### **SESSION ONE** Bond Concepts

#### **CRAIG HILL** Managing Principal NHA Advisors



MUNICIPAL DEBT ESSENTIALS | September 24–26, 2024





## **Table of Contents**

- Introduction to Bonds
- Process of Issuing Bonds
- Basic Bond Characteristics
- Basic Bond Math
- •Fun Stats



# INTRODUCTION TO BONDS





# **Purpose of Municipal Bonds**

Infrastructure

Capital Improvement Projects





- Spread out the cost of constructing the asset over the life of the asset
- Ensures the benefits are paid for by those who enjoy them

## Ways to Fund Projects

#### Available Cash/Reserves

Funding Options

Grants or Loans

**Debt Financing** 





## What Is A Bond?

- Financing mechanism whereby the borrower ("issuer") receives upfront funds from a lender ("bondholder") in exchange for future repayments
- Can be thought of as an <u>IOU</u> between lender and borrower







# **Maturity Schedule**

	Issuer/Deal	Gotham Ci	ity 2024 Revenue Bo	nds		
	Par	\$32,750,000				
	Тах					
	Status/Rating	Tax-Exempt, AAA December 1. 2032				
	Par Call Date					
	Maturity	PAR AMOUNT	COUPON RATE	YIELD		
_	2023	\$1,750,000	5.00%	2.85%		
Sorial	2024	\$2,000,000	5.00%	2.95%		
	2025	\$2,500,000	5.00%	3.10%		
Bonds	2026	\$3,000,000	5.00%	3.20%		
<u> </u>	2027	\$3,500,000	5.00%	3.40%		
	2028					
	2029					
Term	2030					
	2031					
Bond	2032	\$20,000,000	4.25%	4.50%		

## **Maturity Schedule**

	Issuer/Deal	Gotham City 2024 Revenue Bonds \$32,750,000				
	Par					
	Tax Status/Rating	Tax-Exempt, AAA				
	Par Call Date	De	ecember 1, 2032			
	Maturity	PAR AMOUNT	COUPON RATE	YIELD		
	2023	\$1,750,000	5.00%	2.85%		
	2024	\$2,000,000	5.00%	2.95%		
	2025	\$2,500,000	5.00%	3.10%		
	2026	\$3,000,000	5.00%	3.20%		
	2027	\$3,500,000	5.00%	3.40%		
Sinking Fund	2028	\$3,750,000				
	2029	\$4,000,000				
	2030	\$5,000,000				
	2031	\$5,750,000				
	2032	\$6,500,000	4.25%	4.50%		



## **Sources and Uses**

#### **Sources Of Funds**

Par Amount of Bonds

\$5,000,000

Total Sources

\$5,000,000

Uses Of FundsCosts of Issuance\$200,000Project Fund\$4,800,000

Total Uses

\$5,000,000



### Tax-Exempt Nature of Municipal Bonds

- Majority of Municipal Bonds are issued for public use projects and so are Tax-Exempt
- Bonds issued for "private purposes" are not tax-exempt
- Issuers are not allowed to earn more on the bond proceeds than the calculated bond yield ("arbitrage yield")



## **Bond Structures**







# **Voter Approval Exceptions**

General Fund Lease Obligations

Utility Revenue Bonds Obligations Imposed by Law









# PROCESS OF ISSUING BONDS



# **Developing the Financing Plan**

Identify Project Costs

#### Quantify Available Cash

Identify Repayment Sources

**Develop Financial Model** 





Counsel

Δ+





# **Ascending Debt Service**





## Wrap Around Debt Service



# **Bond Types**

#### **Current Interest Bond**



#### **Capital Appreciation Bond**





## **Bond Sale Strategies**

#### **Competitive Sale**

- Structured Prior to Bond Sale
- Underwriter Bids to Purchase All Bonds
- Best Strategy for Highly Rated or Frequent Issuers

#### Negotiated Sale

- Underwriter assists in Bond Structure
- Underwriter Pre-Markets Bonds Before Setting Interest Rate





### Preliminary Official Statement

-----

2022

**NEW ISSUE - FULL BOOK-ENTRY** 

RATING: S&P: "\_\_\_\_" See "RATING".

