



**MUNICIPAL GREEN BOND DISCLOSURE:
INVESTOR GUIDANCE AND ISSUER PERSPECTIVE**

SEPTEMBER 19TH
10^{AM} – 11:30^{AM}



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Speaker Introductions



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Goals of the Webinar

1. Understand that green bonds continue to be an important topic.
2. Recognize the potential benefits of issuing green bonds
3. Appreciate the different types of investors that invest in green bonds, that is bonds that finance projects with an 'environmental benefit.'
4. Know what additional POS disclosure is required to have green bond investors interested in your green bond sale.





Survey Question #1

What is the biggest hurdle in issuing green bonds?

- ✓ No resources to produce project-specific disclosure
- ✓ Waiting to see a pricing benefit (i.e. greenium)
- ✓ Concerns about additional continuing disclosure requirements
- ✓ We have issued green bonds in the past



Background/Purpose of the CGBMDC's Green Bond Paper

- The recently released “**Recommended Approach to Municipal Green Bond Disclosure**” was written with input from municipal market investors, specifically for U.S. municipal market issuers.
- The California Green Bond Market Development Committee (“CGBMDC”) established a subcommittee, comprised primarily of municipal bond investors, to develop this paper (resource).

Background/Purpose of the CGBMDC's Green Bond Paper

The subcommittee members:

Richard Akulich, Preston Hollow Community Capital

Raul Amezcua, Ramirez & Co., Inc.

David Blair, Nuveen

Mark Capell, Build America Mutual

Paul Charbonneau, Neuberger Berman

Kevin Civale, Esq., Stradling Yocca

Ruth Ducret, Breckinridge Capital Advisors

Ksenia Koban, Neuberger Berman

Akiko Mitsui, Individual Contributor

Kim Nakahara, Allspring Global Investments

Katryna Pouliot, Calvert Research Management

Emily Robare, Pacific Investment Management Co.

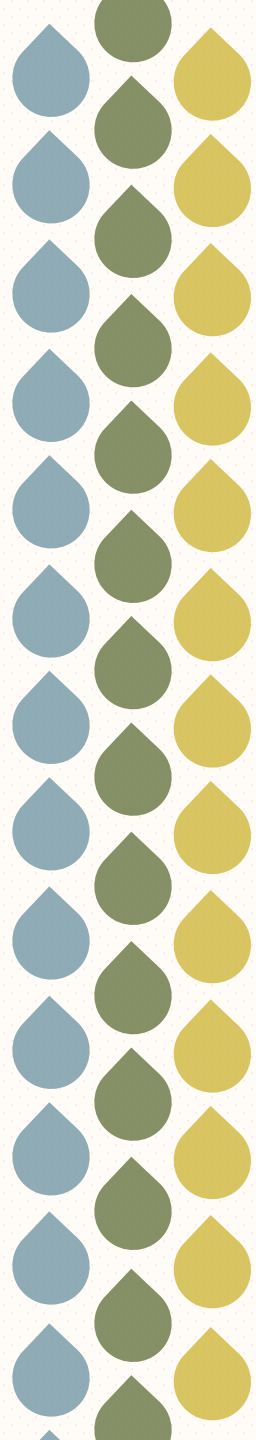
Barbara Van Scoy, Heron Foundation

David Wooley, UC Berkeley, Goldman School of Public Policy

Background/Purpose of the CGBMDC's Green Bond Paper

The guidelines **only address information disclosure for investors' green bond assessments**, and not the broader environmental risk disclosures necessary for general credit analysis.

For purposes of this report, ***green bond* refers to a bond where the proceeds are used to fund projects with environmental benefits**, without regard to whether the bond is labeled as “Green” or not.



An Example of Good Green Bond Project Disclosure

The District's Green Bonds Guidance further provides that in identifying potential projects for Green Bond financing, **the District's aim should be towards including projects that best meet one or more of the identified criteria** and excluding those projects that appear marginal or that have unresolved sustainability issues.

In identifying projects eligible for green bond financing, **the District considers projects that are designed to meet one or more of the following criteria to be “green” projects:** (i) maintain water quality; (ii) improve water use efficiency, including conservation through reduced water loss; (iii) improve biodiversity and ecosystem quality; (iv) protect against flooding; (v) reduce pollution; (vi) improve resilience (adaptation) to climate change; (vii) reduce the combustion of fossil fuels; (viii) reduce greenhouse gas emissions; (ix) implement “reduce, reuse, recycle” practices in preference to raw materials; or (x) adhere to sustainable purchasing guidelines



An Example of Good Green Bond Project Disclosure

East Bay Municipal Utility District Expected Series 2022A Green Bonds Projects			
Project Name	Short Description	EBMUD Green Bond Criteria	Amount Funded
Treatment Plant Upgrades	The Project supports compliance with water quality regulations and improves the safety, reliability, and operation of the water treatment plants. Work included under this project includes design completion and the start of construction of the Orinda Water Treatment Plant (“WTP”) filter air scour, Sobrante WTP control system modernization, and other improvements for chemical safety and reliability.	1, 2, 5, 6	\$40.9 million
Open Cut Reservoir Program	Open-cut reservoir rehabilitation, replacement, and demolition projects are necessary to remove hazardous materials, reduce maintenance costs, improve safety, and improve water quality by optimizing storage in the distribution system.	1, 2, 5	\$21.7 million



An Example of Less Than Ideal Green Bond Project Disclosure

It simply states bonds are designated as...

“Green” due to the proceeds being used to finance sustainable water and wastewater management projects that contribute to the development of sustainable infrastructure for clean water and/or drinking water and wastewater treatment.

No additional verbiage on additional environmental benefits.

Ruth Ducret, Senior Research Analyst
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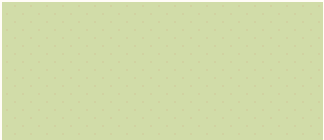
Overview

1993
YEAR FOUNDED

- Experienced asset manager
- Offices in Boston and San Diego



88
EMPLOYEES



\$44+ Billion
ASSETS UNDER MANAGEMENT

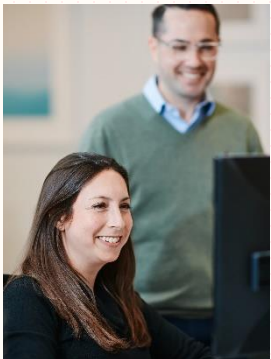
\$35.8B	SECTOR-FOCUSED FIXED INCOME
\$8.6B	MULTI-SECTOR FIXED INCOME

- Customized separate accounts
- Fixed income, dividend income and sustainable investing strategies

Certified
B
Corporation

100%
INDEPENDENTLY OWNED

- Committed to independence
- Clients are our top priority





Breckinridge: ESG Integration

ESG INTEGRATION

Why

- Risk management
- Additional insight
- Longer-term horizon
- PRI commitment

How

- Emphasizes materiality
- Internal frameworks
- Proprietary scores & ratings
- Data from a variety of sources

APPROACHES

CORPORATES¹

**ESG Research Focus:
Credit Risk Management**

- Sector-based frameworks
- Evaluate CSR disclosure and commitments
- Actively monitor issuer controversies
- Engage in direct dialogue with issuers

