



**ASSOCIATION OF  
METROPOLITAN  
WATER AGENCIES**

**Presentation to the Association of Metropolitan Water Agencies:  
2016 Water Policy Conference**

## **Evolution of the Municipal Tax- Exempt Market**

March 22, 2016

This information was prepared by Morgan Stanley sales, trading, banking or other non-research personnel. This is not a research report and the views or information contained herein should not be viewed as independent of the interest of Morgan Stanley trading desks. Such interest may conflict with your interests and recipients should be mindful of such potential conflicts of interest when reviewing this information. The views of the trading desk may differ from those of the Research Department or others at Morgan Stanley. Morgan Stanley may deal as principal in or own or act as market maker or liquidity provider for the securities/instruments (or related derivatives) mentioned herein. The trading desks may engage in a variety of trading activities (which may conflict with the position an investor may have) before or after providing this information, including accumulation of a position in the subject securities/instruments based on the information contained herein or otherwise. Morgan Stanley may also perform or seek to perform investment banking services for the issuers of the securities and instruments mentioned herein. Morgan Stanley is not a municipal advisor and the opinions or views contained herein are not intended to be, and do not constitute, advice, including within the meaning of Section 975 of the Dodd-Frank Wall Street Reform and Consumer Protection Act. Please see additional important information and qualifications at the end of this material.



## Introduction

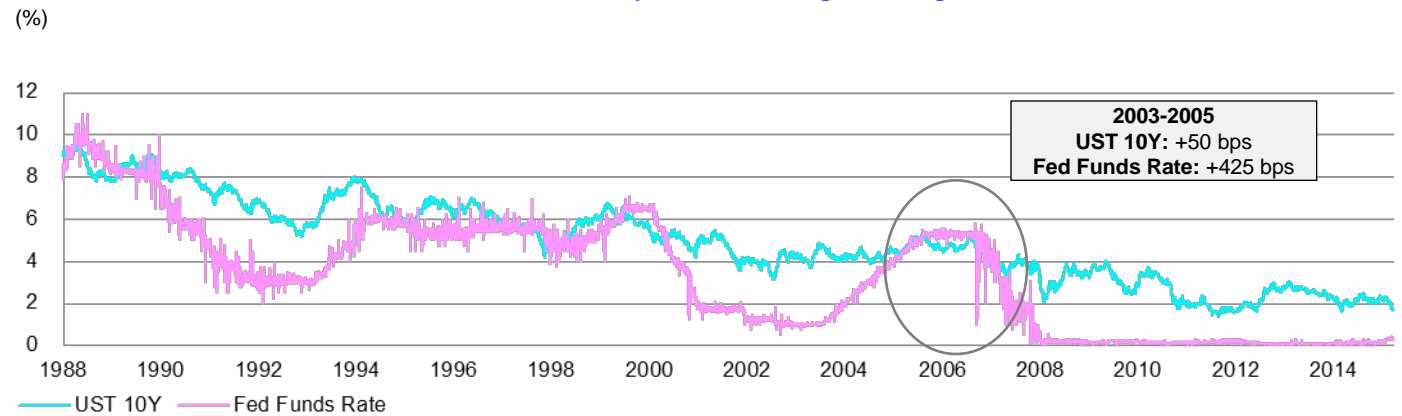
- Water issuers benefit from stable credit outlook and high regard that essential service utility credits have in the marketplace
  - Strong credit profile with generally over 70% of volume each year rated in the AA or higher rating category by at least one rating agency
  - Strong demand for water issues by both tax-exempt and taxable investors

- Municipal Market Technical Factors
- Buyers of Tax-Exempt Municipal Bonds
- Largest Institutional Holders of Water Revenue Bonds
- Emergence of Sustainable Investors

