CDIAC

CALIFORNIA DEBT AND INVESTMENT ADVISORY COMMISSION

SOURCES AND USES OF DATA:
A SHIFTING BASIS FOR THE MUNICIPAL MARKET

Facilitator: Jennifer Johnston, Vice President/Research Analyst
Panel:
Jeff Curie, President, Bitvore Corp.
Barbara Voute', Director, Market Practices, MSRB
Richard Ciccorone, President/CDI, Merritt Research Services
Ted Price, Co-founder and CEO, GovInvest, Inc.

November 3, 2018

CDIAC

CALIFORNIA
DEBT AND
INVESTMENT
ADVISORY
COMMISSION

BITVORE IN MUNICIPAL CREDIT ANALYSIS

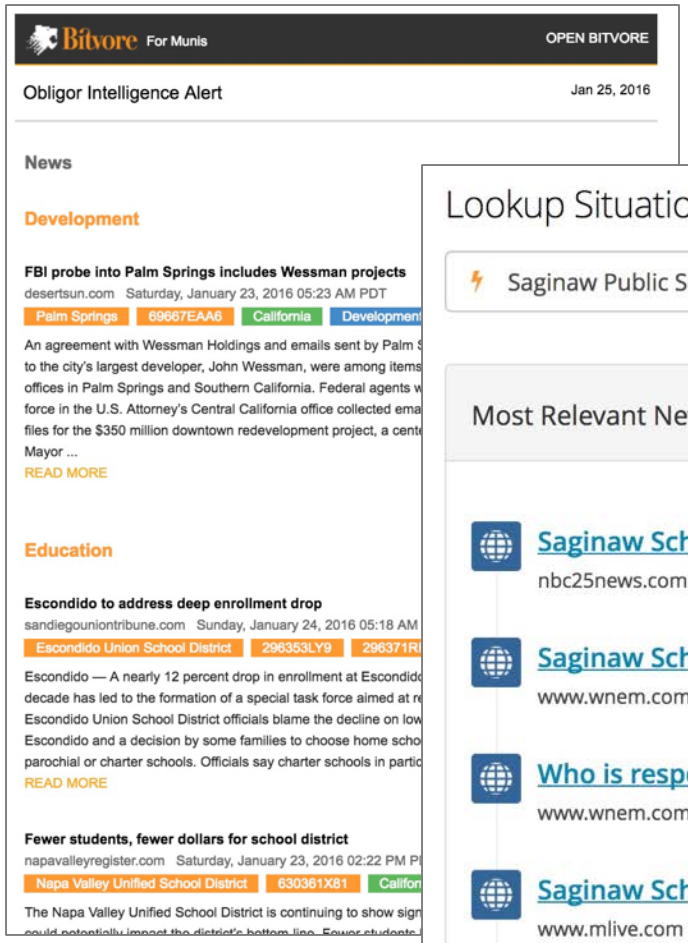
JEFF CURIE
PRESIDENT
BITVORE CORP.