MUNICIPALS

**ESG Research Focus:
Credit Risk Management**

- Sector-based frameworks
- Analyze data from U.S. Census, FBI, EPA and others
- Evaluate sustainability initiatives and plans
- Engage in direct dialogue with issuers

AGENCY MBS & CMBS

**ESG Research Focus:
Prepayment Risk**

- Climate risk score adjusts prepayment speeds
- Score based on state level climate risks
- Incorporates third party climate change research

ABS

**ESG Research Focus:
Credit Risk Management**

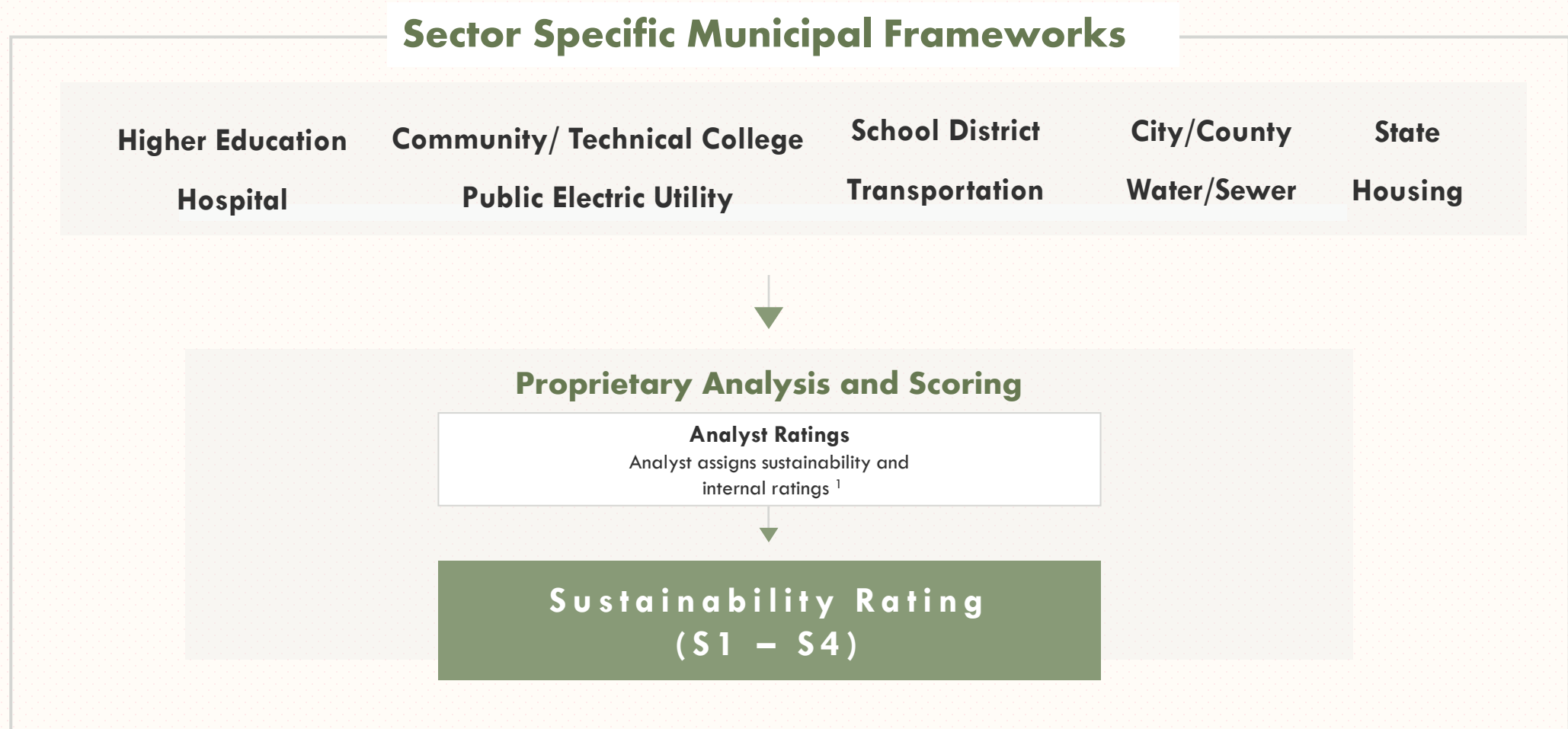
- Sector-based frameworks
- Contains sector-risk ratings for ABS sub-sectors
- Utilizes Bloomberg ESG data and third-party scores

¹May include issuers of asset backed securities.



Municipal: ESG Research Approach

Our ESG integration methodology incorporates municipal frameworks comprised of both quantitative and qualitative ESG factors to derive a composite sustainability rating.



¹ Ratings may be peer reviewed to ensure consistency.

² Engagement discussion takeaways can inform an analyst's view on a sector theme or material ESG risk.



Disclaimer

This presentation has been prepared for investment professional and institutional use.

All information and opinions are current as of the date on the cover or as indicated and are subject to change without notice. There is no assurance that any estimate, target, projection or forward-looking statement (collectively, “estimates”) included in this material will be accurate or prove to be profitable; actual results may differ substantially. Breckinridge estimates are based on Breckinridge’s research, analysis and assumptions. Other events that were not considered in formulating such projections could occur and may significantly affect the outcome, returns or performance.

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Equity investments are volatile and can decline significantly in response to investor reception of the issuer, market, economic, industry, political, regulatory or other conditions.

Breckinridge believes that the assessment of ESG risks, including those associated with climate change, can improve overall risk analysis. When integrating ESG analysis with traditional financial analysis, Breckinridge’s investment team will consider ESG factors but may conclude that other attributes outweigh the ESG considerations when making investment decisions.

There is no guarantee that integrating ESG analysis will improve risk-adjusted returns, lower portfolio volatility over any specific time period, or outperform the broader market or other strategies that do not utilize ESG analysis when selecting investments. The consideration of ESG factors may limit investment opportunities available to a portfolio. In addition, ESG data often lacks standardization, consistency and transparency and for certain companies such data may not be available, complete or accurate.

Breckinridge’s ESG analysis is based on third party data and Breckinridge analysts’ internal analysis. Analysts will review a variety of sources such as corporate sustainability reports, data subscriptions, and research reports to obtain available metrics for internally developed ESG frameworks. Qualitative ESG information is obtained from corporate sustainability reports, engagement discussion with corporate management teams, among others. A high sustainability rating does not mean it will be included in a portfolio, nor does it mean that a bond will provide profits or avoid losses.

Net Zero alignment and classifications are defined by Breckinridge and are subjective in nature. Although our classification methodology is informed by the Net Zero Investment Framework Implementation Guide as outlined by the Institutional Investors Group on Climate Change, it may not align with the methodology or definition used by other companies or advisors. Breckinridge uses the financed emissions methodology developed by the Partnership for Carbon Accounting Financials (PCAF) to track, monitor and allocate emissions.

These differences should be considered when comparing Net Zero application and strategies.

Targets and goals for Net Zero can change over time and could differ from individual client portfolios. Breckinridge will continue to invest in companies with exposure to fossil fuels; however, we may adjust our exposure to these types of investments based on net zero alignment and classifications over time.



