

ESG Concepts in US Public Finance

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The overarching goal of integrating ESG concepts into public finance activities and related investment decisions, should be to advance the concept of a just transition to a decarbonized economy. A coordinated effort is urgently needed to address eco-systemic risk.

In the context of a climate emergency, global biodiversity crisis and deep societal unrest that threatens our democracy, the most significant public benefit to be derived from US public finance is a coordinated and impactful strategy to transition our country to a decarbonized economy in a way that brings everyone along.

Given the importance of the US capital markets to the strength of the US economy, protecting financial stability should also be paramount. Without a common understanding of the environmental, social and governance factors that are material to each investment, market participants are exposed to information asymmetries. These can impact liquidity, which can slow down or stop financial market activity. In severe cases, the financial system could become paralyzed and unable to channel capital to public finance.

Market-based crises are often characterized by a coordination failure, when a wide cross-section of financial market participants simultaneously decide to reduce perceived risk and pull back from financing activities. By coordinating adoption of a new dimension of analysis, namely the incorporation of climate risk into pricing, regulatory agencies can serve the market and protect financial stability.

The American economy and climate change are both dynamic and nonlinear systems. Small changes can produce large and unexpected outcomes. This presents both a grave threat and our best hope for meaningful climate action. The time to act is now.

If municipal market participants can come together and prioritize the *just transition to a decarbonized economy*, then we will not only reduce systemic risk in our financial system, but we will gain the chance to protect our planet from irreparable environmental collapse. The MSRB has a momentous opportunity to coordinate actions and facilitate this.



DISTINGUISHING ESG FROM GREEN, SOCIAL & SUSTAINABILITY BONDS

Environmental, Social, Governance (ESG) is an investment theory or approach to investing that takes a broader view of material risks and opportunities. This approach looks at an investment's relative value and considers additional (ESG) factors. ESG, as an investment approach can vary widely—some investors focus on assessing opaque risks, such as transition risk, others look for positive environmental or social impact. Green, social and sustainability bonds are tools that issuers of bonds can use to communicate positive environmental or social attributes of their financed activities. The additional transparency that should come with green, social and sustainability bonds allows investors to make informed decisions about alignment with their bespoke ESG strategies or investment mandates.

E CONCEPTS: ECO-SYSTEMIC RISK

A central finding of the US Commodity Futures Trading Commission's [landmark 2020 report](#) is that climate change poses systemic risks to the US financial system. Systemic risk can be thought of as the risk that some event (global climate change perhaps) will trigger a loss of economic value or confidence in the market, leading to increases in uncertainty about a substantial portion of the financial system, serious enough to have significant adverse effects on the real economy.

Climate change is expected to affect multiple sectors, geographies, and assets in the United States, sometimes simultaneously and within a relatively short timeframe. ...transition and physical risks—as well as climate and non-climate-related risks—could interact with each other, amplifying shocks and stresses. This raises the prospect of spillovers that could disrupt multiple parts of the financial system simultaneously.¹

Climate change poses a major risk to the stability of the U.S. financial system and to its ability to sustain the American economy...This reality poses complex risks for the U.S. financial system. Risks include disorderly price adjustments in various asset classes, with possible spillovers into different parts of the financial system, as well as potential disruption of the proper functioning of financial markets. In addition, the process of combating climate change itself—which demands a large-scale transition to a net-zero emissions economy—will pose risks to the financial system if markets and market participants prove unable to adapt to rapid changes in policy, technology, and consumer preferences. Financial system stress, in turn, may further exacerbate disruptions in economic activity, for example, by limiting the availability of credit or reducing access to certain financial products, such as hedging instruments and insurance.¹

1. "Managing Climate Risk in the U.S. Financial System," Report of the Climate-Related Market Risk Subcommittee, Market Risk Advisory Committee of the U.S. Commodity Futures Trading Commission, September 2020, <https://www.cftc.gov/sites/default/files/2020-09/9-9-20%20Report%20of%20the%20Subcommittee%20on%20Climate-Related%20Market%20Risk%20-%20Managing%20Climate%20Risk%20in%20the%20U.S.%20Financial%20System%20for%20posting.pdf>.



Since climate change poses a systemic risk to global financial systems and all of the world's ecosystems, "eco-systemic risk" seems a more appropriate term. The CFTC's assessment implies that the market needs a **coordinated effort** to incorporate climate risk into pricing:

... systemic shocks are more likely in an environment in which financial assets do not fully reflect climate-related physical and transition risks. A sudden revision of market perceptions about climate risk could lead to a disorderly repricing of assets, which could in turn have cascading effects on portfolios and balance sheets and therefore systemic implications for financial stability.¹

Positive feedback loops can trigger systemic failures in financial systems and ecosystems alike. The Financial Stability Board (FSB), which coordinates the policy work of national financial authorities and international standard-setting bodies for the financial sector, notes the potential for positive feedback loops in their November 2020 report.² The FSB lays out how risks to financial stability from climate change can be divided into physical and transition risks. The value of financial assets/liabilities could be affected by the actual or expected economic impacts of climate change (physical risks), or by an adjustment toward a low-carbon economy (transition risks). It is important to remember that the risks can be both positive and negative. The FSB noted how nascent we are in considering climate-related risks to financial stability.³

While there appears to be widespread discussion of climate-related risks, including physical risks and transition risks, what municipal market participants seem to be missing right now is an understanding of the urgent need for action. Time horizons are much shorter than most people realize, and climate change is moving much faster than we are. Municipal bonds may have maturities that extend 10, 20, 30 or even 100 years; but when it comes to addressing climate change, we have less than 10 years to take significant action.⁴ Climate impacts are already manifesting in economies of our largest states.⁵ If we fail to act decisively to decarbonize our economy right now, the positive feedback loops related to climate change will amplify destruction of earth's natural systems. Simultaneously, the increased risk and uncertainty will push financial markets toward instability and crisis. Secretary of Treasury Janet Yellen warned of this in November 2021 when she said, "The climate crisis is already here. This is not a challenge for future generations, but one we must confront today...Rising to this challenge will require the wholesale transformation of our carbon-intensive economies."⁶

2. "The Implications of Climate Change for Financial Stability," Financial Stability Board, November 2020, <https://www.fsb.org/wp-content/uploads/P231120.pdf>.

3. The FSB describes how climate-related risks might impact the financial system and examines potential mechanisms within the financial system that might amplify the effects of climate-related risk as well as the cross-border transmission of risks. <https://www.fsb.org/wp-content/uploads/P231120.pdf>.

4. "Global warming of 1.5°C – An IPCC Special Report," Intergovernmental Panel on Climate Change, 2018, https://www.ipcc.ch/site/assets/uploads/sites/2/2019/06/AR5_Full_Report_High_Res.pdf.

5. "Addressing Climate as a Systemic Risk – A call to action for U.S. financial regulators," The Ceres Accelerator For Sustainable Capital Markets, June 2020, <https://www.ceres.org/sites/default/files/reports/2020-06/Financial%20Regulators%20FULL%20FINAL.pdf>.

6. "Keynote Remarks by Secretary of the Treasury Janet L. Yellen," COP26 in Glasgow, Scotland, at the Finance Day Opening Event, November 2021, <https://home.treasury.gov/news/press-releases/jy0457>.



ECOSYSTEM SERVICES AND THE BIODIVERSITY CRISIS

Even in Muniland, the Earth provides essential ecosystem services on which we all depend: water for sustenance; pollinators and soils for agriculture; trees for lumber; air to breathe; and oceans for food, livelihoods and inspiration. In some cases, these services provided by natural systems seem to come at no-cost (sunlight). In other cases, we build infrastructure to harness and use them (Central Valley Project). Climate change affects not only when, where, and what ecosystem services will be available, but also the extent and cost of infrastructure and human effort that will be required to use those services.

The United Nations has declared a Global Biodiversity Crisis. Half of plant and animal species on Earth, or more, may be lost by 2070.⁷ This is not happening in some far-away place, this loss of biodiversity is happening across the United States every single day. It is happening right now. Last September, the United States Fish and Wildlife Service proposed removing 23 species from the Endangered Species list because the animals and plants have already gone extinct.⁸ We don't even comprehend all that we are losing. Researchers estimate that even today, much of the world's biodiversity is not yet known to science.⁹ Preserving biodiversity is one of the most urgent imperatives facing humanity. The biodiversity crisis is critical and intertwined with financial stability as all life on Earth depends on healthy functioning ecosystems. On a daily basis, US municipal bonds finance activities that can directly impact biodiversity in both positive and negative ways. Bond issuers can and should prioritize protection of biodiversity through project planning and restorative actions.

Last June, the UN Environmental Program¹⁰ issued a report¹¹ about tackling the biodiversity and climate crises together and discussed their combined social impacts:

Unprecedented changes in climate and biodiversity, driven by human activities, have combined and increasingly threaten nature, human lives, livelihoods and well-being around the world. Biodiversity loss and climate change are both driven by human economic activities and mutually reinforce each other. Neither will be successfully resolved unless both are tackled together. This is the message of a workshop report, published today by 50 of the world's leading biodiversity and climate experts.¹²

Climate change is truly a “threat multiplier.” Making wise decisions at the intersection of ecosystems and financial systems, is at the heart of climate change adaptation, and central to the coordinated effort needed in US public finance. It may also be an aspiration of some ESG investing strategies.