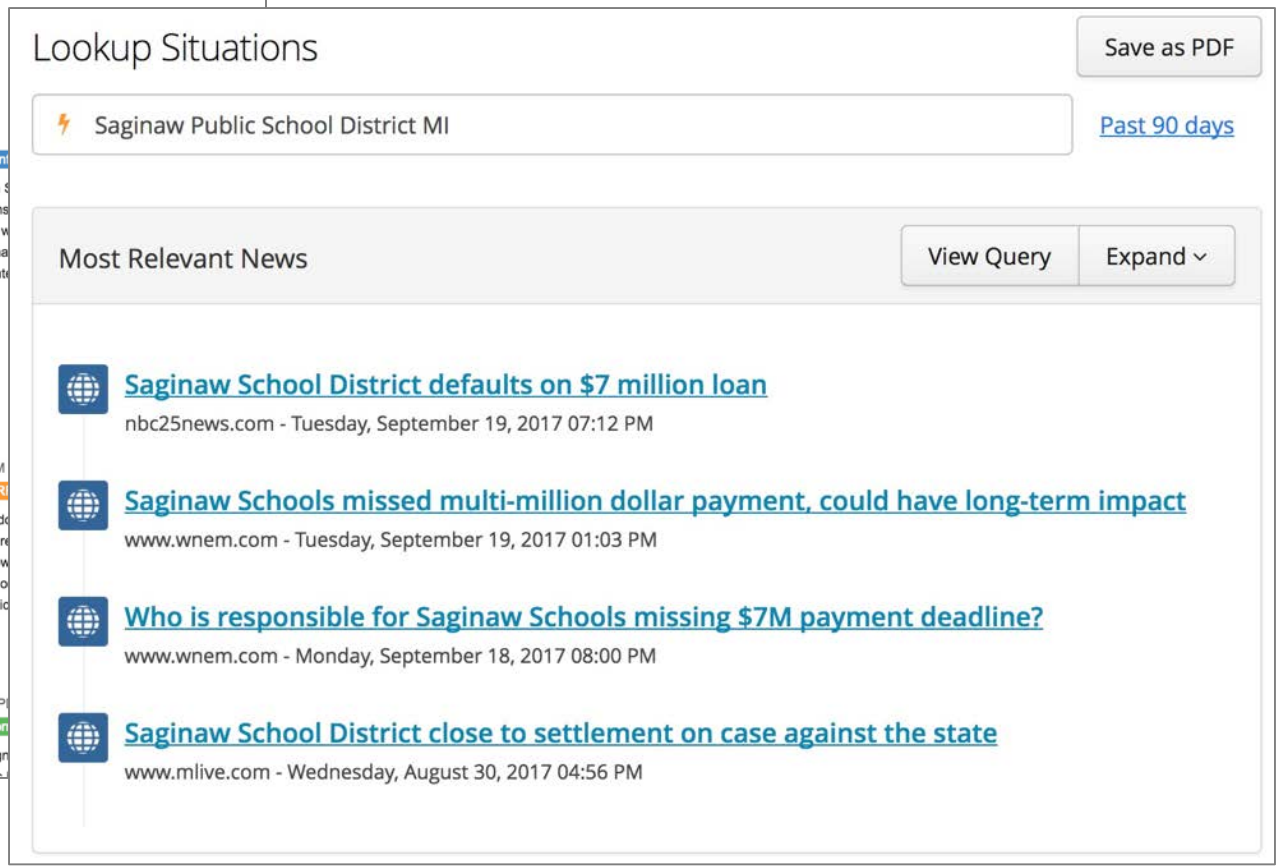
Continuous Monitoring of Muni Obligors

If You Don't Know, You Can't Act

CALIFORNIA DEBT AND INVESTMENT ADVISORY COMMISSION

Tracks 1.2M CUSIPs





Early Warning System

CALIFORNIA DEBT AND INVESTMENT ADVISORY COMMISSION

Bitvore AI

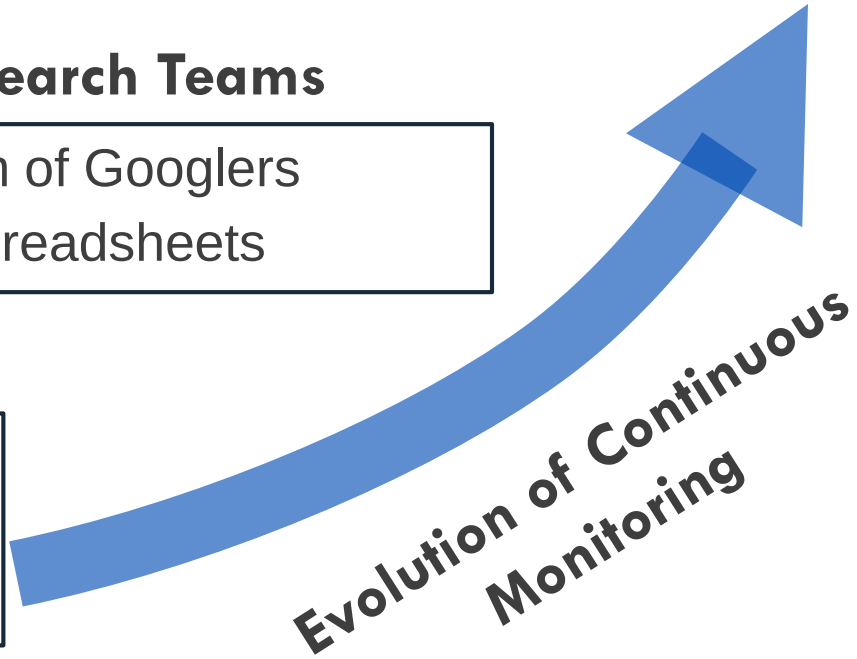
- Proactive holdings surveillance
- Linked to CUSIPs, Tickers
- Concise, read in minutes