In the opinion of Jones Hall, A Professional Law Corporation, San Francisco, California, Bond Counse, and the second seco

\$30,000,000\* L ELECTION OF 2018 GENERAL OBLIGATION BONDS, SERIES 2022

Dated: Date of Delivery

to the

la da

18

552

#### Due: September 1, as shown on inside cover

Cover Page. This cover page contains information for quick reference only. It is not a summary of all the provisions of the Bonds. Investors must read the entire official statement to obtain information essential to making an informed investment decision.

Authority and Purpose. The captioned Election of 2018 General Obligation Bonds, Series 2022 (the "Bonds"), are being issued by the City of Campbell (the "City") pursuant to certain provisions of the California Government Code and resolutions of the City Council of the City adopted on May 17, 2022. The Bonds were authorized at an election of the registered voters of the City held on November 6, 2018, which authorized the issuance of general obligation bonds for the purpose of financing the acquisition and improvement of a police emergency operations center and a public library. The initial series of bonds under the 2018 authorization was issued in 2020. See "THE BONDS – Authority for Issuance" and "THE FINANCING PLAN" herein.

Security. The Bonds are general obligations of the City, payable solely from ad valorem property taxes levied by the City and collected by Santa Clara County (the "County"). The City Council is empowered and is obligated to annually levy ad valorem taxes for the payment of interest on, and principal of, the Bonds upon all property subject to taxation by the City, without limitation of rate or amount (except certain personal property that is taxable at limited rates). See "SECURITY FOR THE BONDS."

Payments. Interest on the Bonds accrues from the date of delivery and is payable semiannually on March 1 and September 1 of each year, commencing September 1, 2022, by check, draft or wire mailed to the person in whose name the Bond is registered. Payments of principal and interest on the Bonds will be paid by The Bank of New York Mellon Trust Company, N.A., as paying agent for the Bonds (the "Paying Agent"), to DTC for subsequent disbursement to DTC Participants who will remit such payments to the beneficial owners of the Bonds. See "THE BONDS – Description of the Bonds."

Redemption. The Bonds are subject to optional redemption and mandatory sinking fund redemption prior to maturity as described herein. See discussion of redemption under the heading "THE BONDS."

Book-Entry Only. The Bonds will be issued in book-entry form only, and will be initially issued and registered in the name of Cede & Co. as nominee of The Depository Trust Company ("DTC"). Purchasers will not receive physical certificates representing their interests in the Bonds. See APPENDIX E for additional information about the book-entry only system.

The following firm, serving as municipal advisor to the City, has structured this issue.

NHA ADVISORS Financial & Policy Strategies.

> Maturity Schedules (See inside cover)

The Bonds are offered when, as and if issued and received by the Underwriter and subject to the approval as to their legality by Jones Hall, A Professional Law Corporation, San Francisco, California, Bond Counsel. Certain legal matters will also be passed upon for the City by Jones Hall, A Professional Law Corporation, San Francisco, California, as Disclosure Counsel and for the Underwriter by Stradling Yocca Cartson & Rauth, A Professional Corporation, San Francisco, California. It is anticipated that the Bonds in definitive form will be available for delivery to Cede & Co., as nominee of The Depository Trust Company, on or about June 22, 2022.



The date of this Official Statement May \_\_, 2022.



### Official Statement

#### **NEW ISSUE - FULL BOOK-ENTRY**

#### RATING: S&P: "AAA" See "RATING".

In the opinion of Jones Hall, A Professional Law Corporation, San Francisco, California, Bond Counsel, subject, however to certain qualifications described herein, under existing law, the interest on the Bonds is excluded from gross income for federal income tax purposes and such interest is not an item of tax preference for purposes of the federal alternative minimum tax. In the further opinion of Bond Counsel, such interest is not an item of tax preference for purposes. Bond Counsel expresses no opinion regarding any other tax consequences caused by the ownership or disposition of, or the accrual or receipt of interest on, the Bonds. See "LEGAL MATTERS – Tax Exemption."

#### \$30,000,000 CITY OF CAMPBELL ELECTION OF 2018 GENERAL OBLIGATION BONDS, SERIES 2022

#### Dated: Date of Delivery

#### Due: September 1, as shown on inside cover

Cover Page. This cover page contains information for quick reference only. It is not a summary of all the provisions of the Bonds. Investors must read the entire official statement to obtain information essential to making an informed investment decision.

