		9,000,000.00
Other Fund Deposits:		
Capitalized Interest Fund		444,786.00
Series A Debt Service Fund Deposit		223,998.50
		<hr/>
		668,784.50
Delivery Date Expenses:		
Cost of Issuance		165,000.00
Underwriter's Discount		54,000.00
		<hr/>
		219,000.00
		<hr/>
		9,887,784.50
		<hr/>

# “Level” Debt Service



- Same total annual payment
- Usually semi-annual interest and annual principal
- Payment frequency options available in private placements

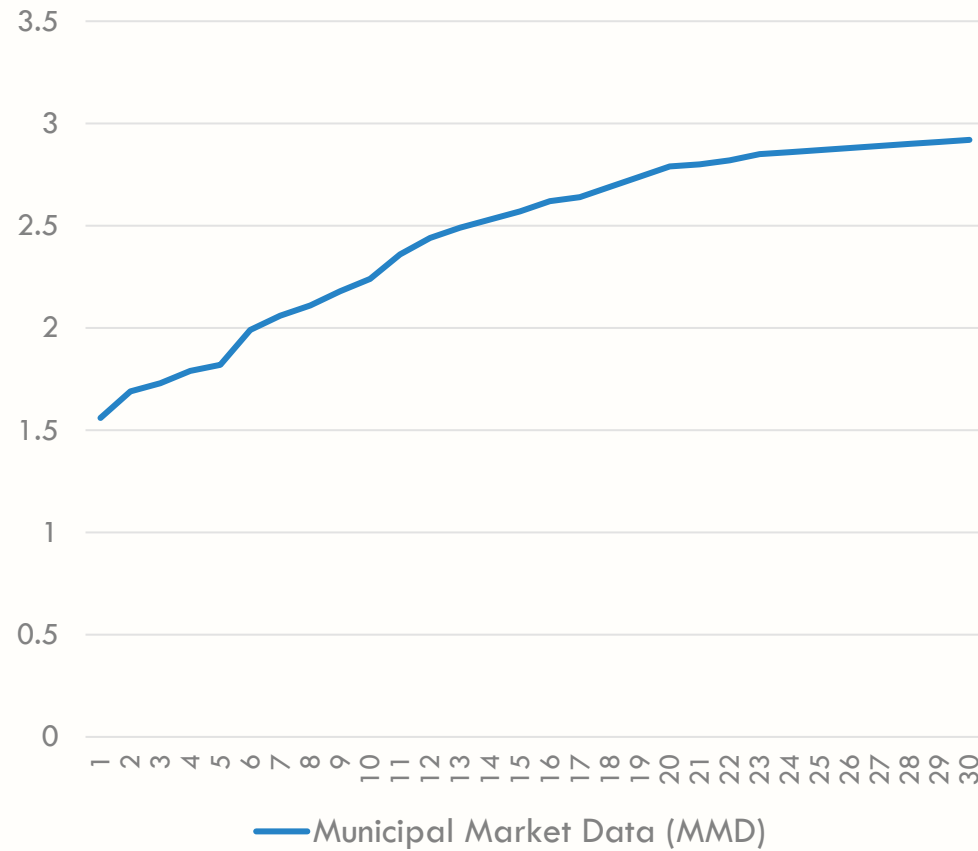
# Structuring Debt Service for Multiple Issues



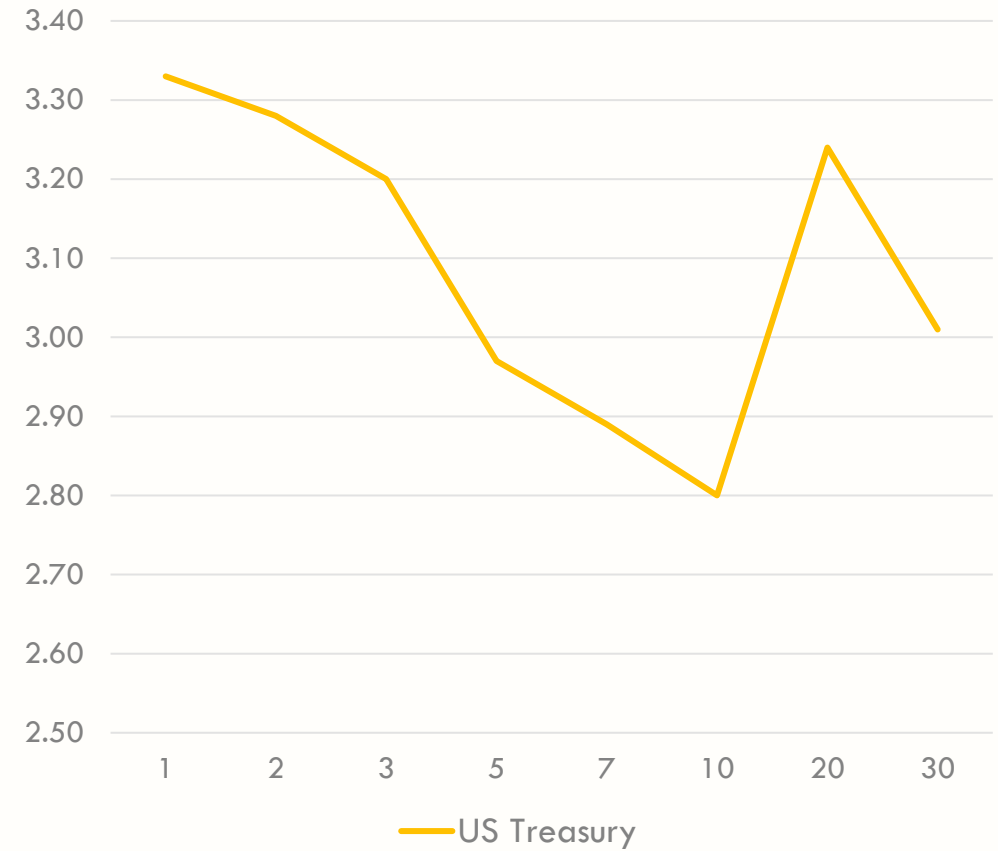
- Long-term cash flow management
- Example:
  - Current debt matures in 5 years
  - New debt structured as interest only for first 5 years
  - Achieves level long-term debt service

# Yield Curve

Yield Curve – MMD (8/9/22)



Yield Curve – US Treasury (8/9/22)





# Serial and Term Bonds

**Serial Bonds** – Bonds structured with maturity dates over regular intervals. This structure allows an issuer to take advantage of different pricing levels across the yield curve.

- For example: Years 2022-2038

**Term Bonds** - A bond which matures on a single date.

- For example: Years 2042, 2047, 2052

Sale Date	4/28/2022				
	Enterprise Revenue Bonds, Series 2022				
Issue Size	\$16,860,000				
Type	Water and Wastewater Revenue Bonds				
U/L Rating	AA				
Call Feature	12/1/32 at par				
Maturity	Par Amt. \$1000s	Coupon	Yield	Spread	4/27/22 Int. MMD
2022	210	5.000	1.77	-11.0	1.88
2023	250	5.000	2.17	6.0	2.11
2024	265	5.000	2.46	19.0	2.27
2025	275	5.000	2.53	18.0	2.35
2026	290	5.000	2.63	26.0	2.37
2027	305	5.000	2.75	33.0	2.42
2028	320	5.000	2.85	36.0	2.49
2029	340	5.000	2.93	37.0	2.56
2030	355	5.000	3.01	41.0	2.60
2031	375	5.000	3.13	46.0	2.67
2032	395	5.000	3.20	50.0	2.70
2033	415	5.000	3.28	53.0	2.75
2034	435	5.000	3.34	57.0	2.77
2035	455	5.000	3.40	60.0	2.80
2036	480	5.000	3.45	65.0	2.80
2037	500	5.000	3.47	65.0	2.82
2038	525	5.000	3.49	65.0	2.84
2042	2,400	5.000	3.60	70.0	2.90
2047	3,675	4.000	4.14	116.0	2.98
2052	4,595	5.000	3.83	80.0	3.03



# Fixed & Variable Rate Debt

- Most current municipal debt issues have fixed interest rate through maturity
- **Variable interest rate debt** – interest rate is tied to an index (LIBOR, 3-month US Treasuries, etc.) and resets periodically:
  - Can become popular in steep yield curve environment – short term rates are much lower than long term rates
  - Exposes issuer to interest rate risk due to rising short-term interest rates
  - If short-term interest rates rise, could result in significant debt service increase
  - In 2017, rates were adjusted due to tax law changes

# Redemption Features

- Optional Redemption
  - Debt is paid off with refinancing proceeds or cash
  - Prepayment penalty
    - Public Offering: at par in 8-10 years or up to 3% if under 10 years
    - Private Placement: typically 5 years at par, but can be as early as anytime at par
  - If possible, structure with any date call (not any payment date)
- Extraordinary Redemption
  - Debt is paid off with insurance payout proceeds, grant funding, surplus bond proceeds, or proceeds from General Obligation bond issuance
  - Should not have a penalty, but there are cases in which a penalty exists
- Mandatory Redemption
  - Usually structured with a sinking fund payment schedule
  - Part of planned debt amortization