Disclaimer - Continued

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Cross transactions will be used to facilitate tax loss harvesting in most cases. When using cross transactions for tax loss harvesting, participating client accounts gain exposure to the tax-loss harvested bonds received from other accounts. While Breckinridge generally selects bonds that, in its best judgement, will not change significantly in price, bonds nevertheless are subject to fluctuations in price, and the bonds received may go up or down in value.

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Disclaimer - Continued

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The Bloomberg Municipal Bond Index is considered representative of the broad market for investment grade, tax-exempt bonds with a maturity of at least one year.

The Bloomberg U.S. Government/Credit Index measures the performance of investment grade, U.S.-dollar denominated government and corporate bonds with maturities of at least one year.

The Bloomberg U.S. Aggregate Bond Index measures the investment-grade, U.S.-dollar denominated, fixed-rate taxable bond market.

The Bloomberg U.S. Agency CMBS Index measures the market for investment-grade, multi-family CMBS debt-issued by U.S. government agencies, Freddie Mac and Fannie Mae.

The Bloomberg Managed Money Short measures the performance of U.S.-dollar denominated short term, tax-exempt bond market.

The S&P 500 Index is a common measure of the broad U.S. equity market and is composed of the top 500 publicly traded U.S. companies. (Source: S&P Dow Jones)

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Muni Green Bond Disclosure

CDIAC Green Bonds Webinar

September 19, 2023

IMPORTANT NOTICE

Please note that the following contains the opinions of the manager as of the date noted, and may not have been updated to reflect real time market developments. All opinions are subject to change without notice.

PIMCO: Best Practice Guidance for Sustainable Bond Issuance

Key Takeaways

- 1. A label doesn't confirm virtue.** PIMCO can map Green, Social, Sustainability, and Sustainability-Linked bonds internally across a spectrum based on Strategic Fit, Impact Assessment, and Red Flags/Reporting.
- 2. Best practices** may include:
 - Bond framework as a stand-alone document, not just a Use of Proceeds paragraph in the Official Statement.
 - Clear and full alignment with ICMA Principles and Guidelines
 - Connection with issuer's long-term sustainability strategy and objectives
 - Use of proceeds aligned with UN Sustainable Development Goals (SDGs)
- 3.** While issuers can self-label, PIMCO suggests **obtaining independent external verification** (e.g., second-party opinion, certification) of an ESG-labelled bond.

Helpful Disclosure Examples:

- **State clean water trust:** Appendix with extensive detail on eligible project categories and descriptions of funded projects
- **City Housing Finance Agency:** Discussion of alignment with Climate Bonds Initiative's low carbon buildings criteria

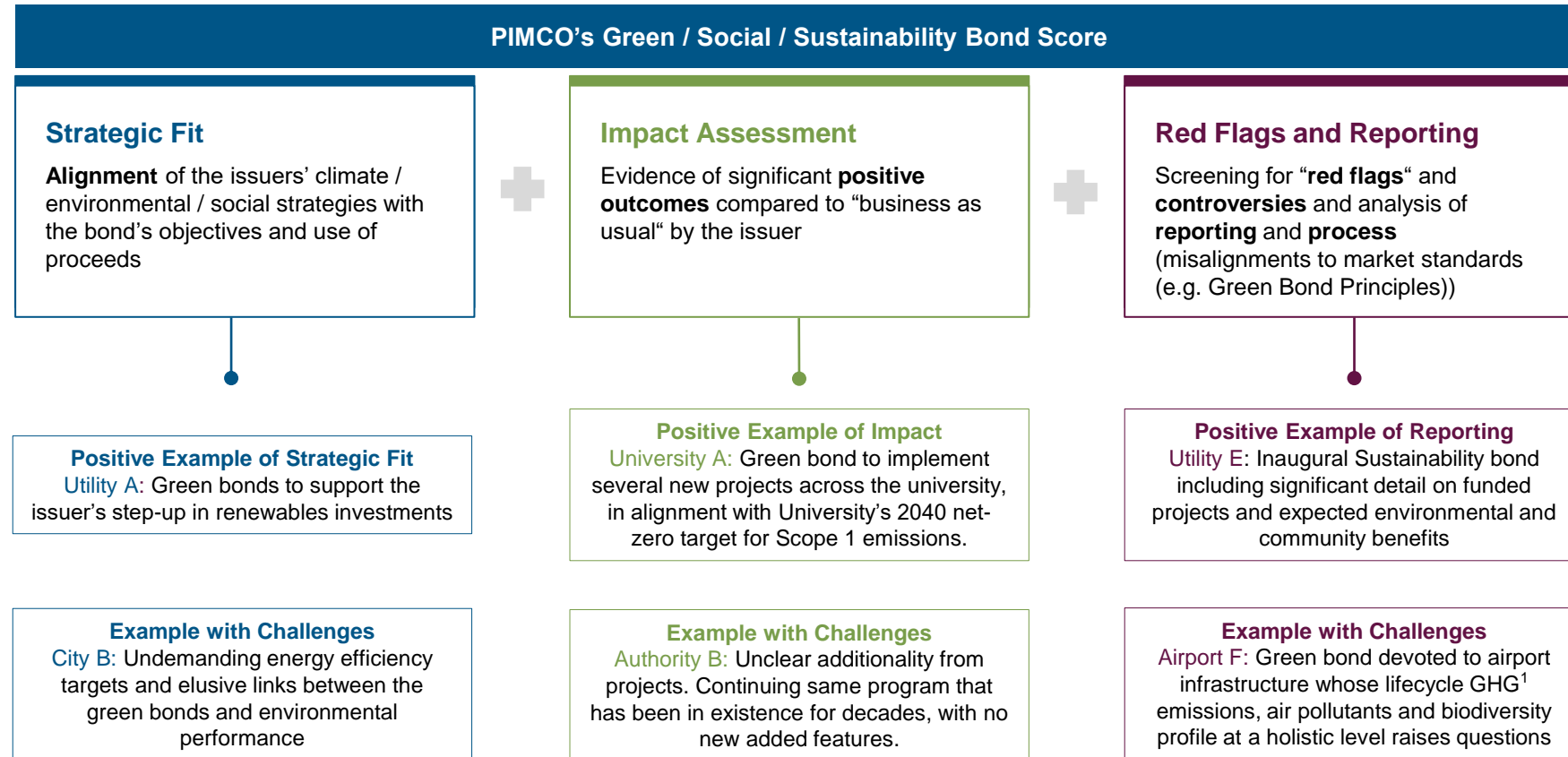
For Illustrative Purposes Only

SOURCE: PIMCO

Refer to Appendix for additional ESG investing, investment strategy, and risk information.

Evaluating credentials of Green, Social, Sustainability-labelled Bonds

Assessing the rationale for “use-of-proceeds” bonds and positive impact credentials (‘greenness’)



For Illustrative Purposes Only

SOURCE: PIMCO

¹Green house gas

Refer to Appendix for additional ESG investing, investment strategy, and risk information.

Disclosures

ESG INVESTING

ESG-Labelled Bonds are defined as green, social, and sustainable bonds and sustainability-linked bonds. **Green Bonds** are those issues with proceeds specifically earmarked to be used for climate and environmental projects. **Social Bonds** are use-of-proceeds bonds earmarked to finance new and existing projects or activities with positive social impacts. **Sustainability Bonds** are use-of-proceeds bonds earmarked to finance new and existing projects or activities with positive environmental and social impacts. **Sustainability-Linked Bonds (SLBs)** are bonds that include sustainability-linked covenants, as explained by the issuer through use of a framework and/or legal documentation.