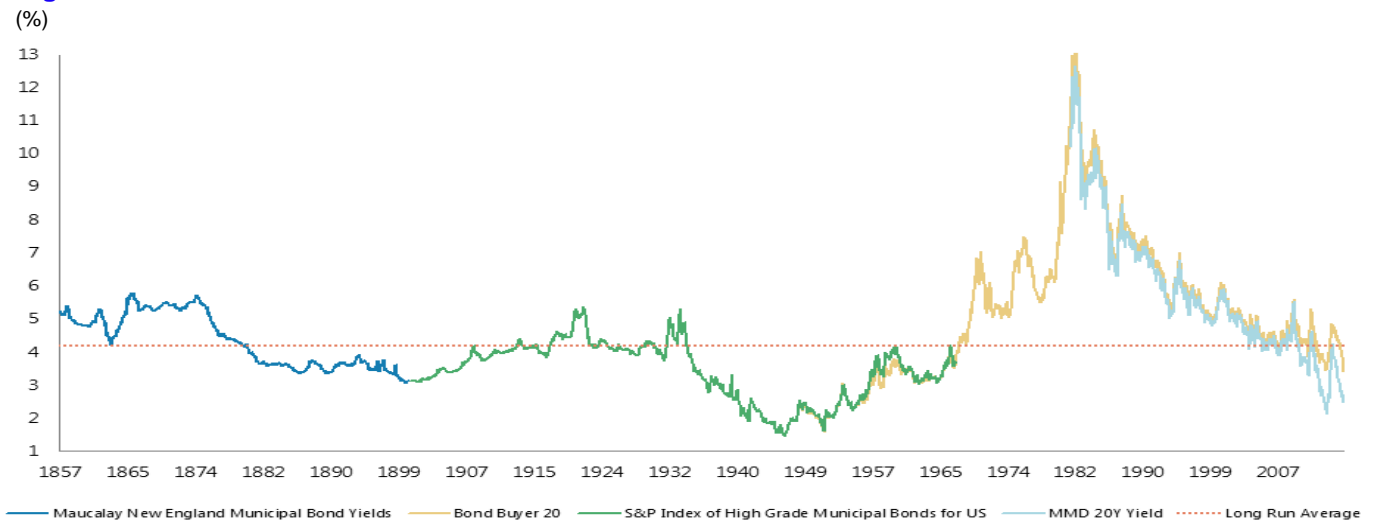
# The Potential of Lower for Longer

- From 2003 to 2005, while the federal funds rate rose 425 bps, the 10 Year Treasury only rose 50 basis points
- The interest rate environment of the 1970's and 1980's was historically unusual
- Interest rates may remain low due to:
  - Demographics: As baby boomers prepare for and settle into retirement by saving additional monies
  - Low Growth: As other developed nations struggle for economic growth, Central Banks around the world are easing monetary policy
  - Declining capital cost of innovation

## Increased Short Term Interest Rates Do Not Always Result in Higher Long Term Interest Rates



## The Long-Term Average of Rates is Higher But Not Significantly Higher



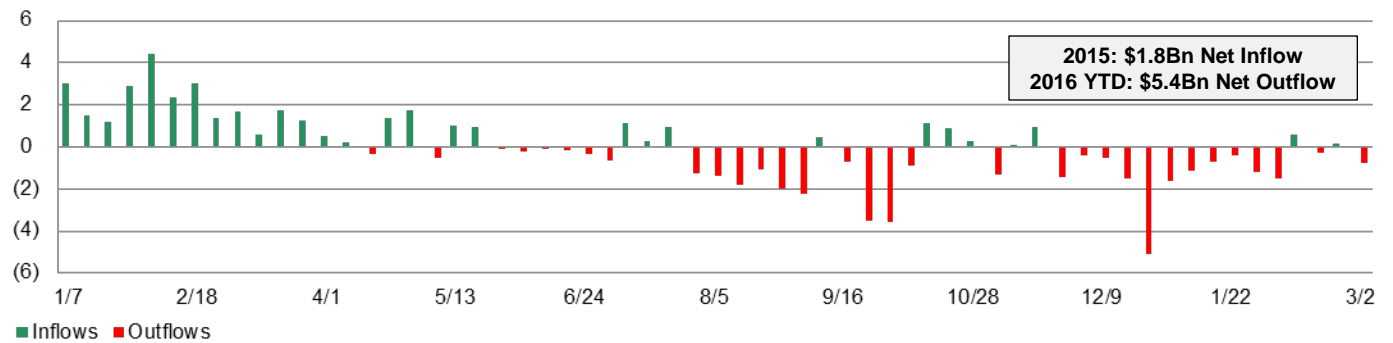


# Municipal Market Technicals Continue to Be Strong

- Investment grade bond fund flows turned negative during the second half of 2015, driven by heightened volatility in the global markets
- Municipal bond fund flows have remained strong since October 2015 and have trended higher with the market volatility so far in 2016
- January and February are also a strong period of redemptions in the municipal market, which further buttresses the strong technical environment in the municipal market

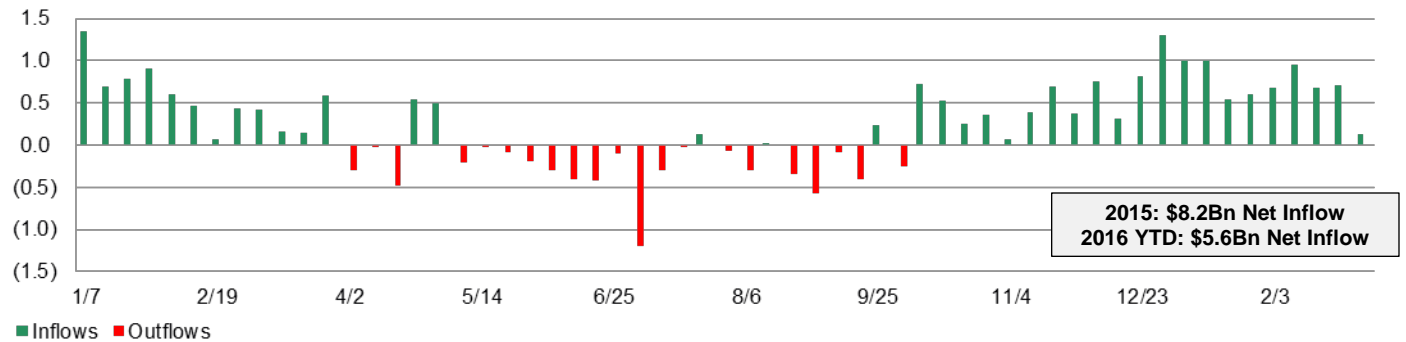
## Corporate Fund Flows Saw Outflows in the Second Half of 2015...