Authority and Purpose. The captioned Election of 2018 General Obligation Bonds, Series 2022 (the "Bonds"), are being issued by the City of Campbell (the "City") pursuant to certain provisions of the California Government Code and resolutions of the City Council of the City adopted on May 17, 2022. The Bonds were authorized at an election of the registered voters of the City held on November 6, 2018, which authorized the issuance of general obligation bonds for the purpose of financing the acquisition and improvement of a police emergency operations center and a public library. The initial series of bonds under the 2018 authorization was issued in 2020. See "THE BONDS – Authority for Issuance" and "THE FINANCING PLAN" herein.

Security. The Bonds are general obligations of the City, payable solely from ad valorem property taxes levied by the City and collected by Santa Clara County (the "County"). The City Council is empowered and is obligated to annually levy ad valorem taxes for the payment of interest on, and principal of, the Bonds upon all property subject to taxation by the City, without limitation of rate or amount (except certain personal property that is taxable at limited rates). See "SECURITY FOR THE BONDS."

Payments. Interest on the Bonds accrues from the date of delivery and is payable semiannually on March 1 and September 1 of each year, commencing September 1, 2022, by check, draft or wire mailed to the person in whose name the Bond is registered. Payments of principal and interest on the Bonds will be paid by The Bank of New York Mellon Trust Company, N.A., as paying agent for the Bonds (the "Paying Agent"), to DTC for subsequent disbursement to DTC Participants who will remit such payments to the beneficial owners of the Bonds. See "THE BONDS – Description of the Bonds."

Redemption. The Bonds are subject to optional redemption and mandatory sinking fund redemption prior to maturity as described herein. See discussion of redemption under the heading "THE BONDS."

Book-Entry Only. The Bonds will be issued in book-entry form only, and will be initially issued and registered in the name of Cede & Co. as nominee of The Depository Trust Company ("DTC"). Purchasers will not receive physical certificates representing their interests in the Bonds. See APPENDIX E for additional information about the book-entry only system.

The following firm, serving as municipal advisor to the City, has structured this issue.

NHA ADVISORS Financial & Policy Strategies. Delivered.

Maturity Schedules (See Inside cover)

The Bonds are offered when, as and if issued and received by the Underwriter and subject to the approval as to their legality by Jones Hall, A Professional Law Corporation, San Francisco, California, Bond Counsel. Certain legal matters will also be passed upon for the City by Jones Hall, A Professional Law Corporation, San Francisco, California, as Disclosure Counsel and for the Underwriter by Stradling Yocca Cartson & Rauth, A Professional Corporation, San Francisco, California. It is anticipated that the Bonds in definitive form will be available for delivery to Cede & Co., as nominee of The Depository Trust Company, on or about June 22, 2022.

#### STIFEL

The date of this Official Statement is May 24, 2022.



#### MATURITY SCHEDULE\*

\$30,000,000\* CITY OF CAMPBELL ELECTION OF 2018 GENERAL OBLIGATION BONDS, SERIES 2022 (Base CUSIP<sup>†</sup>: 134105)

Maturity Date	Principal					
(September 1)	Amount	Interest Rate	Yield	Price	CUSIP <sup>†</sup> No.	

#### MATURITY SCHEDULE

#### \$30,000,000 CITY OF CAMPBELL ELECTION OF 2018 GENERAL OBLIGATION BONDS, SERIES 2022 (Base CUSIP<sup>†</sup>: 134105)