- 3-year history research
- 80,000 Sources, incl. EMMA

Pay Research Teams

- Hire a team of Googlers
- Forward spreadsheets

Every Person for Themselves

- Dredge the Internet
- Newspapers, Debtwire, Google, Factiva, Rating Agencies, EMMA

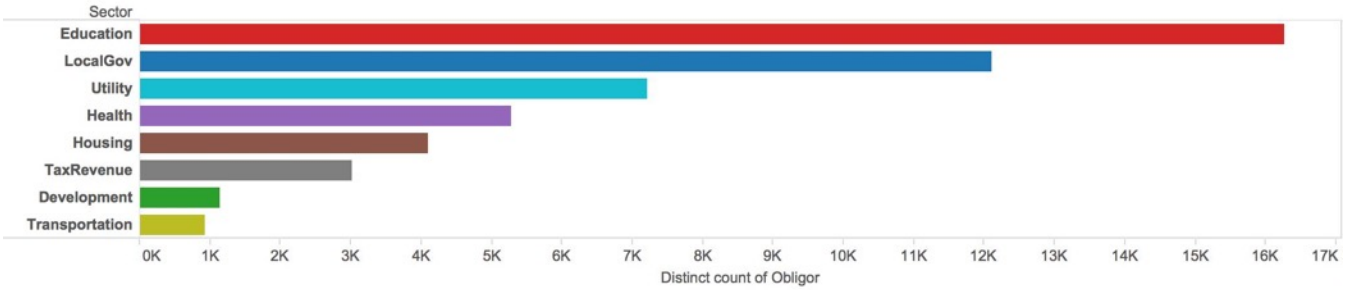


AI for Muni Credit Support

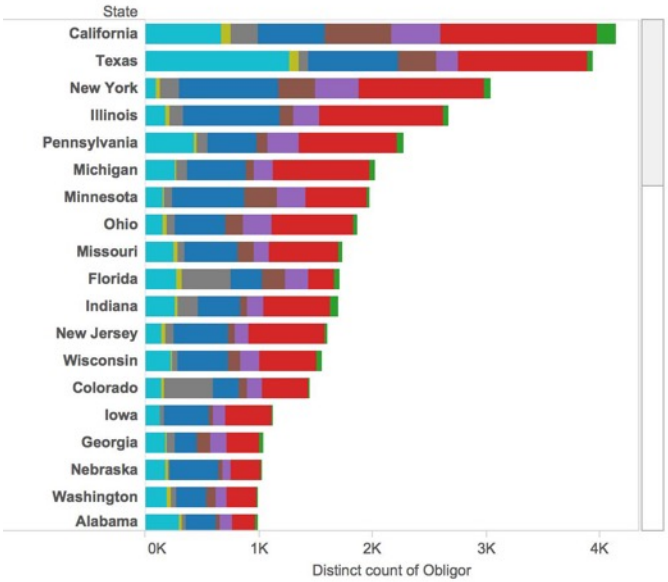
CALIFORNIA DEBT AND INVESTMENT ADVISORY COMMISSION