7. Cristian Román-Palacios and John J. Wiens, “Recent responses to climate change reveal the drivers of species extinction and survival,” Proceedings of the National Academy of Sciences, February 2020, 117 (8), <https://doi.org/10.1073/pnas.1913007117>.
8. “Press Release: US Fish and Wildlife Service Proposes Delisting 23 Species from Endangered Species Act Due to Extinction,” US Fish and Wildlife Service, September 2021, https://www.fws.gov/news>ShowNews.cfm?_ID=37017.
9. Richard T. Cortlett, “Plant diversity in a changing world: Status, trends, and conservation needs,” Plant Diversity, February 2016, <http://dx.doi.org/10.1016/j.pld.2016.01.001>.
10. Secretariat of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
11. “IPBES-IPCC Co-Sponsored Workshop Report on Biodiversity and Climate Change,” Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) and Intergovernmental Panel on Climate Change (IPCC), June 2021, <https://ipbes.net/biodiversityclimatescience>.
12. “Press Release: Tackling Biodiversity & Climate Crises Together and Their Combined Social Impacts,” United Nations, June 2021, <https://www.un.org/sustainabledevelopment/blog/2021/06/tackling-biodiversity-climate-crises-together-and-their-combined-social-impacts/>.

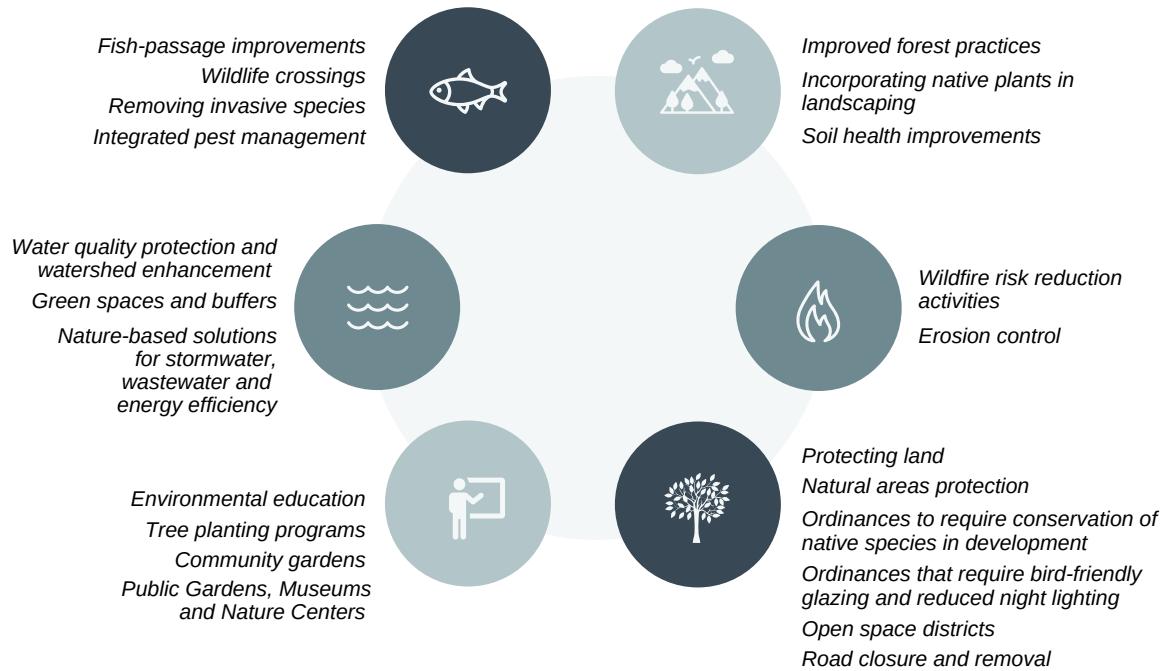


That intersection space of the two systems is complicated and messy: it includes the physical, chemical, and biological intricacies of the natural world and all the complexities of government, commerce and finance. A recent UN report about the rapid decline of nature globally highlights this:

Ecosystems, species, wild populations, local varieties and breeds of domesticated plants and animals are shrinking, deteriorating or vanishing. The essential, interconnected web of life on Earth is getting smaller and increasingly frayed... This loss is a direct result of human activity and constitutes a direct threat to human well-being in all regions of the world.¹³

Municipal bond issuers exist in this space, charged with making the daily decisions that increasingly involve applied science in unique local contexts. Some issuers are more prepared than others to acknowledge and plan for physical and transition risk related to climate change. In Kestrel, we believe that every municipal bond matters because the financed activities will either move us collectively toward the just transition, or not.

At the level of municipal bond-financed activities, prioritizing biodiversity could look like this:



What does prioritizing biodiversity look like?

The UN has clear guidance: "[A New Global Framework for Managing Nature Through 2030](#)"

13. "UN Report: Nature's Dangerous Decline 'Unprecedented'; Species Extinction Rates 'Accelerating,'" United Nations, May 2019, <https://www.un.org/sustainabledevelopment/blog/2019/05/nature-decline-unprecedented-report/>.



S CONCEPTS: SOCIETAL RISK

Societal risk also contributes to instability in the US financial systems. Societal risk includes risk to stable democracy, risk to civil liberties and human rights, risk to labor supply, and risk to public health.¹⁴ Experts agree that polarization is increasing in the US, posing a threat to our civil society. Also known as sectarianism, polarization can lead to dysfunctional government, violence, insurgency, civil war and even disunion or partition. Economic hardship and wealth gaps, as well as inter-group and racial conflicts, contribute to polarization. Therefore, a key step toward decreasing polarization in the United States, and its attendant risks to our society and financial system, is to prioritize actions designed to lessen inequality. In US public finance, we must prioritize activities that work toward more even distribution of public goods and services.

Mitigating climate transition risk requires planning for structural changes to address climate change and societal inequity, with recognition of the risks associated with inaction. We refer to this as the *just transition to a decarbonized economy*, or *the just transition*. Bond-financed activities that are aligned with the just transition are characterized by the equitable inclusion and accommodation of all individuals, with a special focus on disadvantaged groups who are disproportionately affected by the cost and impacts associated with climate change. **The “just transition” is integral to the success of climate strategies, and also central to reducing societal/democracy risk.**

Bond-financed activities that support the just transition are planned in ways that incorporate understanding of physical, transition and/or societal risks, and consider the distributional and equity impacts on low- to moderate-income households and marginalized communities. Bond issuers can address societal risk by incorporating best practices of inclusive planning, and prioritizing actions to lessen inequality. In every sector of municipal bonds, there are concrete actions that can be taken to lessen inequality. Issuers should work to ensure equitable access, service and inclusion through their bond-financed activities and communicate their actions and intentions. Investors can address societal risk by prioritizing bonds that include best practices for lessening inequality, or that directly advance these concepts.

What does “lessening inequality” look like in public finance?

Examples include:

- utility rate assistance programs
- first-time homebuyer loans
- social equity programs in schools
- upward mobility in university graduates
- equitable healthcare delivery programs
- expanding transit services or internet service to new areas
- constructing water or sewer infrastructure in underserved areas
- prioritizing Tribal bonds
- prioritizing rural communities

14. Taylor Gauthier and Financial Security Program, “The Devastating Effects of Climate Change on US Housing Security,” Aspen Institute, August 9, 2021, <https://www.aspeninstitute.org/blog-posts/the-devastating-effects-of-climate-change-on-us-housing-security/>.



CONSUMERS' CHANGING EXPECTATIONS

Consumers increasingly seek investments that are aligned with their values. Market makers want to reduce risk to financial systems. As the implications of climate change and not transforming our economy become more widely understood, it is not hard to imagine a world where bonds that move our country toward the just transition are prioritized, and outliers will be labeled—the opposite of the green bond market now.

G CONCEPTS: GOVERNANCE IN RELATION TO CLIMATE CHANGE AND SOCIETAL RISK

From cyber-security to climate change adaptation and deep societal unrest, issuers of municipal bonds are on the front lines of managing the day-to-day business of building and operating every piece of infrastructure and most social programs in the United States. Among state and local governments, there are vast differences in levels of acknowledgement and planning for climate change and addressing the wealth gap. Disparities in resources between urban and rural issuers, and wealthy and economically disadvantaged areas, can contribute to differences in cost of capital, creating a feedback loop that increases polarization.

Local governments across the US were greatly impacted by the Great Recession and many still deal with lingering effects such as reduced workforce.¹⁵ Post-COVID, the Great Resignation is resulting in even more loss of experienced public servants. This turnover is occurring at time when the functions of government have never been more complex or demanding. Municipal bond issuers would benefit from universal access to standardized tools and common benchmarks to assess and interpret physical climate risk. They also need minimum standards and a template for issuer-level climate action plans. The MSRB could help level the playing field by making available a single source of data for assessing physical climate risks. Then, every bond issuer could disclose these risks, and credit rating organizations could apply uniform data to their models and interpret this for investors.

