

# SESSION FOUR

**CDIAC**

**CALIFORNIA  
DEBT AND  
INVESTMENT  
ADVISORY  
COMMISSION**

## CURRENT TECHNOLOGICAL ADVANCES IN THE MARKET: ALTERNATIVE TRADING SYSTEMS (ATS)

### **MARK CAMPBELL**

EXECUTIVE DIRECTOR,  
CDIAC

### **TOM MEDER**

SENIOR VICE PRESIDENT,  
TMC BONDS LLC

### **CLARKE ROBERTS**

MANAGING PARTNER AND FOUNDER, EAX  
TRADING

### **RAYMOND JOHNSON**

FIXED INCOME APPLICATION SPECIALIST,  
BLOOMBERG LP

### **ROB NOVEMBRE**

CHIEF EXECUTIVE OFFICER AND PRESIDENT,  
CLARITY BIDRATE ALTERNATIVE TRADING SYSTEM

### **ALLEN WILLIAMS**

EXECUTIVE VICE PRESIDENT AND MANAGING  
DIRECTOR, GLOBAL DEBT CAPITAL MARKETS,  
IPREO

# BLOOMBERG'S MUNICIPAL BOND PLATFORM

Raymond E. Johnson  
Fixed Income Specialist

October 21<sup>st</sup>, 2015

# BLOOMBERG ANALYTICS

## What is Bloomberg?

- Market Monitoring
- News
- Advanced Analytics
- Security Master Database
- Communication/Execution Tools

# BLOOMBERG ELECTRONIC EXECUTION PLATFORMS:

## FIT <GO> “Fixed Income Trading”

- Treasuries
- TBA Mortgages
- Interest Rate Swaps
- Agency Bonds
- Corporate Bonds (ALLQ <GO> and IMGR <GO>)

# FIT <GO> (TREASURIES, MORTGAGES, AGENCY BONDS AND INTEREST RATE SWAPS.

Treasuries

TBA Mortgages

Agency Bonds

Swaps



# FIT <GO> EXECUTION PAGE INPUT QUANTITY SELECT DEALERS TO SOLICIT OFFERS

The screenshot displays the Bloomberg FIT <GO> Execution Page. At the top, there are navigation tabs: "United States", "1) Actions", "3) Settings", and "DEMO Fixed Income T...". Below these is a "FIT Inquiry Ticket" header with a "10) None" dropdown.

The main input area includes:

- 10) Flip** dropdown
- Side**: Buy
- Security**: T 1 3/8 09/30/20 912828L65 DV01
- Quantity**: 10000
- Settle**: Reg
- Date**: 10/06/15
- Select Dealers** grid:
 

BBAT	D1	D2
D3	D4	Q2
Q6	SSOX	

Below the input fields is a table of market data:

Broker	Bid Px	Ask Px	BYld	AYld	BSz	ASz	Options
Q1	100-10 <sup>7</sup> / <sub>8</sub>	100-11 <sup>1</sup> / <sub>8</sub>	1.315	1.313	260	260	
Q2	100-10 <sup>7</sup> / <sub>8</sub>	100-11 <sup>1</sup> / <sub>8</sub>	1.315	1.313	160	160	
D4	100-10 <sup>7</sup> / <sub>8</sub>	100-11 <sup>1</sup> / <sub>8</sub>	1.315	1.313	100	130	
D1	100-10 <sup>7</sup> / <sub>8</sub>	100-11 <sup>1</sup> / <sub>8</sub>	1.315	1.313	50	20	07:13 57.01
D3	100-10 <sup>7</sup> / <sub>8</sub>	100-11 <sup>1</sup> / <sub>8</sub>	1.315	1.313	50	10	07:13 54.27
BB	100-10 <sup>7</sup> / <sub>8</sub>	100-11 <sup>1</sup> / <sub>8</sub>	1.315	1.313	10	10	07:13 47.16
D2	100-11 <sup>1</sup> / <sub>8</sub>	100-11 <sup>3</sup> / <sub>8</sub>	1.313	1.312	10	30	07:12 37.61

At the bottom, there are buttons for "1) Submit" and "Close". A "More Options" menu is visible on the right, containing:

- 2) Add Notes
- 5) Order Ticket
- 9) Stage to TSOX
- More Options

Red boxes and arrows highlight the "Quantity" and "Settle" fields, the "Select Dealers" grid, and the "Submit" button. A text box with a red border contains the text: "Input Quantity and Settle Select Dealers Submit".

# COMPETITIVE OFFERING RESPONSES

Page 1/1 Activity Panel							
Basic View		Custom View					
T 1 <sup>3</sup> / <sub>8</sub> 09/30/20				Expire: 1:21		Detail	Pass
	Buy	Dealer	Quantity	Yield	Price		Status
Cusip	912828L65	D1	10,000,000	1.286	100-13 <sup>3</sup> / <sub>4</sub>	Lift	Firm 0:01
Settle	10/06/15	D2	10,000,000	1.287	100-13+	Lift	Firm 0:01
CBBT Px	100-09 <sup>1</sup> / <sub>4</sub> / 100-09+	D3	10,000,000	1.308	100-10 <sup>1</sup> / <sub>4</sub>	Lift	Firm 0:01
CBBT Yld	1.315 / 1.313	D4	10,000,000	1.313	100-09+	Lift	Firm 0:03

- Activity Panel
- Identifies Best Price
- Provides Electronic Audit Trail confirming Best Execution.

Australia 61 2 9777 8600 Brazil 5511 2395 9000 Europe 44 20 7330 7500 Germany 49 69 9204 1210 Hong Kong 852 2977 6000  
 Japan 81 3 3201 8900 Singapore 65 6212 1000 U.S. 1 212 318 2000 Copyright 2015 Bloomberg Finance L.P.  
 SN 625582 PDT GMT-7:00 6556-3493-2 05-Oct-2015 07:16:26

# ELECTRONIC CONFIRMATION

T 1 <sup>3</sup>/<sub>8</sub> 09/30/20    ↓ 100-09<sup>3</sup>/<sub>4</sub> - 02+    100-09+ / 100-09<sup>3</sup>/<sub>4</sub>    1.313 / 1.312  
 At 7:18    -- X --    Source BGN

1) Transactions    2) Blotter    3) Allocate    5) Actions    Trade Detail

Refresh

**Bloomberg**

Buy/Sell	Buy	Cusip	912828L65	Status	Accepted
Issue	T 1 <sup>3</sup> / <sub>8</sub> 09/30/20			Broker Name	BLOOMBERG D4 DEMO
Audit Trail	FIT:D1@100-10 <sup>3</sup> / <sub>8</sub> D2@100-14 <sup>1</sup> / <sub>4</sub> D3@100-20 <sup>3</sup> / <sub>8</sub>			Broker	D4

Quantity	10,000,000	Disc Rate	0.0000	Principal	\$ 10,029,687.50
Clean Price	100.29687500 (100-09+)	Yield	1.313	Acc Int (6)	2,254.10
Settle Date	10/06/2015			Net	10,031,941.60

Entry/Exec Time	07:18:03 / 07:18:06	Seq No	12
Trade Date	10/05/2015	TS Ticket	

User Name: RAYMOND JOHNSON  
 Customer: BLOOMBERG/ SAN FRANCISCO  
 Term Cust: BLOOMBERG/ SAN FRANCISCO

30) Dealer Notes    31) Customer Notes    35) Miscellaneous

DEFAULT b(6D)

Australia 61 2 9777 8600    Brazil 5511 2395 9000    Europe 44 20 7330 7500    Germany 49 69 9204 1210    Hong Kong 852 2977 6000  
 Japan 81 3 3201 8900    Singapore 65 6212 1000    U.S. 1 212 318 2000    Copyright 2015 Bloomberg Finance L.P.  
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**Capture Necessary Security Master and Trade Detail Information.**

# MUNI MARKET UNIQUE CHARACTERISTICS:

1MM+ Active CUSIPS

Unique Issue Details

Greater Number of Dealers

More Cooperative Dealer Network

Far Greater Number of Investors

Relationships Important

# CRITICAL SECURITY DETAILS

DES

709223UW Muni 92) Report 93) Alert Page 1/11 Description: Municipal  
 PENNSYLVANIA ST TURNPIKE COMMISSION TURNPIKE REVENUE 94) Notes 97) Settings  
 SUB-SER C CUSIP 709223UW9 98) PICK \$

Ticker PASTRN Cpn 6.250 Maturity 06/01/2038 Dated 10/28/2008 State PA

21) Municipal Bond 22) Series 23) Issuer Description

Pages	Municipal Bond Information	Trading Information
1) Bond Info	Issue Type REVENUE BONDS	1st Settle Dt 10/28/2008
2) Addtl Info	Ult Borrower Pennsylvania Turnpike Comm	Next Settle Dt 10/08/2015
3) Involved Parties	Maturity Type CALL/SINK	Int Accrual Dt 10/28/2008
4) Adj Cpn Info	Ext Redemption NONE	1st Coupon Dt 06/01/2009
5) Credit Enhance	Coupon 6.250 FIXED, OID	Next Par Call 06/01/2018@Par
6) Credit Ratings	Prc/Yld @ Iss 96.725/6.500	Next Sink 06/01/2029@Par
7) Call Sched & ERP	Coupon Freq SEMI-ANNUAL	For \$ 9.175MM
8) Put Schedule	Tax Provision FED & ST TAX-EXEMPT	Week of Sale 10/13/2008
9) Sink & Est Sink	Credit Enhancement	Award 10/16/2008 13:50
10) Refunding Info	Insurance/Program - ASSURED GTY	First Trade 10/16/2008 16:00
11) DES Notes	Bond Ratings	
	MOODY'S(Underlyi A3 STA	
	Insured A3 STA	
	S&P'S AA STA	
	Underlying A- STA	
	FITCH A- STA	

Quick Links

- 31) TDH MSRB Trade
- 32) CACS Material Evt
- 33) CF Filings
- 34) CN Sec News
- 35) HDS Holders
- 66) Send Bond

Australia 61 2 9777 8600 Brazil 5511 2395 9000 Europe 44 20 7330 7500 Germany 49 69 9204 1210 Hong Kong 852 2977 6000  
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# HUGE UNIVERSE OF OFFERINGS AVAILABLE PICK <GO>

Warning! Client-testing state. Data may not be accurate.  
Monitoring Enabled.

All Offerings | 1) Views | 2) Actions | Page 1/417 | Muni Offerings

Filters: Include: PICK Off... | All States | All Tax Statuses | All Sizes | All Filters: 1

3MM	NJ	NEW JERSEY ST TRANSPRTN TRUSTF TRANSPRTN PROGR	5.000	06/15/28	4.200 (NET)	PICK
A3/A-/A-/NA		ST APPROP CA:22@100.000 EXEMPT	646136G96	SIEBERT	(646)775-4860	IB Email
5M	MI	LANSING MI TXBL-REF-LIMITED TAX-SER B	3.450	06/01/27	3.603 (NET)	PICK
NA/AA-/NA/NA		NONE CA:22@100.000 TAXABLE	516372QY8	MILLENNIUM	(980)213-2345	IB Email
10M	MO	JACKSON CNTY MO CONSOL SCH DIS REF-MO DIRECT DEP	5.000	03/01/22	1.741 (NET)	PICK
NA/AA+/NA/NA		ST AID DIR DEP NON-CALLABLE EXEMPT	467430NR1	MILLENNIUM	(980)213-2345	IB Email
50M	NJ	NEW JERSEY ST TRANSPRTN TRUSTF TRANSPRTN PROGR	5.000	06/15/22	3.669 (NET)	PICK
A3/A-/A-/NA		NONE NON-CALLABLE EXEMPT	646136R60	MILLENNIUM	(980)213-2345	IB Email
25M	WV	MONONGALIA CNTY WV BLDG COMMIS JUSTICE CTR-SER	3.000	02/01/17	0.664 (NET)	PICK
Aa3/NA/NA/NA		NONE NON-CALLABLE EXEMPT	61021PAC5	MILLENNIUM	(980)213-2345	IB Email
15M	PA	PENNSYLVANIA ST TURNPIKE COMMI MOTOR LICENSE FU	4.000	12/01/37	3.437 (NET)	PICK
A2/NA/AA-/NA		NONE CA:21@100.000 EXEMPT	709223X30	MILLENNIUM	(980)213-2345	IB Email
5M	IA	HILLS IA HLTH FACS REVENUE MERCY HOSP PROJ	4.000	08/15/21	2.329 (NET)	PICK
A3/NA/NA/NA		NONE CA:20@100.000 EXEMPT	431669AM2	MILLENNIUM	(980)213-2345	IB Email
10M	TX	UNIV OF TEXAS TX REF-FING SYS-SER B	5.000	08/15/22	1.746 (NET)	PICK
Aaa/AAA/AAA/NA		NONE NON-CALLABLE EXEMPT	9151373V3	MILLENNIUM	(980)213-2345	IB Email
20M	MO	COLUMBIA MO SPL OBLIG REF-ELEC UTIL PROJ-ANNUAL	3.000	10/01/27	2.664 (NET)	PICK
NA/AA/AA/NA		NONE CA:20@100.000			(80)713-2345	IB Email
5M	IA	S E POLK IA CMNTY SCH DIST SCH SER A			27 (NET)	PICK
NA/A+/NA/NA		NONE CA:18@100.000			(80)213-2345	IB Email
40M	PA	PENNSYLVANIA ST TURNPIKE COMMI MOTOR			86 (NET)	PICK
A2/NA/AA-/NA		NONE CA:22@100.000 EXEMPT	7092234U2	MILLENNIUM	(980)213-2345	IB Email
1M	PA	PENNSYLVANIA ST TURNPIKE COMMI SUB-SER A	5.000	06/01/39	4.073 (NET)	PICK
A3/AA/A-/NA		ASSURED GTY CA:19@100.000 EXEMPT	709223VW8	MILLENNIUM	(980)213-2345	IB Email