Muni Bond Obligors Included in Analysis

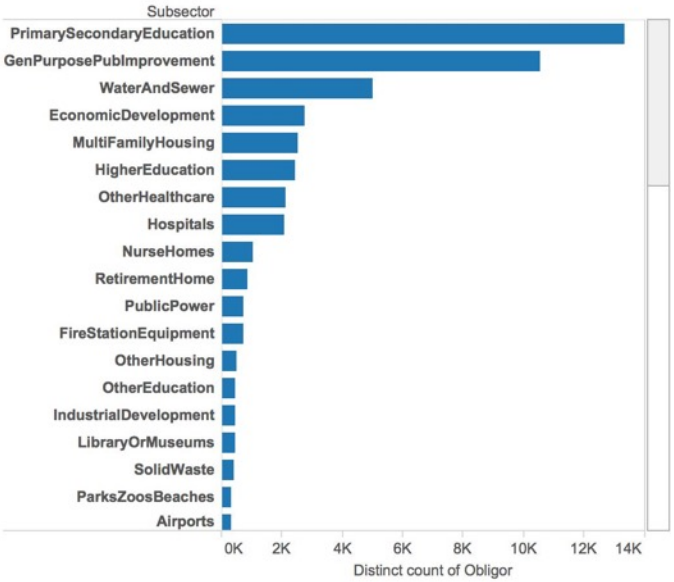
Obligor Coverage by Sector



Obligor Coverage by State



Obligor Coverage by Subsector



Examples of 308 Material Events Monitored

- Accreditation Changes
- Aid Cuts
- Audits
- Bankruptcy
- Bond Sale
- Budget Action
- Cargo Levels
- Certificate Of Need
- City Capital Spend Approval
- Corruption
- Debt Issuance
- Debt Restructure
- Default
- Deficit
- Downsizing
- Economic Forecast
- Economic Incentive
- Emergency Loan
- Employment

Transparent Local Dynamics

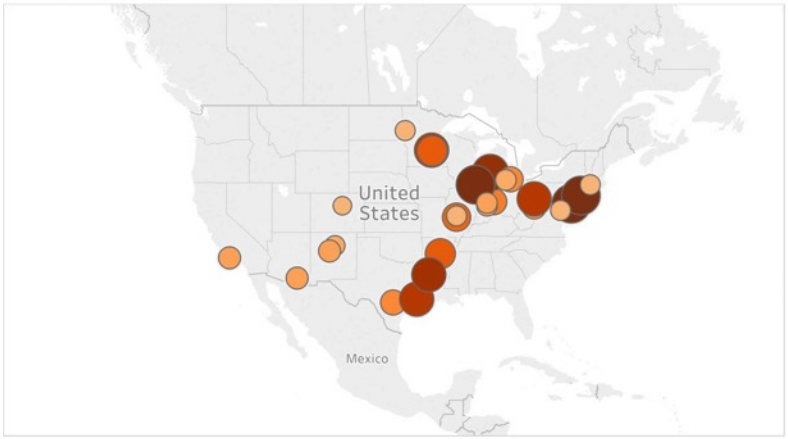
CALIFORNIA DEBT AND INVESTMENT ADVISORY COMMISSION