January 1, 2015 to Present  
(\$Bn)



## ...While Municipal Fund Flows Saw Large Inflows

January 1, 2015 to Present  
(\$Bn)



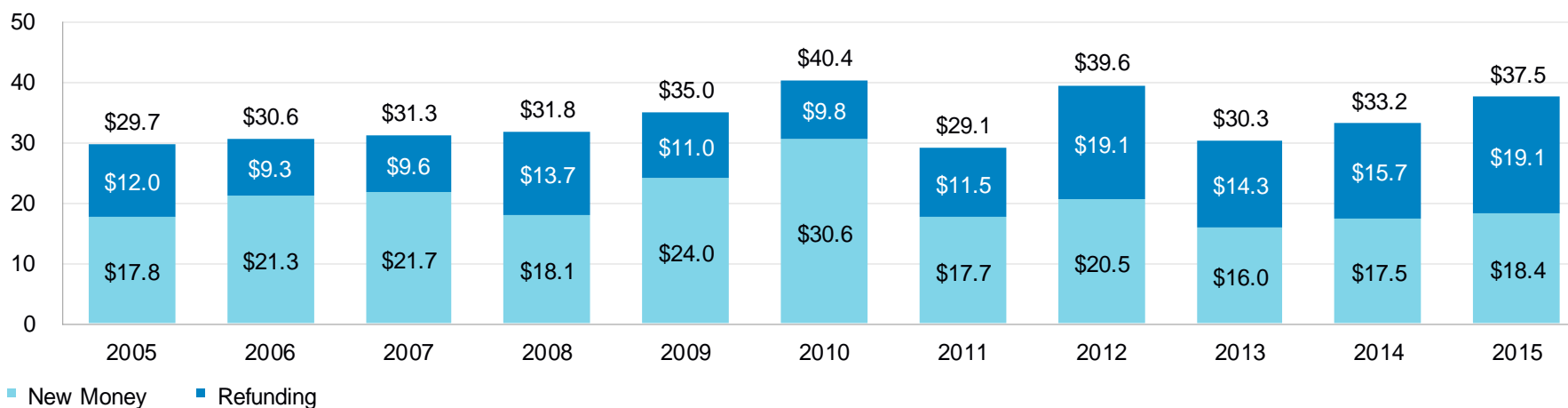


# Municipal Water and Wastewater Debt Issuance Trends

As of December 31, 2015

## Total Water and Wastewater Issuance By Year<sup>(1)</sup>

(\$Bn)



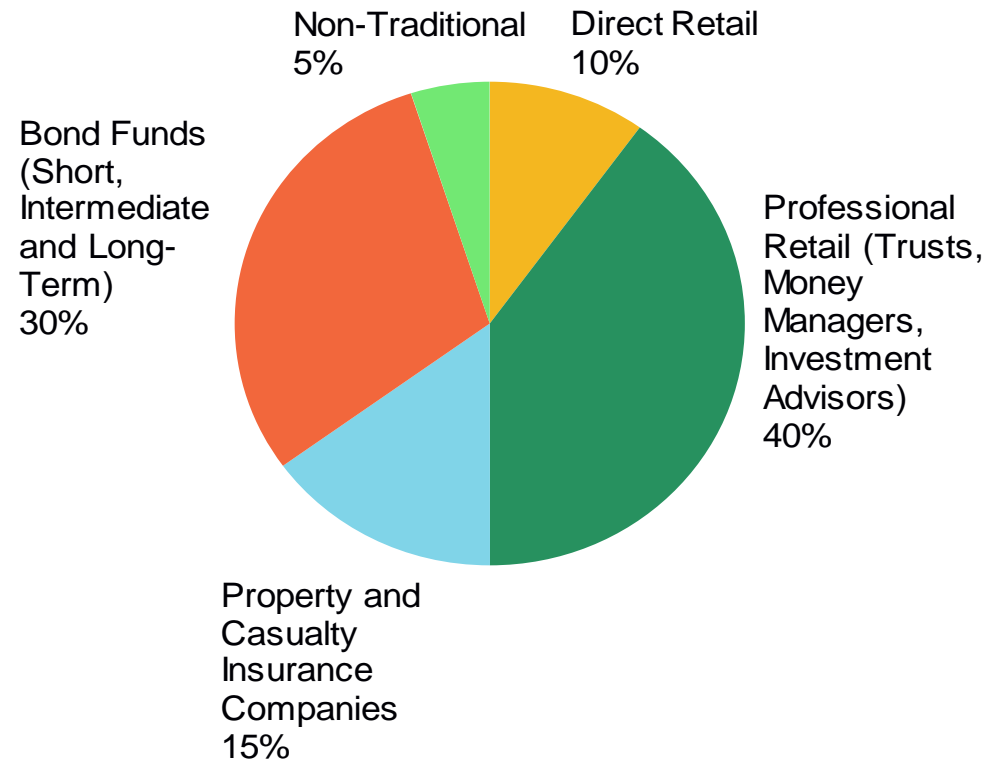
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total Municipal Issuance (\$Bn)	\$405.45	\$382.11	\$424.22	\$386.14	\$406.59	\$430.36	\$277.18	\$367.32	\$311.86	\$314.87	\$377.64
%W&WW	7.33%	8.00%	7.38%	8.24%	8.60%	9.39%	10.52%	10.77%	9.71%	10.54%	9.93%

- Fixed-rate refunding transaction volume in 2014 and 2015 remained high, reflecting historically low interest rates
- 2013 municipal water and wastewater issuance was similar to 2011 due to increased refunding portion
- 2012 municipal water and wastewater debt issuance was close to the 2010 record year and had a record 10.6% market share