At Kestrel, we consider the presence or absence of intentional efforts to address climate change and advance social equity to be an important lens for evaluating governance. This requires transparency on the part of the issuer, both in the offering documents and on the issuer's website. The market needs issuers to communicate about the actions they are taking to lessen inequalities and address climate change, and disclose the activities, impacts and risks that have been considered. Evidence of larger commitments to sustainability and meaningful climate action are indicators that the bond issuer prioritizes decarbonization and/or efforts to reduce inequalities.

An example of a standardized tool:

The Community Rating System (CRS) is a voluntary incentive program established by FEMA that encourages best practices for floodplain management aligned with the National Flood Insurance Program (NFIP). Over 1,500 communities participate nationwide.

In CRS communities, flood insurance premium rates are discounted to reflect the reduced flood risk resulting from the community's efforts that address the three goals of the program:

- 1 Reduce and avoid flood damage to insurable property
- 2 Strengthen and support the insurance aspects of the National Flood Insurance Program
- 3 Foster comprehensive floodplain management

Something like this is needed for a standardized approach to physical climate risk.

15. "Lost Decade' Casts a Post-Recession Shadow on State Finances," The PEW Charitable Trusts, June 2019, <https://www.pewtrusts.org/en/research-and-analysis/issue-briefs/2019/06/lost-decade-casts-a-post-recession-shadow-on-state-finances>.



CONCLUSION

The municipal market encompasses all of the physical infrastructure and much of the social infrastructure of the United States. There is a momentous opportunity to simultaneously address climate change, wealth gaps and systemic risk to financial markets through US public finance. We need a coordinated strategy.

- Issuers must communicate more about how they are addressing climate risk and societal risk.
- Investors can prioritize investments that advance the just transition to a decarbonized economy.
- Finance teams can engage with issuers to communicate the changing ESG landscape and the need for more transparency.
- Credit rating agencies can focus on evaluating relevant transition risks that are external to bond issuers.
- Regulators can set basic expectations for transparency and consistency to allow the markets to incorporate pricing of climate risk in an orderly way, and provide the market with some standardized tools and one public benchmark of physical climate risk.

In the context of the climate emergency, global biodiversity crisis and deep societal unrest that threatens our democracy, the most significant public benefit to be derived from US public finance is a coordinated and impactful strategy to advance the just transition to a decarbonized economy.

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Financial stability is not an end [in] itself—it is a means to protect the assets of millions of Americans and to ensure that the financial system continues to support their goals and aspirations through an efficient and sustainable allocation of capital. In a world confronting climate change, it is imperative that the financial system continue to serve this purpose and, where possible, to advance the solutions needed to meet the climate challenge.

- U.S. Commodity Futures Trading Commission

"Managing Climate Risk in the U.S. Financial System," Report of the Climate-Related Market Risk Subcommittee, Market Risk Advisory Committee of the U.S. Commodity Futures Trading Commission, September 2020.

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ABOUT KESTREL

For more than 20 years Kestrel has been at the forefront of public finance helping state and local governments access capital for sustainable infrastructure.

Kestrel Verifiers, a division of Kestrel 360, Inc., is the market leader for verified green, social, and sustainability municipal bonds. As a Climate Bonds Initiative Approved Verifier, we have a critical understanding of the science and impact behind sustainable finance and have provided external reviews for over one hundred municipal bond issues—amounting to more than \$17 billion in funds.

With our data division, Kestrel ESG, we are proud to be at the leading edge, supporting sustainable finance with meaningful ESG data. Our data is independently developed—encompassing principles of sustainability, sector-specific best practices, and rigorous quality control.

Integrity is a core value of our company, and we always strive for excellence. Our team of environmental and social scientists adhere to best practices designed to remove bias and ensure consistency in our work. Kestrel supports a coordinated and impactful strategy to advance the just transition to a decarbonized economy.

ABOUT MONICA REID

Monica Reid is the Founder and Chief Executive Officer of Kestrel Verifiers and Kestrel ESG. Her current focus is on supporting the growth of Kestrel Verifiers as a provider of green bond services, and Kestrel ESG as a provider of ESG Data for fixed income. Kestrel Verifiers is the market leader for providing external reviews of green, social and sustainability bonds in US public finance.

Ms. Reid has over 20 years of experience as a Principal Consultant and thought leader in the field of innovative finance for infrastructure and sustainability efforts, and she currently serves on the California Green Bond Market Development Committee, convened by the State Treasurer. Prior to founding Kestrel Verifiers, Ms. Reid founded Kestrel Consulting Inc. which provided strategic environmental finance consulting and grant and loan services to local governments from 2000-2019.

Early in her career, Ms. Reid focused on natural resources conservation and public service. She worked in Public Affairs for the US Forest Service in the Pacific Northwest for eight years, and as an environmental educator for Miami-Dade County Parks. Her educational background includes a Bachelor of Science degree in ecology from The Evergreen State College in Washington, and graduate studies in marine science at Moss Landing Marine Laboratories in California. A native of South Florida, Ms. Reid now calls Hood River, Oregon, home. Ms. Reid holds Series 79 and Series 63 securities licenses and the Envision Sustainability Professional credential. [in](#).



Response to MSRB 2021-17

REQUEST FOR INFORMATION ON ENVIRONMENTAL, SOCIAL AND GOVERNANCE (ESG) PRACTICES IN THE MUNICIPAL SECURITIES MARKET

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(A) MUNICIPAL ISSUERS

ESG Disclosures

- (1) Are you currently providing ESG-Related Disclosures or ESG-related information beyond the legally required disclosures in your offering documents, continuing disclosures or other investor communications? Should municipal issuers include a separate section in their official statements and other offering documents expressly devoted to ESG-Related Disclosures?**

Kestrel Verifiers is the market leader for external reviews of green, social and sustainability bonds in the municipal market. We work closely with all deal participants, especially municipal issuers, to improve the amount of relevant information that is shared with investors. This work involves application of environmental science, social science and finance, as well as an understanding of best practices in the sector. Our report, which presents analysis and assurance for investors, is typically an appendix to the offering documents.

In our view, the market can be more efficient if there is a consistent approach to green, social and sustainability bonds. We frequently hear from diverse investors that they read and learn from our reports, and that the additional transparency (material information) contained in our Opinions is helpful. We hear from issuers, that as a result of our reports being included, they receive fewer requests for information from investors.

- (2) Do you believe the information included in ESG-Related Disclosures should be standardized? In your view, is there a consensus on what information and which metrics are important? If so, can you provide insight as to what consensus you believe does or could exist? If not, what barriers do you believe exist in reaching a consensus? What topic areas do you believe are relevant and should be included in ESG-Related Disclosures?**

Generally speaking, most bond issuers are not at all aware of how investors use ESG information. Most investors lack a clear understanding of the binding regulations and decision-making frameworks that bond issuers must operate within.

Issuer-level metrics that are important from the perspective of both risk and impact include:

- 1) The presence or absence of a climate action plan;
- 2) A social equity plan or comparable commitment to prioritize fair treatment, access, opportunity, and advancement for all—while striving to identify and eliminate barriers that have prevented the full participation of some groups;
- 3) How bond-financed activities align with these plans; and
- 4) How each of these types of risk are addressed through bond-financed activities: physical climate risk, climate transition risk, and societal risk.

(A) MUNICIPAL ISSUERS - *continued*

Labeled Bonds

(3) Have you issued ESG-Labeled Bonds? Did you utilize an independent party to validate or otherwise attest to the use of the ESG designation?

In our experience, these are the main reasons issuers give for choosing self-verification:

- Did it that way in the past;
- No perceived value of an external review;
- Irrational fear that it will be a lot of work with an external reviewer;
- Fear of underperformance—that they could somehow lose the green bond designation if they make changes to the project along the way; and
- Fear of onerous reporting.

Kestrel is the current market leader in US public finance external reviews, with more than 60% of the market share¹. Many of our clients report that the review process was efficient and pleasant. Many say that they learned through the review process, and that a primary benefit of the external review was the positive reception from their Board and/or stakeholders.

Not all external review providers are alike. There are distinct differences in approach. In Kestrel, we take a science-based approach, and strive to provide material information, context and interpretation of impact.

¹ Source: Ipreo from January 2021 to present.

(A) MUNICIPAL ISSUERS - *continued*

Continuing Disclosures

- (4) If you issued ESG-Labeled Bonds, did you commit to providing any ongoing or continuing disclosure related to the ESG designation? If so, was that disclosure commitment incorporated into the continuing disclosure agreement or similar contractual obligation related to Securities Exchange Act Rule 15c2-12 (collectively, “CDA”)? If the disclosure commitment was not incorporated into the CDA, how is the information made available to an investor on an ongoing basis and at what frequency?**

The purpose of labeled bonds is to 1) signal alignment with accepted international standards, and 2) disclose material information related to meeting the standards and impact. “Impact” means the environmental or social benefits to be achieved by the bonds. For all investors worldwide there are two universal standards in use: International Capital Market Association (“ICMA”) Green Bond Principles, Social Bond Principles, and Sustainability Bond Guidelines; and Climate Bonds Initiative Standards and Sector Criteria. An external review provides assurance to the marketplace that reporting—whether voluntary or a committed legal obligation of the issuer—will follow consistent guidelines provided by ICMA.