Municipal Debt Early Warning Indicators: U.S. Education

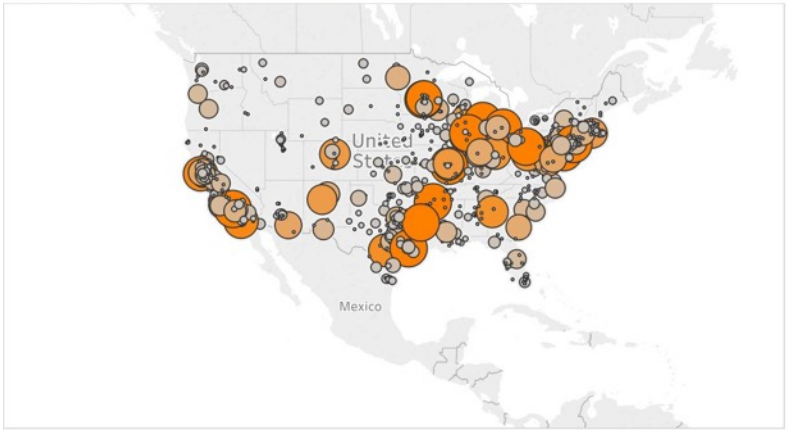
District and University Coverage 13,351

Analysis Period Q2 2017

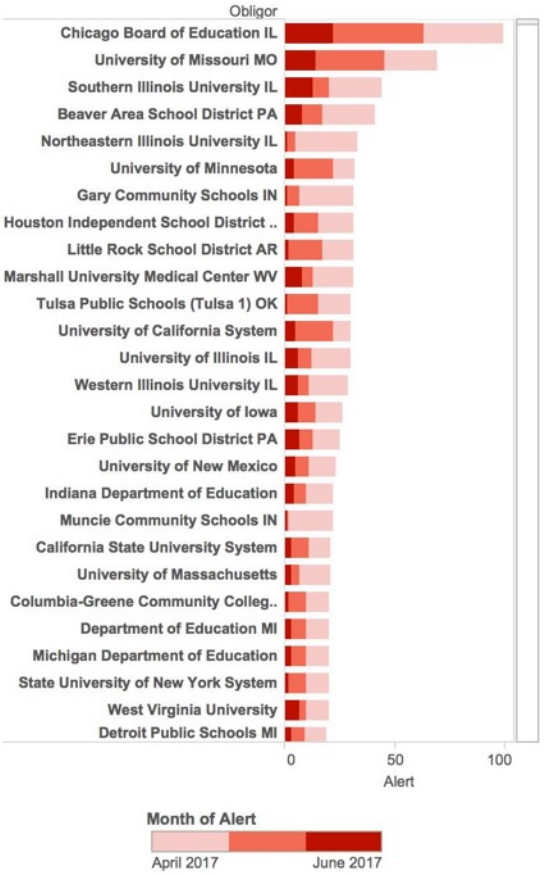
Most Volatile Education Obligors in Period



Early Warning Indicators 12-Months



Most Volatile in Period of Analysis



Non-duplicate, negative news alerts per obligor reported by Bitvore

Learn More

CALIFORNIA DEBT AND INVESTMENT ADVISORY COMMISSION

- Sign up to the free Muni Daily Brief at Bitvore.com

- Contact:

Mike Heberle

1.949.212.9230

mheberle@bitvore.com

CDIAC

CALIFORNIA DEBT AND INVESTMENT ADVISORY COMMISSION

EMMA AND MUNICIPAL MARKET DATA

Barbara Voute'
Director, Market Practices
Municipal Securities Rulemaking Board

EMMA®'s Role in the Municipal Market

CALIFORNIA DEBT AND INVESTMENT ADVISORY COMMISSION

- Promote transparency for the **$3.8 trillion** municipal securities market
- Ensure information about virtually all municipal bonds is:
  - Accessible
  - Centralized
  - Public

EMMA®
Electronic Municipal Market Access

MSRB
Municipal Securities Rulemaking Board

Security-Specific Information

Official Disclosures

- Official Statements
- Advance Refunding Documents
- Event Notices
- Financial Disclosures
- 529 Plan Disclosures
- Municipal Asset-Backed Securities Disclosure
- Political Contribution Disclosures

Real-Time and Market Data

- Trade Prices and Yields
- Interest Rate Resets for Municipal Variable Rate Securities
- Credit Enhancement Documents for Variable Rate Securities
- Credit Ratings

Evolving EMMA

Yield Curves and Indices
View daily and historical yield curves and indices from third-party providers.