## Who Buys Municipal Tax-Exempt Water Bonds?

- There are two major classes of bond buyers:
  - Retail, i.e. individuals/ households/ “Mom & Pop” or professional retail (i.e. investment advisors)
  - Institutional
- Retail investors typically prefer more par type coupons
- Institutional investors fall into the following categories:
  - Bond funds
  - Investment advisors
  - Commercial banks
  - Bank trust departments
  - Insurance companies
  - Hedge funds

### Typical Tax-Exempt Non-AMT Distribution

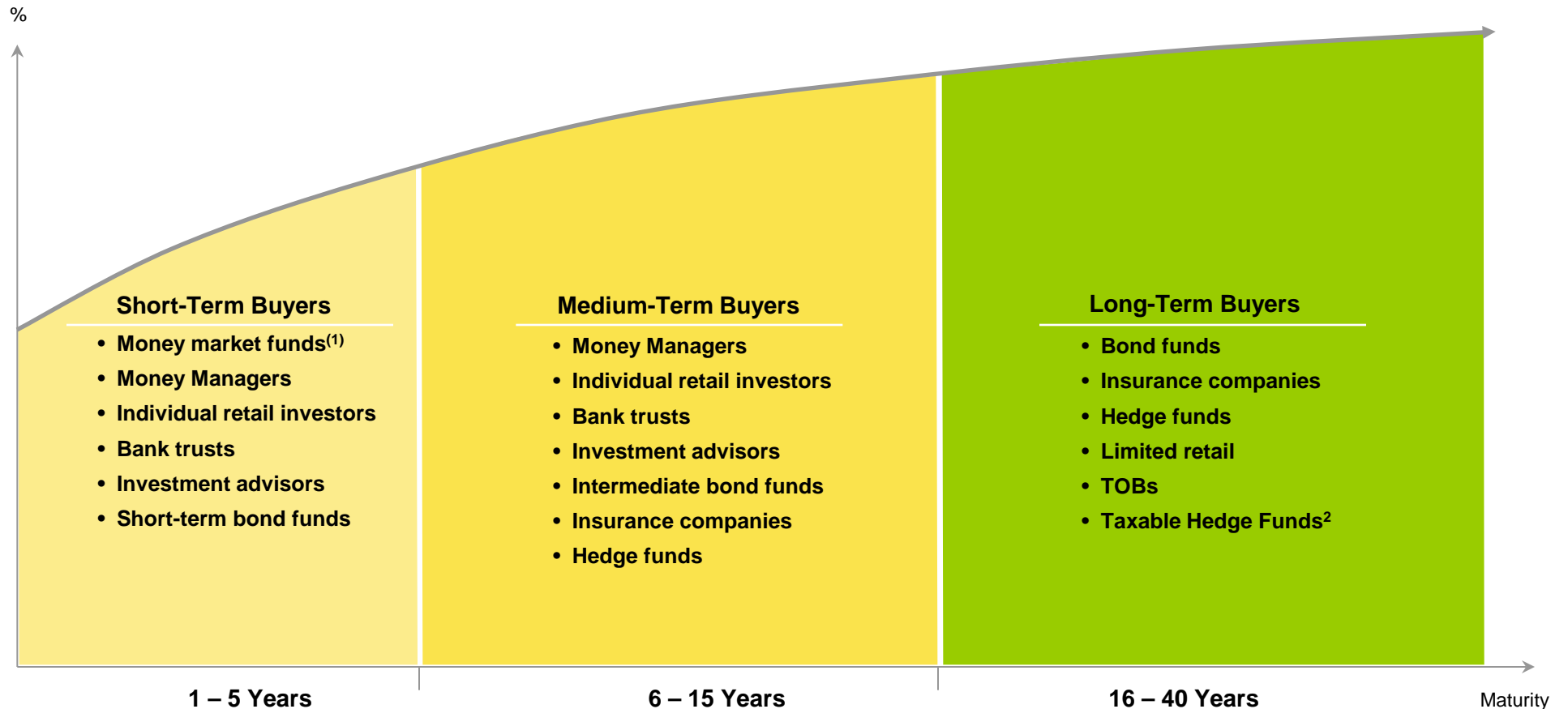


# Likely Buyers of Tax-Exempt Bonds

Buyers Across the Yield Curve

## Expected Investor Types by Maturity

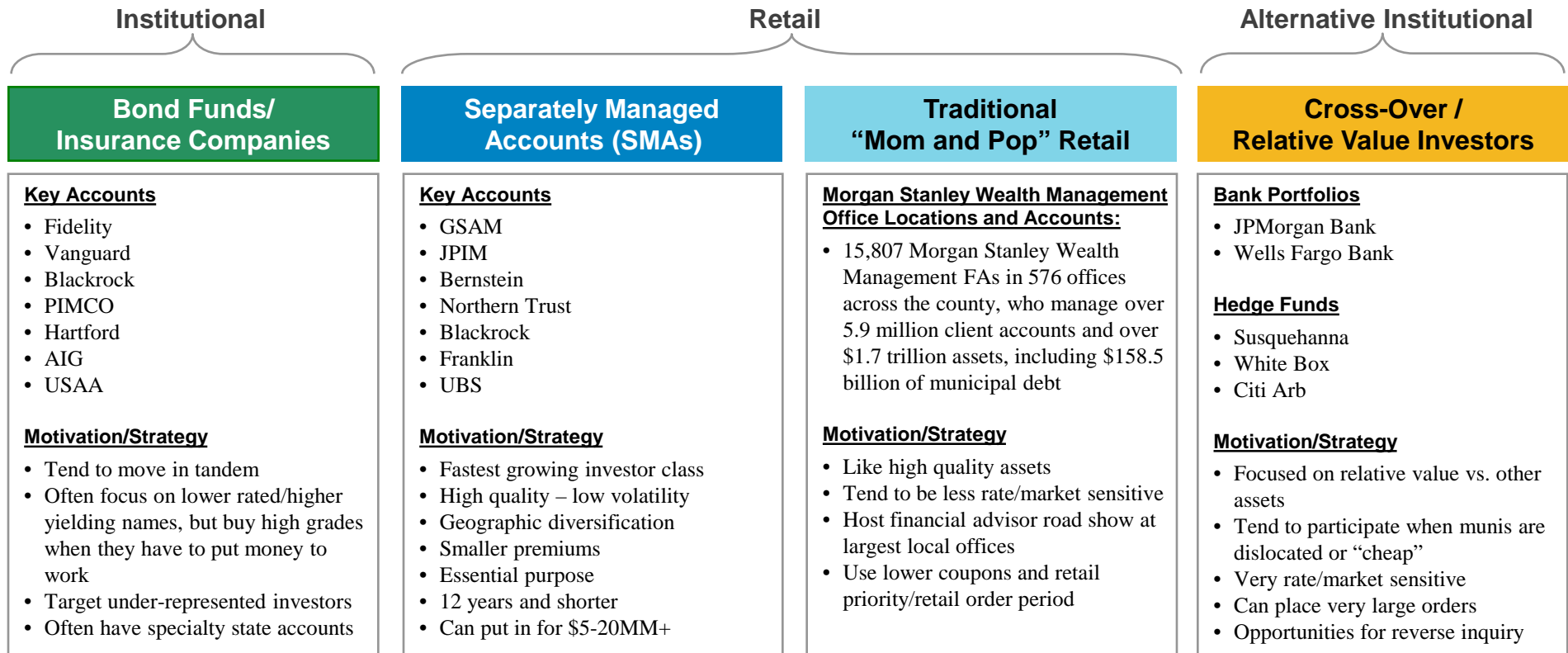
Hypothetical Yield Curve (For Illustrative Purposes Only)



### Notes

1. Buyers of bonds maturing in thirteen months or less
2. Non-traditional tax-exempt buyers

# Targeted Investors





## ASSOCIATION OF METROPOLITAN WATER AGENCIES

# Largest Publicly Disclosed Institutional Holders of Water and Wastewater Revenue Bonds

February 2016

- The top publicly disclosed institutional investors for various water and/or wastewater issuers varies due to credit, specialty state, market, and structuring considerations
  - Investors are concentrating their holdings due to limited internal resources for ongoing credit surveillance
- Morgan Stanley works with its clients to identify institutional investors that are underrepresented compared to peer utilities

### Water and Wastewater Issuer #1

Rank	Investor	Par Amount Held (\$000)
1	BlackRock	146,782
2	PineBridge	95,650
3	Vanguard	75,712
4	General Re-New England	49,821