Maturity Date	Principal				
(September 1)	Amount	Interest Rate	Yield	Price	CUSIP <sup>†</sup> No.
2022	\$2,000,000	5.000%	1.600%	100.644	JF3
2023	1,710,000	5.000	1.900	103.632	JG1
2024	1,010,000	5.000	2.150	106.066	JH9
2025	495,000	5.000	2.310	108.227	JJ5
2026	520,000	5.000	2.380	110.389	JK2
2027	545,000	5.000	2.470	112.253	JL0
2028	575,000	5.000	2.580	113.762	JM8
2029	605,000	5.000	2.710	114.868	JN6
2030	635,000	5.000	2.780	116.159	JP1
2031	665,000	5.000	2.860	115.525 <sup>c</sup>	JQ9
2032	700,000	5.000	2.910	115.131 <sup>c</sup>	JR7
2033	730,000	5.000	3.020	114.269 <sup>c</sup>	JS5
2034	770,000	5.000	3.090	113.725 <sup>c</sup>	JT3
2035	805,000	5.000	3.180	113.030 <sup>c</sup>	JU0
2036	850,000	5.000	3.250	112.492 <sup>c</sup>	JV8
2037	890,000	5.000	3.300	112.110 <sup>c</sup>	JW6
2038	935,000	5.000	3.350	111.730 <sup>c</sup>	JX4
2039	980,000	5.000	3.400	111.351 <sup>c</sup>	JY2
2040	1,030,000	5.000	3.460	110.898 <sup>c</sup>	JZ9
2041	1,080,000	5.000	3.500	110.597 <sup>c</sup>	KA2
2042	1,135,000	5.000	3.520	110.448 <sup>c</sup>	KB0

#### \$6,585,000 - 5.000% Term Bonds maturing September 1, 2047; Yield: 3.550%; Price: 110.223<sup>c</sup>; CUSIP<sup>†</sup>: KC8

\$4,750,000 – 4.000% Term Bonds maturing September 1, 2050; Yield: 4.050%; Price: 99.159; CUSIP<sup>†</sup>: KD6

C Priced to the first optional redemption date of September 1, 2030.

† CUSIP® is a registered trademark of the American Bankers Association. CUSIP data herein are provided by CUSIP Global Services ("CGS"), managed on behalf of the American Bankers Association by FactSet Research Systems Inc. © 2022 CUSIP Global Services. All rights reserved. CUSIP® data herein is provided by CUSIP Global Services. This data is not intended to create a database and does not serve in any way as a substitute for the CGS database. CUSIP® numbers are provided for convenience only. Neither of the City nor the Underwriter takes any responsibility for the accuracy of such numbers.

#### \*Preliminary; subject to change.

† CUSIP® is a registered trademark of the American Bankers Association. CUSIP data herein are provided by CUSIP Global Services (°GGS'), managed on behalf of the American Bankers Association by FactSet Research Systems Inc. © 2022 CUSIP Global Services. All rights reserved. CUSIP® data herein is provided by CUSIP Global Services. This data is not intended to create a database and does not serve in any way as a substitute for the CGS database. CUSIP® numbers are provided for convenience only. Neither of the City nor the Underwriter takes any responsibility for the accuracy of such numbers.

30



# **Continuing Disclosure**

- SEC Rule 15c2-12 requires annual reporting of financial information
- Disclosures are submitted through the Electronic Municipal Market Access (EMMA) website
- Continuing disclosure exemptions:
  - Bond issued before July 1995
  - Issues less than \$1 million
  - Short-term debt (18 months or less)
  - Private placements
  - Sold with minimum denominations of \$100,000
  - 35 or fewer sophisticated investors



# **Bond Closing Flow of Funds**

Issuer





Underwriter



Bondholders













# **S&P Ratings: CA Municipalities**



As of 10/12/2023





As of 8/30/2023

# What's the Credit Rating?











#### **CALIFORNIA REPUBLIC**

## **Credit Enhancements**





# BASIC BOND CHARACTERISTICS



## **Bond Pricing and Yield**

### Prices and yields are inversely correlated

Par

Price

Yields



## **Bond Pricing and Yield**

### Prices and yields are inversely correlated



# **Bond Pricing and Yield**

#### • Prices and yields are inversely correlated



## **Pricing the Bonds**



## **Pricing the Bonds**



## **Pricing the Bonds**



## **Investor Preferences**



49

### **Investor Preferences**

	Issuer Deal Par Tax Status Rating Par Call Date	Gotham City 2022 General Obligation Bonds \$4,120,000 Tax-Exempt AAA 12/1/2032		ds	
	Maturity	P	AR AMOUNT	<b>COUPON RATE</b>	YIELD
	2023		\$175,000	5.00	2.85
Sarial va Tarm	2024		\$185,000	5.00	2.95
Sendi vs renn	2025		\$190,000	5.00	3.10
	2026		\$200,000	5.00	3.20
Premium	2027		\$205,000	5.00	3.40
VC	3028				
V 3	2029				
Discount	2030				
	2031				50
	2032		\$2,000,000	4.25	4.50