# Conclusions



- Market is always changing
- Many different financing options
- Best terms look different for each agency
- Financing decisions you are making will affect your agency and constituents for decades
- Make sure you have a team of trusted advisors



# Questions?

Brad Rockabrand  
Eide Bailly, LLP  
(909) 466-4410  
[brockabrand@eidebailly.com](mailto:brockabrand@eidebailly.com)  
eidebailly.com

Jeff Land  
Oppenheimer & Co. Inc.  
(310) 446-7145  
[jeffrey.land@opco.com](mailto:jeffrey.land@opco.com)  
oppenheimer.com/brandistallman

Dmitry Semenov  
Ridgeline Municipal Strategies, LLC  
(916) 250-1950  
[dsemenov@ridgelinemuni.com](mailto:dsemenov@ridgelinemuni.com)  
ridgelinemuni.com



# LUNCH

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## Marketing, Pricing, & Method of Sale

**Raul Amezcua**

Senior Managing Director  
Ramirez & Co., Inc



**Kim Nakahara**

Senior Research Analyst and Portfolio Manager  
Allspring Global Investments



**Scott Smith**

Principal  
CSG | advisors



# Marketing and Pricing: Issuer's Perspective

- **Municipal entities issue bonds to fund public infrastructure, often with strict revenue limitations**

## Transportation



## Schools



## Housing



## General Operations



## Utilities



## Refundings







# Marketing and Pricing: Municipal Advisor's Perspective

- **Has a fiduciary duty to the Issuer – which is to put the interest of the Issuer above their own interest (duty of loyalty and duty of care)**
- **Assists Issuer in evaluating borrowing cost by reviewing recent market comps and market conditions**
- **In a negotiated sale, assists Issuer in negotiating final interest rates on the bonds with the Underwriter**
- **In a competitive sale, confirms bids and final bond cash flows with winning bidder**

# Marketing and Pricing: Underwriter's Perspective

- **MSRB Rule G-17** requires the Underwriter to deal fairly at all times with both municipal issuers and investors
- The Underwriter, in a negotiated financing, structures and pre-markets the bond issue well in advance of the pricing to maximize investor demand on the day of pricing





# Marketing and Pricing: Investor's Perspective

- **Has responsibility to maximize total return, often relative to a benchmark or peer group**
- **Appetite for investments fluctuate daily, based on available cash to invest or reinvest**
- **Selection of maturities, credit (rating) levels, among other factors, depend on investment strategy, which is also fluid**

# Structure of Underwriting Syndicate (Team): How Many Firms?

## \$25M Transaction



100%

## \$100M Transaction



70% / 30%

## \$50M Transaction



100%

## \$250M Transaction



60% / 20% / 20%

## \$500M Transaction



50% / 20% / 10% / 10% / 10%

# Structure of the UW Team: Who Does What?

## Senior Manager Responsibilities

- Keeping Issuer Appraised
  - Market updates & trends, investor
- Recommends:
  - Optimal Debt Structure
  - Credit (Rating) Strategy
- Prices Bonds – sets market rates
  - Investor outreach (Pre-Marketing)
  - Commits capital (Underwriting)

## Co-Manager Responsibilities

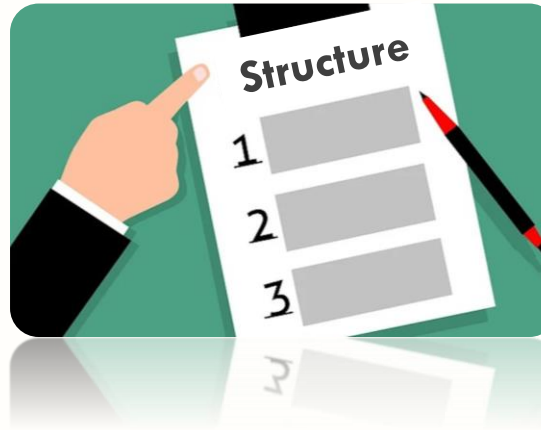
- May provide banking ideas
- Supplements senior manager efforts with investor outreach
  - Underwriting Liability set by Issuer

# What Affects Pricing?

## Investor Demand



## Structural Characteristics



## Par Size



## Credit Quality



## Market Tone



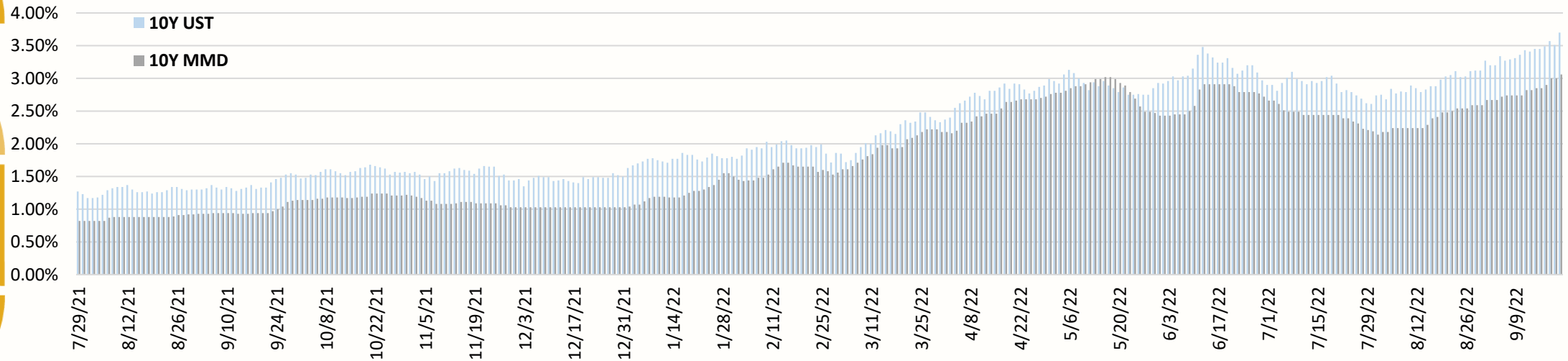
## Economic Calendar



# How Are Bonds Priced?

## A. Identify the Pricing Benchmark

**TAX-EXEMPT BONDS: MMD (Muni Market Data) “AAA” Yield Curve**  
**TAXABLE BONDS : US Treasury Bond Yield Curve**



	Since 9/22/2021		Current	1 Wk. Ago	1 Mo. Ago
	High	Low	(9/22/22)	(9/15/22)	(8/22/22)
<b>10 Year UST</b>	3.70%	1.33%	3.70%	3.45%	3.03%
<b>10 Year MMD</b>	3.06%	0.94%	3.06%	2.85%	2.48%

Source: TM3 and Bloomberg as of close 9/22/2022

# How Are Bonds Priced?

## B. Add a Credit/Liquidity Spread

Municipal Issuer rated "A1/A+/A+"						
Maturity	Coupon	MMD	Credit	Liquidity	Total Spread	Yield
2023	4.00%	1.59%	+15	+10	+25	1.84%
2024	4.00%	1.69%	+15	+12	+27	1.96%
2025	4.00%	1.71%	+15	+14	+29	2.00%
2026	4.00%	1.79%	+15	+16	+31	2.10%

### What do investors need to know to purchase the bonds?

- + Type (GO vs Revenue)
- + Strength of Security Pledge
- + Project Risks
- + Service Area Demographics
- + Risks (e.g. litigation, climate)

### How quickly/easily can an investor sell the bond?

- + Rating(s)
- + Name (size) of Issuer
- + Size of Maturity
- + Market Technicals/Demand
- + Market Tone/Interest Rate Trends



# How Are Bonds Priced?

- Pricing Data Points (“comps”) are used to assess the fairness of the pricing

Sale Date	05/18/22							05/18/22						
	Ontario Public Financing Authority 2022 Lease Revenue Bonds, Series A Par \$90,830 Call Date 11/1/32 @ 100 Insurance AGM Rating --/AA/--							North Lake Tahoe PFA Lease Revenue Bonds, Series 2022 Par \$69,315 Call Date 12/01/29 @103 Insurance None Rating --/AA/--						
Year	Par	Coupon	Yield	MMD*	Spread	YTM		Par	Coupon	Yield	MMD*	Spread	YTM	
						YTM	Spread						YTM	Spread
2023	\$1,335	5.00	1.89	1.77	0.12			\$995	5.00	2.26	2.17	0.09		
2024	\$1,405	5.00	2.17	1.98	0.19			\$1,045	5.00	2.53	2.37	0.16		
2025	\$1,480	5.00	2.37	2.07	0.30			\$1,095	5.00	2.76	2.50	0.26		
2026	\$1,555	5.00	2.44	2.12	0.32			\$1,155	5.00	2.86	2.52	0.34		
2027	\$1,635	5.00	2.57	2.20	0.37			\$1,215	5.00	3.00	2.62	0.38		
2028	\$1,715	5.00	2.70	2.30	0.40			\$1,275	5.00	3.16	2.75	0.41		
2029	\$1,805	5.00	2.87	2.42	0.45			\$1,340	5.00	3.32	2.87	0.45		
2030	\$1,900	5.00	2.98	2.48	0.50			\$1,410	5.00	3.40	2.92	0.48		
2031	\$1,995	5.00	3.06	2.54	0.52			\$1,480	5.00	3.49	2.99	0.50		
2032	\$2,095	5.00	3.15	2.58	0.57			\$1,555	5.00	3.57	3.03	0.54	3.66	0.63
2033	\$2,205	5.00	3.22	2.62	0.60	3.34	0.72	\$1,635	5.00	3.74	3.09	0.65	3.87	0.78
2034	\$2,320	5.00	3.28	2.64	0.64	3.49	0.85	\$1,720	5.00	3.83	3.11	0.72	3.99	0.88
2035	\$2,435	5.00	3.33	2.66	0.67	3.62	0.96	\$1,810	5.00	3.93	3.13	0.80	4.11	0.98
2036	\$2,560	5.00	3.39	2.67	0.72	3.73	1.06	\$1,900	5.00	3.99	3.14	0.85	4.20	1.06
2037	\$2,695	5.00	3.46	2.69	0.77	3.84	1.15	\$2,000	5.00	4.02	3.16	0.86	4.26	1.10

\*All spreads based on interpolated MMD through 2035.