Reporting is one of the four required components of the ICMA standards. For bonds that align with the ICMA, it is expected that an issuer will report on the status of bond-financed activities at least annually until those proceeds are fully allocated. For Green Bonds – Climate Bond Certified, an Approved Verifier is required to provide one post-issuance report within 24 months of issuance, and issuers are expected to report annually on allocation of proceeds. Standard continuing disclosure agreements (“CDA”) disclosed on EMMA satisfy this requirement.

Consistency around reporting allows market participants to compare and properly evaluate green, social, and sustainability bonds. Reporting increases transparency and provides ongoing assurance to market participants on the environmental and social benefits of bond-financed activities.

Kestrel Verifiers works directly with issuers to identify reporting schemes for green, social and sustainability bonds that are meaningful and attainable. We often suggest key performance indicators and insist that issuers make these easy for investors to find. The majority of issuers that receive an external review from Kestrel provide a voluntary update report to the market. Voluntary reports can be standalone or added to an existing report, such as annual financial statements or annual sustainability reports. Several issuers have chosen to report through their continuing disclosure agreement under 15c2-12, providing investors with a legal commitment to report. The duration of reporting also varies. The duration may be one time, until all proceeds have been expended, until project completion, or until maturity.

Reporting should make it simple for investors to locate material information. Issuers should provide enough context so investors can refer to one document to obtain all the information they need to convey the impact of their investments to their clients. It is a best practice for issuers to make reports publicly available via an issuer’s website, an investor page, EMMA, or another site.

Not every issuer is comfortable putting impact reporting into their continuing disclosure agreement, but most recognize the importance of being accountable. The key is that they make a commitment

to report—whether that is a voluntary commitment or the CDA. We advise them to make impact data available to investors in any or all of these ways: EMMA page, investor relations page, issuer website, incorporate into the CDA, and/or public database (e.g., <https://www.green.ca.gov>).

A broader discussion of material ESG factors, such as climate risk is discussed in (C)(1).

(A) MUNICIPAL ISSUERS - *continued*

ESG and Credit Rating Agencies

- (5) Are you providing information to the credit rating agencies regarding ESG-related risk factors and ESG-related practices? How does this information generally compare to the information provided in your offering documents and continuing disclosures? Are the credit rating agencies requesting any new types of ESG-related information? Has the credit rating process changed in any significant ways in relation to ESG-related information?**

Everyone is trying to price in risk in a time of great uncertainty about what those risks even are. The cry for issuers to provide more “transparency” is a reflection of this uncertainty, as is the intense focus on E, S and G factors.

One reason market participants focus on ESG is to better understand fair values of bonds and from that, the value at risk. The Securities and Exchange Commission (“SEC”) now requires fair value accounting which imposes a discipline that can force institutions to take action to address emerging problems that might not occur under historical cost accounting. In contrast, historical cost accounting is more likely to allow serious problems to go undetected and unaddressed for longer periods of time.

The SEC Fair Value of Financial Instruments rule directs institutions to determine fair value by: assessing and managing material risks associated with fair value determinations; selecting, applying, and testing fair value methodologies; and overseeing and evaluating any pricing services used. Market participants and ratings agencies may not be keeping up with value and risk as the ESG landscape is rapidly evolving due to climate risk and societal/democracy risk. Information asymmetries always affect one party adversely. When good securities are not upgraded, producers overpay for working capital. When bad securities are not downgraded, naïve investors suffer unexpected losses. Knowledgeable parties (for example, credit rating agencies and large investors) have not brought this connection to the public’s attention, nor would they be likely to since public ignorance conveys private advantage. The Brookings Institution examined this in 2016.²

The credit rating agencies are mainly focused on the issuer’s ability to repay, and do not yet systematically assess physical climate risks or transition risks. The credit rating agencies do not adequately assess planning and resilience for material climate risks, which vary significantly by sector. Credit rating agencies’ assessment of societal/democracy risk may not be keeping pace with rapid changes in the US social fabric. Societal risk is related to transition risk.

Prioritizing the just transition to a decarbonized economy is in everyone’s interest. Mitigating climate transition risk requires planning for structural changes to address climate change and societal inequity, with recognition of the risks associated with inaction. We refer to this as *the just transition to a decarbonized economy*, or *the just transition*. Bond-financed activities that are aligned with the just transition are characterized by the equitable inclusion and accommodation of all individuals, with a special focus on disadvantaged groups who are disproportionately affected by the cost and impacts associated with climate change. The just transition is integral to the success of climate strategies, and also central to reducing systemic risk in the US financial system.

² Ann Rutledge and Robert E. Litan, “A Real Fix for Credit Ratings,” The Brookings Institution, June 2014, https://www.brookings.edu/wp-content/uploads/2016/06/real_fix_for_credit_ratings_litan.pdf.

(B) INVESTORS IN MUNICIPAL SECURITIES

Materiality

- (1) Do you consider ESG-related information material to your investment decisions? Is ESG-related information important to your evaluation of a municipal issuer's creditworthiness? What ESG-related information do you consider most relevant to a municipal issuer's creditworthiness and why?

Kestrel interacts with investors through our work on green, social, and sustainability bonds and as providers of ESG data. We offer these observations on materiality.

Concept 1

In the context of climate risk, it is most common to think of materiality in terms of the issuer's ability to repay. In this situation, "material" climate risk means: **Will changing conditions directly impact the issuer's ability to repay?**

For example:

- Does increased flooding or frequency of drought pose a risk to the long-term stability of the community or system?
- Will the cost of adapting to climate change (raising major highways, reoperating whole water systems, moving communities out of harm's way, changing or abandoning agricultural production) push certain communities/issuers toward insolvency?
- Does the issuer rely on revenues for repayment that might be directly and adversely impacted by climate change, for example, energy contracts, motor fuel taxes or tourism revenues?

Some of the most significant climate-related impacts might be less direct but still affect ability to repay, for example:

- Rising sea levels may accelerate seawater intrusion into coastal aquifers, affecting local water supplies.
- An area might experience out-migration as a result of extreme heat, increased hurricane activity, wildfire or drought.
- Increases in vector-transmitted infectious diseases may affect tourism-based economies and/or livability of certain areas.

Concept 2

Some reasonable investors expand climate risk "materiality" to also mean: **Will changing conditions affect functionality or performance of bond-financed assets?** Essentially when considering climate risk, these investors ask, "**is the asset designed for the expected future conditions?**" Some investors refer to this as "sustainability."

For example:

- Is the physical asset located in an area that is likely to be subjected to increased flooding or coastal inundation?
- Will extreme heat impact the performance of the wastewater treatment plant?
- Will changes in snowpack affect the operation of the hydropower system?
- Will the loss of biodiversity of pollinators affect agricultural economies?

Concept 3

In this context, it is material to know: **Is the issuer aware of climate change related risks as they pertain to its operations and specifically to the bond-financed activities?** Some reasonable investors consider ESG factors related to governance and climate change planning in their investment strategies.

For example:

- *Have they done appropriate planning and studies?*
- *Have they planned any actions to adapt to and/or mitigate these risks?*
- *Have they made significant commitments to decarbonizing and/or improving social equity?*

In summary, we agree with Mr. Kim's statement that "reasonable investors consider climate risk to be material" but suggest that the definition of "material" should be broadened beyond direct impacts from extreme events that might impact an issuer's ability to repay. "Material" should also encompass the long-term sustainability (durability) of the bond-financed infrastructure in the face of changing conditions, and the issuer's efforts to plan for and mitigate those risks.

Many of the world's assets are now pledged to net zero strategies and it is widely understood that climate change poses systemic risk to US financial systems. Every single municipal bond matters when it comes to decarbonizing the US economy. *Has the issuer acknowledged and planned for physical climate risk? Does the issuer have a climate action plan or sustainability plan that addresses transition risk? Do the bond-financed activities include decarbonizing actions? Has there been a just and equitable approach on the part of the issuer in establishing the need for the bond-financed activities?* These are the questions that must be answered to enable a coordinated effort to address systemic risk posed by climate change and societal unrest.

(B) INVESTORS IN MUNICIPAL SECURITIES - *continued*

Accessing & Availability of ESG Information

- (2) Do you generally have access to all the ESG-related information you need to make an informed investment decision? If not, please identify the gaps in information and market transparency.**

Issuers frequently lump all of their activities together in the bond offering documents, and it is sometimes impossible to discern how funds will be used. This is particularly troubling when bonds finance settlement of police brutality, sexual misconduct or other lawsuits. It should be mandatory for issuers to inform investors how funds will be used. Clear project lists with budgets would be a substantial improvement for investors to make informed decisions. In the context of ESG, reasonable investors want to know these things:

- What exactly is being financed?
- What are the physical climate risks expected in the asset-location as identified by nationally accepted models over the term of this bond?
- Is the issuer aware of these risks?
- In the context of the bond-financed activity, what has the issuer done to adapt to or mitigate these risks?
- What indirect climate risks potentially affect this issuer?
- Is the area likely to experience significant in-migration or out-migration?