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**New PICK.  
IB and Email Links.**

# ELECTRONIC TRADE CONFIRMATION.

BXT  
 1<Go> to send to MSG & VCON, View other options under Settings

PASTRN 6 1/4 06/01/38 Muni 1) Send (VCON) 2) Enrich VCON Buy Ticket  
 10/05/2015 07:57 Trade Date 10/05/15 97) Settings

Trade Information

Trader RAYMOND JOHNSON  
 At BLOOMBERG/ SAN FRANCISCO CUSIP 709223UW9  
 NYSE SYMB N.A.

9) BUY 1000 M of PASTRN 6 1/4 06/01/38 PA TPK SUB-SER C  
 Int Acc Date 10/28/08

Price 99.5000 Yield 6.2910 to Worst 06/01/38 @ 100  
 1st Coupon Dt 06/01/09

Settlement 10/08/15 (T+3 for calendar 'US') State PA  
 Concession Rate 0.000000 Expressed in Points

Ratings S&P AA Moody's A3 Fitch A-  
 Notes \* PA TPK SUB-SER C \*

Trade Numbers

View Amounts in USD

Principal	USD	995,000.00
Concession		0.00
Prin Net Conc		995,000.00
Accrued ( 127 days )		22,048.61
<b>Total</b>	<b>USD</b>	<b>1,017,048.61</b>

Australia 61 2 9777 8600 Brazil 5511 2395 9000 Europe 44 20 7330 7500 Germany 49 69 9204 1210 Hong Kong 852 2977 6000  
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 SN 625582 PDT GMT-7:00 6556-3493-2 05-Oct-2015 07:57:57  
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# CONSOLIDATED TRADE BLOTTER

Load Complete

Single Day | 1) Settings | 2) Actions | 3) Teams | Voice Confirmation

View Alert		Trade Details		Match/Affirm		Confirm	Reject/Cancel		Allocate	Modify	Chat	
Chat	B/S	Amount	Accrued	Net	Security	Price	Counterparty	Status	Trade Date	Settl		
Trades My Firm Submitted												
1. Chat	B	1,000,000		1,005,000.00	CTSGEN 5 08/0	100.5000000	BLOOMBERG/ SA	New	10/05/15	10/1		
2. Chat	B	1,000,000		1,010,000.00	SACDEV 3 12/01	101.0000000	BLOOMBERG/ SA	New	10/05/15	10/1		
Trades My Firm Received												
1. Chat	B	5,000,000	29,150.00	4,988,150.00	FNMA 2.12 12/2	99.1800000	BB	New	10/05/15	10/0		
2. Chat	B	2,000,000	25,777.78	2,050,777.78	AAPL 3.2 05/13	101.2500000	BB	New	10/05/15	10/0		
3. Chat	B	1,000,000	16,969.44	1,261,969.44	F 7.45 07/16/3	124.5000000	BB	New	10/05/15	10/0		
Matched/Affirmed Trades												
1. Chat	B	10,000,000	28,260.87	10,006,385.87	T 2 08/15/25	99-25	BB	Confirmed	10/05/15	10/		

Australia 61 2 9777 8600 Brazil 5511 2395 9000 Europe 44 20 7330 7500 Germany 49 69 9204 1210 Hong Kong 852 2977 6000  
 Japan 81 3 3201 8900 Singapore 65 6212 1000 U.S. 1 212 318 2000 Copyright 2015 Bloomberg Finance L.P.  
 SN 625582 PDT GMT-7:00 6556-3493-2 05-Oct-2015 08:07:19

# ACCOUNT ALLOCATION

1) Send		2) Save		3) Clear		4) Actions		Client Allocation	
T 2.000 8/15/2025 @ 99.781250 (2.0245)				Broker		BLP Test Broker Code		(BB)	
Identifier		912828K74		Trade Date		10/5/2015		Set. Date 10/6/2015	
BLOOMBERG/ SAN FRANCISCO				Status		NoAlloc			
Account Group		ALL		Seq No		50907			
Buyer		RAYMOND JOHNSON		Balance		0		(0.00%)	
Buy		10,000,000		Amount Scaling		None			
Amount Format		Amount							
<input checked="" type="checkbox"/> BuySide Calculated									

Account	Amount	Principal	Accrued	Total
Total		9,978,125.00	28,260.86	10,006,385.86
1	2,000,000	1,995,625.00	5,652.17	2,001,277.17
123	1,500,000	1,496,718.75	4,239.13	1,500,957.88
1234	3,000,000	2,993,437.50	8,478.26	3,001,915.76
2	2,000,000	1,995,625.00	5,652.17	2,001,277.17
3	100,000	99,781.25	282.61	100,063.86
4	1,000,000	997,812.50	2,826.09	1,000,638.59
56578	400,000	399,125.00	1,130.43	400,255.43
96569	0			
ABSOLUTE OPPTS	0			
AC3	0			
PPSM1061	0			

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 SN 625582 PDT GMT-7:00 6556-3493-2 05-Oct-2015 08:11:30

# SHORT TERM MUNI OFFERINGS {BOOM <GO>}

95<GO> to Show Dealer List, <Menu> to Display Searches

Municipal VRDNs 91) Searches 92) Settings 97) Trading Access Money Market Offerings

93) Refine Search DEFAULT Group by LIQ

86) Table 87) Settlement Ladder

Issuer	St	AskSz (M)	Mod	Tax	CDT	LIQ	Rate	Set Date	Nxt Rst Dt	Dlr	Cusip
ROCHESTER HLTH-A-MAY	MN	500	W	NON		BANK OF AME	.020	10/08/15	10/14/15	WFS	771902FF5
BANK OF MONTREAL											
NORTHN CALIF PWR-1B	CA	100	W	TAX		BANK OF MON	.160	10/13/15	10/14/15	CITI	664845BF0
BANK OF NOVA SCOTIA											
OH AIR QLTY-VAR-B	OH	400	W	NON		BANK OF NOV	.010	10/08/15	10/14/15	MS	677525TH0
BANK OF NY MELLON											
FULTON DEV-VAR-DONNE	GA	100	W	NON		BANK OF NY M	.120	10/08/15	10/15/15	WFS	36004PAD6
NH BUS TXB-SER B	NH	400	W	TAX	ST GTD	BANK OF NY M	.160	10/08/15	10/15/15	BNY	64468EAZ3
NH ST BUS FIN-TXB-A	NH	1,060	W	TAX	ST GTD	BANK OF NY M	.160	10/08/15	10/15/15	BNY	64468EAY6
NJ MFH-VAR-AMT-SER A	NJ	1,685	W	AMT	AGM	BANK OF NY M	.140	10/08/15	10/15/15	JPM	646108CR9
NJ MFH-VAR-TXB-I	NJ	2,595	W	TAX	AGM	BANK OF NY M	.300	10/08/15	10/15/15	JPM	646108DZ0
SHELBY CNTY-VAR-VAR-	TN	300	W	NON		BANK OF NY M	.010	10/08/15	10/15/15	GS	821686TM4
UT HFA TXB-VAR-SFM-E	UT	35	W	TAX		BANK OF NY M	.160	10/08/15	10/14/15	BARC	91755NVE2
UT SFM-VAR-D3-CL 1	UT	480	W	TAX		BANK OF NY M	.160	10/08/15	10/14/15	BARC	917436BY2
BANK OF NY MELLON TR											
INTERNAL TEST-VAR	SC	2,222	W	NON		BANK OF NY M	N.A.	10/08/15	ERROR(1)	BBLP	9999609H2
BANK OF STOCKTON											
CA ECON VAR-SCIENTIF	CA	660	W	AMT		BANK OF STO	.040	10/08/15	10/14/15	RBC	13066PAX6
BANK ONE N.A.											
S CENTRAL TX TXBL RO	TX	100	W	TAX		BANK ONE N.A	.100	10/08/15	10/14/15	JPM	837264AA8
BARCLAYS BANK PLC											
BARCLAYS TR-RI-4B	VA	3,335	W	NON		BARCLAYS BA	.100	10/08/15	10/15/15	BARC	06740GAG1
BLACKROCK-7-269	NY	13,800	W	AMT		BARCLAYS BA	.110	10/14/15	10/15/15	BARC	09255F307

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 Japan 81 3 3201 8900 Singapore 65 6212 1000 U.S. 1 212 318 2000 Copyright 2015 Bloomberg Finance L.P.  
 SN 625582 PDT GMT-7:00 H607-749-1 08-Oct-2015 11:04:45