Note: All par amounts in \$000s

# How Are Bonds Priced?

## Call Option Effect on Par Amount & Yields

Call Option Comparison: Tax Exempt Bonds			
Call Feature	5-Year	7-Year	10-Year
Par	\$228,470,000	\$223,215,000	\$217,010,000
<b>Premium</b>	<b>\$22,733,358</b>	<b>\$27,960,216</b>	<b>\$34,130,113</b>
Bond Proceeds	\$251,203,358	\$251,175,216	\$251,140,113
<b>All-In TIC (Yield to Maturity proxy)</b>	<b>4.22%</b>	<b>4.02%</b>	<b>3.79%</b>
<b>Arbitrage Yield (Yield to Call proxy)</b>	<b>2.92%</b>	<b>2.99%</b>	<b>3.06%</b>
Total Debt Service	\$440,225,184	\$430,097,693	\$418,151,117

- **10-Year optional call is “standard” in municipal bond market**
- **Shorter calls provide greater call but have a higher “kick” to YTM**
- **So, when or why would an Issuer prefer a shorter call?**
- **What about in Taxable Bonds? What are Make-Whole Calls?**

# How Are Bonds Priced?

## Couponing Effect on Par Amount & Yields

<b>Coupon Comparison: Tax-Exempt Bonds</b>			
<b>Coupon Structure</b>	<b>3% Coupons</b>	<b>4% Coupons</b>	<b>5% Coupons</b>
Par	\$253,760,000	\$232,760,000	\$216,550,000
<b>Premium/(Discount)</b>	<b>(\$2,427,051)</b>	<b>\$18,465,288</b>	<b>\$34,591,331</b>
Bond Proceeds	\$251,332,949	\$251,225,288	\$251,141,331
<b>All-In TIC (Yield to Maturity proxy)</b>	<b>3.12%</b>	<b>3.41%</b>	<b>3.77%</b>
<b>Arbitrage Yield (Yield to Call proxy)</b>	<b>3.08%</b>	<b>3.04%</b>	<b>3.01%</b>
Total Debt Service	\$384,392,497	\$399,062,129	\$417,293,181

- **Higher coupons are strongly preferred by investors, especially in a rising interest rate environment**
- **Lower coupons are more economic in stable/lower interest rate environments**

# How Are Bonds Priced?

## Evaluating the Use of Insurance

- **Two active insurers: AGM and BAM**
  - S&P ratings of 'AA'
- **Using insurance “lends” the Insurer’s rating to the transaction**
  - Beneficial to Issuer’s whose transactions are rated below 'AA'
- **Bond insurance should reduce the cost of a borrowing**
  - A surety reserve vs a cash funded reserve
  - Lower interest rates resulting in lower debt service
- **If insurance and/or surety bids are too high, insurance becomes too costly and increases debt service**
  - Evaluated prior to the pricing; sometimes a pricing day decision

# One of the Most Important Steps Issuers Can Take to Secure the Best Price: Improved Disclosure



## Multi-Year Budgets



## Reserve Levels



FitchRatings  
MOODY'S  
S&P Global  
Ratings



INITIATIVE  
INITIATIVE

# Green Bonds: What are They and Why Should I label My Bond Green?

- **Impact of the project is just as important as the project itself**
  - Detailed disclosure metrics of “Green” label such as:
    - Impact on environment/climate
      - Carbon Emissions; Waste Reduction; etc.
    - Dedicated Green Investor relations website
    - Annual Reports



Renewable  
energy



Energy  
efficiency



Clean  
transportation



Responsible  
waste management

# Green Bond Designation: Two Recent Examples

- **Western Placer Waste Management Authority - Solid Waste Revenue Bonds, Series 2022A (Green Bonds)**

- Funded a Materials Recovery Facility to meet statewide diversion mandates
- Self-Designation
- Garnered large orders from three ESG focused bond funds



- **California Public Works - Lease Revenue Bonds, 2021 Series C & D (Green Bonds – Climate Bond Certified)**

- Funded construction of a LEED building designed with sustainability as a goal
- Third-party certification
  - Climate Bond Certified
- Third-party engaged to verify to certification
  - Kestrel Verifiers
  - Report included as POS Appendix



# Marketing Trends: Inflation vs. Recession Tug of War

- **Fed raising rates at fastest pace in 30 years**
  - Monetary policy poses greatest risk of a recession by hiking rates too fast or too far
  - World events are fueling inflation: Ukraine, China, Supply Chain
  - Inflation fears triggers rise in rates
  - Recession fears result in market rallies/lower interest rates