5	Northern Trust	46,500
6	AIG	45,512
7	Invesco Advisers	37,948
8	Fidelity	36,135
9	Metropolitan Life Insurance Co	34,805
10	Conning Asset Management	29,444
11	Loews Corporation	29,000
12	Prudential	28,000
13	Deutsche Asset Management	25,352
14	MacKay Shields	24,331
15	Fountain Capital Management	23,830

### Wastewater Issuer #2

Rank	Investor	Par Amount Held (\$000)
1	PineBridge	174,630
2	Travelers	88,580
3	Vanguard	88,100
4	The Hartford	85,277
5	Deutsche Asset Management	67,767
6	WAMCO	67,028
7	GE Asset Management	55,545
8	John Hancock	50,700
9	BlackRock	50,359
10	PIMCO	34,606
11	Prudential	31,573
12	Columbia Management	25,240
13	Wellington	24,155
14	Nuveen	23,991
15	Liberty Mutual	20,975

### Water Issuer #3

Rank	Investor	Par Amount Held (\$000)
1	Travelers	62,320
2	John Hancock	50,460
3	State Farm Insurance	33,290
4	T Rowe Price	12,340
5	Prudential	12,060
6	J.P. Morgan	10,410
7	American Equity Life	9,020
8	Boston Management & Research	7,795
9	Conning Asset Management	6,550
10	General Re-New England	6,245
11	Capital Research & Management	5,500
12	Deutsche Asset Management	5,310
13	BlackRock	4,815
14	Nationwide Insurance	4,715
15	Markel Insurance	3,845

### Water and Wastewater Issuer #4

Rank	Investor	Par Amount Held (\$000)
1	Vanguard	170,295
2	Franklin Templeton Investments	119,945
3	Nuveen	31,686
4	PineBridge	30,000
5	The Hartford	23,000
6	BlackRock	19,683
7	Principal Global Investors	19,600
8	BNY Mellon	19,510
9	Fidelity	18,710
10	J.P. Morgan	17,635
11	Lord, Abbett	16,873
12	Western Asset Management	13,525
13	Deutsche Asset Management	12,401
14	GE Asset Management	12,000
15	PIMCO	11,500