PIMCO is committed to the integration of Environmental, Social and Governance ("ESG") factors into our broad research process and engaging with issuers on sustainability factors and our climate change investment analysis. At PIMCO, we define ESG integration as the consistent consideration of material ESG factors into our investment research process, which may include, but are not limited to, climate change risks, diversity, inclusion and social equality, regulatory risks, human capital management, and others. Further information is available in PIMCO's Sustainable Investment Policy Statement.

ESG investing is qualitative and subjective by nature, and there is no guarantee that the factors utilized by PIMCO or any judgment exercised by PIMCO will reflect the opinions of any particular investor, and the factors utilized by PIMCO may differ from the factors that any particular investor considers relevant in evaluating an issuer's ESG practices. In evaluating an issuer, PIMCO is dependent upon information and data obtained through voluntary or third-party reporting that may be incomplete, inaccurate or unavailable, or present conflicting information and data with respect to an issuer, which in each case could cause PIMCO to incorrectly assess an issuer's business practices with respect to its ESG practices. Socially responsible norms differ by region, and an issuer's ESG practices or PIMCO's assessment of an issuer's ESG practices may change over time. There is no standardized industry definition or certification for certain ESG categories, for example "green bonds"; as such, the inclusion of securities in these statistics involves PIMCO's subjectivity and discretion. There is no assurance that the ESG investing strategy or techniques employed will be successful. Past performance is not a guarantee or reliable indicator of future results.

INVESTMENT STRATEGY

There is no guarantee that these investment strategies will work under all market conditions or are appropriate for all investors and each investor should evaluate their ability to invest long-term, especially during periods of downturn in the market.

RISK

A word about risk: All investments contain risk and may lose value. Investing in the **bond market** is subject to risks, including market, interest rate, issuer, credit, inflation risk, and liquidity risk. The value of most bonds and bond strategies are impacted by changes in interest rates. Bonds and bond strategies with longer durations tend to be more sensitive and volatile than those with shorter durations; bond prices generally fall as interest rates rise, and low interest rate environments increase this risk. Reductions in bond counterparty capacity may contribute to decreased market liquidity and increased price volatility. Bond investments may be worth more or less than the original cost when redeemed.

Pacific Investment Management Company LLC, 650 Newport Center Drive, Newport Beach, CA 92660 | 800.387.4626

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East Bay Municipal Utility District

Robert Hannay
Treasury Manager

September 19, 2023

EBMUD - Celebrating 100 Years

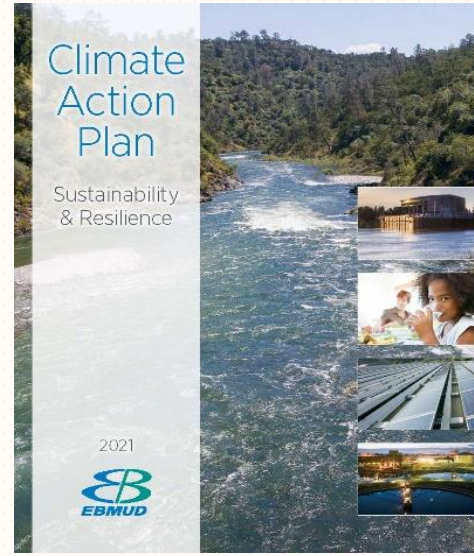
- Water System
 - One of the largest retail water systems in the US
 - Diverse portfolio of high-quality water sources
- Wastewater System
 - Provides regional wastewater treatment
- Serves 1.4 million people over 332 sq. mi.
- Budgeted appropriations are \$1.4B in FY24
- Total debt outstanding is \$3B
 - Ratings: Water: AAA/Aaa/AA+; Wastewater: AAA/Aa1/AA+



Service area is located on the eastern shore of the San Francisco Bay and includes portions of Alameda County, CA & Contra Costa County, CA

Approach to Green Bonds

- Long history of promoting sustainability & environmental stewardship
 - Board adopted District's first Sustainability Policy in 1994
- About \$570M in green bonds issued since 2015
 - Next issuance expected in early 2024
 - Bond proceeds fund qualified projects on a reimbursement basis
- Self-certified in accordance with the District's Green Bond Guidance
 - Detailed project descriptions included in Appendix of OS



APPENDIX G
THE DISTRICT'S GREEN BOND GUIDANCE AND
EXPECTED SERIES 2024 GREEN BOND PROJECTS

The District anticipates funding or reimbursing CIP expenditures for the Water System projects identified in the table below using proceeds of the Series 2024 Bonds. These projects were selected using the District's Guidance for Issuing Green Bonds, which was last approved by the District's Board on March 22, 2023. A complete copy of the District's Green Bond Guidance as approved by the District is found on March 22, 2023 in attached below.

The District's criteria are presented below in a numbered list for easier reference in the table below:

1. Maximize water quality
2. Improve water use efficiency, including conservation through reduced water loss
3. Improve biodiversity and ecosystem quality
4. Protect against flooding
5. Reduce pollution
6. Improve resilience (adaptation) to climate change
7. Reduce the combination of fossil fuels
8. Utilize green building practices
9. Implement "reduce, reuse, recycle" practices in preference to raw materials
10. Adhere to sustainable purchasing guidelines

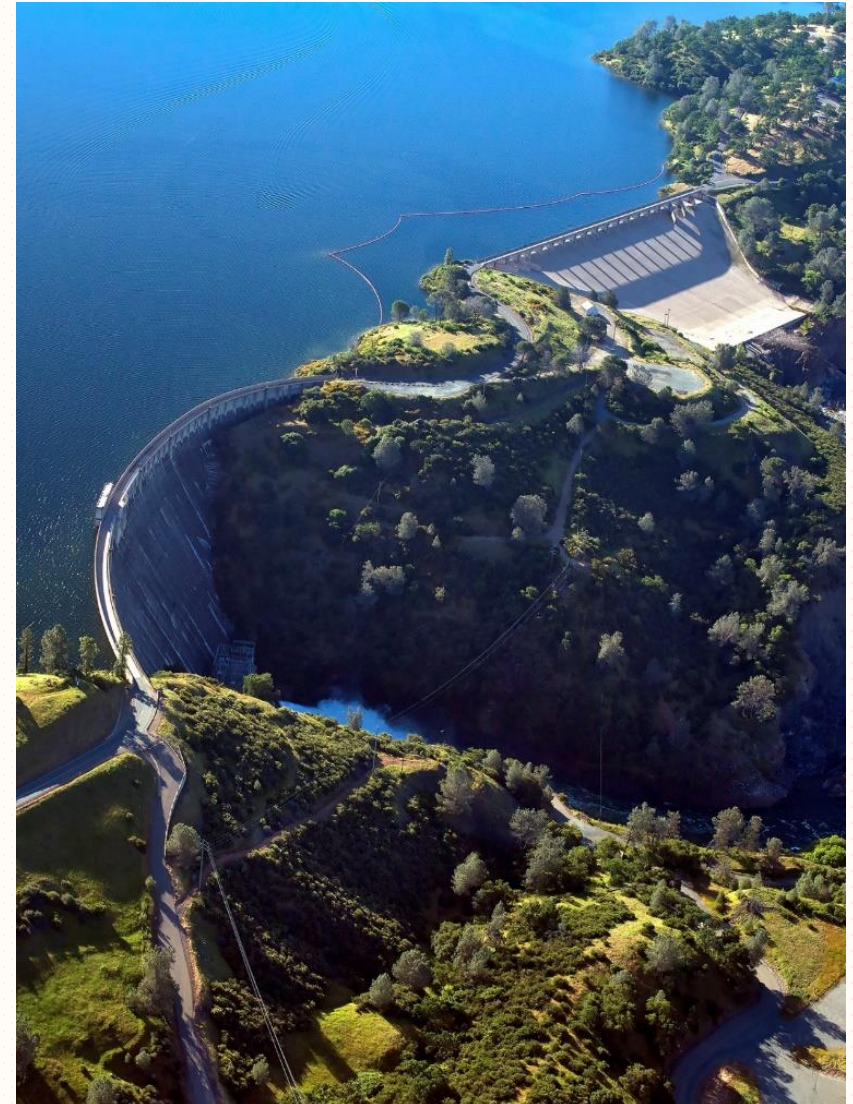
Project Name	Short Description	EBMUD Green Bond Criteria	Amount Bonded
Treatment Plant Upgrade	The project supports a replacement with water quality treatment and improves flexibility, efficiency, and operation of the water treatment plant. Work includes capital equipment including computer automation, the best of construction of the District Water Treatment Plant ("WTP") Water treatment, including WTP control system (valves, meters, and other improvements for chemical injection and efficiency).	1, 2, 5, 6	\$105 million
Open-Canal Reuse Program	Open-canal treatment rehabilitation, replacement and construction projects are necessary to restore beneficial material, reduce maintenance costs, improve safety, and improve water quality by separating storage in the wastewater system.	1, 2, 4	\$17.7 million