# MONITORING THE NEW ISSUE MARKET

30 records found

1) Export to Excel

2) Edit Columns

Municipal Fixed Rate Calendar

Date	10/05/2015	-	mm/dd/yyyy										
Date↓	Time	Issuer Description	ST	Amt (MM)	Tax	Senior Manager	Int Cost	Status	Type	Industry	Security Type	*	
11)	10/05/2015	CA INFRA & ECON DEV BK	ca	221.000	N	WELLS FARGO BANK N		WED	NEGT	Not-For-Profit Cultural O	Revenue Bonds	*	
12)	10/05/2015	CA INFRA & ECON DEV BK	CA	128.000	N	WELLS FARGO BANK N		WED	NEGT	Not-For-Profit Cultural O	Revenue Bonds	*	
13)	10/05/2015	CA MUNI FIN AUTH -A	CA	20.250	N	CITIGROUP GLOBAL M		MON	NEGT	State Multi-Family Housi	Revenue Bonds	*	
14)	10/05/2015	CALIFORNIA SCH FIN AUTH	CA	27.490	N	RBC CAPITAL MARKET		DAY/DAY	NEGT	Charter Schools	Revenue Bonds	*	
15)	10/05/2015	CALIFORNIA SCH FIN AUTH	CA	.270	T	RBC CAPITAL MARKET		DAY/DAY	NEGT	Charter Schools	Revenue Bonds	*	
16)	10/05/2015	CALIFORNIA ST -REF -CK	CA	152.295	N	BANK OF AMERICA ME		THUR	NEGT	General Obligation	G.O. Unlimited Bon	*	
17)	10/05/2015	CALIFORNIA ST -REF -CL	CA	128.610	N	BANK OF AMERICA ME		THUR	NEGT	General Obligation	G.O. Unlimited Bon	*	
18)	10/05/2015	CALIFORNIA ST-AMT-REF-C	CA	164.795	A	BANK OF AMERICA ME		THUR	NEGT	General Obligation	G.O. Unlimited Bon	*	
19)	10/05/2015	CHINO CMNTY FACS DT	CA	13.500	N	STIFEL NICOLAUS & C		WED	NEGT	Mello-Roos	Special Tax	*	
20)	10/05/2015	CHINO HILLS FING AUTH -	CA	10.760	N	PIPER JAFFRAY & CO		TUE	NEGT	Miscellaneous Tax	Special Tax	*	
21)	10/05/2015	COMPTON CCD-REF	CA	13.190	N	RBC CAPITAL MARKET		TUE	NEGT	Community College Distri	G.O. Unlimited Bon	*	
22)	10/05/2015	DELANO UNION ESD -A -R	CA	9.635	N	STIFEL NICOLAUS & C		TUE	NEGT	School Districts	G.O. Unlimited Bon	*	
23)	10/05/2015	MTN VIEW WHISMAN SD	CA	9.895	N	RBC CAPITAL MARKET		WED	NEGT	School Districts	G.O. Unlimited Bon	*	
24)	10/05/2015	ORANGE CNTY CFD 2015-1	CA	90.925	N	STIFEL NICOLAUS & C		WED	NEGT	Mello-Roos	Special Tax	*	
25)	10/05/2015	RNR SCH FIN AUTH -SUB-	CA	14.315	N	STIFEL NICOLAUS & C		TUE	NEGT	Mello-Roos	Special Tax	*	
26)	10/05/2015	SAN MATEO-FOSTER CSD	CA	10.000	N	RBC CAPITAL MARKET		MON	NEGT	School Districts	G.O. Unlimited Bon	*	
27)	10/05/2015	SOLANO CCD-REF	CA	47.877	N	RBC CAPITAL MARKET		TEST	NEGT	Higher Education	G.O. Unlimited Bon	*	
28)	10/12/2015	DOWNEY USD -REF	CA	2.000	N	PIPER JAFFRAY & CO		WED	NEGT				
29)	10/12/2015	DOWNEY USD -REF	CA	7.000	N	PIPER JAFFRAY & CO		WED	NEGT				
30)	10/12/2015	GREENFIELD USD -A	CA	5.000	N	STIFEL NICOLAUS & C						Bon *	
31)	10/12/2015	GREENFIELD USD -A1	CA	5.000	N	STIFEL NICOLAUS & C						Bon *	
32)	10/12/2015	SULPHUR SPRINGS UN SD-	CA	10.000	N	PIPER JAFFRAY & CO							
33)	10/06/2015	13:00 SAN FRANCISCO USD -C	CA		N								
34)	10/06/2015	13:00 SAN FRANCISCO USD -F	CA	226.000	N							Bon *	
35)	10/07/2015	11:30 SAN FRANCISCO CITY/CO-R	CA	127.980	N				COMP	Intergovernmental Lease	Certificates of Par		
36)	10/07/2015	12:00 CAJON VALLEY USD-D	CA	17.880	N				COMP	School Districts	G.O. Unlimited Bon		
37)	10/08/2015	13:00 SAN FRANCISCO USD -RE	CA	71.950	N				COMP	School Districts	G.O. Unlimited Bon		
38)	10/13/2015	11:00 SONOMA CO WTR AGY	CA	20.190	N				COMP				
39)	10/13/2015	11:30 SONOMA CO WTR AGY-TXBL	CA	1.760	T				COMP				
40)	10/15/2015	13:00 STANDARD SD-REF	CA	8.190	Q				COMP	School Districts	G.O. Unlimited Bon		

"i" allows comparison of deals series:  
Coupon/Yield/Spread

Blue Deals - Internal To Bloomberg Only.

Australia 61 2 9777 8600 Brazil 5511 2395 9000 Europe 44 20 7330 7500 Germany 49 69 9204 1210 Hong Kong 852 2977 6000  
Japan 81 3 3201 8900 Singapore 65 6212 1000 U.S. 1 212 318 2000 Copyright 2015 Bloomberg Finance L.P.  
SN 625582 PDT GMT-7:00 6556-3493-2 05-Oct-2015 08:16:27

# COMPARING NEW ISSUE DEALS

Sale Date	08/03/15	08/03/15	08/24/15	08/03/15	10/06/15
Issuer	CLOVIS USD -D	OAKLAND USD-A-REF	BEVERLY HILLS USD	OAKLAND USD-REF	SAN FRANCISCO USD -F
State	CA	CA	CA	CA	CA
Amount (MM)	103.018729	173.5	76	168.705	226
Moody/S&P/Fitch	Aa2/AA/ --	-- / -- / --	Aa1e/AA+/ --	-- / -- / --	Aa2e/APPLIED/ --
Senior Manager	STIFEL NICOLAUS & CO INC	SIEBERT BRANDFORD SHANK	CITIGROUP GLOBAL MKTS INC	SIEBERT BRANDFORD SHANK	
Call	08/01/25 @ 100	08/01/25 @ 100	08/01/25 @ 100	08/01/25 @ 100	06/15/24 @ 100
Tax Type	FED & ST TAX-EXEMPT				
Year	Coupon/Yield/Spread/SprToMat	Coupon/Yield/Spread/SprToMat	Coupon/Yield/Spread/SprToMat	Coupon/Yield/Spread/SprToMat	Coupon/Yield/Spread/SprToMat
1Y	4.000 / 0.220 / -5 / -5	-- / -- / -- / --	2.000 / 0.230 / -2 / -2	5.000 / 0.820 / +54 / +54	-- / -- / -- / --
2Y	4.000 / 0.590 / -4 / -4	5.000 / 1.140 / +69 / +69	2.000 / 0.590 / +5 / +5	5.000 / 1.290 / +65 / +65	-- / -- / -- / --
3Y	5.000 / 0.840 / -7 / -7	-- / -- / -- / --	3.000 / 0.840 / +1 / +1	5.000 / 1.630 / +73 / +73	-- / -- / -- / --
4Y	5.000 / 1.060 / -6 / -6	-- / -- / -- / --	3.000 / 1.020 / -6 / -6	5.000 / 1.920 / +82 / +82	-- / -- / -- / --
5Y	5.000 / 1.320 / -6 / -6	5.000 / 2.280 / +90 / +90	2.000 / 1.290 / -5 / -5	5.000 / 2.280 / +94 / +94	-- / -- / -- / --
6Y	5.000 / 1.620 / -2 / -2	5.000 / 2.570 / +93 / +93	2.000 / 1.560 / -3 / -3	5.000 / 2.320 / +71 / +71	-- / -- / -- / --
7Y	5.000 / 1.930 / +7 / +7	5.000 / 2.840 / +98 / +98	2.000 / 1.760 / -2 / -2	5.000 / 2.590 / +75 / +75	-- / -- / -- / --
8Y	5.000 / 2.100 / +6 / +6	5.000 / 3.000 / +96 / +96	4.000 / 1.870 / -6 / -6	5.000 / 2.750 / +73 / +73	-- / -- / -- / --
9Y	5.000 / 2.290 / +13 / +13	5.000 / 3.180 / +102 / +102	4.000 / 2.010 / -5 / -5	5.000 / 2.930 / +76 / +76	-- / -- / -- / --
10Y	5.000 / 2.450 / +16 / +16	5.000 / 3.340 / +105 / +105	4.000 / 2.170 / -3 / -3	5.000 / 3.090 / +79 / +79	-- / -- / -- / --
11Y	5.000 / 2.660 / +37 / +43	5.000 / 3.480 / +119 / +119	5.000 / 2.280 / +8 / +14	5.000 / 3.230 / +80 / +80	-- / -- / -- / --
12Y	-- / -- / -- / --	5.000 / 3.560 / +127 / +126	5.000 / 2.400 / +20 / +30	5.000 / 3.310 / +78 / +78	-- / -- / -- / --
13Y	5.000 / 2.900 / +61 / +70	5.000 / 3.640 / +135 / +131	3.500 / 2.830 / +63 / +43	5.000 / 3.390 / +77 / +77	-- / -- / -- / --
14Y	5.000 / 2.970 / +68 / +77	5.000 / 3.710 / +142 / +134	3.500 / 3.010 / +81 / +52	5.000 / 3.460 / +77 / +77	-- / -- / -- / --
15Y	-- / -- / -- / --	5.000 / 3.780 / +149 / +137	3.000 / 3.090 / +41 / +41	5.000 / 3.530 / +77 / +77	-- / -- / -- / --
16Y	-- / -- / -- / --	5.000 / 3.850 / +156 / +139	4.000 / 3.120 / +92 / +65	-- / -- / -- / --	-- / -- / -- / --
17Y	-- / -- / -- / --	5.000 / 3.900 / +161 / +141	4.000 / 3.170 / +97 / +66	-- / -- / -- / --	-- / -- / -- / --
18Y	-- / -- / -- / --	5.000 / 3.930 / +164 / +141	-- / -- / -- / --	-- / -- / -- / --	-- / -- / -- / --
19Y	-- / -- / -- / --	5.000 / 3.940 / +165 / +140	-- / -- / -- / --	-- / -- / -- / --	-- / -- / -- / --
20Y	-- / -- / -- / --	5.000 / 3.970 / +168 / +141	-- / -- / -- / --	-- / -- / -- / --	-- / -- / -- / --
22Y	5.000 / 3.370 / +108 / +103	-- / -- / -- / --	-- / -- / -- / --	-- / -- / -- / --	-- / -- / -- / --
25Y	4.000 / 4.000 / +90 / +90	5.000 / 4.100 / +181 / +141	-- / -- / -- / --	-- / -- / -- / --	-- / -- / -- / --

# BIDS WANTED INPUT

Muni	1) Lists		1) Options		Get Enabled		Bid/Offer List Trading					
Name	TCULLUM12 10/5/15 11:19:42		Bid Time		13:00		Time Zone		Eastern Time (US)			
			Firm Until Time		13:02		Distribution		A - 10000			
CUSIP	Amt(M)	Settle	Issue	ST	Cpn	Maturity	M	S&P	I	Allocations	Item	
1. 13063BFV9	25	10/08/15	CALIFORNIA ST BUILD AMERICA ...	CA	7.95	03/01/36	Aa3	AA-	N	Alloc	A1	
2. 358240FC8	50	10/08/15	FRESNO CA WTR SYS REVENUE R...	CA	6.75	06/01/40	N.A.	A	N	Alloc	A2	
3. 799387AH8	150	10/08/15	SAN RAMON CA REDEV AGY SUCC...	CA	5	02/01/24	N.A.	AA	Y	Alloc	A3	
4. 702274AV3	100	10/08/15	PASADENA CA PUBLIC FING AUTH...	CA	6.998	03/01/34	N.A.	AA+	N	Alloc	A4	
5. 901072EB0	35	10/08/15	TUSTIN CA UNIF SCH DIST SCH F...	CA	6.589	08/01/34	Aa1	AA	N	Alloc	A5	
6. 798136TS6	25	10/08/15	SAN JOSE CA ARPT REVENUE TX...	CA	6.6	03/01/41	A2	AA	Y	Alloc	A7	
7. 59334PDA2	50	10/08/15	MIAMI-DADE CNTY FL TRANSIT S...	FL	5.624	07/01/40	A1	AA	N	Alloc	A8	
8. 514444WZ7	200	10/08/15	LANCASTER TX BUILD AMERICA ...	TX	6.528	02/15/40	Aa3	AA-	N	Alloc	A9	
9. 67884FZG4	0	10/08/15	OKLAHOMA DEV FIN AUTH LEASE ...	OK	4.768	06/01/40	N.A.	AA	N		A10	
10.												
11.												
12.												
13.												
14.												
15.												
16.												
17.												
18.												
19.												
20.												
21.												
22.												

21) List Entry   22) List Activity Panel   23) Intraday Blotter

# BIDS WANTED RESPONSES

Successfully sent!