# The Growth of Sustainable Investing

## The Evolution of Sustainable Investing



Socially-Responsible and Sustainable Investing have evolved predominantly in the equities and overseas markets over the past several decades

## Mainstream Interest in Sustainable Investing

**\$7 Trillion**

IN SOCIALLY-RESPONSIBLE INVESTING ASSETS IN THE UNITED STATES<sup>(1)</sup>

**71%**

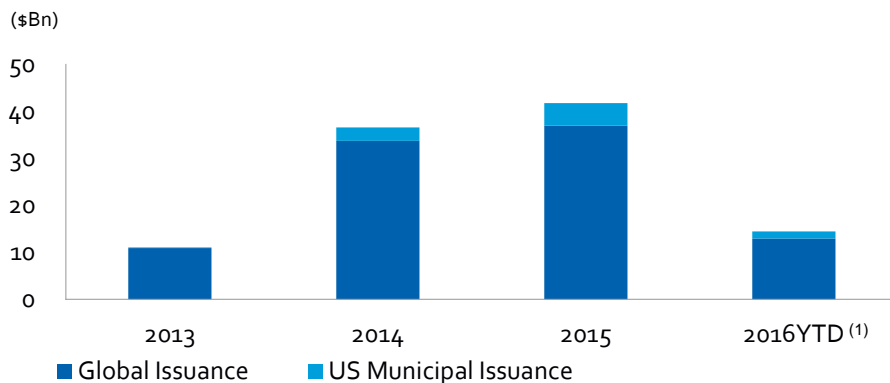
OF INDIVIDUAL RETAIL INVESTORS ARE INTERESTED IN SUSTAINABLE INVESTING<sup>(2)</sup>

**\$10 Billion**

GOAL OF MORGAN STANLEY WEALTH MANAGEMENT ASSETS IN SUSTAINABLE INVESTING PRODUCTS BY 2018

# Green Bonds: US Municipal Issuers' Access to Sustainable Investors

## Global Green Bond Market



- The Global Green Bond market continues to grow, with multilateral development banks and European corporate issuers having issued a majority of transactions
- US Municipal Green Bonds are becoming a larger proportionate share of the market
- To date, US municipal issuers have issued 60 transactions totaling \$9.3 billion

## Recent US Municipal Green Bond Issuances

Sale Date	Issuer	Par Amount
10/06/15	DC Water and Sewer Authority	100,000,000
10/15/15	State of Hawaii	35,000,000
10/22/15	St. Michael's College	18,465,000
11/10/15	New Jersey Environ. Infrastructure Trust	9,555,000
11/18/15	State of Connecticut	65,000,000
11/18/15	San Diego Unified School District	100,000,000
12/03/15	Rhode Island Infrastructure Bank	22,640,000
12/04/15	Mission Economic Development Corp.	48,000,000
12/09/15	Vienna, Virginia	6,180,000
12/09/15	New York City Housing Development Corp.	373,825,000 <sup>(2)</sup>
01/06/16	University of Texas	206,040,000
01/27/16	Massachusetts Clean Water Trust	207,805,000
02/01/16	Ramsey County (MN)	17,900,000
02/18/16	Metropolitan Transportation Authority (NY)	782,520,000
03/10/16	New York City Housing Development Corp.	124,290,000 <sup>(2)</sup>
03/18/16	Indiana Finance Authority	115,790,000 <sup>(3)</sup>
03/23/16	City of St. Paul (MN)	8,000,000 <sup>(3)</sup>

## Notes

1. Year-to-Date as of March 21, 2016
2. Sustainable Neighborhood Bonds

3. Preliminary, subject to change

# Benefits for Municipal Issuers

POSITIVE OUTCOMES

## Leadership

- Demonstrate leadership in a growing market
- A visionary & public commitment to sustainable progress aligned with good public policy

## Investor Diversification

- Attract new and like-minded investors to diversify investor base and align with strategic supporters
- Tap into new pockets of demand via growing segment of Institutional Socially-Responsible Investment (“SRI”) portfolios



- Appeal to large number of traditional and professional retail buyers who want to align their investments with their interests and values



## Positive Publicity

- Highlight existing or new green projects and sustainability efforts
- Increase the profile of the bond offering with a positive message
- Give investors the opportunity to partake in exciting local projects

## Specific Opportunities for Water Agencies

### Funding Water Projects with Green Bonds

- Sustainable Water Management was a broad category denoted in the original Green Bond Principles
- 41% of US Municipal Green Bonds have been issued for State Revolving Funds and Water / Wastewater issuers
  - Water issuers to date include: the City of Spokane (WA), the City of Asheville (NC), East Bay Municipal Utility District (CA), the City of Venice (FL), the Mission Economic Development Authority (CA)
- Types of water projects include:

Energy Efficiency | Water Treatment | Leakage Reduction | Water Recycling | Conservation

### Broadening the Opportunity

- Socially-responsible investors are interested in the benefits of water infrastructure beyond green
  - The social impact of accessibility and treatment of water
- Designating a bond as a Social or Sustainability Bond can broaden the Green Bond opportunity for water agencies

**Appendix A**

# Disclaimer



## DISCLAIMERS

### MSRB G-23 and Municipal Advisor Disclaimer

(a) Morgan Stanley & Co. LLC (“Morgan Stanley”) is not acting as an advisor to you and does not owe a fiduciary duty pursuant to Section 15B of the Exchange Act to you with respect to the information and material contained in this communication; (b) Morgan Stanley is acting for its own interests; (c) you should discuss any information and material contained in this communication with any and all internal or external advisors and experts that you deem appropriate before acting on this information or material; and (d) Morgan Stanley seeks to serve as an underwriter on a future transaction and not as a financial advisor or municipal advisor. The information provided is for discussion purposes only in anticipation of serving as underwriter. The primary role of an underwriter is to purchase securities with a view to distribution in an arm’s-length commercial transaction with the issuer. The underwriter has financial and other interests that differ from those of the issuer and obligated persons.