(table continued on next page)



EBMUD Green Bond Guidance

- Board approved in 2015 and updated in 2022
- Criteria are aligned with frameworks established by the:
 - International Capital Market Association's Green Bond Principles
 - United Nations' Sustainable Development Goals
 - Climate Bonds Initiative's Climate Bonds Taxonomy
- 2022 Guidance includes mapping to other frameworks
 - No representation is made that the projects satisfying the District's criteria will necessarily fit the mapped criteria from the other frameworks



Pardee Reservoir located on the Mokelumne River in the central Sierra Nevada Mountains

Kevin Civale

Shareholder

Stradling Yocca Carlson & Rauth, P.C.





Disclosure Practices Continue to Evolve to Meet Regulatory & Market Developments

- As you are hearing today, a vigorous “buy side” has continued to develop
 - Institutions devoting significant resources to ESG analysis
 - Increasing number of “green funds” established
- SEC heightened focus on ESG disclosure
 - Establishment of climate and ESG task force (2021)
 - Increasing number of enforcement actions relating to misleading ESG disclosure
 - Rulemaking in process for corporate issuers, final rule expected later this year



Documentation Considerations

Generally, green bond issuance does not include enforceable contractual obligations of issuer to adhere to identified standards/principles.

Statement of present intention.

Legal documents typically provide flexibility to review project.

Green bond expectations must be consistent with State and federal tax law requirements.

Reporting requirement *may* be contractual. If so, consider making it a separate document from your Continuing Disclosure Undertaking pursuant to Rule 15c2-12.



Federal Securities Law Considerations

Materiality

- Federal securities law generally requires all “material” information be disclosed
- Information is material if “there is a substantial likelihood that a reasonable investor or prospective investor would consider the information important in deciding whether or not to invest”

Designation Description

- Clearly describe designation approach
- If self-certified, describe analysis used
- Describe environmental benefit on which certification was based
- Make it clear the green bond designation doesn’t affect security for repayment (i.e., green bonds have no more or less claim to repayment than other non-green bonds, if issued)



More Federal Securities Law Considerations

Disclaimers (aka free insurance)

- No contractual promise to build identified project or comply with green standards
- No assurance that project as constructed will achieve anticipated benefits
- No obligation to comply with changes in standards
- Describe verifier opinion (and state it is only an opinion, not a guarantee)

Optional Extras

- Include second-party opinion – if you do, you own it
- Post-issuance reporting could be subject to the federal securities law – if you do it, make sure to follow guidelines

Goal 1 - Green Bonds Continue to be an Important Topic

- Since 2014, \$100+ billion of green bonds have been issued in the U.S.
- **In California, over 150 Green bonds have been issued, totaling over \$30 billion since 2014.**

California Green Bonds

\$16,415,000



**SAN DIEGO UNIFIED
SCHOOL DISTRICT**

Elec of 2012, GO Refunding
Bonds, Series ZR-3

May 2023

\$486,875,000



Services of the San Francisco
Public Utilities Commission

**SAN FRANCISCO CITY &
COUNTY PUC**

Water Revenue Refunding
Bonds, 2023 Sub-Series C

July 2023

\$248,010,000



LOS ANGELES WORLD AIRPORTS

**LOS ANGELES WORLD
AIRPORTS**

Sub Refunding Revenue
Bonds, Series 2023A

March 2023

\$268,355,000



**SAN JOSE
FINANCING AUTHORITY**

Wastewater Revenue Bonds,
Series 2022B

November 2022

\$47,380,000



**CITY & COUNTY OF
SAN FRANCISCO**

CFD No. 2014-1 Special
Tax Bonds, Series 2022B

November 2022

Green Bonds Continue to be an Important Topic

California Green Bonds

\$18,815,000



SANTA CLARITA PUBLIC FINANCING AUTHORITY
Lease Revenue Bonds, Series 2022A & B
October 2022

\$88,830,000



WESTERN PLACER WASTE MANAGEMENT AUTH
Solid Waste Revenue Bonds, Series 2022A
August 2022

\$19,945,000



SANTA CRUZ COUNTY CAPITAL FINANCING AUTH
Revenue Bonds, Series 2022
June 2022

\$133,950,000



EAST BAY MUNICIPAL UTILITY DISTRICT
Water System Revenue Bonds, Series 2022A
June 2022

\$686,730,000



SAN FRANCISCO BAY AREA RAPID TRANSIT DISTRICT
Elec. Of 2022 GO Bonds, Series D-1 & D-2
May 2022

\$294,990,000



CALIFORNIA STATE PUBLIC WORKS BOARD
Lease Revenue Bonds, 2022 Series D
May 2022

\$99,025,000



CITY OF LOS ANGELES
Wastewater System Sub Rev Bonds, Series 2022-A
April 2022

\$89,900,000



LOS ANGELES COUNTY SANITATION DISTRICTS
Converting Waste Into Resources
LOS ANGELES COUNTY SANITATION DISTRICTS FA
Revenue Bonds, Series 2022A
March 2022

\$30,000,000



EAST BAY REGIONAL PARK DISTRICT
Elec. Of 2008 GO Bonds, Series 2022A-2
February 2022

\$13,205,000



WOODLAND FINANCE AUTHORITY
Water Revenue Refunding Bonds, Series 2021
December 2021