### **Investor Preferences**

	Issuer Deal Par Tax Status Rating Par Call Date	Gotham City 2022 General Obligation Bonds \$4,120,000 Tax-Exempt AAA 12/1/2032		lds	
	Maturity	PAR AMOUNT	COUPON RATE	YIELD	
D. 1	2023	\$175,000	5.00	2.85	
Ketail —	2024	\$185,000	5.00	2.95	
	2025	\$190,000	5.00	3.10	
Professional	2026	\$200,000	5.00	3.20	
Retail/SMA	2027	\$205,000	5.00	3.40	
	2028				
	2029				
	2030				
Institutional	2031			1	51
	2032	\$2,000,000	4.25	4.50	



# BASIC BOND MATH



## **Bond Price**

- Bond Price: Price at which the bond is sold to investors
- Equation:

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

- **C** = Coupon payment
- i = Interest rate (required yield)
- M = Value at maturity
- n = Number of payments
- Excel 'PRICE' Function:
  - =PRICE(delivery date, maturity date, coupon, yield, value at maturity, frequency of coupons, day count basis)

Inputs	Values
Delivery Date (settlement)	9/1/2022
Maturity Date	9/1/2032
Coupon (rate)	5.00%
Yield	4.50%
Maturity Value (redemption)	\$100
Coupon Payments/Year	2
Day Count Basis	О
PRICE function	\$103.99

# Yield to Maturity (YTM)

- Yield to Maturity (YTM): Total return anticipated on a bond if held until maturity
- Equation:

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

 Back-solves bond price equation to determine yield, given bond price and coupon:

#### Excel 'YIELD' Function:

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

Inputs	Values
Delivery Date (settlement)	9/1/2022
Maturity Date	9/1/2032
Coupon (rate)	5.00%
Purchase Price	\$110
Maturity Value (redemption)	\$100
Coupon Payments/Year	2
Day Count Basis	0
YIELD function	3.79%



## True Interest Cost (TIC)

- True Interest Cost (TIC): Rate necessary to discount the amounts payable on the bond to the purchase price received
  - Effective borrowing rate on Bond inclusive of P&I and all costs associated with Bond issuance
  - Proxied by internal rate of return (IRR)
- Excel 'IRR' function:
- =IRR(values, guess)
  - <u>Values</u>: Series of payments (first cash inflow must have negative value)
  - <u>Guess</u>: Gives Excel a place to start solving

Principal and	Annual Debt
Date	Amount
Issue Bonds	\$(5,000,000)
12/1/2024	\$1,250,000
12/1/2025	\$1,250,000
12/1/2026	\$1,250,000
12/1/2027	\$1,250,000
12/1/2028	\$1,250,000
IRR Function (TIC)	7.93%



## Debt Service (DS) 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(Interest rate, Number of Periods, Present Value, Future Value, Payment Due Period)

Inputs	Values
Coupon (rate)	5.00%
Years to Maturity (nper)	30
Present Value (PV)	\$30,000,000
Face Value (FV)	\$0
Payment Due period	0
PMT Function (Annual DS)	(\$1,951,543)

- "PMT" value returned is negative to show cash payments going out
- Includes both principal and interest component



# FUN STATS



### **Historical California Transactions**



## **Transaction Types**



## Annual Volume (Principal)



### 2023-2024 Transactions



### 2023-2024 Issuer Transactions



## 2023-2024 Volume (by Par)



## MMD vs. Treasury (10-year)



#### **MMD vs. Treasury** (10-year) (2021-2024) 6% **Treasury** 5% 2.75% 4% Average 3% 2% 1.95% 1% Average 0% 2020 2022 2024

## MMD vs. Treasury (30-year)



#### MMD vs. Treasury (30-year) (2021-2024)



### **QUESTIONS?**

#### **CRAIG HILL** Managing Principal NHA Advisors