New Issue Calendar
View a list of issues scheduled to come to market, integrated with final pricing scales

Economic Calendar
View upcoming economic reports and events

- Providing market-wide data and tools to support understanding of market trends
- Improvements to navigation and presentation of information

MSRB
Municipal Securities Rulemaking Board

EMMA Guiding Principles

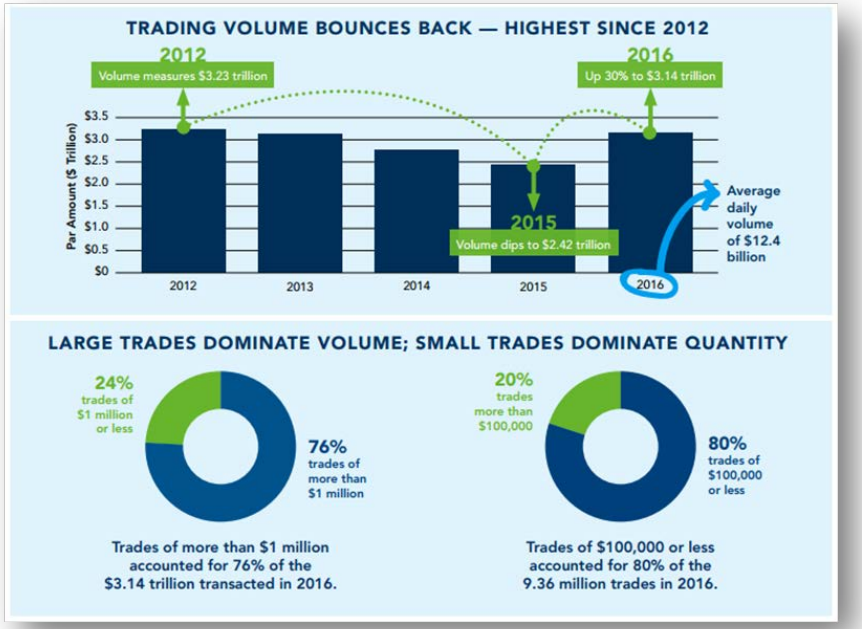
CALIFORNIA DEBT AND INVESTMENT ADVISORY COMMISSION

- Promote fair municipal security transactions and support investment and issuance decisions by making comprehensive pricing and disclosure information readily available at no cost;
- Facilitate efficient access to and submission of municipal market data, disclosures and information through an interface that is intuitive and dynamic;
- Prioritize potential enhancements based on the public interest, cost, benefit, and size of target audience; and
- Ensure that data storage and delivery are reliable and secure without sacrificing availability.

MSRB
Municipal Securities Rulemaking Board

Optimizing Market Data

- Conducting a comprehensive analysis of relevant market data
  - Disclosure documents
  - Trade data
  - Third-party data (e.g., credit ratings)
- Maximizing availability, utility and quality



MSRB
Municipal Securities Rulemaking Board

CDIAC

CALIFORNIA DEBT AND INVESTMENT ADVISORY COMMISSION

MERRITT RESEARCH SERVICES - AMERICA'S OLDEST MUNICIPAL CREDIT DATABASE

VIA CREDITSCOPE

RICHARD A CICCARONE
PRESIDENT & CEO
NOVEMBER 3, 2017

Providing municipal credit data analysis solutions since 1986

History

- First municipal bond credit analysis data and software package available to industry - introduced as **The Merritt System** in 1986 by **Van Kampen Merritt/Xerox Financial**
- Joined with **Investortools' CreditScope** in 1996 to advance software capabilities and create portfolio solution with Perform
- Spun off from **Van Kampen/Morgan Stanley** to become an independent company as **Merritt Research Services LLC** in 2001