Green Bonds Continue to be an Important Topic

California Green Bonds

\$24,910,000



**MONTEREY REGIONAL WASTE
MGMT AUTH**
IWMS Refunding Revenue
Bonds, Series 2021
November 2021

\$49,060,000



**SAN DIEGO
COUNTY**
Certificates of Participation,
Series 2021
November 2021

\$486,875,000



**LOS ANGELES COUNTY PUBLIC
WORKS FA**
Lease Revenue Bonds,
Series 2021F
October 2021

\$30,000,000



**SOLANO
COUNTY**
Certificates of Participation,
Series 2021
September 2021

\$36,170,000



**ROWLAND
WATER DISTRICT**
Water Revenue Refunding
Bonds, Series 2021A
August 2021

\$30,000,000



**FREMONT UNION
HIGH SCHOOL DISTRICT**
Elec. Of 2018 GO Bonds,
Series 2021B
May 2021

\$271,455,000



**SAN DIEGO COUNTY WATER
AUTHORITY**
Water Revenue Refunding
Bonds, Series 2021B
April 2021

\$39,145,000



**CALLEGUAS MUNICIPAL
WATER DISTRICT**
Water Revenue Refunding
Bonds, Series 2021A
March 2021

\$10,090,000



**LUCIA MAR UNIFIED SCHOOL
DISTRICT**
Refunding Certificates of
Participation, Series 2021
March 2021

\$79,305,000



**SOUTHERN CALIFORNIA
PUBLIC POWER AUTH**
Refunding Revenue Bonds,
Series 2021-1
March 2021

Green Bonds Continue to be an Important Topic

California Green Bonds

\$104,285,000



**SAN FRANCISCO
MUNI TRANS AGENCY**
Revenue Bonds,
Series 2021C
February 2021

\$34,185,000



**MARYSVILLE JOINT UNIFIED
SCHOOL DISTRICT**
Certificates of Participation,
Series 2021
February 2021

\$23,305,000



**OXNARD
FUNANCING AUTHORITY**
Water Revenue Bonds, Series
2021A
February 2021

\$42,600,000



**CITY OF
VALLEJO**
Water Revenue Bonds, Series
2021A
February 2021

\$17,710,000



**WESTMINSTER
SCHOOL DISTRICT**
Certificates of Participation,
Series 2021
January 2021

\$19,880,000



**FALLBROOK PUBLIC
UTILITY DISTRICT**
Wastewater Rev Ref Bonds,
Series 2021A & B
January 2021

\$131,200,000



**SUNNYVALE
FINANCING AUTHORITY**
Lease Revenue Bonds, Series
2020
October 2020

\$122,970,000



**SONOMA-MARIN AREA RAIL
TRANSIT DISTRICT**
Measure Q Revenue Ref Bonds,
Series 2020A
October 2020

\$128,625,000



**MOUNTAIN HOUSE
FINANCING AUTHORITY**
Utility System Revenue Bonds,
Series 2020A & B
October 2020

\$54,410,000



**ROSEDALE-RIO BRAVO WATER
STORAGE DISTRICT**
Refunding Revenue Bonds,
Series 2020A & B
September 2020

Green Bonds Continue to be an Important Topic

California Green Bonds

\$1,356,095,000



**LOS ANGELES
COUNTY MTA**
Measure R Junior Sub Sales
Tax Rev Ref Bonds, 2020A
August 2020

\$271,205,000



**TRANSBAY JOINT
POWERS AUTHORITY**
Sen & Sub Tax Allocation
Bonds, Series 2020ABC
June 2020

\$11,690,000



**CITY OF
BERKELEY**
Elec. Of 2008 GO
Refunding Bonds, Series B
May 2020

\$400,000,000



**SACRAMENTO MUNICIPAL
UTILITY DISTRICT**
Electric Revenue Bonds,
Series 2020H
April 2020

\$123,000,000



**DUBLIN UNIFIED
SCHOOL DISTRICT**
Elec. Of 2016 GO Bonds, Series
2016C
April 2020

\$20,000,000



**LYNWOOD
UTILITY AUTHORITY**
Enterprise Revenue
Bonds, Series 2020A
April 2020

\$20,925,000



**CITY OF
SANTA CRUZ**
Water Revenue Bonds, Series
2019
November 2019

\$54,785,000



**STOCKTON PUBLIC
FINANCING AUTHORITY**
Water Revenue Refunding
Bonds, Series 2019A
November 2019

\$10,675,000



**HARBOR DEPT OF
THE CITY OF LOS ANGELES**
Refunding Revenue Bonds,
Series 2019C-1 & C-2
September 2019

\$335,000,000



**SAN DIEGO ASSOCIATION OF
GOVERNMENTS**
Capital Grant Receipts Rev
Bonds, Series 2019A & B
July 2019



Goal 1 - Green Bonds Continue to be an Important Topic

- **Issuer Perspective** A key goal of every bond sale is to maximize the universe of potential investors, which helps secure competitive interest rates.
 - If investors have greater confidence that a green bond will conform to their requirements over time, greater demand should result and potentially, better pricing for the issuer.



Goal 1 - Green Bonds Continue to be an Important Topic

- **Investor Perspective:** Most municipal bond financed projects have environmental benefits, but **investors require additional data and disclosure about the use of bond proceeds in order to accept and categorize such bonds as green bonds.**



Goal 2 – Benefits of Issuing Green Bonds

- **Potentially, Better Pricing.** Increase demand for your bonds from a broader group of investors. Greater demand could result in lower borrowing cost.
- **Strong Management.** Signal to investors that your organization's management is taking environmental risks seriously and addressing them on a timely basis.
- **Leadership.** Be recognized as a leader by residents, taxpayers, employees who care about environmental stewardship.
- **Free Positive Publicity.** Perhaps even the local press will write a favorable story about your organization.



Survey Question #2

Which is the most critical attribute of a green bond?

- ✓ The municipal issuer labels the bond “green”
- ✓ A 3rd-party affirms the bond’s “green” label
- ✓ Proceeds fund projects with environmental benefits



Goal 3 - Municipal Green Bond Investors Are Not All the Same

- **Investors are diverse in terms of type, size, investment strategy and/or focus, with different disclosure needs**
- **Certain green bond investors need project specific environmental disclosure** to drive positive and negative screening techniques as well as enact thematic investing with a focus on environmentally responsible investments

Municipal Green Bond Investors Are Not All the Same

Green-Focused

Investors with a mandate around a specific theme (e.g., environmental, etc.)

Impact

Investors that seek a particular impact that may require more specific and measurable metrics

Integration

Investors who incorporate material environmental risks into their traditional credit analysis

Traditional

Investors who follow traditional credit analysis without a specific environmental mandate



Green Bond Verification Reports & Second Party Opinions

- The use of second and third-party opinions or certifications are an ICMA green bond principles 'key recommendation' and can increase confidence in a green bond label, but not necessary.
- **Many environmentally-focused and impact investors perform their own internal analyses in order to determine whether a bond meets their internal green bond criteria.**
- **Most green bond investors need additional project specific disclosure information** to make their own internal assessment, regardless of inclusion or exclusion of any third-party report.



Survey Question #3

What type of investors purchase Green Bonds?