- (3) Does your expectation as to the availability and sufficiency of ESG-related information change depending on whether the purchase of municipal securities is made in the primary market or the secondary market?**

Kestrel supports sustainable finance with meaningful ESG data. Our latest product, Kestrel ESG Data, is original ESG data for fixed income which provides impact transparency at the bond level. We also take into consideration the overarching environmental rules, anti-discrimination and civil rights laws, and permitting procedures that issuers are required to meet.

Kestrel ESG Data is available now on primary market issuances >\$20 million, and secondary market coverage will be available later this year. More information is available at kestrelesg.com.

(4) In light of the potential availability of ESG-related information from other sources, how can municipal issuers best present and disseminate their ESG-related information to investors? What topic areas do you believe are most relevant for municipal issuers to include when providing ESG-Related Disclosures? In your view, is it sufficient for ESG-Related Disclosures to just describe material ESG-related risk factors? Is there a benefit to municipal issuers further describing the initiatives and other projects they are pursuing to address such risks?

Municipal issuers should be as transparent as possible with:

- Climate action plans;
- Sustainability plans;
- Plans for addressing social equity; and/or
- Environmental justice.

(B) INVESTORS IN MUNICIPAL SECURITIES - *continued*

ESG Disclosures

- (5) Certain market participants have expressed concerns that, while analysts and investors have expressed their desire for more standardized ESG-Related Disclosures, there is no consensus on which data and metrics are important or essential.³ Do you believe such disclosures should be standardized? Do you believe there is a consensus on which data and metrics are important or essential? If so, can you provide insight as to what consensus you believe does or could exist? If not, what barriers do you believe exist in reaching a consensus?

This is the information Kestrel views as essential:

- Pre-issuance disclosures: all project/activity list with budget.
- Any financing related to lawsuits.
- Links to previous bonds that are refunded.
- Links between financed activities and climate action plans, sustainability plans and/or social equity plans.
- Presence of any green building standards or features.
- Who will be served/benefit from the bond-financed activity?
- Post-issuance disclosures:
 - Project construction/implementation status.
 - 1-3 key performance indicators appropriate for each sector.
 - Have bond proceeds been allocated?

- (6) When purchasing municipal securities for ESG-Designated Funds, what ESG-related information is most useful for the investment decision? How do fund managers screen securities to ensure that they meet a fund's criteria? Once purchased, what information is most relevant in assessing that a security continues to meet the ESG criteria established for an ESG-Designated Fund?

While there are many bespoke ESG strategies that may be centered on impact, risk or arbitrage, this measure works for all: **Does this investment move the United States toward the just transition to a decarbonized economy?**

Post-issuance, investors want to know that the issuer did what they set out to do, and have some key performance indicators to support that.

³ See, e.g., GFOA Climate Risk Letter (stating that “analysts and investors have not developed consensus on what data and which metrics are important to their analysis”).

(B) INVESTORS IN MUNICIPAL SECURITIES - *continued*

Labeled Bonds

- (7) When purchasing ESG-Labeled Bonds, do you evaluate municipal securities with an independent certification differently from bonds that do not have such a certification? If so, how? If not, why not? In your view, what are the benefits to an investor of purchasing a bond with an independent certification?

There are green bonds, social bonds and sustainability bonds. Climate Bonds are a type of green bond. These are defined by ICMA's voluntary standards and the Climate Bonds Standard. "ESG Bonds" is confusing terminology because there are no standards for ESG Bonds. The market and MSRB should use the correct terms: green bonds, social bonds and sustainability bonds.

Labeled green, social, and sustainability bonds are a tool for investors interested in aligning their capital with more intentional outcomes. Making it more transparent to investors which bonds have followed best practices and/or requirements from internationally accepted self-regulatory organizations is crucial for market efficiencies and alignment with ESG investment approaches.

Just as an audit provides an independent examination of financial statements, an independent external review is a best practice for green or social bonds. The International Capital Market Association ("ICMA"), the standard-setting institution for green, social and sustainability bonds, recommends the use of an external reviewer. The Climate Bonds Initiative ("CBI") requires an external review.

As external reviewers, Kestrel went through an approval process with the Climate Bonds Initiative. We follow the International Auditing and Assurance Standards Board's *International Standard on Assurance Engagements (ISAE) 3000: Assurance Engagements Other than Audits or Reviews of Historical Financial Information*. Our external review attests to the credibility of the environmental or social benefit inherent in the bond-financed activities and provides assurance for investors that the benefits are real. The purpose of an external review is to clearly identify, and sometimes quantify, the green and/or social benefits of the bond-financed activities. Bonds that issuers have labeled themselves take a variety of forms and perpetuate inconsistency, confusion, dilute impact, potentially omit critical information and contain errors. Additionally, some self-labeled transactions use their own standards and may or may not describe conformance with internationally accepted standards.

Not all external review providers are alike. There are distinct differences in approach. In Kestrel, we take a science-based approach, and strive to provide material information, context and interpretation of impact.

(C) DEALERS

Due Diligence

- (1) Does the underwriting of ESG-Labeled Bonds raise any novel compliance issues for firms, such as challenges regarding fair dealing, due diligence, pricing or other related legal obligations? How is due diligence generally conducted regarding municipal issuers' ESG-Related Disclosures?

Fair Dealing and Due Diligence

Municipal bonds that carry a green, social, or sustainability label verified by an external reviewer provide transparency to market participants. Specific to Kestrel Verifiers, our Second Party Opinions or Verifier's Reports travel with the offering document as an appendix. Second Party Opinions are made available to investors at the same time and in the same manner as all other information in the offering document.

External Reviewers have the responsibility to protect the integrity of the green, social and sustainability bond market by providing accurate and up-to-date information on verified bonds. Kestrel has a robust due diligence process for all transactions where we provide an external review. As part of this process, we hold a due diligence call with essential members of the deal team, including underwriters, municipal advisors, issuer leadership and project experts. The purpose of the call is to assess suitability and confirm our understanding of the project and associated benefits. This engagement allows us to determine and accurately communicate relevant facts to market participants. Further, as part of our contractual agreement, Kestrel requires issuers to notify us of any past or pending litigation, material information or changes to the bond-financed projects between the date of issuance and 45 days after the closing date.

As discussed in our response to (A)(4), issuers of labeled green, social, and sustainability bonds under ICMA are required to report on the status of bond-financed activities at least annually until those proceeds are fully allocated. For Green Bonds – Climate Bond Certified, issuers are required to provide one post-issuance report within 24 months of issuance. Issuers can choose to make these reports voluntary or make a legal commitment to report under their continuing disclosure agreement. In circumstances where facts changed from the original issuance documents or omissions occurred, issuers should provide updated information to the market via their chosen reporting method.

Pricing – Tools for Compliance

Accurately pricing risk requires good disclosure. Determining risks associated with ESG factors is nuanced. Independent external reviews or third-party ESG data providers give informed insights and data to aid in compliance.

Labeled green, social, and sustainability bonds alert market participants of inherent externalities of the bond-financed activities. From December 2020 to December 2021, Kestrel is aware of four transactions that had a clear pricing differential on a green bond versus a comparable non-green bond. All four transactions provided exceptional disclosure to the marketplace regarding ESG factors. Please find these case studies in Appendix A.

Pricing and Climate Risk Disclosure

The United States' 2030 emissions reduction target of 50%-52% below 2005 levels is substantial.⁴ Climate change and its related effects span every sector of the municipal market. Municipal market participants require climate risk disclosure to accurately price risk. It is imperative for the municipal market, serving as the main source of capital for America's infrastructure and underpinnings of the US economy, to prioritize climate action.

Climate risk in the municipal market is not being accounted for in a comparable coordinated fashion. The market is still at nascent stages of delivering climate risk disclosure. Large institutional and sophisticated investors have developed and measured climate risk on their own platforms or through third-party data providers. A combination of regulation, analytical tools, technology, and data can coalesce to bring the municipal market up to speed with necessary disclosure. Climate change and associated risks are material and deeply inherent in the municipal market.⁵ As the market continues to develop, the burden for issuers who do not account for climate risk will be incorporated into their overall cost of capital and long term value of assets.

These non-regulatory and coordinating actions from the MSRB would be helpful:

- Deploy a national level tool to assess climate risk by geographic location, so that risks may be identified uniformly.
- Include both immediate climate impacts (drought, increased wildfire, flooding, sea level rise etc.) as well as other climate-related risks (climate migration, water supply at-risk, infectious diseases).
- This tool could be accessed by issuers, investors and regulators alike.
- Set minimum standards and a template for issuer-level climate action plans. Encourage issuers to post their climate action plan which identifies risks and mitigation and adaptation activities.
- Work with leaders in this space to demonstrate best practices.

Credit Rating Agencies

- For credit rating agencies to incorporate climate risk into their analysis with minimal disruption to the market, they must all do it the same way, using the same reference data, at the same time.