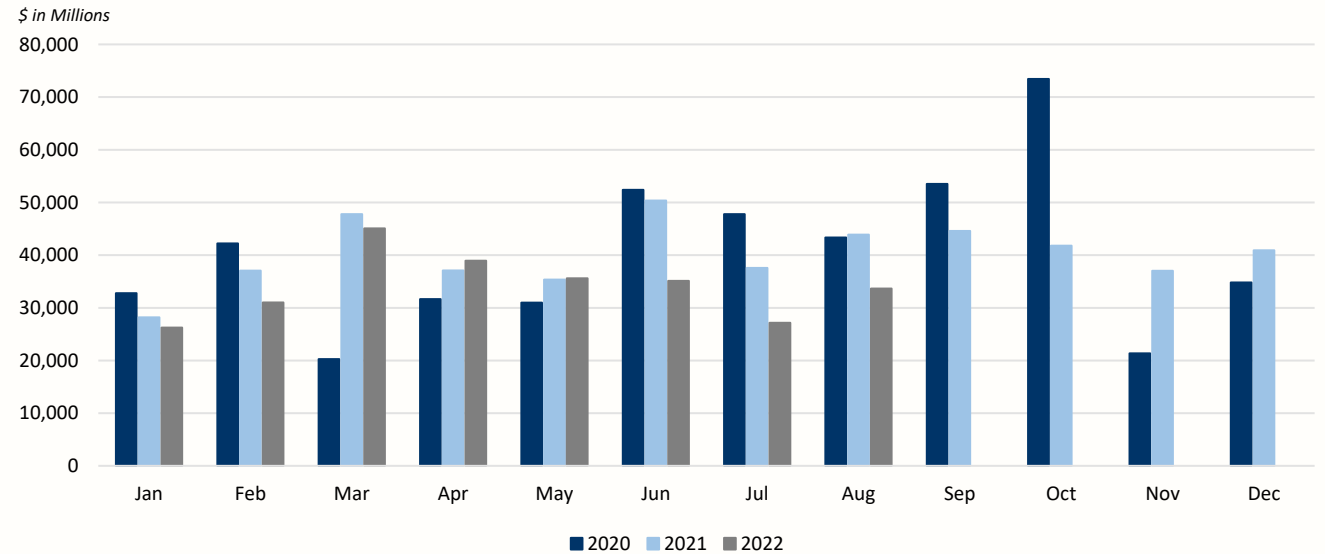


# Market Trends: 2022

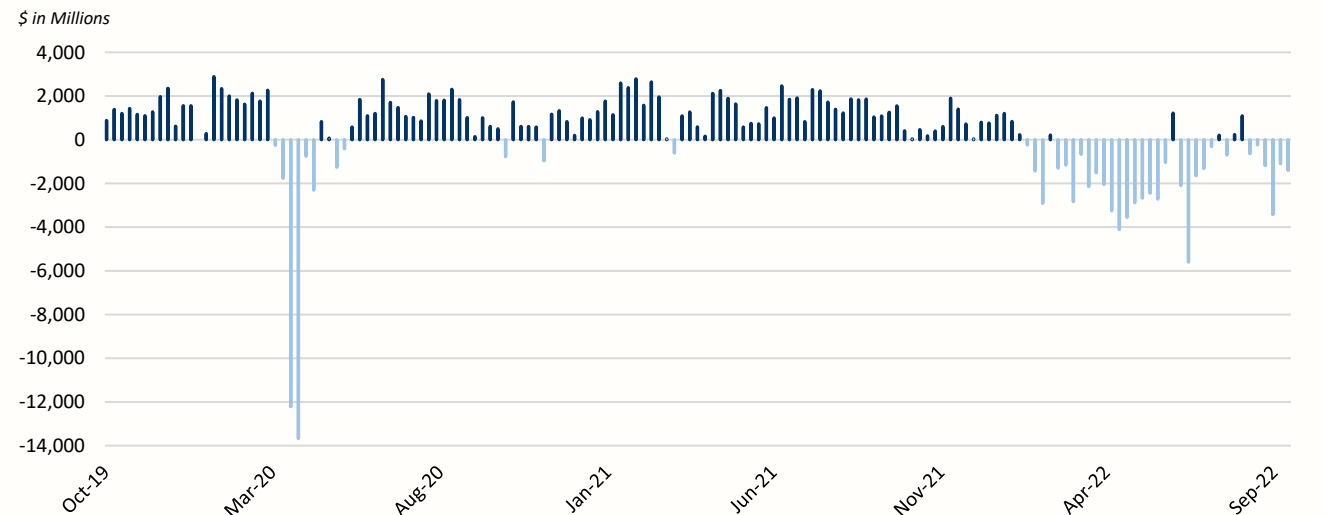
- **Sharp (unexpected) increase in interest rates starting in January**
- **YTD ~14.0% reduction in issuance (mostly fewer refundings)**
- **Rising rates & inflation are the key drivers on investor hesitancy**

Source: TM3 and Bond Buyer as of close 7/29/2022

## 2022 Issuance Volume - \$272.810 billion; ↓ 14%YOY

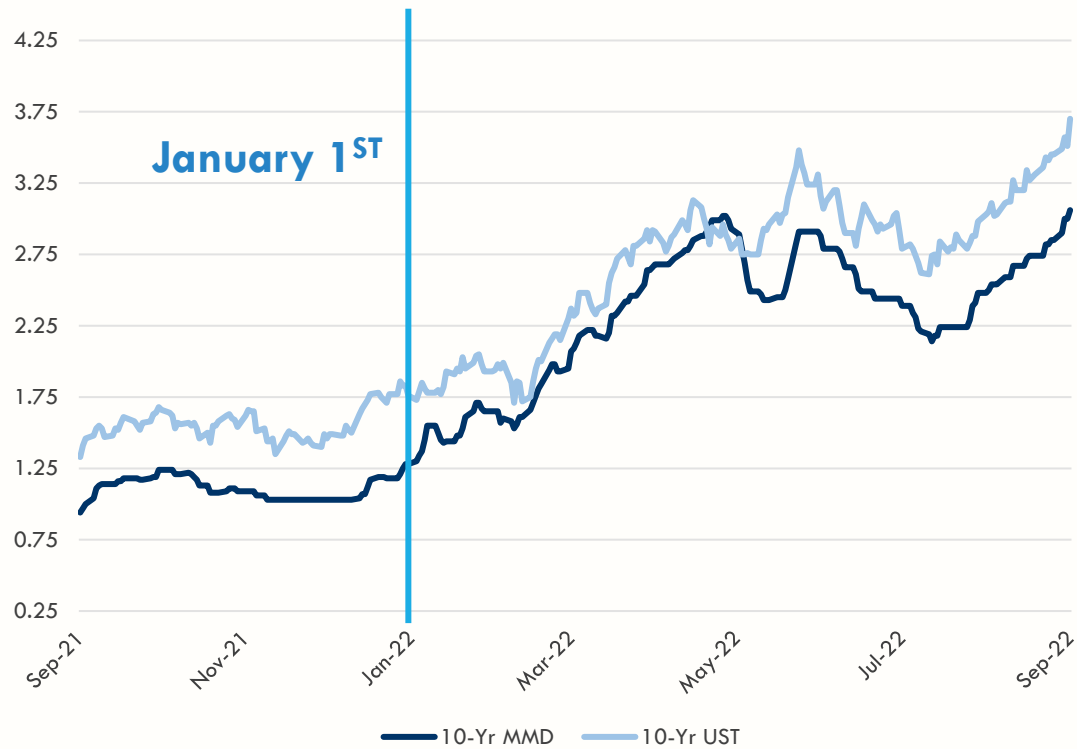


## Muni Fund Flows YTD Total \$(54.407) Billion of Net Inflows

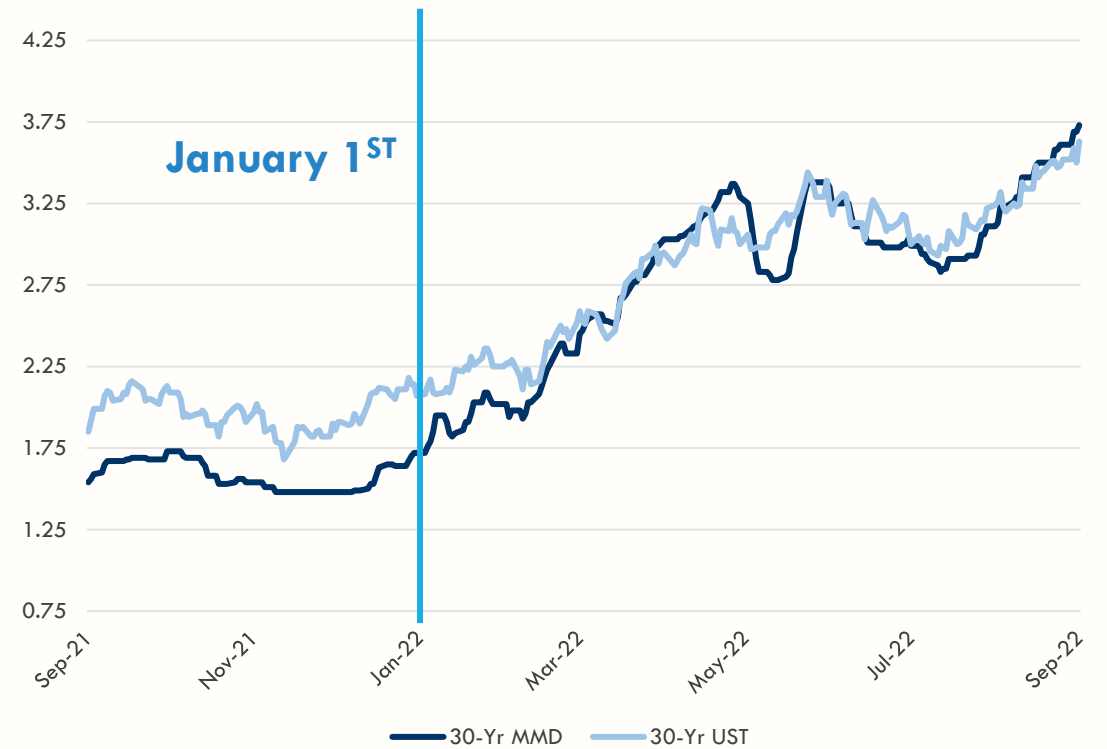


# Marketing Trends: Since January 2022

## 10-Year MMD & UST Rates

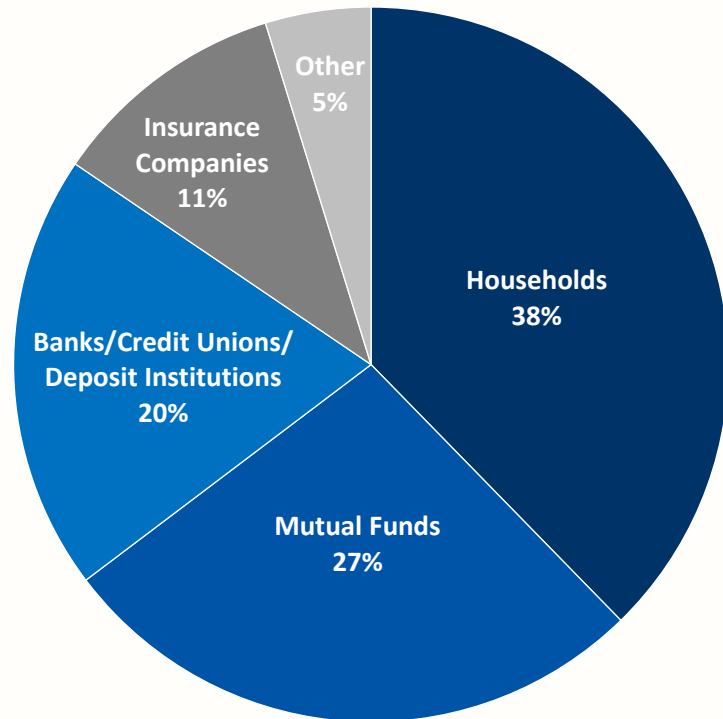


## 30-Year MMD & UST Rates



# Who Buys Municipal Bonds?

- >\$4T in bonds outstanding as of March 2022
- Bond purchasers on the day of pricing differ from long term bond holders