- ✓ Green bond focused investors
- ✓ Impact investors
- ✓ Integration investors
- ✓ Traditional muni investors
- ✓ All of the above

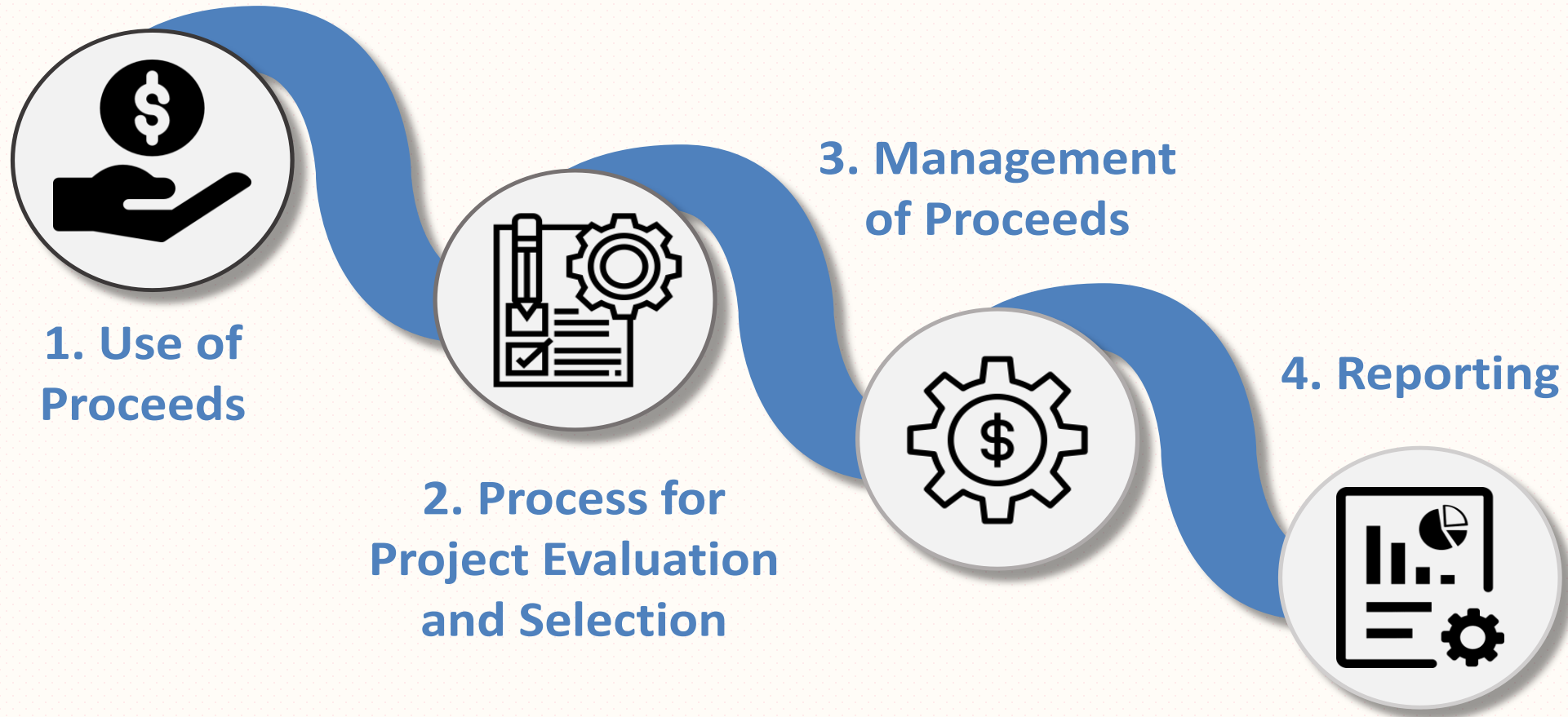


Goal 4 - Current Labeling Frameworks

- The International Capital Market Association's ("ICMA") **Green Bond Principles ("GBP")** is the most commonly utilized framework. In 2022, 74% of municipal issuers who issued green bonds followed the GBP³. While ICMA offers a general framework, it does not specifically address the disclosure requirements of many municipal green bond investors.
- The **Climate Bonds Initiative (CBI) Certification** incorporates the ICMA framework, but takes it further by addressing the disclosure recommendations discussed therein and utilizing sector-specific standards to show consistency with global climate goals.

The ICMA Framework

The most basic level of green bond disclosure should follow the ICMA Green Bond Principles (“GBP”) four core components.



Sample Project Specific Impact Metrics



Green-Buildings

- ✓ Energy efficiency, amount/percent reduction in energy used
- ✓ Reduction in carbon emissions
- ✓ Waste management (e.g., reduction in construction and/or operations)
- ✓ Walkability/access to public transportation



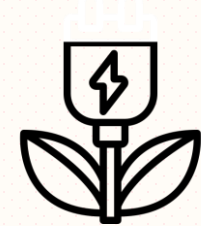
Water

- ✓ Reduction in water losses in water transfer and/or distribution
- ✓ Reduction in water consumption
- ✓ Mandatory water conservation programs
- ✓ Discussion of monitoring/efficiency systems



Transportation

- ✓ Expected increase in sewage treatment capacity
- ✓ Expected decrease in nutrient level in local waterways
- ✓ Description of recycled water system and expected benefits



Power

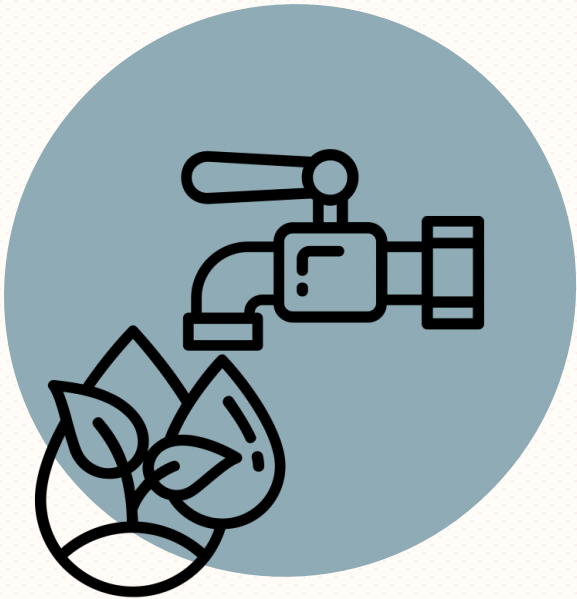
- ✓ Generation capacity by resource (fuel source)
- ✓ Reductions in fossil fuel use
- ✓ Toxic emissions and waste
- ✓ Specific indicators for CO2 emission reductions

PROJECT SPECIFIC IMPACT METRICS – Green Buildings



- **Examples of useful metrics and information include, if or when applicable:**
- Building certification (e.g., LEED, Energy Star, BREEAM)
- **Energy efficiency, amount/percent reduction in energy used**
- **Reduction in carbon emissions**
- Renewable energy sources including applicable threshold or exclusions
- Water efficiency (e.g, amount and/or percent of water use reduction, water recycling)
- **Waste management (e.g., reduction in construction and/or operations)**
- Use of sustainable or efficient materials, including reuse/recycled materials, low VOC paints, xeriscaping, sustainable sourcing of certified materials (e.g., FSC certification)
- Protection of native species, water supplies and/or air quality
- Adaptive re-use of existing/historic properties
- **Walkability/access to public transportation**
- Protection of green fields/reductions in impervious surface
- Use of low carbon building material