⁴ "The gap between the current policy trajectory and the 2030 target is 1.7-2.3 billion metric tons. Putting this gap in context, that's the same as zeroing out emission from the entire state of Florida every year for the next nine years. Since 2005, the US has only cut emissions at that level in absolute terms." Pathways to Paris – A Policy Assessment of the 2030 US Climate Target – Rhodium Group, October 19, 2021, https://rhg.com/wp-content/uploads/2021/10/Rhodium-Group_Pathways-to-Paris-A-Policy-Assessment-of-the-2030-US-Climate-Target.pdf.

⁵ Analysis and risk modeling by BlackRock and the Rhodium Group concludes that under a scenario where emissions of warming gases are not controlled, "...within a decade, more than 15% of the current S&P National Municipal Bond Index (by market value) would be issued by MSAs [metropolitan statistical areas]..." per Brian Deese's 2019 whitepaper "Getting physical: Scenario analysis for assessing climate-related risks," <https://www.blackrock.com/ch/individual/en/literature/whitepaper/bii-physical-climate-risks-april-2019.pdf> as cited in the "Hutchins Center Working Paper #67 - Flying Blind: What Do Investors Really Know About Climate Change Risks in the U.S. Equity and Municipal Debt Markets?" September 2020, https://www.brookings.edu/wp-content/uploads/2020/09/WP67_Victor-et-al.pdf.

(2) Do primary offerings that prioritize certain ESG investors raise any novel compliance issues for firms? What criteria are used to define an ESG Investor for purposes of such priority provisions? How might investors be assessed to ensure they meet the applicable criteria?

Underwriters and broker-dealers follow rules that address communication, book record-keeping and duty to deal fairly (Rules G-11, G-8, G-17 and G-32). They must comply with an issuer's chosen priority of orders and related requirements. Underwriters must also demonstrate taking reasonable steps to fill orders in accordance with an issuer's priority preference request. The following could affect an underwriter's ability to properly adhere to these standards:

- **Lack of a Tracking System** – At present there is no universal system for broker-dealers to confirm investors, institutional or retail, committed ESG orders or validate an “ESG” account.
- **ESG Investor Regulation** – There is no regulation in the United States for investors who classify their investment vehicles as ESG.
- **Priority Order Formats** – ESG priority requests are not standardized and are written in free form.
- **Internal Controls** – Underwriters need to set up proper controls and audit processes to accurately account for ESG orders.

(C) DEALERS - *continued*

ESG in the Secondary Market

- (3) Does the purchase or sale of ESG-Labeled Bonds in the secondary market raise any novel compliance issues for firms, such as challenges regarding fair dealing, pricing, suitability, best execution, time of trade disclosures or other related legal obligations? Does this answer depend on whether the customer is a retail customer, institutional customer or Sophisticated Municipal Market Professional?

The municipal market has roughly thirty times more bonds to trade than the corporate market⁶, yet it is less liquid, and experiences relatively infrequent trading compared to all other fixed income asset classes⁷. The sheer size of the municipal market in terms of number of issuers and issues outstanding, coupled with over-the-counter trading methods, contribute to the fragmented nature of the market. More access, more data, and better technology is shifting the municipal market buyer base slightly, but individuals still represent the largest holders of municipal bonds. The combination of these unique attributes and the nascent stage of ESG municipal market solutions present compliance challenges for secondary market participants.

Labeled Green, Social and Sustainability Bonds⁸

- Self-labeled bonds do not provide market participants with an audit trail for disclosing material environmental or social attributes of the bond-financed activities. This may affect one's ability to discern suitability.
- Pricing – Recent findings have shown that labeled bonds can directly affect bond pricing in the secondary market.⁹ That is, labeled bonds can have lower yields and higher prices in the market. In certain situations, this might affect fair dealing and best execution, especially if the bond was self-labeled.
- Surveillance – One of the challenging aspects of labeled bonds in the secondary market is the absence of surveillance. Market participants currently do not have a way to know if the bonds achieved the intended environmental or social benefits. In certain situations, this could affect best execution. An issuer's commitment to meaningful and robust reporting can mitigate this challenge.
- Labeled Bond Tickers – Currently, a globally accepted standard for warehousing infrastructure/technology to identify labeled bonds does not exist. This affects the supply of labeled bonds. Investors have a smaller pool⁷ of bonds to choose from in response to the increasing demand for labeled bonds. This impacts best execution in situations when the investor is required to select a labeled bond to meet firm ESG mandates or client requirements.

⁶ "The Modernization of Municipal Bond Trading," Greenwich Associates, Q2 2019, <https://www.theice.com/publicdocs/Modernization-Municipal-Bond-Trading.pdf> - SIFMA third quarter stats in 2018.

⁷ "Of the one million outstanding municipal securities, approximately one percent of those bonds trade on a given day. Aggregate daily trading activity from 2010–2017 averaged nearly 39,000 transactions each business day, resulting in an average total par value of about \$11 billion traded per day." Analysis of Municipal Securities Pre-Trade Data from Alternative Trading Systems, October 2018, <https://www.sec.gov/spotlight/fixed-income-advisory-committee/msrb-staff-analysis-of-municipal-securities-pre-trade-data.pdf>.

⁸ Labeled bonds in 2021 represented ten percent of the municipal market by par and two percent by number of issuances. Ipreo Buyside, <https://buyside.app.ipreo.com/v2#/muni-deals/calendar?weekOf=2022-02-21>.

⁹ 2022 Sustainable Bond Update – Bloomberg Intelligence Muni Strategy, North America Dashboard, Eric Kazatsky.

(D) MUNICIPAL ADVISORS

Not addressed.

(E) ALL MUNICIPAL MARKET PARTICIPANTS

ESG and Systemic Risk

- (1) Are there any ESG-related factors that could pose a systemic risk to the municipal securities market? If so, how might the MSRB approach such systemic risks from a regulatory perspective? Are there non-regulatory approaches the MSRB could take that would advance issuer protection, investor protection, and the overall fairness and efficiency of the market?**

For a complete discussion of systemic risk and ESG factors, please see Kestrel's "ESG Concepts in US Public Finance" provided as Attachment 1 in our response to MSRB Notice 2021-17.

By coordinating adoption of a new dimension of analysis, namely the incorporation of climate risk into pricing, the MSRB can serve the market and protect financial stability.

Here are some non-regulatory ways the MSRB could approach systemic risk:

- 1) Suggest appropriate disclosures as listed above in response (B)(5);
- 2) Provide uniform tools to be used by all for assessing physical climate risk;
- 3) Recommend best practices per sector;
- 4) Work with FINRA to require climate risk and systemic risk training for all dealers; and
- 5) Stay open to innovation, especially when it comes to a common yardstick of risk and value.

(E) ALL MUNICIPAL MARKET PARTICIPANTS - *continued*

Voluntary Standards

- (2) There are a number of organizations establishing voluntary standards for the issuance of ESG-Labeled Bonds, such as the ICMA and CBI. Does the availability of these voluntary, market-based standards provide adequate guidance for issuers and transparency for investors in the municipal securities market? If not, what additional guidance or transparency do you believe are warranted with respect to ESG-Labeled Bonds?

Issuers should not be allowed to self-label. Problems caused by self-labeling include: inconsistent use of standards (some issuers create their own standards), omission of critical information, errors, and greenwashing. These are not at all conducive to market efficiency.

The purpose of an independent external review is to provide assurance to the market that internationally accepted standards are met through a standardized approach. Kestrel Verifiers' external reviews provide these benefits: consistency, integrity, credibility, investor confidence, market efficiencies, and reduced risk to issuers.

(E) ALL MUNICIPAL MARKET PARTICIPANTS - *continued*

ESG Data

- (4) There are numerous vendors providing ESG data for the municipal securities market. Does unequal access to ESG data result in disparate impacts to investors and other market participants? Does competing ESG data create investor confusion? How could the MSRB use the EMMA website to reduce information asymmetry or investor confusion?

Many investors are still figuring out their ESG strategies and don't know exactly what information to ask for. Please see previous descriptions of actions the MSRB can take.

- (5) Does the availability of ESG-related information (or lack thereof) in other financial markets directly or indirectly influence the functioning of the municipal market? For example, when evaluating competing investment opportunities, do taxable ESG investors expect the same timeliness and quality of ESG-related information for a municipal issuer as for a corporate issuer? And how might the differing expectations of different classes of investors (e.g., foreign versus domestic; retail versus institutional; or tax-exempt versus taxable) regarding ESG-related information affect pricing, underwriting, trading, and other market activities?

Taxable municipal bonds may attract European investors. The EU Sustainable Finance Disclosure Rules require investors to justify why various investments belong in sustainability portfolios. The external review on green, social, and sustainability bonds support this, as does Kestrel ESG Data.

Principle 1 of the UN Principles for Responsible Investment requires signatories to commit to incorporating ESG issues into investment analysis and decision-making processes.¹⁰ Investors are in the early days of compliance with this, and deciding which ESG factors are material is challenging.