Muni 11) Lists 12) Options Get Enabled Bid/Offer List Trading

Name TCULLUM12 10/5/15 11... Par Amt 685M # Items 9 Time to Curtain 00:00:00 Pass All  
 Side SELL Exec Amt 0 # Responses 9 Time to Expiry 11:18:50 Hit All Best  
 Hide done trades Showing top 3 dealers Excel Exec

Securities	Brkr	Firm	Gr Prc	Net Prc	Gr Yld	Net Yld	Con	Status		
1. CAS 7.950 03/01/36	CAS	7.950 03/01/36	Cusip: 13063BFV9	State: CA	Amt: 25M			#A1	Pass	
2. FREWTR 6.750 06/01/40	D2	BLOOMBERG L.P.	121.071	121.071	2.820	2.820		Firm	00:18:50	Hit
3. SRADEV 5.000 02/01/24	BB	BLOOMBERG L.P.						Expired		
4. PASGEN 6.998 03/01/34	D3	BLOOMBERG L.P.						Expired		
5. TUSEDU 6.589 08/01/34	FREWTR	6.750 06/01/...	Cusip: 358240FC8	State: CA	Amt: 50M			#A2	Pass	
6. SJSAPT 6.600 03/01/41	D2	BLOOMBERG L.P.	253.556	251.556	0.290		2	Firm	00:18:50	Hit
7. MIATR 5.624 07/01/40	BB	BLOOMBERG L.P.						Expired		
8. LAN 6.528 02/15/40	D3	BLOOMBERG L.P.						Expired		
9. OKSDEV 4.768 06/01/40	SRADEV	5.000 02/01/24	Cusip: 799387AH8	State: CA	Amt: 150M			#A3	Pass	
	D2	BLOOMBERG L.P.	140.056	137.056	0.150	0.453	3	Firm	00:18:50	Hit
	BB	BLOOMBERG L.P.						Expired		
	D3	BLOOMBERG L.P.						Expired		
	PASGEN	6.998 03/01/...	Cusip: 702274AV3	State: CA	Amt: 100M			#A4	Pass	
	D2	BLOOMBERG L.P.	225.712	225.712	0.100			Firm	00:18:50	Hit
	BB	BLOOMBERG L.P.						Expired		
	D3	BLOOMBERG L.P.						Expired		
	TUSEDU	6.589 08/01/...	Cusip: 901072EB0	State: CA	Amt: 35M			#A5	Pass	
	D2	BLOOMBERG L.P.	123.861	121.861	1.440	1.824	2	Firm	00:18:50	Hit
	BB	BLOOMBERG L.P.						Expired		
	D3	BLOOMBERG L.P.						Expired		
	SJSAPT	6.600 03/01/41	Cusip: 798136TS6	State: CA	Amt: 25M			#A6	Pass	
	D2	BLOOMBERG L.P.	123.247	119.247	2.030	2.739	4	Firm	00:18:50	Hit

21) List Entry 22) List Activity Panel 23) Intraday Blotter

# KEYS TO IMPROVING MUNI WORKFLOW EFFICIENCY:

- Efficient Distribution of Offerings and Bid Lists
- Access to all Information needed to Evaluate Trade
- Digital Capture of Trade Details
- Communication of Trade Details to Back Office/Clearing
- Electronic Audit Trail (Compliance)

# CDIAC Session- Ipreo Overview

# Who is Ipreo?

We are the engine behind your new  
issuance process.

Ipreo delivers a powerful suite of capital market solutions to manage all aspects of the new-issue workflow, serving all participants in the capital-raising process

Over **90%** of new issuance in the municipal market is run on our systems

## Bidding & Origination

Manage new issuance with greater efficiency

- The industry standard competitive bid calculation system
- Online Bookrunning's comp/ neg AAU function allows syndicate & selling group members to respond electronically to an invitation
- Municipal Information Center provide comprehensive municipal new-issue data and deal information and offer historical analysis to produce pitch books and RFP's
- A full-service electronic document delivery providing a complete audit trail

## Syndication & Marketing

Form the underwriting group, share documents and market to investors

- Order Monitor enables any authorized deal player to access a sale in real-time from the web and view orders & accounts
- Online Bookrunning manages the entire new-issue process in real-time
  -
- NM Bookrunning system allows for real-time communication & sharing of deal information
  -
- Retail/ Institutional Electronic Order Entry platform allows sales force to receive wires & deal information

## Orders & Allocation

Streamline the entire process from indications of interest through final pricing

- Ownership Analysis and Profiles help underwriters and issuers understand interested investors to ensure a fit
- Bookbuilding platform to give all participants real-time access to order information
- Fully automated workflow ensures efficient & accurate pricing and allocations, including designations, P/ L accounting and straight-through-processing
- iProspectus allows timely and efficient delivery of all deal documents to appropriate investors

## Trading & Settlement

Ensure success of deals and manage institutional investor distribution channels

- Our private-labeled prospectus library facilitating "Access Equals Delivery"
- Customized Trading Systems & Feeds designed to flow seamlessly from Bookrunning system
- Retail/ Institutional Electronic Order Entry enables sales force to break down allotments by account online to feed directly into the firm's internal trading system
- Variable Rate Trading provides access to buy-side & sell-side users allowing full trading automation

# Are you a Municipal Advisor, Underwriter or Issuer?

Ipreo continues to lead the way in innovations which are now so commonly used in the market's day-to-day operations; they are standards of behavior. Some of our products you would know include:

01	<b>BIDCOMP:</b> The industry standard competitive bid calculation system to conduct transactions quickly and efficiently	
	Parity: a secure process for underwriters to submit bids and for issuers to receive bids in combination with the BIDCOMP system	02
03	<b>Deal Monitor System:</b> enables any authorized deal player to access real-time collection of investor data	

As we continue to broadly improve workflow software, Ipreo is innovating around how Issuers access the Capital Markets, starting with the launch of a new tool allowing for a real-time view of how an Issuer's deal is progressing



**New tools allow Banks to communicate deal progress with Issuers more effectively. Some of these new tools include:**

- Real-time view of how an issuer's deal is progressing, available on any browser or tablet device
- Market based views and insight, both during, before and after a deal
- Roadshow and Order Book views
- Real-time Document management and accessibility
- Scale and comparable analysis tools



TMCBONDS.COM  
FIXED INCOME MARKETPLACE

# **TMC Bonds**

## **CDIAC Pre-Conference**

### **Alternative Trading Systems (ATS)**

**Tom Meder**  
**([t.meder@tmcbondd.com](mailto:t.meder@tmcbondd.com))**  
**October 2015**

# Overview

## Primary Market & Underwriter Applications

- Muni New Issue Order Platform
- MassDirect Notes – Commonwealth of Massachusetts
- Recent Deals & Secondary Trading of Unsold Balances

## Issuers

- Search and Plot Secondary Offerings by CUSIP Root

## Portfolio Managers & Traders

- Fixed Income Investment Products
- TMC Model – What's in it for you?

**Pedigree—note that TMC was responsible for 27% of all secondary interdealer trading in Municipal bonds (September 2015)**

## ➤ Muni New Issue Application

- TMC's functionality enables underwriters to post New Issue Primary offerings via TMC's marketplace.
- Approved dealers and investors submit orders via TMC marketplace during the order period. TMC is deemed a 'conduit' and not an underwriter.
- Functionality allows for re-pricing, allotments and real-time ticketing. Dealers' orders receive approximately one-half the takedown—again, TMC is not involved herein.
- TMC's new issue site is multi-dealer with new underwriters added in 2015. Since launch TMC has placed 500+ orders (for \$150+ million par) on Citi's negotiated underwritings alone.

# ➤ New Issue Muni Ex. – Turlock Irrigation District

CUSIP	Issue Name	Coupon	Maturity ▲	Atrb	Rating	Ins	Call	SDate	Bid Yld	Ofr Yld	Ofr Pr...
616794LL5	<a href="#">MORELAND CALIF SCH DIST GO BDS 2004-D</a>	0.000	08/01/2036	XO	A3/AA-/WD	FGIC	X 14@ 28.9	07/09		BW 11:00 AM	BW 11...
801546MW9	<a href="#">SANTA CLARA CNTY CALIF GO BDS 2013 B</a>	5.000	08/01/2015		-/AAA/AA+			07/11		0.119	105.147
13033L3K1	<a href="#">CALIFORNIA HEALTH FACS FING AU REV BD...</a>	2.000	10/01/2015	EC	Aa3/AA-/AA			07/11		0.080	102.345
13063A5D2	<a href="#">CALIFORNIA ST GO BDS</a>	5.950	04/01/2016	Taxable	Aa3/A/A			07/11	1.150	0.850	108.699
13063A5D2	<a href="#">CALIFORNIA ST GO BDS</a>	5.950	04/01/2016	Taxable	Aa3/A/A			07/11	1.200	0.570	109.206
NONE	<a href="#">Turlock Irrigation District TURLOCK IRRIGATIO...</a>	4.000	01/01/2017		A+/A+		C 24@ 100	07/23	OrdP 09:00	0.730	107.889
13063CHM5	<a href="#">CALIFORNIA ST FOR PREVIOUS ISS GO BDS ...</a>	5.000	12/01/2017		Aa3/A/A	Available		07/11		0.690	114.411
NONE	<a href="#">Turlock Irrigation District TURLOCK IRRIGATIO...</a>	4.000	01/01/2018		A+/A+		C 24@ 100	07/23	OrdP 09:00	1.160	109.546
271014XG2	<a href="#">EAST BAY CALIF MUN UTIL DIST W REV REF ...</a>	2.000	06/01/2018		Aa1/AAA/-			07/11		0.770	104.703
77781PBU0	<a href="#">ROSEVILLE CALIF FIN AUTH SPL T REF BDS 2...</a>	4.000	09/01/2018		-/A/-			07/11		1.100	111.701
91857RAE3	<a href="#">VACAVILLE CALIF REDEV AGY SUCC SUB T...</a>	5.000	09/01/2018		-/A/-			07/11		1.037	116.012
NONE	<a href="#">Turlock Irrigation District TURLOCK IRRIGATIO...</a>	5.000	01/01/2019		A+/A+		C 24@ 100	07/23	OrdP 09:00	1.540	114.789
13063A7G3	<a href="#">CALIFORNIA ST GO BDS 2009</a>	6.200	10/01/2019	EC, Tax...	Aa3/A/A	Available		07/11	2.600	2.270	119.246
13063A7G3	<a href="#">CALIFORNIA ST GO BDS 2009</a>	6.200	10/01/2019	EC, Tax...	Aa3/A/A	Available		07/11	2.890	2.270	119.246
13063A7G3	<a href="#">CALIFORNIA ST GO BDS 2009</a>	6.200	10/01/2019	EC, Tax...	Aa3/A/A	Available		07/11		2.250	119.355
13063A7G3	<a href="#">CALIFORNIA ST GO BDS 2009</a>	6.200	10/01/2019	EC, Tax...	Aa3/A/A	Available		07/11		2.200	119.627
13063A7G3	<a href="#">CALIFORNIA ST GO BDS 2009</a>	6.200	10/01/2019	EC, Tax...	Aa3/A/A	Available		07/11		2.186	119.704
13063A7G3	<a href="#">CALIFORNIA ST GO BDS 2009</a>	6.200	10/01/2019	EC, Tax...	Aa3/A/A	Available		07/11		2.143	119.938

## ➤ MassDirect Notes

*The Bond Buyer* 13<sup>th</sup> Annual Deal of the Year Award winner

TMC's electronic bond trading platform is used to offer bonds to retail investors via 1,000+ firms and 125,000+ Financial Advisors who access TMC's marketplace.

- Three different fixed rate GO maturities offered initially
- Different maturities offered the following week and regularly thereafter
- Daily allotment and re-pricing of bonds
- Orders submitted by broker-dealers via TMC
- Over \$100mm par placed

Known issuers can make their offerings available to retail investors on a nearly continuous basis and expand their distribution via an electronic ATS.