# Recent Muni TAXABLE Bond Example

- **Santa Cruz Metropolitan Transit District – Sales Tax Revenue Bonds, (Measure G) Series 2022**



WELLS CAPITAL  
GROUP



P I M C O



Allstate®



Account	Allotments
Performance Trust	\$7,605
Delphi Financial	6,640
Wells Capital Management	4,590
Standard Ins. Co.	4,465
PIMCO Advisors	2,825
Brotherhood Mutual	2,770
First New York Securities	2,750
Transmarket Bastion	2,480
Neuberger Berman	1,820
Union Bank of CA	1,820
Indiana Farm Bureau	1,750
Allstate Insurance Co	1,725
Bel Air Investment Advisors	1,575
Western Asset Fund	1,200
Fiduciary Trust Co. of NY	1,175
16th Amendment Advisors	1,000
Sterling Capital Mgmt	975
Sit Investment Advisors	875
J.P. Morgan Fleming	975
Halyard Asset Management	600
Belle Haven Investments	585
RBC Global Asset Mgmt	500
Three add'l SMA's	1,050
<b>Total</b>	<b>\$51,750</b>

# Recent Muni TAX-EXEMPT Bond Example

- **Ontario PFA – 2022 Lease Revenue Bonds, Series C (Civic Center Improvements)**



**BlackRock**



**nuveen**  
A TIAA Company

Payden&Rygel

P I M C O



Account	Allotments
EV Tabs	\$17,070
Allstate Insurance Company	15,765
PIMCO Advisors L.P.	11,220
Payden & Rygel	8,805
Blackrock/MLAM	9,000
J.P. Morgan Fleming	3,385
Wells Capital Management	3,360
Nuveen Asset Mgmt, LLC	3,045
Fiera Capital Inc.	2,390
Breckinridge Capital Advisors	1,710
Western Asset Fund	1,625
Massachusetts Fin. Services	2,400
US Trust Corporation	1,135
RW Baird Advisors	1,665
Wells Fargo Private Group	455
Clark Capital Mgmt Group	610
Hartford Life Insurance Co.	515
Columbia Mgmt Group	660
Invesco Power Share	2,500
Blackrock PPG	525
Maritime Capital	1,275
Five add'l SMA's	1,715
<b>Total</b>	<b>\$90,830</b>



# Main Takeaways

- **Pricing Municipal Bonds is more “art than science”**
- **External Factors (macro-economic, supply & demand, etc.) are beyond issuers’ control**
- **Internal Factors (Disclosure, Finance Team, Structure, etc.) should be a focus of the Issuer to secure the lowest borrowing rate**



15-MINUTE

**BREAK**

September 28, 2022

# CDIAC Debt Essentials Seminar

## *Session 4 - Group Exercise: Bond Pricing*

*Presented by:*

**Anna Sarabian**, Principal  
(949) 660-7308  
asarabian@fieldman.com



**Holly Vocal**, Managing Director  
(415) 913-2327  
holly.vocal@bofa.com





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# Outline

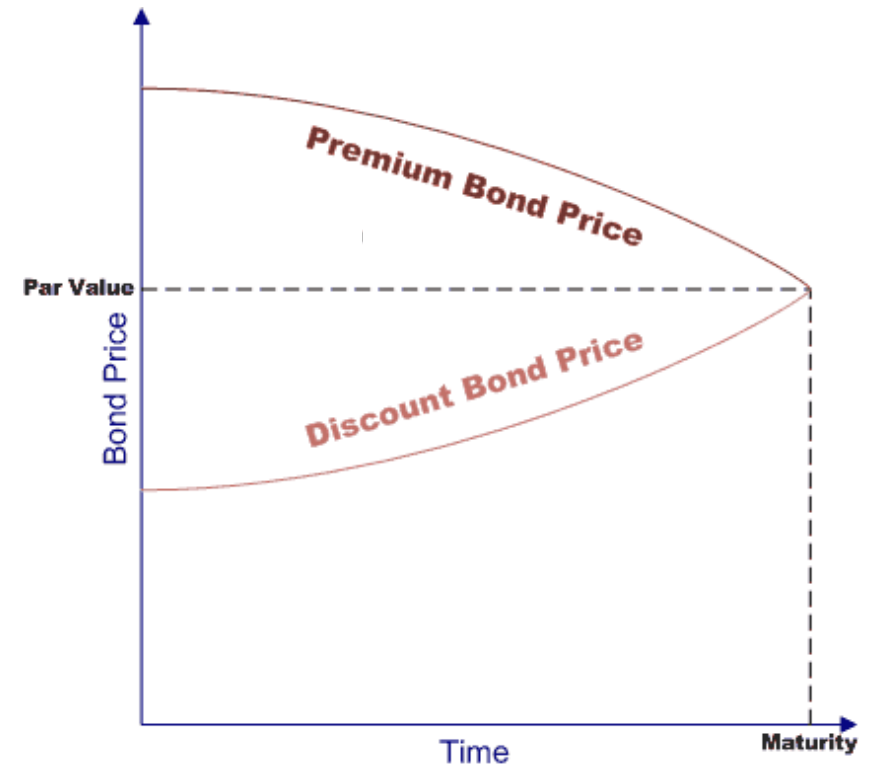
- I. Review of Fundamentals
- II. Pre-Pricing Day (Exercises A & B)
- III. Pricing Day (Exercise C)
- IV. Final Thoughts and Conclusion

# Introduction

- ❖ Your perspective as an issuer
  - You must live with the issue on a long-term basis
  - The underwriter facilitates access to investors
  - Investor relations should play a role in the process

# Review of Bond Pricing Terminology

- ❖ **“Price”** represents the discounted present value of debt service on an individual maturity
  - Debt service is calculated using the coupon, then discounted at the yield
- ❖ **“Yield”** is the rate that equates the present value of the future cash flows to the amount paid for the bond
  - “Yield-to-Maturity” (YTM)
  - “Yield-to-Call” (YTC)
  - Bonds are sold at the “Price-to-the-Worst”
- ❖ **“Premium Bonds”** - Coupon rate is greater than market yield. Price is greater than the par value of the bond
- ❖ **“Discount Bonds”** - Coupon rate is less than market yield. Price is less than the par value of the bond
- ❖ **“Par Bonds”** - Coupon rate equals market yield. Price is equal to the par value of the bond



# Serial Bonds vs. Term Bonds

Serial Bonds	Term Bonds
Principal installments that mature every year over a period of consecutive years.	A series of principal installments that mature on a single date.
No sinking fund payments.	Annual sinking fund payments are made which are used to call bonds (selected by lot) prior to maturity at par.
Each serial bond is structured separately with a specific coupon / yield / price.	All the bonds are structured with the same coupon / yield / price.
Favored by retail & institutional investors.	Favored by institutional investors.

# Overview of Pricing Process

## 1. Developing a Sense of the Market

- Economic, FOMC, political news
- Rates, indices, etc.
- Supply and demand

## 2. Preliminary Pricing

- Recent issues
- Secondary market trades
- Competition
- Benchmarks

## 3. The Order Process

- Who's playing; who's not
- Prices at which orders are entered
- Negotiating
- "Bid" to purchase



# Identifying Market Trends

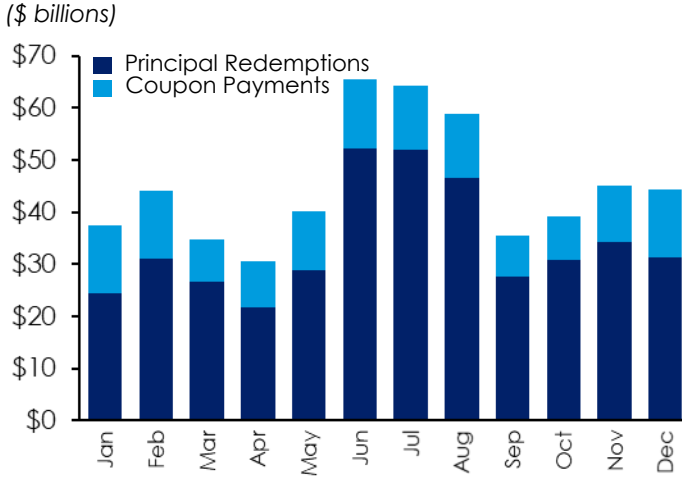
- ❖ Technical vs. fundamental factors
  - Technical = supply and demand
  - Fundamental = economics and interest rates
- ❖ Forward supply
  - Current inventory (what's currently for sale)
  - Visible supply ("snapshot" of what's coming in next 30 days)
- ❖ Distribution of issues in market
  - By rating
  - By region or state
  - By size
  - By tax status