PROJECT SPECIFIC IMPACT METRICS – Water



- **Examples of useful metrics and information include, if or when applicable:**
- Discussion of any known environmental hazards
- Handling and treatment of any “forever chemicals”
- Age of major capital infrastructure components
- Current status of CEQA, EPA, NPDES permits, including date of last issued permit, date of permit expiration, and cease-and-desist orders
- **Reduction in water losses in water transfer and/or distribution** – current estimated water loss percentage and estimated improvements to loss percentage
- **Reduction in water consumption** – on a per customer basis, if in a growth area
- Discussion of any specific/separate charges related to system improvements or to support conservation
- Discussion of water recycling systems, including water re-use/water use avoided

PROJECT SPECIFIC IMPACT METRICS – Water

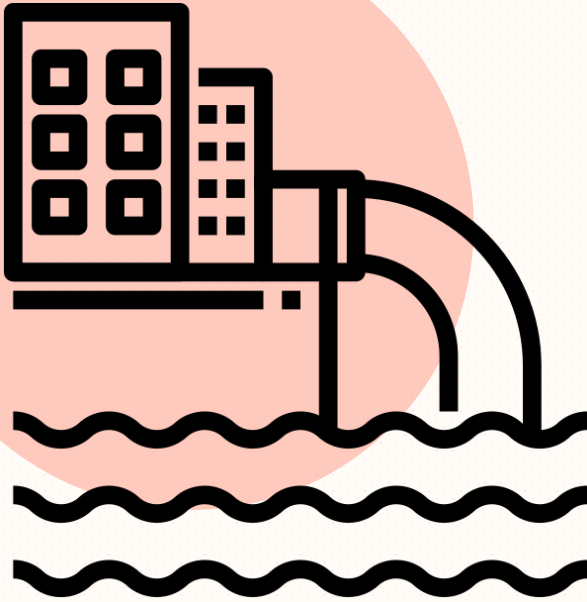
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- Discussion of current wastewater treatment process (e.g., primary, secondary, or tertiary), including any expected reductions in wastewater treated/avoided
- Flood mitigation project impact
- Drought plans such as any **mandatory water conservation programs**
- Requirements for new development/additional customers
- Average daily and annual demand versus supplies
- **Discussion of monitoring/efficiency systems**
- Disclosure of significant system leaks
- Status/plan for lead pipe mitigation and replacement
- Strength of water rights



PROJECT SPECIFIC IMPACT METRICS – Wastewater



- **Examples of useful metrics and information include, if or when applicable:**
- Discussion of any known environmental hazards
- Comparisons of utilization to capacity (e.g., average daily flow versus max/peak flow versus, average daily capacity versus peak capacity)
- **Expected increase in sewage treatment capacity** due to the project
- Expected reduction in Combined Sewer Overflow amount (in CCF)
- Expected amount of overflow waste recaptured by project
- **Expected decrease in nutrient level in local waterways**
- Discussion of any specific/separate charges related to system improvements or to support conservation
- **Description of recycled water system and expected benefits**
- Discussion of current wastewater treatment process (e.g., primary, secondary, or tertiary), including any expected reductions in wastewater treated/avoided
- Planned use of renewable energy via onsite clean generation or procurement

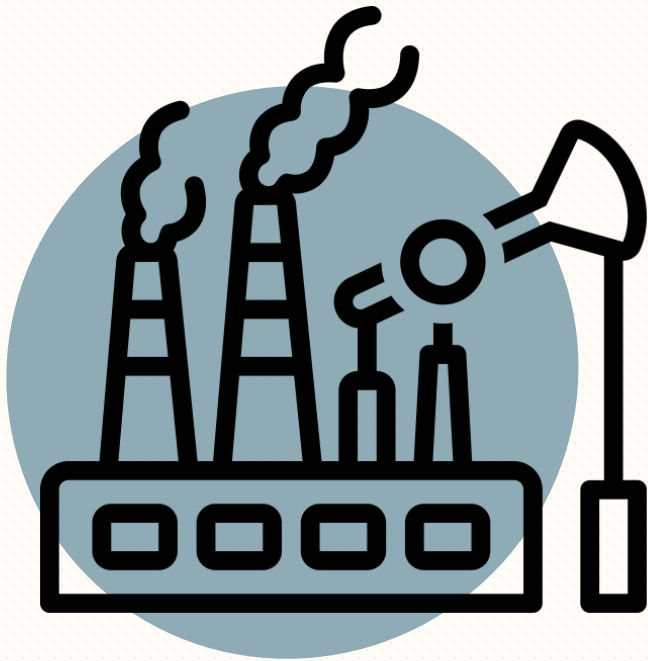
PROJECT SPECIFIC IMPACT METRICS – Transportation



- **Examples of useful metrics and information include, if or when applicable:**
- **Public transportation riders: Number of passenger miles**, gallons of gas, and/or CO2 emissions reduced or avoided per day/year
- Relationship to community or state electrification and alternative fuel strategies
- Sources of system power
- **Pounds of CO2 per passenger mile**
- Development/incorporation of bicycle lanes; how many linear miles?
- Development of walkable communities
- **Congestion pricing strategies**
- **Amount of cool pavement utilized**
 - Number of electric vehicle charging stations; either total or on some per-unit measure like per square mile
 - Electric vehicle charging stations along HOV/toll roads
 - The extent to which any federal funding (such as grants) are subject to specified environmental standards



PROJECT SPECIFIC IMPACT METRICS – Power



- **Examples of useful metrics and information include, if or when applicable:**
- **Generation capacity by resource (fuel source),** and energy sales by resource (fuel source)
- Power source mix over last decade and commitment to and timing of clean energy within capital plan
- **Reductions in fossil fuel use,** including specific goals or targets
- Transition risks, including to local community
- Dispatch stack, fuel and power supply hedges, outage information
- Carbon emissions:
 - Clear outline of state emissions standards and any and pending energy legislation. How is the utility positioned relative to these standards?
 - Data that shows generation mix, current and historical

PROJECT SPECIFIC IMPACT METRICS – Power

(Continued)



- Carbon emissions (continued):
 - Is the utility subject to any energy legislation that could adversely impact its ability to operate in the future?
 - Does the utility have contracts in place to procure clean energy at some point in the future?
 - Clear disclosure on how the utility plans to achieve clean energy goals/targeted future generation mix
- **Toxic Emissions and Waste:**
 - Increased disclosure around how generation byproducts are disposed
 - How are the byproducts protected from natural disaster?
 - Are state and/or federal guidelines being followed?
 - If the utility has decommissioned assets, disclosure on how the assets were decommissioned and what state/federal guidelines were followed
- **Specific indicators for CO2 emission reductions**
- Details of any Integrated Resource Plan that incorporates carbon reduction strategies for power plants



Survey Question #4

What is most important to ensure investors treat bonds as green?

- ✓ Secure a third-party verification report
- ✓ Secure a second-party opinion
- ✓ Disclose project-specific environmental benefits

Q&A



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UPCOMING CDIAC EVENTS

*The Bond Buyer California Public Finance Pre-
Conference: Managing Your Borrowing Costs
Through Market Turbulence*
October 18, 2023 | San Francisco

Fundamentals of Public Investing
February 28-29, 2024
Details Coming Soon

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