Any non-historical interest rates used herein are hypothetical and take into consideration conditions in today’s market and other factual information such as the issuer’s or obligated person’s credit rating, geographic location and market sector. As such, these rates should not be viewed as rates that Morgan Stanley guarantees to achieve for the transaction. Any information about interest rates and terms for SLGs is based on current publically available information and treasury or agency rates for open-market escrows are based on current market interest rates for these types of credits and should not be seen as costs or rates that Morgan Stanley guarantees to achieve for the transaction.



## DISCLAIMERS

# Disclaimer

This material was prepared by sales, trading, banking or other non-research personnel of one of the following: Morgan Stanley & Co. LLC, Morgan Stanley & Co. International plc, Morgan Stanley MUFG Securities Co., Ltd., Morgan Stanley Capital Group Inc. and/or Morgan Stanley Asia Limited (together with their affiliates, hereinafter "Morgan Stanley"). Unless otherwise indicated, the views herein (if any) are the author's and may differ from those of the Morgan Stanley Research Department or others in the Firm. This information should be treated as confidential and is being delivered to sophisticated prospective investors in order to assist them in determining whether they have an interest in the type of instruments described herein and is solely for internal use.

This material does not provide investment advice or offer tax, regulatory, accounting or legal advice. By submitting this document to you, Morgan Stanley is not advising you to take any particular action based on the information, opinions or views contained in this document, and acceptance of such document will be deemed by you acceptance of these conclusions. You should consult with your own municipal, financial, accounting and legal advisors regarding the information, opinions or views contained in this document. Unless stated otherwise, the material contained herein has not been based on a consideration of any individual client circumstances and as such should not be considered to be a personal recommendation. This material was not intended or written to be used, and it cannot be used by any taxpayer, for the purpose of avoiding penalties that may be imposed on the taxpayer under U.S. federal tax laws. Each taxpayer should seek advice based on the taxpayer's particular circumstances from an independent tax advisor.

This material has been prepared for information purposes only and is not a solicitation of any offer to buy or sell any security, commodity, futures contract or instrument or related derivative (hereinafter "instrument") or to participate in any trading strategy. Any such offer would be made only after a prospective participant had completed its own independent investigation of the instrument or trading strategy and received all information it required to make its own investment decision, including, where applicable, a review of any prospectus, prospectus supplement, offering circular or memorandum describing such instrument or trading strategy. That information would supersede this material and contain information not contained herein and to which prospective participants are referred. If this material is being distributed in connection with or in advance of the issuance of asset backed securities, information herein regarding any assets backing any such securities supersedes all prior information regarding such assets. Unless otherwise specifically indicated, all information in these materials with respect to any third party entity not affiliated with Morgan Stanley has been provided by, and is the sole responsibility of, such third party and has not been independently verified by Morgan Stanley or its affiliates or any other independent third party. We have no obligation to tell you when information herein is stale or may change. We make no express or implied representation or warranty with respect to the accuracy or completeness of this material, nor are we obligated to provide updated information on the instruments mentioned herein. Further, we disclaim any and all liability relating to this material.

To the extent any prices or price levels are noted, they are for informational purposes only and are not intended for use by third parties, and are indicative as of the date shown and are not a commitment by Morgan Stanley to trade at any price.

This material may have been prepared by or in conjunction with Morgan Stanley trading desks that may deal as principal in or own or act as market maker or liquidity provider for the instruments or issuers mentioned herein and may also seek to advise issuers of such instruments. Where you provide us with information relating to your order or proposed transaction ("Information"), we may use that Information to facilitate the execution of your orders or transactions, in managing our market making, other counterparty facilitation activities or otherwise in carrying out our legitimate business (which may include, but is not limited to, hedging a risk or otherwise limiting the risks to which we are exposed). Counterparty facilitation activities may include, without limitation, us taking a principal position in relation to providing counterparties with quotes or as part of the ongoing management of inventories used to facilitate counterparties. Where we commit our capital in relation to either ongoing management of inventories used to facilitate clients, or in relation to providing you with quotes we may make use of that information to enter into transactions that subsequently enable us to facilitate clients on terms that are competitive in the prevailing market conditions. Trading desk materials are not independent of the proprietary interests of Morgan Stanley, which may conflict with your interests. Morgan Stanley may also perform or seek to perform investment banking services for the issuers of instruments mentioned herein 'Characteristics and Risks of Standardized Options,' which is available from your account representative.

Any securities referred to in this material may not have been registered under the U.S. Securities Act of 1933, as amended, and, if not, may not be offered or sold absent an exemption therefrom. In relation to any member state of the European Economic Area, a prospectus may not have been published pursuant to measures implementing the Prospectus Directive (2003/71/EC) and any securities referred to herein may not be offered in circumstances that would require such publication. Recipients are required to comply with any legal or contractual restrictions on their purchase, holding, sale, exercise of rights or performance of obligations under any instrument or otherwise applicable to any transaction. In addition, a secondary market may not exist for certain of the instruments referenced herein.