Basic Concept

CALIFORNIA DEBT AND INVESTMENT ADVISORY COMMISSION

- Designed as a new issue and surveillance credit screening and productivity tool
  - Collected and consistently fielded data
    - Sourced directly from obligors, official repositories and other sources
    - Over 10,000 data fields
    - Reputation for high quality data
  - Features: quick access to credit fundamentals, peer group comparisons, statistical modeling and rankings, surveillance report repository
  - Credit sectors released in stages – beginning with hospitals and now 13 standard and 17 custom credit sectors
  - Encompassing approximately:
    - 10,000+ full data obligors
    - 59,000+ supplemental credits
    - 338,000+ linked issues

Sample of A City Report

CALIFORNIA DEBT AND INVESTMENT ADVISORY COMMISSION

Credit Name	State	GNIS County Name	Moody	S&P	Population	Fiscal Year End	CreditScope Rank	CreditScope City Barometer	High Burden Taxpayer Risk	Days Cash GenF on Hand[2016]
Alhambra	CA	Los Angeles			85,058	06/30/2016	53.07	6	54.34	127
Buena Park	CA	Orange			82,928	06/30/2016	88.85	0	88.43	325
Alameda	CA	Alameda		AA+	78,363	06/30/2016	67.89	2	20.82	189
Milpitas	CA	Santa Clara			77,269	06/30/2016	86.35	8	25.91	176
San Ramon	CA	Contra Costa		AA+	75,100	06/30/2016	87.84	4	68.15	51
Apple Valley	CA	San Bernardin			71,980	06/30/2016	49.63	3	83.00	90
Lynwood	CA	Los Angeles			71,583	06/30/2016	21.26	2	52.03	45
Rancho Cordov	CA	Sacramento			70,783	06/30/2016	91.14	8	56.32	161
Pittsburg	CA	Contra Costa	CE	A+	69,192	06/30/2016	62.30	2	43.45	154
Camarillo	CA	Ventura			67,339	06/30/2016	94.58	8	85.17	621
Yuba City	CA	Sutter			66,604	06/30/2016	36.15	0	77.91	6
Palo Alto	CA	Santa Clara	Aaa	AAA	66,567	06/30/2016	81.44	6	48.63	133
Santa Cruz	CA	Santa Cruz		AA+	64,112	06/30/2016	37.77	7	31.94	68
Madera	CA	Madera			63,916	06/30/2016	55.90	-4	85.79	148
Pico Rivera	CA	Los Angeles			63,850	06/30/2016	67.49	6	70.74	360
Encinitas	CA	San Diego			62,762	06/30/2016	81.10	-2	69.00	183
Lake Elsinore	CA	Riverside			62,270	06/30/2016	52.19	-4	62.49	137
Rocklin	CA	Placer			61,047	06/30/2016	76.52	9	79.84	240
Petaluma	CA	Sonoma			60,358	06/30/2016	69.71	-3	51.37	47
La Mesa	CA	San Diego	Aa2		59,876	06/30/2016	66.07	7	63.15	228
San Rafael	CA	Marin		AA-	59,123	06/30/2016	61.29	3	18.51	63
Huntington Par	CA	Los Angeles		BBB	59,088	06/30/2016	14.79	7	29.92	125
Brentwood	CA	Contra Costa	Aa3	CE	58,767	06/30/2016	87.23	3	77.86	228
Arcadia	CA	Los Angeles		AAA	58,071	06/30/2016	76.04	2	25.53	186
Fountain Valley	CA	Orange		AA+	56,750	06/30/2016	69.98	-7	49.39	366
Novato	CA	Marin	Aa2	AA+	55,486	06/30/2016	93.83	4	31.24	284
Paramount	CA	Los Angeles			55,100	06/30/2016	68.36	3	68.58	191