Kestrel ESG Data, as described in (B)(3), is purpose-built to allow investors to make informed decisions regarding the ESG attributes of bonds.

¹⁰ "What are the Principles for Responsible Investment?" United Nations, <https://www.unpri.org/about-us/what-are-the-principles-for-responsible-investment>.

(E) ALL MUNICIPAL MARKET PARTICIPANTS - *continued*

MSRB, EMMA and IHS Markit

- (6) The MSRB recently incorporated an ESG indicator from an independent data vendor, IHS Markit, into the New Issue Calendar shown on the EMMA website. This ESG indicator denotes when an issuer has self-labeled a bond issue as green, social, or sustainable, or if the issuer includes an independent ESG certification as part of the offering document. Does making this ESG indicator available on the EMMA website enhance market transparency regarding ESG-Labeled Bonds? Specifically, is it valuable to investors, municipal issuers or other market participants?

The municipal bond market is highly complex and fragmented with over 50,000 issuers and one million individual bonds that typically trade on non-centralized exchanges.¹¹ Additionally, roughly forty two percent of municipal bond holders are individual investors.¹² An ESG indicator on EMMA assists individual investors in making more informed decisions, and promotes the integrity of the green, social and sustainability bond market.

The “independent ESG certification” is more accurately referred to as an “external review,” as per ICMA.

Standards and transparency promote investor confidence and market efficiencies. It is good to distinguish bonds with external reviews.

¹¹ “Re: Release No. 34-83463, Request for Comment, Draft FY 2018-2022 Strategic Plan for the Securities and Exchange Commission,” MSRB, July 2018, <https://msrb.org/Market-Topics/~/media/F2EBC8FBD4AB4495B4FD87E421BD9F95.ashx>.

¹² SIFMA third quarter stats in 2018. Source: “The Modernization of Municipal Bond Trading,” Greenwich Associates, Q2 2019, <https://www.theice.com/publicdocs/Modernization-Municipal-Bond-Trading.pdf>.

(E) ALL MUNICIPAL MARKET PARTICIPANTS – *continued*

MSRB, EMMA and IHS Markit - *continued*

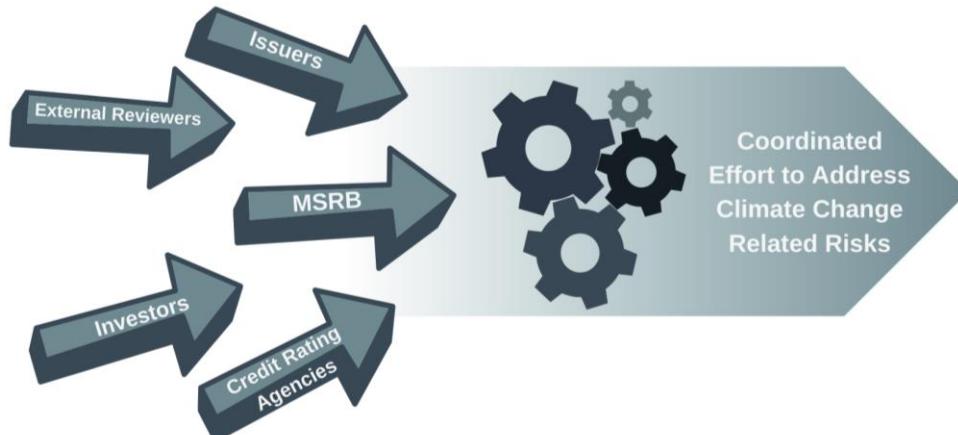
- (7) What improvements could the MSRB make to the EMMA website regarding ESG-Related Disclosures, ESG-Labeled Bonds and other ESG-related information? Which improvements to the EMMA website would most enhance access for investors and other market participants to ESG-related information? Which improvements to the EMMA website would most enhance the fairness and efficiency of the municipal market?

To improve market efficiency, these non-regulatory and coordinating actions from the MSRB would be helpful:

- Deploy a national level tool to assess climate risk by geographic location, so that risks may be identified uniformly.
- Include both immediate climate impacts (drought, increased wildfire, flooding, sea level rise etc.) as well as other climate-related risks (climate migration, water supply at-risk, infectious diseases).
- This tool could be accessed by issuers, investors and regulators alike.
- Set minimum standards and a template for issuer-level climate action plans. Encourage issuers to post their climate action plan, which identifies risks and mitigation and adaptation activities.
- Work with leaders in this space to demonstrate best practices.

The American economy and climate change are both dynamic and nonlinear systems. Small changes can produce large and unexpected outcomes. This presents both a grave threat and our best hope for meaningful climate action. The time to act is now.

If municipal market participants can come together and prioritize the just transition to a decarbonized economy, then we will not only reduce systemic risk in our financial system, but we will gain the chance to protect our planet from irreparable environmental collapse. The MSRB has a momentous opportunity to coordinate actions and facilitate this.



(E) ALL MUNICIPAL MARKET PARTICIPANTS – *continued*

Additional Information

- (8) Is there any additional information that you would like to share with the MSRB regarding any other ESG-related activities or trends in the municipal securities market?**

Please see the attached letter from Kestrel 360, Inc., ““ESG Concepts in US Public Finance.”

ABOUT KESTREL

For more than 20 years Kestrel has been at the forefront of public finance helping state and local governments access capital for sustainable infrastructure.

Kestrel Verifiers, a division of Kestrel 360, Inc., is the market leader for verified green, social, and sustainability municipal bonds. As a Climate Bonds Initiative Approved Verifier, we have a critical understanding of the science and impact behind sustainable finance and have provided external reviews for over one hundred municipal bond issues—amounting to more than \$17 billion in funds.

With our data division, Kestrel ESG, we are proud to be at the leading edge, supporting sustainable finance with meaningful ESG data. Our data is independently developed—encompassing principles of sustainability, sector-specific best practices, and rigorous quality control.

Integrity is a core value of our company, and we always strive for excellence. Our team of environmental and social scientists follow best practices designed to remove bias and ensure consistency in our work. Kestrel supports a coordinated and impactful strategy to advance the just transition to a decarbonized economy.

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Appendix A. CASE STUDIES

Demand for Green Bonds, Social Bonds and Sustainability Bonds with independent, external reviews is increasing and in some cases has resulted in a pricing premium. The Climate Bonds Initiative **2020 Green Bond Pricing Report** describes tighter spreads and more oversubscription on green bonds versus non-green counterparts.

Fairfax County Economic Development Authority Case Study

Fairfax County Economic Development Authority (the "Authority") issued two series of Revenue Bonds in November 2021. The \$74,605,000 2021 Series A Bonds will partially finance construction of a new public works complex which includes significant innovation, green building features, and a geothermal pilot project. The Series A Bonds were designated as a Green Bond by Kestrel Verifiers and were the first Green Bonds in Virginia to seek an external review. The \$13,865,000 2021 Series B Refunding Bonds will refinance the County's Series 2012 A Bonds (Community Services Facilities Projects). Both Series were rated Aa1/AA+/AA+ by Moody's, Standard and Poor's and Fitch respectively. In comparable maturities with the same couponing, the Authority experienced a 1 to 3 basis point pricing benefit resulting in interest cost savings for the Authority. Both Series experienced strong subscription levels with the Series A (Green Bonds) showing stronger subscription levels of .9x to 1.8x over the Series B Bonds.

Issuer	Fairfax County Economic Development Authority Fairfax County Facilities Revenue Bonds, Series 2021A (County Facilities Projects) (Green Bonds)				
Bond Type	Projects) (Green Bonds)				
Par Amount	\$74,605,000				
Sale Date	11/5/2021				
Dated Date	11/23/2021				
M/S&P/F Ra:	Aa1/AA+/AA+				
Call Option	10/1/2031				
Maturity	1-Oct				
Maturity	Par Amount	Coupon	Yield	Spread (bps)	Spread to Non-Green
10/1/2022	2,245,000	5.00%	0.160%		
10/1/2023	2,360,000	5.00%	0.280%	+6	
10/1/2024	2,485,000	5.00%	0.390%	+8	
10/1/2025	2,605,000	5.00%	0.530%	+8	
10/1/2026	2,740,000	5.00%	0.670%	+7	
10/1/2027	2,885,000	5.00%	0.840%	+6	
10/1/2028	3,030,000	5.00%	1.000%	+8	
10/1/2029	3,185,000	5.00%	1.130%	+12	
10/1/2030	3,350,000	5.00%	1.210%	+11	
10/1/2031	3,520,000	5.00%	1.300%	+14	
10/1/2032	3,700,000	5.00%	1.370%	+18	
10/1/2033	3,890,000	5.00%	1.410%	+19	
10/1/2034	4,090,000	5.00%	1.480%	+24	
10/1/2035	4,300,000	5.00%	1.500%	+23	
10/1/2036	4,500,000	4.00%	1.640%	+34	
10/1/2037	4,685,000	4.00%	1.680%	+35	(3)
10/1/2038	4,895,000	5.00%	1.560%	+21	(3)
10/1/2039	5,150,000	5.00%	1.600%	+21	(3)
10/1/2040	5,385,000	4.00%	1.770%	+35	(1)
10/1/2041	5,605,000	4.00%	1.800%	+34	(1)