# Municipal Market Technicals

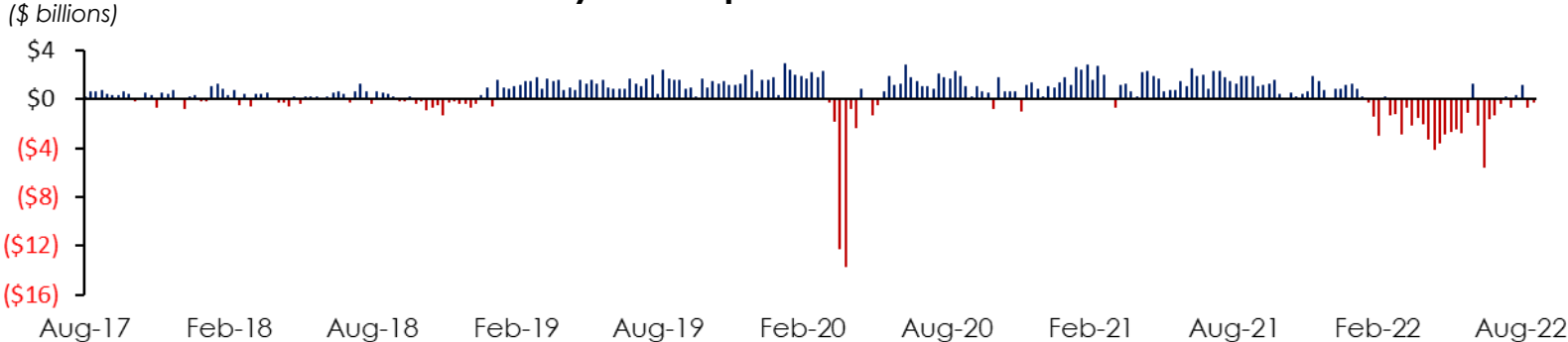
**Projected Municipal Bond Issuance<sup>(1)</sup>**



**Projected National Redemptions<sup>(1)</sup>**



**Weekly Municipal Bond Fund Flows<sup>(2)</sup>**



(1) Source: Thomson Reuters and IPREO calendar as of 8/19/22; excludes notes and private placements  
 (2) Source: Lipper U.S. Fund Flows as of 8/19/22; data includes weekly reporting funds

# Economic Calendar

August 2022						
S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

September 2022						
S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

■ Holiday

Source: BofA Securities  
Global Research

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
<b>22</b>	<b>23</b> New Home Sales	<b>24</b> Durable Goods Orders Pending Home Sales	<b>25</b> GDP	<b>26</b> Advance Goods Trade Balance Personal Income & Outlays U. Of Mich Sentiment
<b>29</b>	<b>30</b> S&P CoreLogic CS HPI Conference Board Confidence	<b>31</b> ADP Employment Chicago PMI	<b>September 1st</b> Productivity & Costs IHS-Markit manufacturing ISM manufacturing Construction Spending Wards Auto Sales	<b>2</b> Employment Report
<b>5 Labor Day</b>	<b>6</b> IHS- Markit services ISM services	<b>7</b> Trade Balance Fed's Beige Book	<b>8</b> Consumer credit	<b>9</b> Wholesale Inventories
<b>12</b>	<b>13</b> NFIB Small Bus. Optimism Consumer Price Index Monthly Budget Statement	<b>14</b> Producer Price Index	<b>15</b> Retail Sales Empire Manufacturing Import Price Index Philly Fed Industrial Production Business Inventories	<b>16</b> U. Of Mich Sentiment
<b>19</b> NAHB Housing Index	<b>20</b> Housing Starts & Permits	<b>21</b> Existing Home Sales FOMC Rates Decision	<b>22</b>	<b>23</b>

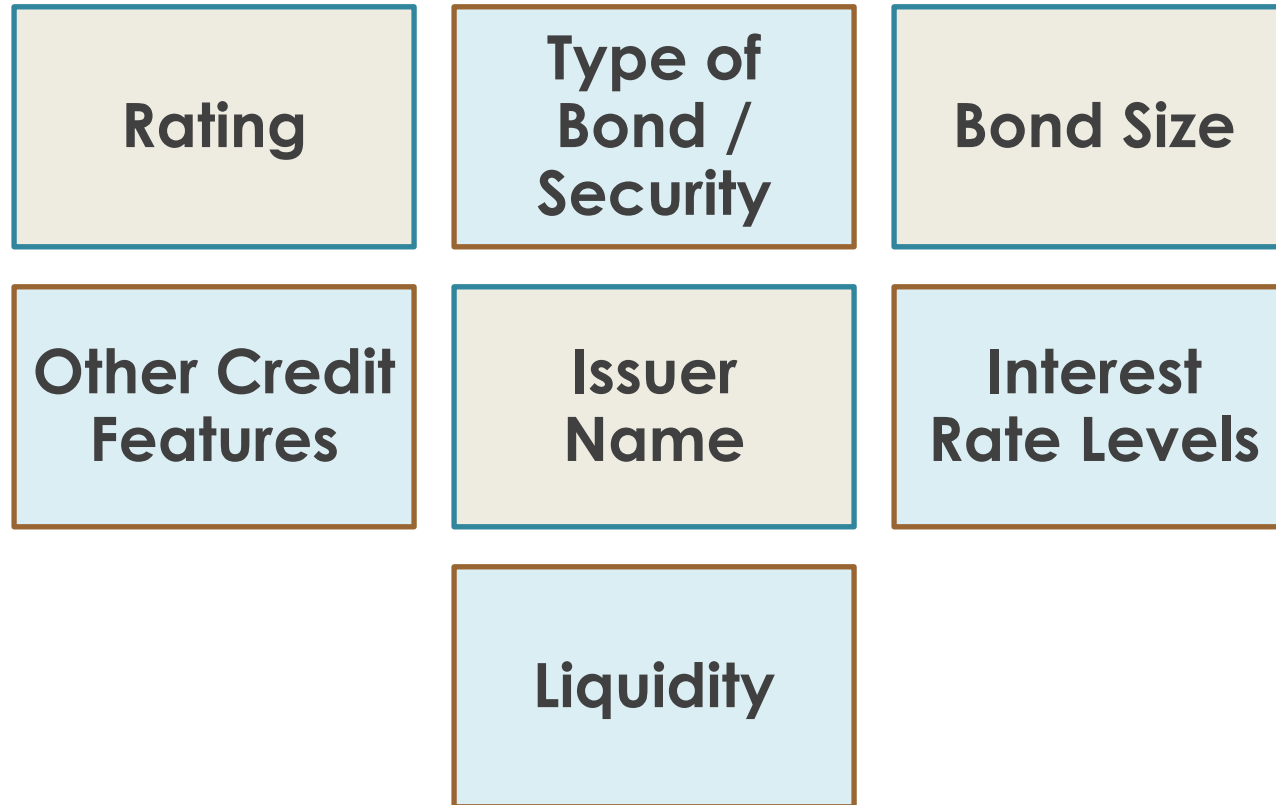
# How Tax-Exempt Interest Rates are Set



- ❖ **"MMD"** – The benchmark interest rate for a “AAA” tax-exempt bond (interest earned by the investor is “triple tax-exempt”)
  - Municipal Market Data is a private company
  - Compiled and adjusted on a daily basis
  - Released to the market after 12 noon (Pacific)
- ❖ **"Spread"** – The additional interest rate over MMD that investors require for the added risk associated with a particular bond