**\$60,000,000\***  
**The Commonwealth of Massachusetts**  
**General Obligation Bonds**

**\$30,000,000 Consolidated Loan of 2014 (MassDirect Notes), Series 1**  
**\$30,000,000 Consolidated Loan of 2014 (MassDirect Notes), Series 2**

**\*\*Bonds will be sold to Retail Investors Only over a two week offering period\*\***

**\$30,000,000\***  
**General Obligation Bonds**  
**Consolidated Loan of 2014**  
**(MassDirect Notes), Series 1**

**Dated: Date of Delivery**

**Due: As shown below**

<u>Maturity*</u>	<u>Amount*</u>	<u>Interest Rate</u>	<u>Price or Yield</u>	<u>CUSIP Number**</u>
April 1, 2017	\$10,000,000			
April 1, 2019	\$10,000,000			
April 1, 2024	\$10,000,000			

**\$30,000,000\***  
**General Obligation Bonds**  
**Consolidated Loan of 2014**  
**(MassDirect Notes), Series 2**

**Dated: Date of Delivery**

**Due: As shown below**

<u>Maturity*</u>	<u>Amount*</u>	<u>Interest Rate</u>	<u>Price or Yield</u>	<u>CUSIP Number**</u>
April 1, 2016	\$10,000,000	%	%	
April 1, 2018	\$10,000,000			
April 1, 2023	\$10,000,000			

**Bond Sale Schedule\*:**

Series 1 Bonds to be sold during Week 1 of Sales (3/17 – 3/21)  
 Series 2 Bonds to be sold during Week 2 of Sales (3/24 – 3/28)

# Primary Market - Unsold Balances



TMCBONDS.COM  
FIXED INCOME MARKETPLACE

Muni Desk:(646) 375-1111 | Taxable Desk:(646) 375-1104

[Help](#)

MUNIS ▾ ACCOUNTS ▾ UPDATE ▾ TRADE ADMIN ▾ SEARCH ▾ RESULTS BID WANTEDS ▾ CENTER VISION ▾

## RECENT DEALS

16:18:34 GMT-0400 (Eastern Daylight Time)

Prefix	State	Description	Offers	Par
<a href="#">722480</a>	AR	PINE BLUFF ARK SCH DIST NO 003 REF BDS 2015	4	4,775
<a href="#">745400</a>	AR	PULASKI CNTY ARK SPL SCH DIST CONSTR BDS 2015	18	39,670
<a href="#">98851U</a>	AZ	YUMA ARIZ MUN PPTY CORP EXCISE SR LIEN UTIL SYS REV REF 2015	5	9,620
<a href="#">988516</a>	AZ	YUMA ARIZ MUN PPTY CORP UTIL S SR LIEN UTIL SYS REV REF 2015	11	31,020
<a href="#">128019</a>	CA	CAJON VALLEY CALIF UN SCH DIST GO BDS D	2	2,475
<a href="#">13034A</a>	CA	CALIFORNIA INFRASTRUCTURE & EC REV BDS 2015A ACADEMY OF MOTION PICTURE ARTS	1	2,350
<a href="#">13063C</a>	CA	CALIFORNIA ST FOR PREVIOUS ISS VETERANS GO BDS CM	3	9,925
<a href="#">13068L</a>	CA	CALIFORNIA ST PUB WKS BRD LEAS REF BDS G	12	44,975
<a href="#">21221M</a>	CA	CONTRA COSTA CALIF TRANSN AUTH LTD TAX BDS 2015A	10	22,460
<a href="#">421209</a>	CA	HAYWARD CALIF CTFS PARTN COPS 2015	3	10,815
<a href="#">587635</a>	CA	MERCED CALIF UN HIGH SCH DIST GO BDS D	2	3,445
<a href="#">785849</a>	CA	SACRAMENTO CALIF CITY FING AUT REF BDS 2015A	2	7,980
<a href="#">78805Q</a>	CA	SACRAMENTO CALIF PUB FING AUTH REV BDS 2015	1	2,840
<a href="#">798720</a>	CA	SAN BERNARDINO CALIF CMNTY COL GO BDS D	2	3,935
<a href="#">797681</a>	CA	SAN FRANCISCO CALIF BAY AREA R GO BDS 2015D	8	14,745
<a href="#">79771T</a>	CA	SAN FRANCISCO CALIF CITY & CNT GO REF BDS 2015	12	57,365
<a href="#">79785D</a>	CA	SAN FRANCISCO CALIF CITY & CNT REF COPS 2015-R	8	19,420
<a href="#">798083</a>	CA	SAN JOAQUIN CALIF DELTA CMNTY GO REF BDS A	4	5,000
<a href="#">928346</a>	CA	VISTA CALIF UNI SCH DIST GO REF BDS 2015	1	1,000
<a href="#">038699</a>	CO	ARAPAHOE CNTY COLO SCH DIST NO GO BDS	1	3,275
<a href="#">19848A</a>	CO	COLORADO HEALTH FACS AUTH REV HOSP REV BDS 2015 VAIL VALLEY MED CTR	2	9,920



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# Primary - Unsold Balances

(cont'd)



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MUNIS ▾ ACCOUNTS ▾ UPDATE ▾ TRADE ADMIN ▾ SEARCH ▾ RESULTS BID WANTEDS ▾ CENTER VISION ▾ QUICK FIND ▾ PRIMARY ADMIN ▾ BLOTTER ▾

Municipal  
47.49m Par | 39 Items

**Table**

Graph

Analyze

Refine

Save Search

Enter Cusip

Favorites

16:24:37

On the Fly

Ofr Qty	O min	CUSIP	Issue Name	Coupon	Maturity	Atrb	Rating	Call	SDate	Ofr YTW	Ofr Price	Ofr YTM	IDC Yld	IDC O...
250	10	13068LWK7	CALIFORNIA ST PUB WKS BRD LEAS REF BDS G	4.000	05/01/2025	EC	A1/ A+ /A		10/16	2.340	114.121	2.340	2.370	-3.0
25	25	13068LVS1	CALIFORNIA ST PUB WKS BRD LEAS REF BDS F	5.000	05/01/2025	EC	A1/ A+ /A		10/16	2.368	122.357	2.368	2.369	-0.1
5825	10	13068LVS1	CALIFORNIA ST PUB WKS BRD LEAS REF BDS F	5.000	05/01/2025	EC	A1/ A+ /A		10/16	2.350	122.532	2.350	2.369	-1.9
1500	50	13068LVS1	CALIFORNIA ST PUB WKS BRD LEAS REF BDS F	5.000	05/01/2025	EC	A1/ A+ /A		10/16	2.340	122.627	2.340	2.369	-2.9
2275	10	13068LVM4	CALIFORNIA ST PUB WKS BRD LEAS REF BDS F	5.000	05/01/2026	EC	A1/ A+ /A	EC C 25@ 100	10/16	2.520	120.915	2.706	2.519	0.1
1450	50	13068LVM4	CALIFORNIA ST PUB WKS BRD LEAS REF BDS F	5.000	05/01/2026	EC	A1/ A+ /A	EC C 25@ 100	10/16	2.490	121.199	2.678	2.519	-2.9
75	5	13068LWL5	CALIFORNIA ST PUB WKS BRD LEAS REF BDS G	5.000	05/01/2026	EC	A1/ A+ /A	EC C 25@ 100	10/16	2.490	121.199	2.678	2.519	-2.9
2135	25	13068LWL5	CALIFORNIA ST PUB WKS BRD LEAS REF BDS G	5.000	05/01/2026	EC	A1/ A+ /A	EC C 25@ 100	10/16	2.420	121.863	2.614	2.519	-9.9
7050	10	13068LVN2	CALIFORNIA ST PUB WKS BRD LEAS REF BDS F	5.000	05/01/2027	EC	A1/ A+ /A	EC C 25@ 100	10/16	2.640	119.790	2.963	2.629	1.1
250	100	13068LWN1	CALIFORNIA ST PUB WKS BRD LEAS REF BDS G	3.000	05/01/2028	EC	A1/ A+ /A	EC C 25@ 100	10/16	3.012	99.878	3.012	3.100	-8.8
310	10	13068LWN1	CALIFORNIA ST PUB WKS BRD LEAS REF BDS G	3.000	05/01/2028	EC	A1/ A+ /A	EC C 25@ 100	10/16	3.011	99.880	3.011	3.100	-8.9
4690	10	13068LVT9	CALIFORNIA ST PUB WKS BRD LEAS REF BDS F	5.000	05/01/2028	EC	A1/ A+ /A	EC C 25@ 100	10/16	2.770	118.584	3.190	2.759	1.1
700	50	13068LVT9	CALIFORNIA ST PUB WKS BRD LEAS REF BDS F	5.000	05/01/2028	EC	A1/ A+ /A	EC C 25@ 100	10/16	2.750	118.769	3.174	2.759	-0.9
5000	25	13068LVT9	CALIFORNIA ST PUB WKS BRD LEAS REF BDS F	5.000	05/01/2028	EC	A1/ A+ /A	EC C 25@ 100	10/16	2.680	119.417	3.117	2.759	-7.9
210	10	13068LVU6	CALIFORNIA ST PUB WKS BRD LEAS REF BDS F	5.000	05/01/2029	EC	A1/ A+ /A	EC C 25@ 100	10/16	2.890	117.484	3.380	2.890	0.0
1650	10	13068LVU6	CALIFORNIA ST PUB WKS BRD LEAS REF BDS F	5.000	05/01/2029	EC	A1/ A+ /A	EC C 25@ 100	10/16	2.860	117.758	3.357	2.890	-3.0

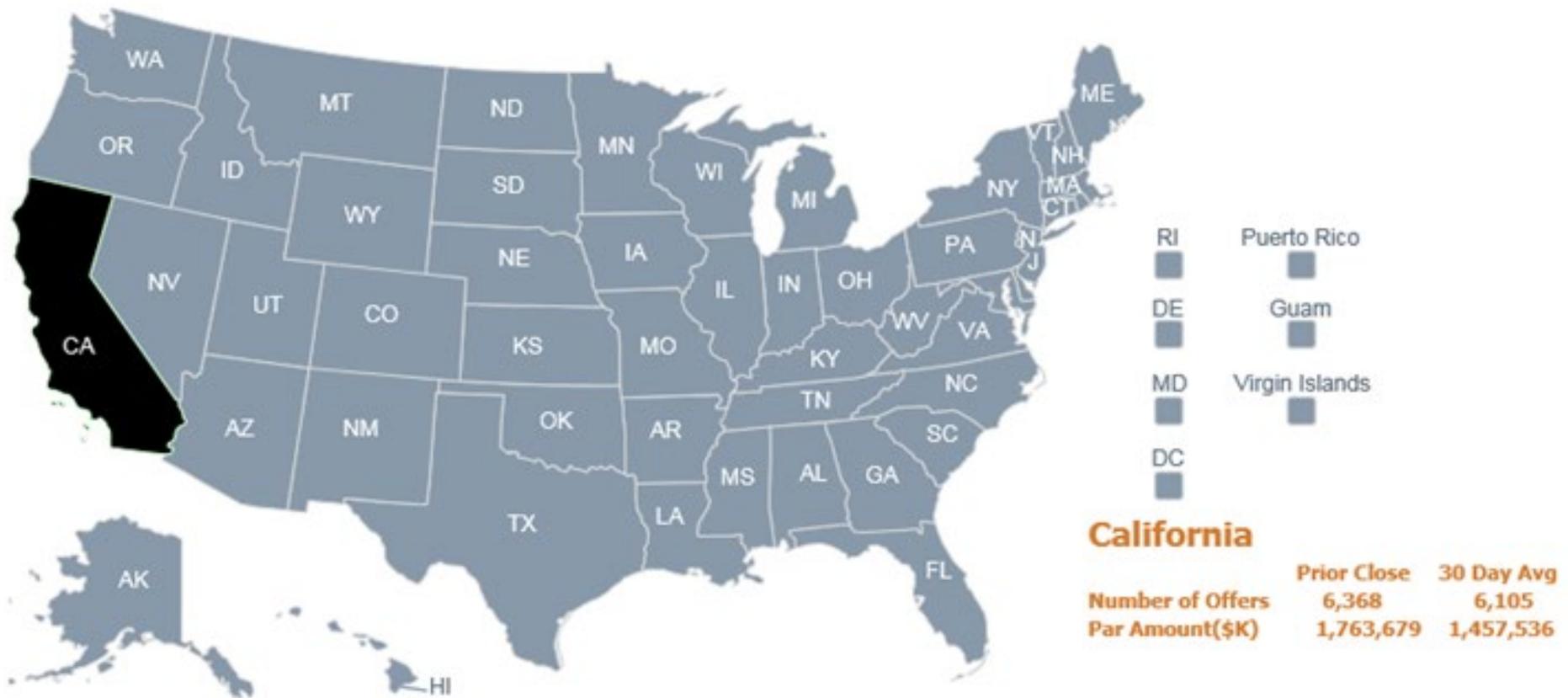


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FIXED INCOME MARKETPLACE

# Issuers

Monitor secondary market supply in your state

- CA 6,368 offerings for \$1.76 Billion in Par (10/9/15)