The securities, commodities, futures or other instruments (or related derivatives) discussed in this material may not be suitable or appropriate for all investors. This material has been prepared and issued by Morgan Stanley for distribution to market professionals and institutional investor clients only. This material does not provide individually tailored investment advice or offer tax, regulatory, accounting or legal advice. Prior to entering into any proposed transaction, recipients should determine, in consultation with their own investment, legal, tax, regulatory and accounting advisors, the economic risks and merits, as well as the legal, tax, regulatory and accounting characteristics and consequences, of the transaction. You should consider this material among other factors in making an investment decision.

Options and futures are not for everyone. Before purchasing or writing options, investors should understand the nature and extent of their rights and obligations and be aware of the risks involved, including the risks pertaining to the business and financial condition of the issuer and the underlying instrument. For Morgan Stanley customers who are purchasing or writing exchange-traded options, please review the publication 'Characteristics and Risks of Standardized Options,' which is available from your account representative.



## DISCLAIMERS

# Disclaimer

The value of and income from investments may vary because of changes in interest rates, foreign exchange rates, default rates, prepayment rates, securities, prices of instruments or securities, market indexes, operational or financial conditions of companies or other factors. There may be time limitations on the exercise of options or other rights in instruments (or related derivatives) transactions. Past performance is not necessarily a guide to future performance. Estimates of future performance are based on assumptions that may not be realized. Actual events may differ from those assumed and changes to any assumptions may have a material impact on any projections or estimates. Other events not taken into account may occur and may significantly affect the projections or estimates. Certain assumptions may have been made for modeling purposes only to simplify the presentation and/or calculation of any projections or estimates, and Morgan Stanley does not represent that any such assumptions will reflect actual future events or that all assumptions have been considered or stated. Accordingly, there can be no assurance that estimated returns or projections will be realized or that actual returns or performance results will not materially differ from those estimated herein. Some of the information contained in this document may be aggregated data of transactions executed by Morgan Stanley that has been compiled so as not to identify the underlying transactions of any particular customer.

Notwithstanding anything herein to the contrary, Morgan Stanley and each recipient hereof agree that they (and their employees, representatives, and other agents) may disclose to any and all persons, without limitation of any kind from the commencement of discussions, the U.S. federal and state income tax treatment and tax structure of the transaction and all materials of any kind (including opinions or other tax analyses) that are provided to it relating to the tax treatment and tax structure. For this purpose, "tax structure" is limited to facts relevant to the U.S. federal and state income tax treatment of the transaction and does not include information relating to the identity of the parties, their affiliates, agents or advisors.

This information is not intended to be provided to and may not be used by any person or entity in any jurisdiction where the provision or use thereof would be contrary to applicable laws, rules or regulations.

This communication is directed in the UK to those persons who are eligible counterparties or professional clients and must not be acted on or relied upon by retail clients (each as defined in the UK Financial Services Authority's rules).

This information is being disseminated in Hong Kong by Morgan Stanley Asia Limited and is intended for professional investors (as defined in the Securities and Futures Ordinance) and is not directed at the public of Hong Kong.

This information is being disseminated in Singapore by Morgan Stanley Asia (Singapore) Pte. This information has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this information and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of this security may not be circulated or distributed, nor may this security be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than (i) to an institutional investor under Section 274 of the Securities and Futures Act, Chapter 289 of Singapore (the "SFA"), (ii) to a relevant person pursuant to Section 275(1) of the SFA, or any person pursuant to Section 275(1A) of the SFA, and in accordance with the conditions, specified in Section 275 of the SFA or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA. Any offering of this security in Singapore would be through Morgan Stanley Asia (Singapore) Pte, an entity regulated by the Monetary Authority of Singapore.

This information is being disseminated in Japan by Morgan Stanley MUFG Securities Co., Ltd., Any securities referred to herein may not have been and/or will not be registered under the Financial Instruments Exchange Law of Japan (Law No. 25 of 1948, as amended, hereinafter referred to as the "Financial Instruments Exchange Law of Japan"). Such securities may not be offered, sold or transferred, directly or indirectly, to or for the benefit of any resident of Japan unless pursuant to an exemption from the registration requirements of, and otherwise in compliance with the Financial Instruments Exchange Law and other relevant laws and regulations of Japan. As used in this paragraph, "resident of Japan" means any person resident in Japan, including any corporation or other entity organized or engaged in business under the laws of Japan. If you reside in Japan, please contact Morgan Stanley MUFG Securities for further details at +613-5424-5000.

This information is distributed in Australia by Morgan Stanley Australia Limited A.B.N. 67 003 734 576, holder of Australian financial services license No. 233742, which accepts responsibility for its contents, and arranges for it to be provided to potential clients. In Australia, this report, and any access to it, is intended only for "wholesale clients" within the meaning of the Australian Corporations Act.

For additional information, research reports and important disclosures see <https://secure.ms.com/servlet/cls>. The trademarks and service marks contained herein are the property of their respective owners. Third-party data providers make no warranties or representations of any kind relating to the accuracy, completeness, or timeliness of the data they provide and shall not have liability for any damages of any kind relating to such data.

This material may not be redistributed without the prior written consent of Morgan Stanley.

---

© 2016 Morgan Stanley

---