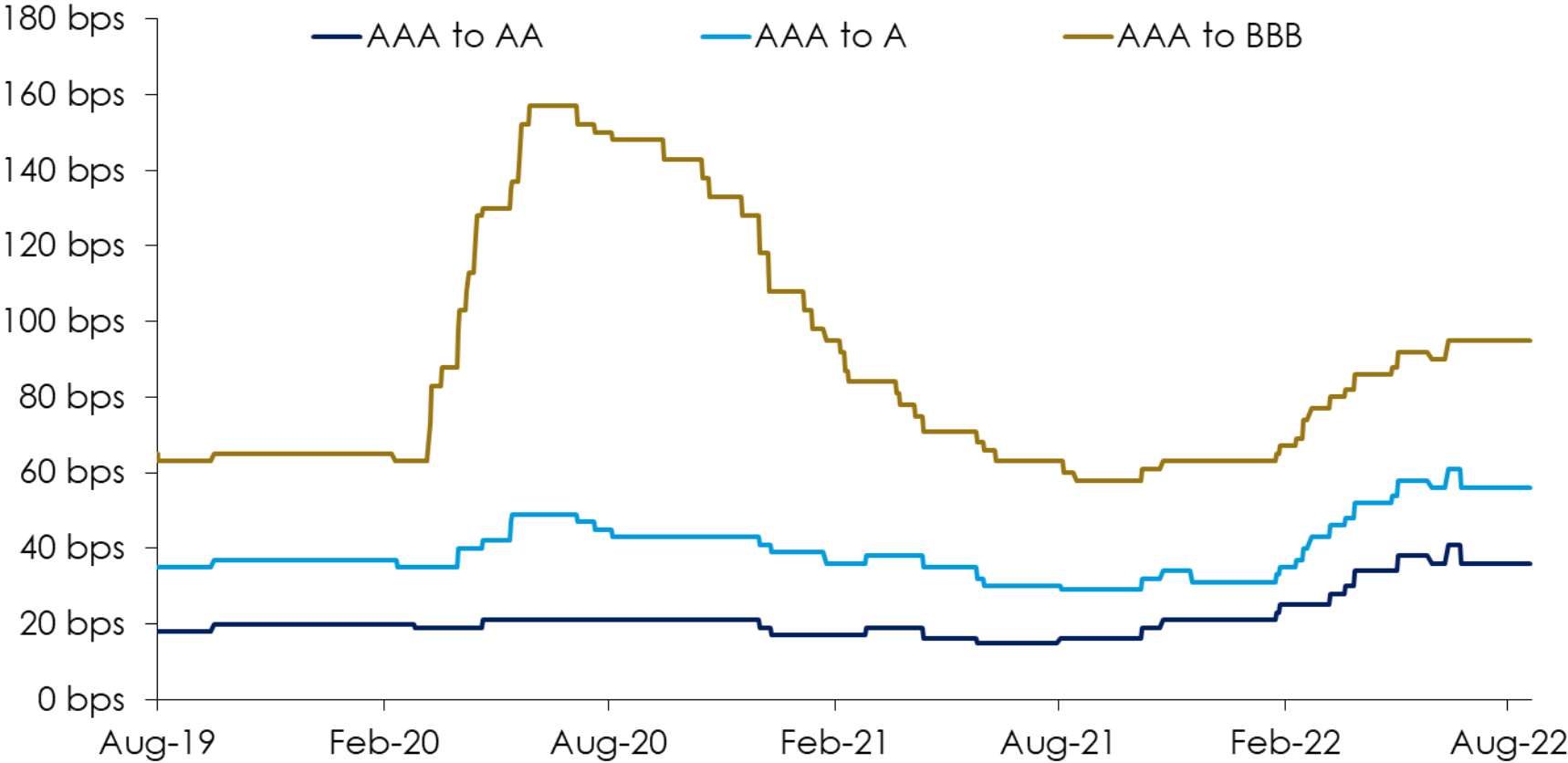
# Factors that Impact Credit Spreads

- ❖ Several factors impact credit spreads, such as:



# MMD Credit Spreads

### Tax-Exempt Credit Spreads (30-Year)

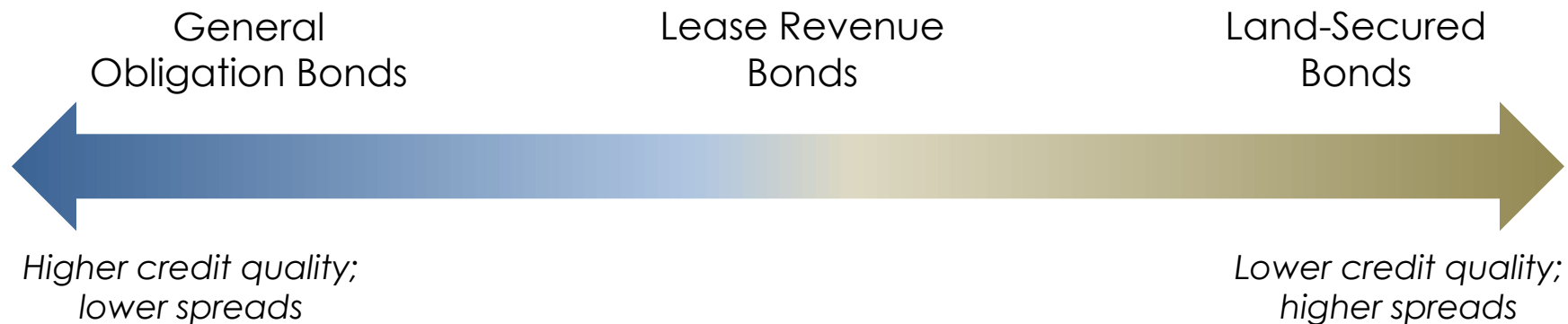


Source: Thomson Municipal Market Monitor

# Spreads Between Types of Bonds

- ❖ In general, credit spreads can vary based on the type of bond (or security of the bond) for the same rating category

## Types of Bonds – General Credit Spectrum



- ❖ Tax-exempt spread to MMD
- ❖ Taxable spread to U.S. Treasuries

# How to Use Pricing Comparables

- ❖ Pricing comparables (or “pricing comps”) may help you evaluate the proposed and final market pricing levels for your bonds
- ❖ Relevant pricing comps have similar characteristics (bond type, rating, size, etc.) to your bonds
  - Understand “the story” behind comparable transactions
  - Timing of sales / sale date is important
- ❖ If similar financings are limited, other issues may be used as a comp based on spread relationships
- ❖ Pricing comparables may not be relevant based on market conditions



# Understanding the Pricing Comps

- ❖ Comparison of **Spread to MMD** (tax-exempt) or **Spread to US Treasuries** (taxable)

## Hypothetical Pricing Comparables

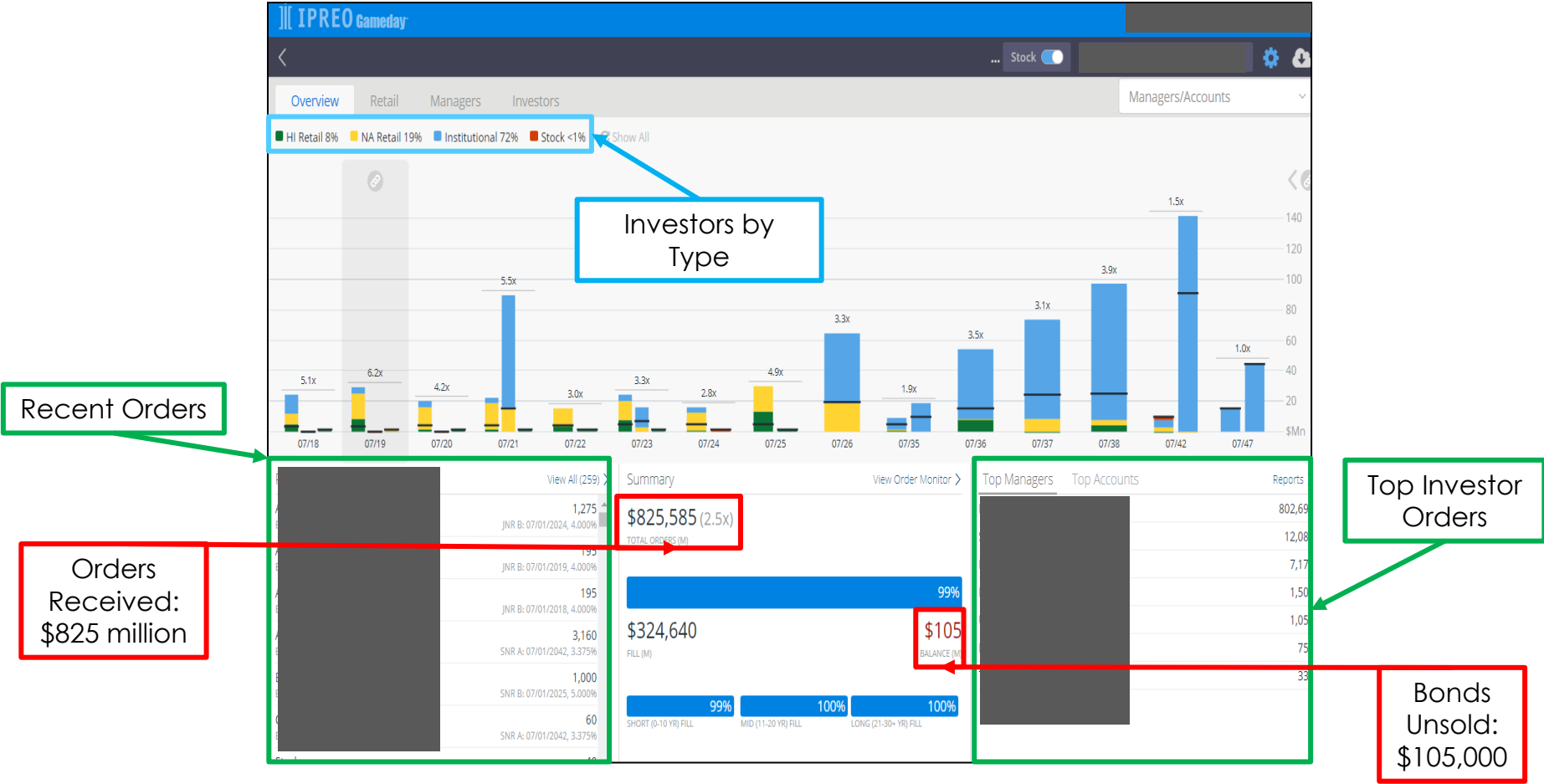
Par Amount Issue		\$25,000,000 General Obligation Bonds California City A			\$25,000,000 General Obligation Bonds California City B			\$500,000,000 General Obligation Bonds California City C			\$25,000,000 General Obligation Bonds California City D		
Issuer		Tax-exempt			Tax-exempt			Tax-exempt			Tax-exempt		
Call Feature		2032 at 100%			2032 at 100%			2032 at 100%			2032 at 100%		
Principal Date		1-Jun			1-Jun			1-Jun			1-Jun		
Ratings		Aa/AA/AA			A2/A/A			A2/A/A			Baa2/BBB/BBB		
Maturity	MMD as of 8/26/22 <sup>(1)</sup>	Coupon	Yield	Spread to MMD (bps)	Coupon	Yield	Spread to MMD (bps)	Coupon	Yield	Spread to MMD (bps)	Coupon	Yield	Spread to MMD (bps)
2023	2.19%	5.00%	2.21%	2	5.00%	2.26%	7	5.00%	2.31%	12	5.00%	2.74%	55
2024	2.20%	5.00%	2.23%	3	5.00%	2.29%	9	5.00%	2.34%	14	5.00%	2.80%	60
2025	2.23%	5.00%	2.27%	4	5.00%	2.34%	11	5.00%	2.39%	16	5.00%	2.88%	65
2026	2.24%	5.00%	2.30%	6	5.00%	2.38%	14	5.00%	2.43%	19	5.00%	2.94%	70
2027	2.26%	5.00%	2.34%	8	5.00%	2.43%	17	5.00%	2.48%	22	5.00%	3.01%	75
2028	2.27%	5.00%	2.37%	10	5.00%	2.47%	20	5.00%	2.52%	25	5.00%	3.07%	80
2029	2.35%	5.00%	2.47%	12	5.00%	2.59%	24	5.00%	2.64%	29	5.00%	3.20%	85
2030	2.41%	5.00%	2.55%	14	5.00%	2.69%	28	5.00%	2.74%	33	5.00%	3.31%	90
2031	2.48%	5.00%	2.64%	16	5.00%	2.79%	31	5.00%	2.84%	36	5.00%	3.43%	95
2032	2.54%	5.00%	2.72%	18	5.00%	2.87%	33	5.00%	2.92%	38	5.00%	3.54%	100
2033	2.65%	5.00%	2.87%	22	5.00%	3.02%	37	5.00%	3.07%	42	5.00%	3.70%	105
2034	2.75%	5.00%	2.99%	24	5.00%	3.14%	39	5.00%	3.19%	44	5.00%	3.85%	110
2035	2.81%	5.00%	3.07%	26	5.00%	3.22%	41	5.00%	3.27%	46	5.00%	3.96%	115
2036	2.85%	5.00%	3.13%	28	5.00%	3.28%	43	5.00%	3.33%	48	5.00%	4.05%	120
2037	2.88%	5.00%	3.18%	30	5.00%	3.33%	45	5.00%	3.38%	50	5.00%	4.13%	125