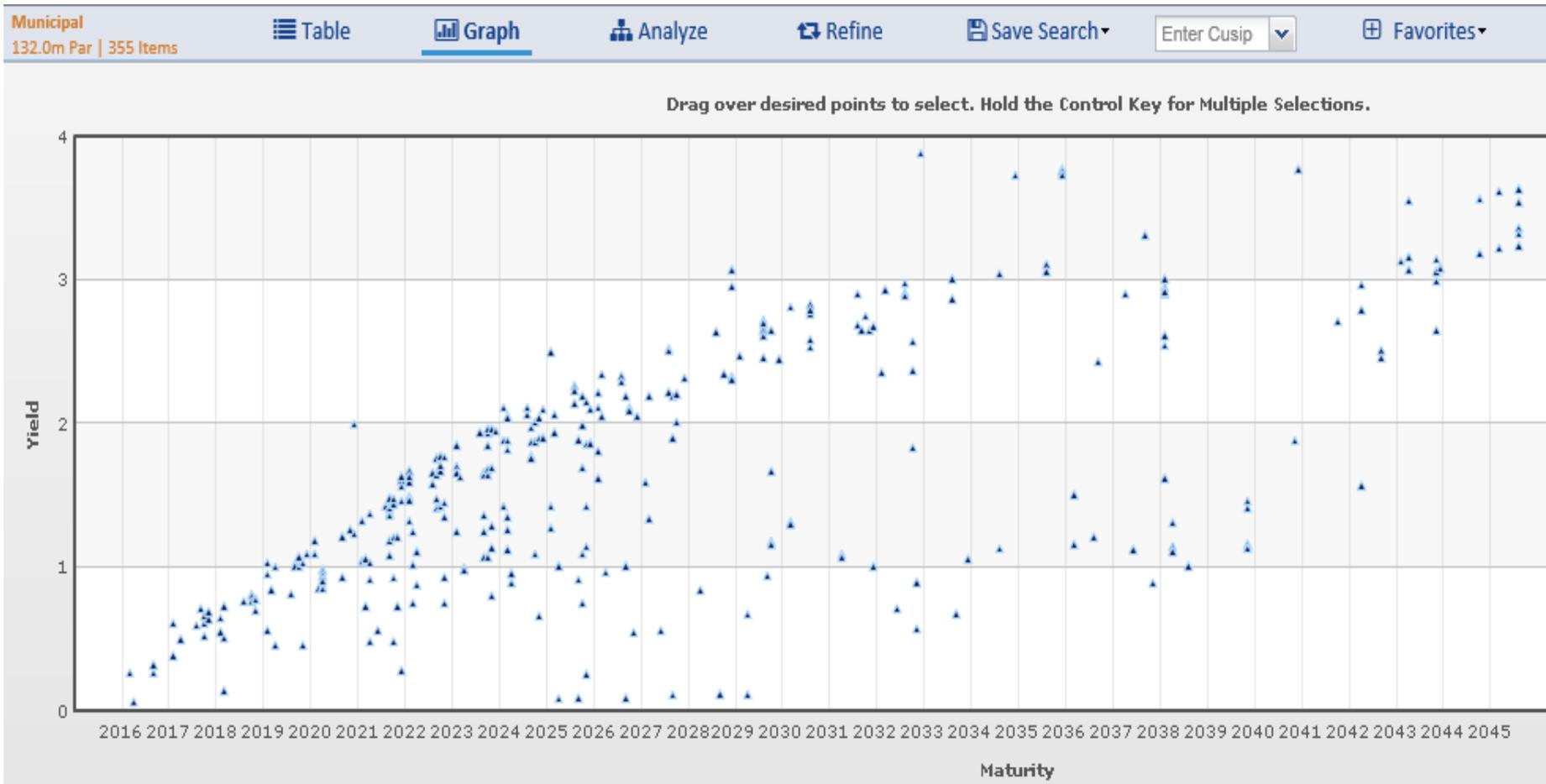


## Track your issuance in secondary market by root CUSIP.

Ofr Qty	O min	CUSIP	Issue Name	Coupon	Maturity ▲	Rating	Call	SDate	Ofr YTW	Ofr Price
25	10	797646WP7	SAN FRANCISCO CALIF CITY & CNT GO BDS C	5.000	06/15/2017	Aa1/ AA+ /AA		10/19	0.445	107.504
25	10	797646PX8	SAN FRANCISCO CALIF CITY & CNT GO REF BDS 2011 -	5.000	06/15/2017	Aa1/ AA+ /AA		10/19	0.350	107.669
75	10	797646WQ5	SAN FRANCISCO CALIF CITY & CNT GO BDS C	5.000	06/15/2018	Aa1/ AA+ /AA		10/19	0.650	111.433
25	5	797646RQ1	SAN FRANCISCO CALIF CITY & CNT GO BDS B	4.000	06/15/2018	Aa1/ AA+ /AA		10/19	0.224	109.993
1195	300	797646ML7	SAN FRANCISCO CALIF CITY & CNT GO BDS 2010A	4.750	06/15/2019	Aa1/ AA+ /AA		10/19	0.840	114.045
<b>115</b>	<b>10</b>	<b>797646PZ3</b>	<b>SAN FRANCISCO CALIF CITY &amp; CNT GO REF BDS 2011 -</b>	<b>5.000</b>	<b>06/15/2019</b>	<b>Aa1/ AA+ /AA</b>		<b>10/19</b>	<b>0.880</b>	<b>114.788</b>
15	15	797646LV6	SAN FRANCISCO CALIF CITY & CNT GO HOSPITAL IMPT BDS 2009A	5.250	06/15/2023	Aa1/ AA+ /AA	R 19@ 100	10/19	1.022	115.131
25	25	797646LT1	SAN FRANCISCO CALIF CITY & CNT GO HOSPITAL IMPT BDS 2009A	5.250	06/15/2021	Aa1/ AA+ /AA	R 19@ 100	10/19	0.750	116.197
20	5	797646QB5	SAN FRANCISCO CALIF CITY & CNT GO REF BDS 2011 -	5.000	06/15/2021	Aa1/ AA+ /AA		10/19	1.269	120.296
5	5	797646QW9	SAN FRANCISCO CALIF CITY & CNT GO BDS A	3.000	06/15/2021	Aa1/ AA+ /AA	C 20@ 100	10/19	1.415	107.115
20	5	797646A30	SAN FRANCISCO CALIF CITY & CNT GO REF BDS 2015-R	5.000	06/15/2022	Aa1/ AA+ /AA		10/19	1.532	121.861
265	100	797646YK6	SAN FRANCISCO CALIF CITY & CNT GO BDS C	5.000	06/15/2022	Aa1/ AA+ /AA		10/19	1.290	123.587
10	10	797646QC3	SAN FRANCISCO CALIF CITY & CNT GO REF BDS 2011 -	5.000	06/15/2022	Aa1/ AA+ /AA	C 21@ 100	10/19	1.327	121.643
10	10	797646QC3	SAN FRANCISCO CALIF CITY & CNT GO REF BDS 2011 -	5.000	06/15/2022	Aa1/ AA+ /AA	C 21@ 100	10/19	1.299	121.828
5	5	797646RV0	SAN FRANCISCO CALIF CITY & CNT GO BDS B	3.000	06/15/2023	Aa1/ AA+ /AA	C 20@ 100	10/19	1.570	106.394
35	5	797646QD1	SAN FRANCISCO CALIF CITY & CNT GO REF BDS 2011 -	5.000	06/15/2023	Aa1/ AA+ /AA	C 21@ 100	10/19	1.468	120.714
750	25	797646QD1	SAN FRANCISCO CALIF CITY & CNT GO REF BDS 2011 -	5.000	06/15/2023	Aa1/ AA+ /AA	C 21@ 100	10/19	1.430	120.962
10	10	797646QD1	SAN FRANCISCO CALIF CITY & CNT GO REF BDS 2011 -	5.000	06/15/2023	Aa1/ AA+ /AA	C 21@ 100	10/19	1.325	121.650
20	5	797646QD1	SAN FRANCISCO CALIF CITY & CNT GO REF BDS 2011 -	5.000	06/15/2023	Aa1/ AA+ /AA	C 21@ 100	10/19	1.199	122.488
75	50	797646UK0	SAN FRANCISCO CALIF CITY & CNT GO BDS E	5.000	06/15/2024	Aa1/ AA+ /AA	C 22@ 100	10/19	1.574	121.564
20	5	797646A55	SAN FRANCISCO CALIF CITY & CNT GO REF BDS 2015-R	5.000	06/15/2024	Aa1/ AA+ /AA	C 23@ 100	10/19	1.807	122.730
25	10	797646XT8	SAN FRANCISCO CALIF CITY & CNT GO BDS 2014A	5.000	06/15/2025	Aa1/ AA+ /AA	C 22@ 100	10/19	1.816	119.875
35	35	797646XT8	SAN FRANCISCO CALIF CITY & CNT GO BDS 2014A	5.000	06/15/2025	Aa1/ AA+ /AA	C 22@ 100	10/19	1.750	120.332
15	15	797646ZL3	SAN FRANCISCO CALIF CITY & CNT GO BDS D	4.000	06/15/2027	Aa1/ AA+ /AA	C 22@ 100	10/19	2.300	110.433
10	10	797646SA5	SAN FRANCISCO CALIF CITY & CNT GO BDS B	3.000	06/15/2028	Aa1/ AA+ /AA	C 20@ 100	10/19	2.477	102.286

Plot a yield curve of your secondary market offerings.

355 California GO offerings - \$132mm Par (10/13/15)



# TMC for Portfolio Managers & Traders

## Fixed Income products on TMC's marketplace

- Agency & Treasury securities
- Primary and secondary CD's
- Corporate and Municipal bonds
- MBS & Structured Products

## What's in it for you...

- Content – bids, offers & bids wanted on a single venue  
Levels playing field for smaller participants
- Advanced search functionality enhances work flow
- Liquidity
- Centralized counterparty clearing > Access / Credit
- Pre and post trade anonymity
- Electronic trading supported by trading professionals



The Electronic Platform for Variable-Rate Securities

# What is Clarity BidRate ATS?

---

## Clarity is a new electronic platform for remarketing variable-rate securities

- Powerful combination of an electronic platform and a team of active market experts
- Replaces pricing role of traditional remarketing agent

## Key points

- Competitive bid process
- Allocations determined by bid level – encourages buyers to compete on price
- Pre-trade price transparency
- Multi-modal security – Clarity is simply an additional mode
- New deals and/or conversions of outstanding deals

## Goals of the Clarity system

1. Improve Execution
2. Lower Volatility
3. Provide Data
4. Promote Transparency, Competition and Centralization

# Market Dynamics

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## TEAM

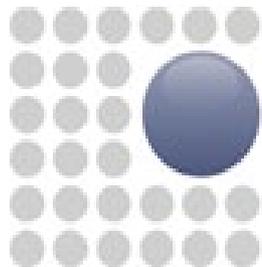
- Broad Experience
- Tier 1 Professionals
- Independent

## ATS

- Competitive Bidding
- Transparent
- Centralized Liquidity

## STRATEGY

- Market Standardization
- Lessons Learned
- Clarity Securities



**CLARITY**<sup>®</sup>  
BIDRATE ALTERNATIVE TRADING SYSTEM<sup>SM</sup>

# Clarity ATS vs. Current Market

---

## Important Similarities

- Multi-modal
- 2a7-eligible products
- Marketing team of experienced professionals
- Access to existing investor base
- Fees competitive with current market
- Uses traditional underwriting process

## Important Differences

- Pricing and allocation is competitive
- All positions re-bid at each reset period
- Pre-trade price transparency
- Multiple order types, including Good-Til-Cancelled (GTC)
- Access to data – both historical and real-time markets
- Does not use dealer balance sheet

# Market Dynamics

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## Dealer Balance Sheet

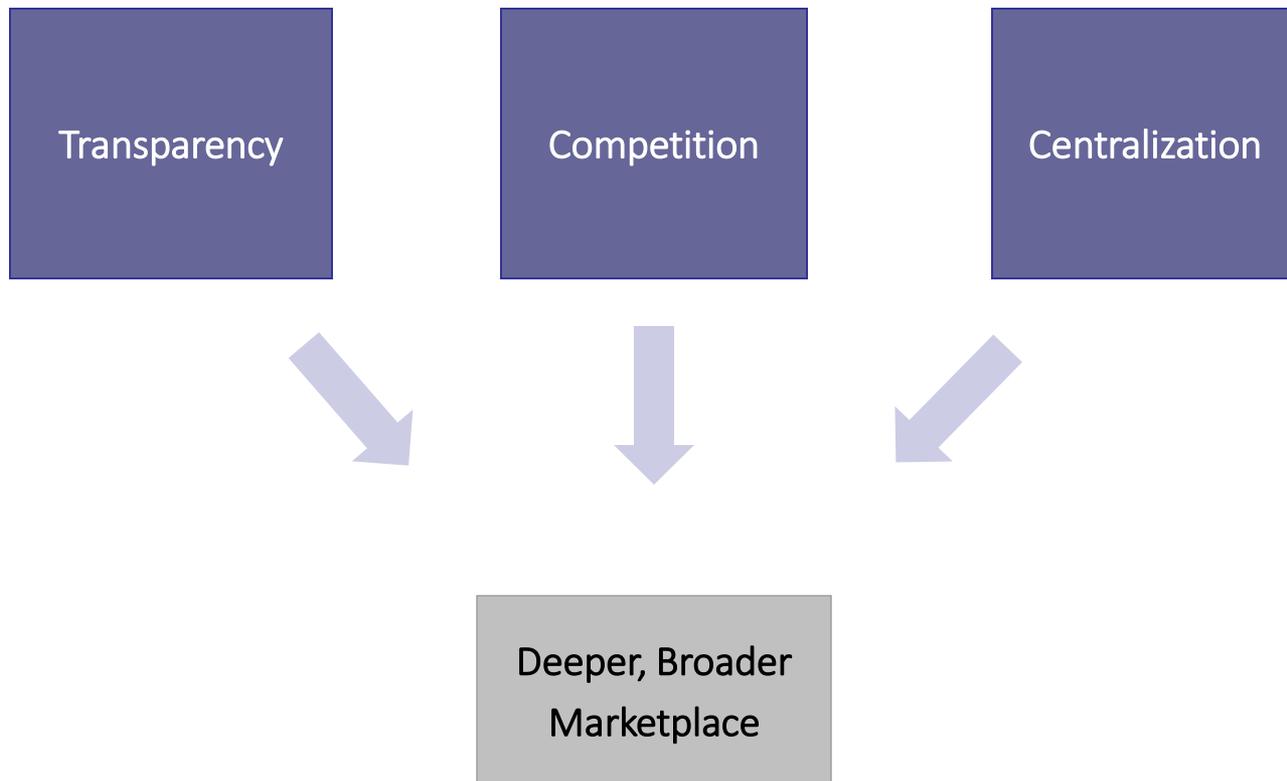
- Hold positions sold by investors
- Average of only 1.3% of outstanding VRDNs [Moody's 4/14/2014]
- Capital is expensive given new regulations (Basel III, Fed Leverage Ratio)

## Clarity Operates Without Balance Sheet

- Active Competition – full-time buyer participation in the market
- Buyer Base – extension of equal access to all institutional investors
- Intelligent Bidding – resting GTC orders to create layers of liquidity
- Real-Time Data and Transparency – alerts sideline investors to buying opportunities
- Centralized – immediate, one-stop access to investors that may not participate frequently

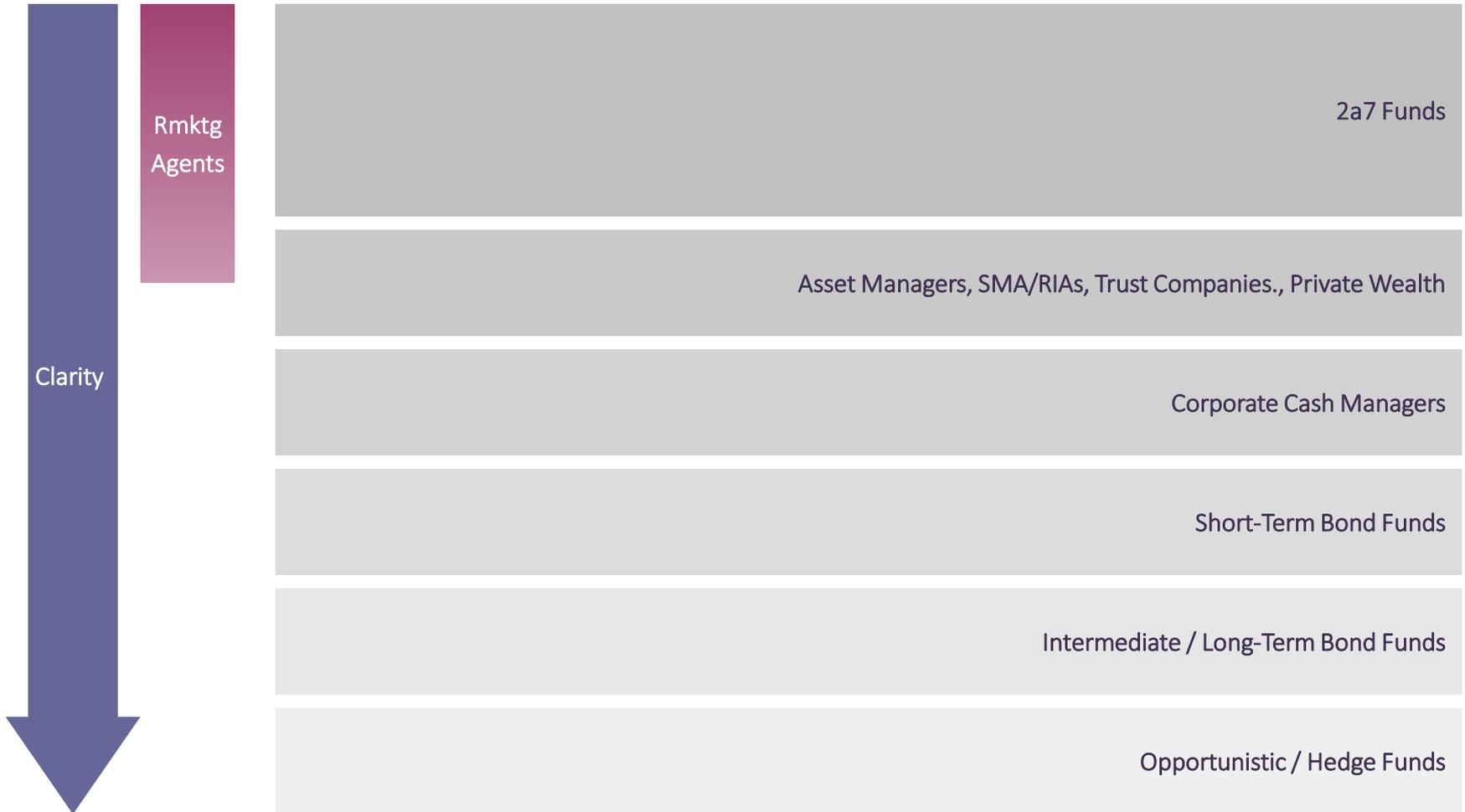
# Clarity ATS Market Dynamics

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# Market Dynamics Comparison

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# Comparison

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	Remarketing Agents	Clarity
Market	Voice	Electronic
Organization	Fragmented	Centralized
Liquidity Providers	Yes	Yes
Bidding	No	Yes
Pricing	Determined by Dealer	Competitive Bidding
Balance Sheet	Yes	No
Real-Time Data	No	Yes
Pre-Trade Transparency	No	Yes
Conflicts of Interest	Yes	No

## WELCOME

to Clarity Bidrate Alternative Trading System.  
Enter your account info below.

User ID:

Password:

LOGIN

TECHNICAL SUPPORT 212.849.5026

# Clarity BidRate ATS



Clarity Reports Logout

Welcome Fidelity Test Bidder!

PRIMARY BIDDING

Market Activity

Views: Daily  Reset Date: 3/2/2015  to 3/2/2015  Go Current

Effective Period	Rate	High	Low
11/14/14-11/20/14	0.048	4.000	0.035
11/21/14-11/27/14	0.049	4.000	0.035
11/28/14-12/4/14	0.049	4.000	0.035
12/5/14-12/11/14	0.048	4.000	0.035
12/12/14-12/18/14	0.045	4.000	0.040
12/19/14-12/25/14	0.045	4.000	0.040
12/26/14-1/1/15	0.044	4.000	0.040
1/2/15-1/8/15	0.044	4.000	0.040
1/9/15-1/15/15	0.044	4.000	0.040
1/16/15-1/22/15	0.045	4.000	0.040
1/23/15-1/29/15	0.045	4.000	0.040
1/30/15-2/5/15	0.045	4.000	0.040
2/6/15-2/12/15	0.044	4.000	0.040

Effective Period	Rate
11/14/14-11/20/14	0.048
11/21/14-11/27/14	0.049
11/28/14-12/4/14	0.049
12/5/14-12/11/14	0.048
12/12/14-12/18/14	0.045
12/19/14-12/25/14	0.045
12/26/14-1/1/15	0.044
1/2/15-1/8/15	0.044
1/9/15-1/15/15	0.044
1/16/15-1/22/15	0.045
1/23/15-1/29/15	0.045
1/30/15-2/5/15	0.045
2/6/15-2/12/15	0.044

- Full Rate History – table and graph view
- On-demand and in real-time
- Download all historical data
- Export in PDF, Excel or email

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102

# Clarity BidRate ATS



Clarity Reports Logout Welcome

**PRIMARY BIDDING**

**Bid Summary**

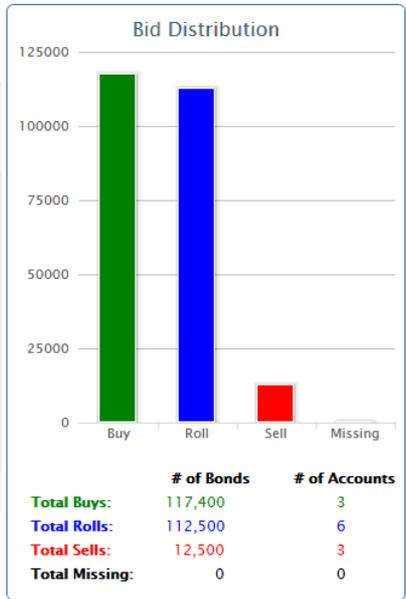
Market Activity Account Activity Bid Summary

Reset Date: 10/9/2015 Cusip: 64972FWK8 Deadline Time: 5:12 PM Current Time: 5:04:27 PM Actions: Rate History Report Go

64972FWK8 - Municipal Bond Ser A 2015 Outstanding Size: \$125,000,000.00 Security Name: BVRDO

Ceiling Rate: 11.000% All Sell Rate: 1.100% Previous Reset: 0.052% Projected Final Rate: 0.046% Projected Contractual Bidder Final Position: 0

Account	Account #	Opening Position	Bid Type	Bid Amt	Bid Rate	Index	Spread/%	Projected Allocation	
ABC Fund	71-00001	0	BUY						
Order13		0	BUY	50,000	.543%			0	
Order14		0	BUY	25,000	.035%			25,000	
Order15		0	BUY	15,000	.031%			15,000	
ABC Fund	71-00001	20,800	BUY-GTC	2,400	.080%	SIFMA	.040 S	0	
Order1		0	BUY-GTC	25,000	.428%			0	
ABC Fund	71-00001	20,800	ROLL	3,000	.158%	LIBOR	.025 S	0	
ABC Fund	71-00001	20,800	ROLL	5,800	.052%			0	
ABC Fund	71-00001	20,800	ROLL	1,000	.050%			0	
Order11		15,000	ROLL	2,000	.001%			2,000	
Order16		30,900	ROLL	30,900	.029%			30,900	
Order2		9,500	ROLL-GTC	5,000	.048%			0	
Order4		9,500	ROLL-GTC	2,000	.045%			2,000	
Order5		20,000	ROLL-GTC	5,000	.047%			0	
Order6		20,000	ROLL-GTC	5,000	.048%			3,100	
Order7		20,000	ROLL-GTC	5,000	.045%			5,000	
Order8		20,000	ROLL-GTC	5,000	.043%			5,000	
ABC Fund	71-00001	20,800	SELL	5,000				0	
Order12		15,000	SELL	5,000				0	
Order3		9,500	SELL	2,500				0	



**Contractual Bidder**

XYZ Bank	71-00002	0	BUY	125,000				0
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\* All amounts are in 000's