(1) Source: Thomson Reuters  
Interest rate spreads are shown for illustrative purposes. Preliminary; subject to change.

# The Order Period

❖ Generally, issuers are able to monitor order flow during order period

## Sample Municipal Monitor Order Book



# Reviewing the Order Book

- ❖ After the order period, a final pricing proposal is made
- ❖ Final pricing proposal may reflect adjustments from the preliminary pricing scale based on market conditions, order book results and investor feedback

Maturities	Amounts (\$000's)	Orders (\$000's)	Subscription	Comments
2023 Serial	380	1,600	4.2x	Institutional (4 orders)
2024 Serial	410	1,390	3.4x	Retail (1 partial order); Institutional (3 orders)
2025 Serial	425	950	2.2x	Institutional (3 orders; 2 full)
2026 Serial	440	880	2.0x	Institutional (1 order)
2027 Serial	460	1,330	2.9x	Institutional (3 orders)
2028 Serial	475	475	1.0x	Institutional (1 order)
2029 Serial	500	500	1.0x	Institutional (1 order)

# Receiving the Bid

- ❖ Critical information:
  - Strength of market
  - Quality of orders as well as quantity
  - How many bonds on the “street” after the award?
- ❖ What happens after the award is important
  - MSRB trade activity reporting system as a resource
  - Reports from the underwriter at syndicate/account closing

# Typical Tax-Exempt Pricing Timeline

## PRE-PRICING DAY

- **1:00 PM:** Underwriter Distributes Pre-Pricing Presentation (including Pricing Comps and Proposed Pre-Pricing Scale)
- **2:00 PM:** Hold Pre-Pricing Call with Issuer and Municipal Advisor

## PRICING DAY

- **5:30 AM:** Review Market Conditions; Adjust Scale (as needed)
- **7:00 AM:** Release Scale; Open Bond Order Period
- **9:00 AM:** Close Bond Order Period
- **10:30AM:** Distribute Final Pricing Scale
- **11:00 AM:** Pricing Call; Receive “Verbal Award”
- **11:45 AM:** Receive Cash Flow Verification (in the case of a refunding)
- **12:00 PM:** Distribute Final Bond Cash Flows
- **12:00 PM:** Final Bond Purchase Agreement Distributed
- **12:30 PM:** Bond Purchase Agreement Signature Pages Released (“Written Award”); Orders Confirmed with All Investors

# Pricing Process (Week of Pricing)

Review overall market conditions & municipal flows

Review recent bond comparables & trading levels

Develop “price thoughts” and provide market update to client

Pre-pricing call to develop consensus scale

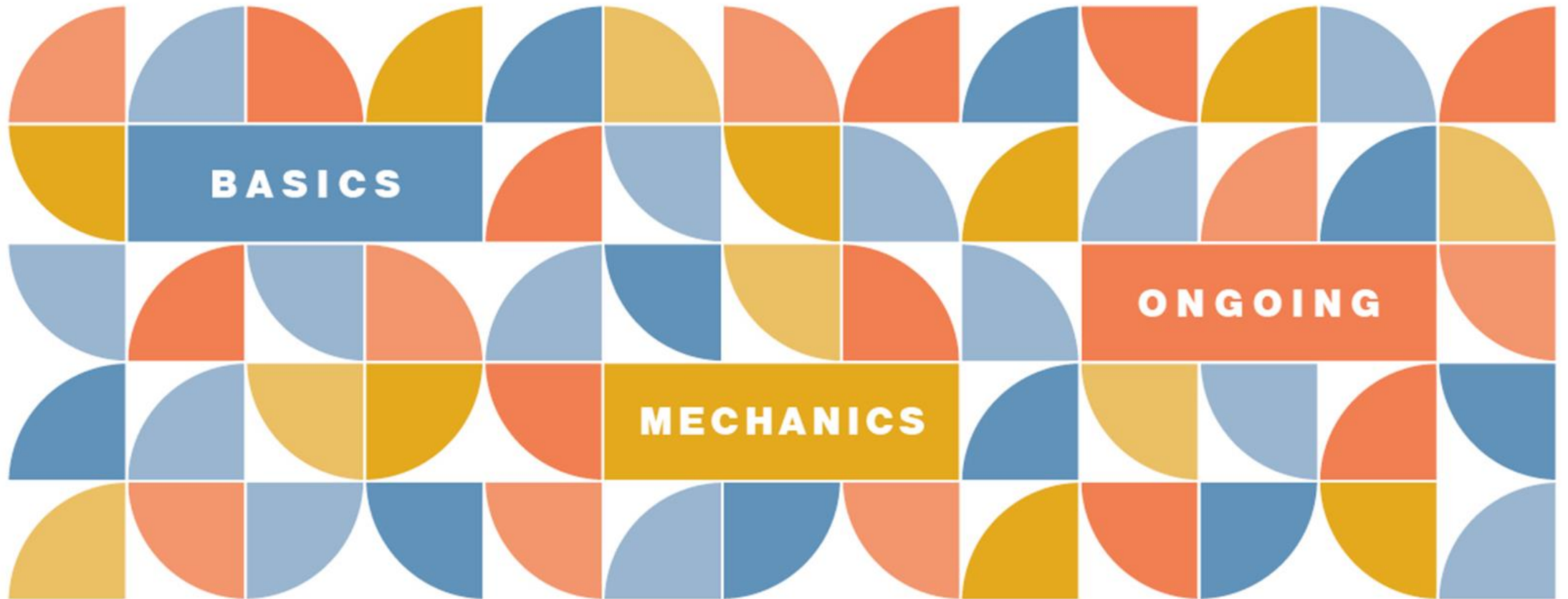
Hold order period; review order book with client

Agree on final interest rate scale; confirm orders with investors

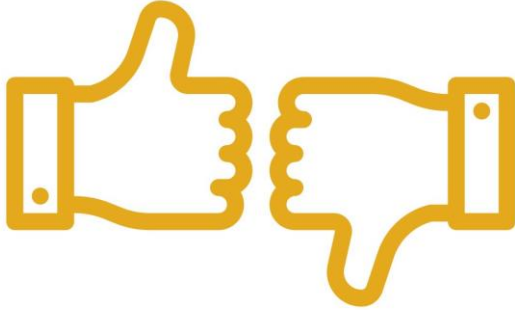
# Questions?



# MUNICIPAL DEBT ESSENTIALS







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DAY 3 | ONGOING  
ADMINISTRATION