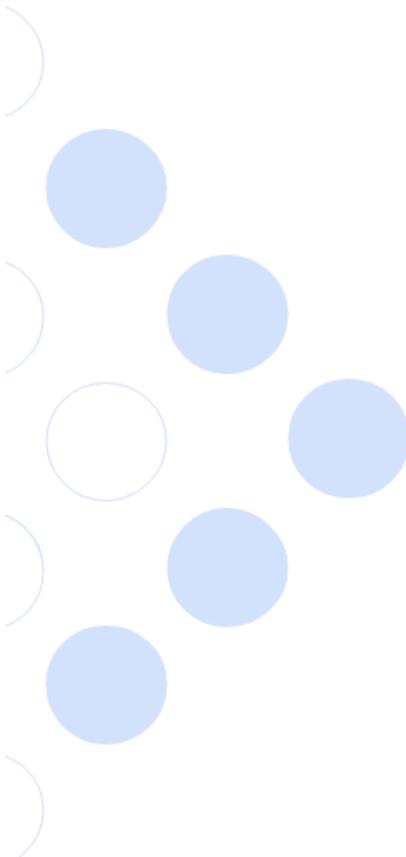
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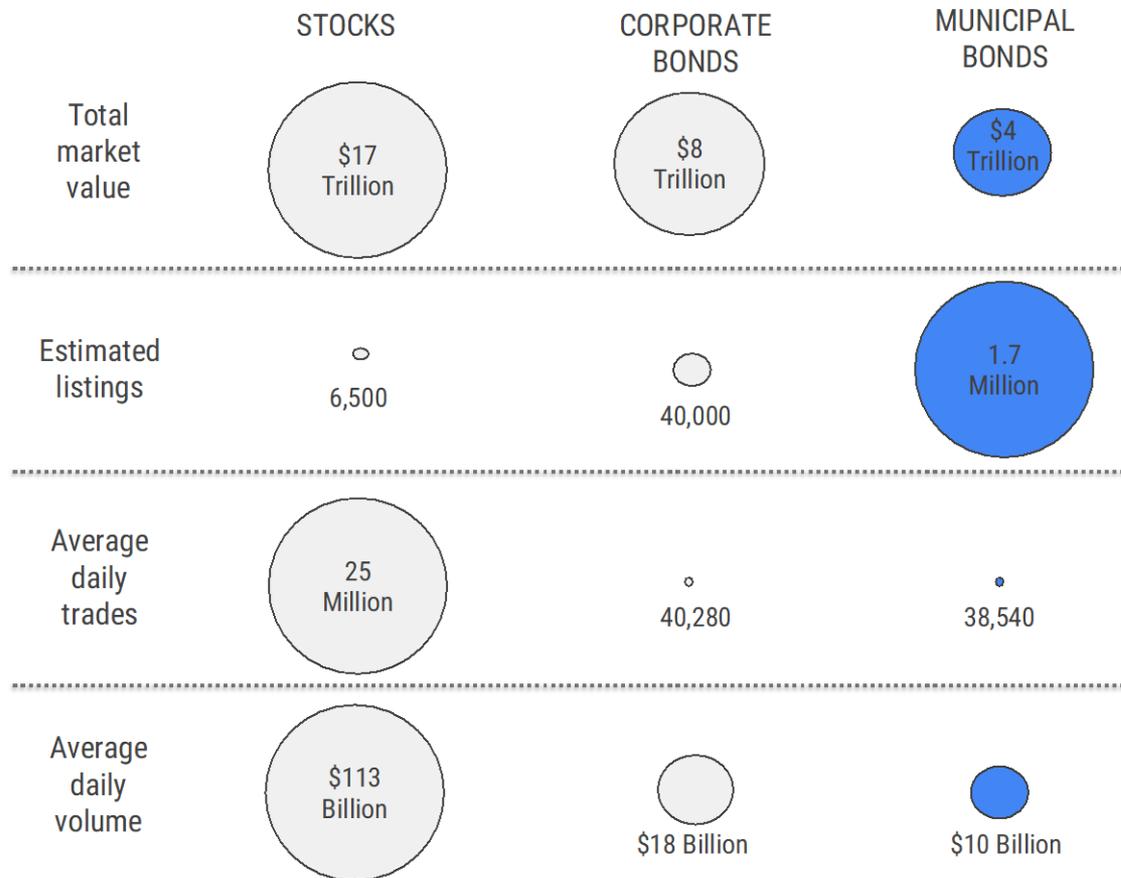
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# EAX TRADING

MUNI BOND TRADING + DATA

# COMPARISON OF THE US MARKETS



“Although the municipal securities market is often characterized as a “buy-and-hold” market, significant secondary market trading occurs.”\*

\*SEC Report of the Municipal Market 2012

# PROBLEMS IN SECONDARY MUNI TRADING



- Muni trades incur exorbitant transaction & search costs in the secondary market
  - Price differential exceeds 2%(200 bps) for over half of customer-to-customer chains<sup>1</sup>
  - Length of 2 or more days for over half of customer-to-customer chains<sup>1</sup>
- Regulators: “.investors have access to relatively little pricing information”<sup>2</sup>
- Dealer inventories to provide liquidity declined 65% since 2007<sup>3</sup> due to new regulations
- \$2.5 trillion<sup>2</sup> in annual secondary trading via phone or antiquated bulletin-board systems

1. MSRB Report on Secondary Market Trading in the Municipal Securities Market, July 2014

2. SEC Report on the Municipal Market, July 2012

3. Federal Reserve



# MUNIS ARE LIKE THE HOUSING MARKET

## Muni Characteristics

- 1.7 million individual bonds (CUSIPs)
- High retail ownership (>75%)
- Personal tax exemption
- Low turnover, most bonds trade twice per year<sup>1</sup>

## Price Discovery in the Housing Market

- Buyers express interest by house type: # of bedrooms, # of bathrooms, for about \$X
- Sellers list their house for a price
- Agent matches serious buyers + sellers prior to firm bidding

1. SEC Report on the Municipal Market, July 2012



# INEFFECTIVE PRICING DATA

## Muni Reference Pricing

- Last trade
- 3<sup>rd</sup> party price evaluation
- Comparables of like-bonds

..s similar to housing market

- The price you bought your house
- Zillow estimated price
- Your neighbor's selling price



No quote on  
CURRENT demand  
for your bond &  
amount for sale



# EAX REDEFINES TRADING & DATA

- For the first time, buyers may express interest across types of bonds (patent pending\*)
- Buyers use our cloud technology to indicate desired bond features, size & price range
- Sellers view indicative market for their bonds & contact buyers at attractive prices
- Search based model creates a new trading and data ecosystem

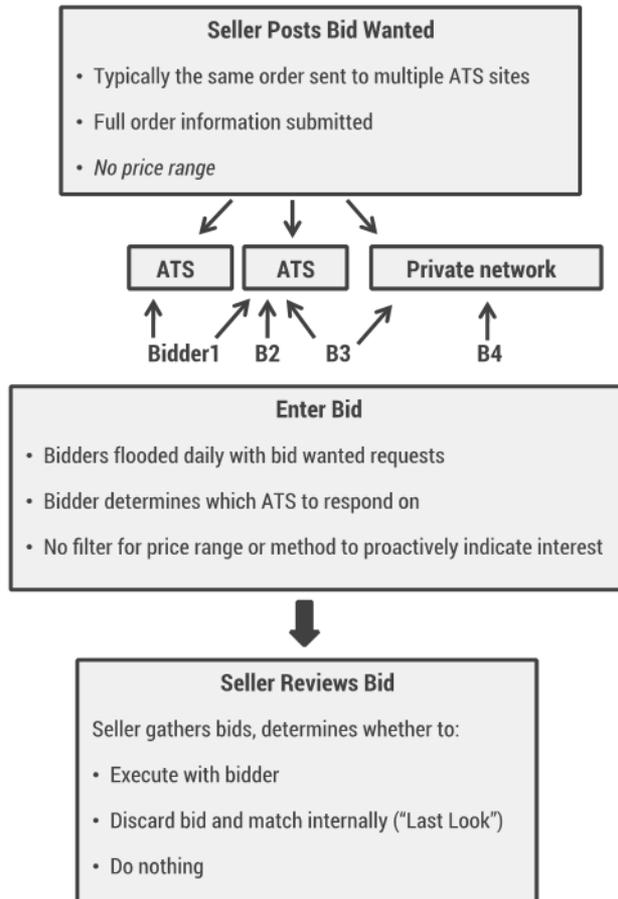
Align Interest:      Sellers have specific security  
                                 Buyers want type of bond within price range

\*United States Patent Application Serial No.  
14/643,870  
(claiming priority to Serial No. 62/950,594, filed March  
10, 2014) Filed: March 10, 2015

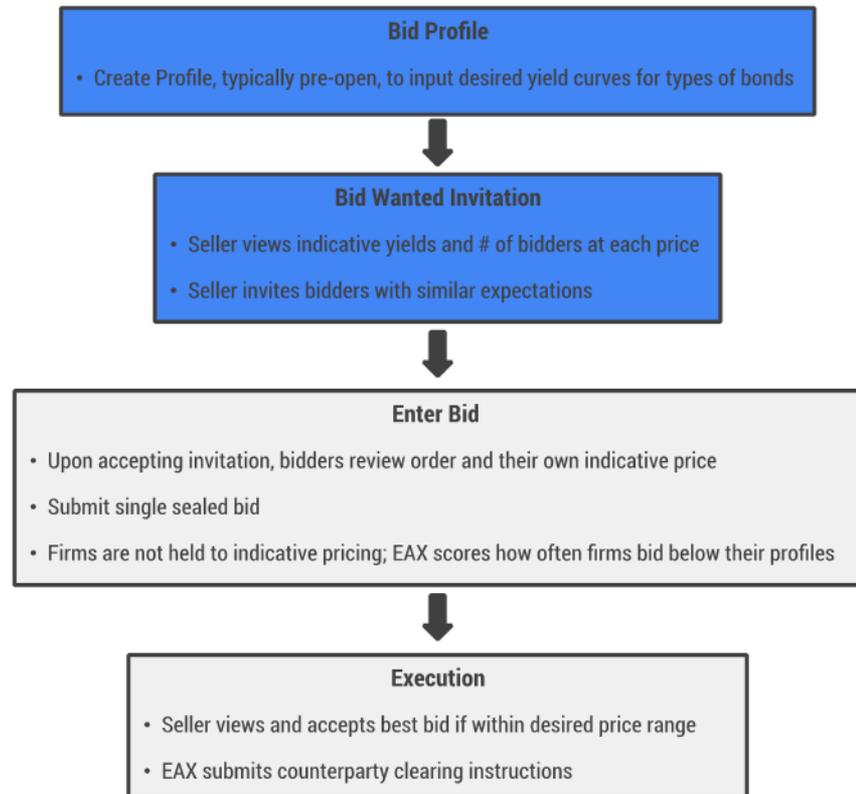


# EAX: THE TARGETED APPROACH

## Current Process



## EAX Process





# CREATE BID PROFILE

- Enter target yields vs. indexes across bond features, maturity & call ranges
- Limit bid-wanted invitations to sellers with similar expectations
- Flexible methods to receive bid invitations: app, email, IM, text



**Start Profile** Profile settings and trade criteria

Name  
Profile Name

Account  
Optional Account

**Matching Criteria** Basic criteria for bonds matching this profile

Maturities Start: 12, 2014  
Maturities End: MM, YYYY  
Ratings Worst: Unlimited  
Ratings Best: Unlimited

Legend:

- Alabama
- California
- District of Columbia
- Guam
- Illinois
- Louisiana
- Arkansas
- Colorado
- Delaware
- Hawaii
- Indiana
- Massachusetts

# TARGETED BID INVITATIONS FOR SINGLE-SEALED BIDS



Sellers Search & Select Invitation  
Price

Size  
300

Counterparty Score  
Unlimited

Lookup

Select a price level to continue

Yield	Price	Matches
1.705	122.449	1
1.753	122.116	2
1.790	121.860	4
1.802	121.777	5
1.957	120.714	6
2.005	120.386	7

Invitations Display Profile Price

**Auction Invitations**  
5 pending invitations

⊖ Decline All    ⊕ Accept All

**300 @ 1.705**  
2:12 PM to 3:12 PM

California    AA- / A1 / NR  
Tax Exempt    0 Complex

⊖ Decline    ⊕ Accept

**300 @ 1.790**  
2:12 PM to 3:12 PM

California    AA- / A1 / NR  
Tax Exempt    0 Complex

⊖ Decline    ⊕ Accept

REDEFINE THE SECONDARY MUNI BOND MARKET

CREATE A SEARCHABLE NETWORK OF TRADING INTEREST