Issuer	Fairfax County Economic Development Authority Fairfax County Facilities Revenue Bonds, Series 2021B Refunding Bonds (County Facilities Projects)				
Bond Type	Refunding Bonds (County Facilities Projects)				
Par Amount	\$13,865,000				
Sale Date	11/5/2021				
Dated Date	11/23/2021				
M/S&P/F Ra	Aa1/AA+/AA+				
Call Option	10/1/2031				
Maturity	1-Oct				
Maturity	Par Amount	Coupon	Yield	Spread (bps)	
10/1/2037	2,525,000	4.00%	1.710%	+38	
10/1/2038	2,645,000	5.00%	1.590%	+24	
10/1/2039	2,775,000	5.00%	1.630%	+24	
10/1/2040	2,900,000	4.00%	1.780%	+36	
10/1/2041	3,020,000	4.00%	1.810%	+35	

State Public Works Board of the State of California

The State Public Works Board (SPWB) of the State of California issued two series of Lease Revenue Bonds in November 2021:

- 2021 Series C Bonds (\$467,550,000) which financed a new natural resources headquarters in Sacramento for the Department of General Services which was designated as "Green Bonds - Climate Bond Certified" by Kestrel Verifiers; and
- 2021 Series D Bonds (\$94,950,000) which financed various capital projects.

Both Series were rated Aa3/A+/AA- by Moody's, Standard and Poor's and Fitch respectively. External review was from Kestrel Verifiers. Additionally, both Series had comparable structures with serial maturities ranging from November 1, 2022 to November 1, 2046. Where the same couponing structure was used, the "Green Bonds - Climate Bond Certified" Series experienced a 2 to 3 basis point pricing benefit over the non-green series, resulting in interest cost savings for the SPWB.

State Public Works Board of The State of California					
Bond Type	Lease Revenue Bonds, 2021 Series C (Green Bonds - Climate Bond Certified)				
Par Amount	\$467,550,000				
Sale Date	11/3/2021				
Dated Date	11/17/2021				
M/S&P/F Ra ^a	Aa3/A+/AA-				
Call Option	11/1/2031				
Maturity	1-Nov				
Maturity	Par Amount	Coupon	Yield	Spread (bps)	Spread to Non-Green
11/1/2022	9,940,000	5.00%	0.190%	+3	(2)
11/1/2023	10,450,000	5.00%	0.300%	+7	
11/1/2024	10,985,000	5.00%	0.420%	+10	
11/1/2025	11,550,000	5.00%	0.580%	+12	
11/1/2026	12,140,000	5.00%	0.720%	+11	
11/1/2027	12,765,000	5.00%	0.890%	+9	(2)
11/1/2028	13,420,000	5.00%	1.020%	+7	(3)
11/1/2029	14,105,000	5.00%	1.190%	+13	(2)
11/1/2030	14,830,000	5.00%	1.270%	+12	(2)
11/1/2031	15,590,000	5.00%	1.360%	+16	
11/1/2032	16,390,000	5.00%	1.440%	+21	(2)
11/1/2033	17,230,000	5.00%	1.520%	+26	
11/1/2034	18,115,000	5.00%	1.560%	+28	
11/1/2035	18,945,000	4.00%	1.740%	+43	(3)
11/1/2036	19,720,000	4.00%	1.800%	+46	(3)
11/1/2037	20,525,000	4.00%	1.850%	+48	(3)
11/1/2038	21,360,000	4.00%	1.860%	+47	(3)
11/1/2039	22,235,000	4.00%	1.880%	+45	(3)
11/1/2040	23,260,000	5.00%	1.770%	+31	
11/1/2041	24,325,000	4.00%	1.930%	+43	(3)
11/1/2046	89,670,000	5.00%	1.930%	+29	(3)
11/1/2046	50,000,000	4.00%	2.050%	+41	

State Public Works Board of The State of California					
Bond Type	Lease Revenue Bonds, 2021 Series D (Various Capital Projects)				
Par Amount	\$94,950,000				
Sale Date	11/3/2021				
Dated Date	11/17/2021				
M/S&P/F Ratings	Aaa/AAA/-				
Call Option	11/1/2030				
Maturity	1-Nov				
Maturity	Par Amount	Coupon	Yield	Spread (bps)	
11/1/2022	2,905,000	5.00%	0.210%	+5	
11/1/2023	3,040,000	4.00%	0.320%	+9	
11/1/2024	3,165,000	4.00%	0.440%	+12	
11/1/2025	3,290,000	4.00%	0.600%	+14	
11/1/2026	3,430,000	4.00%	0.740%	+13	
11/1/2027	3,580,000	5.00%	0.910%	+11	
11/1/2028	3,770,000	5.00%	1.050%	+10	
11/1/2029	3,960,000	5.00%	1.210%	+15	
11/1/2030	4,165,000	5.00%	1.290%	+14	
11/1/2031	4,360,000	4.00%	1.380%	+18	
11/1/2032	4,560,000	5.00%	1.460%	+23	
11/1/2033	4,790,000	5.00%	1.540%	+28	
11/1/2034	5,015,000	4.00%	1.650%	+37	
11/1/2035	5,220,000	4.00%	1.770%	+46	
11/1/2036	5,430,000	4.00%	1.830%	+49	
11/1/2037	2,800,000	4.00%	1.880%	+51	
11/1/2038	2,920,000	4.00%	1.890%	+50	
11/1/2039	3,035,000	4.00%	1.910%	+48	
11/1/2040	3,160,000	4.00%	1.940%	+48	
11/1/2041	3,290,000	4.00%	1.960%	+46	
11/1/2046	19,065,000	5.00%	1.960%	+32	

Oberlin College

In July 2021, Oberlin College issued two series of bonds to finance a new geothermal energy system. The College was able to demonstrate (1) a clear pricing differential on a Certified Climate Bond versus a non-green bond from the same issuer, and (2) a pricing differential on a Kestrel verified Climate Bond versus a self-certified green bond from a different issuer. Both deals were led by Tier 1 firms, with similar account coverage. After reviewing Oberlin's non-green bond and the self-certified bond from another issuer, the anchor investor chose to only submit an order for Oberlin's Certified Climate Bond, citing demonstrated ESG credentials verified in an external review. The anchor investor placed an order for the entire transaction and maintained the order despite a 5 basis point repricing.

Oberlin College					
Taxable Bonds, Series 2021A (Green Bonds - Climate Bond Certified)					
Kestrel Verified					
Bond Type	Par Amount	Coupon	Treasury Yield	Spread (bps)	Spread to Non-Green
Par Amount	\$80,625,000				
Sale Date	7/14/2021				
M/S&P/F Ratings	Aa3/AA/-				
Call Option	Make Whole Call				
Maturity	1-Oct				
Maturity	Par Amount	Coupon	Treasury Yield	Spread (bps)	
10/1/2051	80,625,000	2.87%	1.97%	+90	(5)

Oberlin College					
Taxable Bonds, Series 2021B					
Bond Type	Par Amount	Coupon	Treasury Yield	Spread (bps)	
Par Amount	\$30,350,000				
Sale Date	7/14/2021				
M/S&P/F Ratings	Aa3/AA/-				
Call Option	Make Whole Call				
Maturity	1-Oct				
Maturity	Par Amount	Coupon	Treasury Yield	Spread (bps)	
10/1/2051	30,350,000	2.92%	1.97%	+95	

Oberlin College					
Taxable Bonds, Series 2021A (Green Bonds - Climate Bond Certified)					
Kestrel Verified					
Bond Type	Par Amount	Coupon	Treasury Yield	Spread (bps)	Spread to Self Certified Green
Par Amount	\$80,625,000				
Sale Date	7/14/2021				
M/S&P/F Ratings	Aa3/AA/-				
Call Option	Make Whole Call				
Maturity	1-Oct				
Maturity	Par Amount	Coupon	Treasury Yield	Spread (bps)	
10/1/2051	80,625,000	2.87%	1.97%	+90	(2)

State of Connecticut Health and Educational Facilities Authority					
Revenue Bonds, Wesleyan University Issue					
Series 2021 (Federally Taxable) (Green Bond) - Self Certified					
Bond Type	Par Amount	Coupon	Treasury Yield	Spread (bps)	
Par Amount	\$55,520,000				
Sale Date	7/14/2021				
M/S&P/F Ratings	Aa3/AA/-				
Call Option	Make Whole Call				
Maturity	1-Jul				
Maturity	Par Amount	Coupon	Treasury Yield	Spread (bps)	
7/1/2051	50,520,000	2.87%	1.95%	+92	

City of Boston

In December 2020, the City of Boston, Massachusetts, issued a series of General Obligation Bonds, (Aaa Moody's and AAA Standard and Poor's), in which the City experienced the widest green bond pricing benefit—or “greenium”—in the US Municipal Market to date. The City's \$121,660,000 General Obligation Bonds, 2020 Series A and \$23,885,000 General Obligation Bonds, 2020 Series B (Green Bonds) priced on the same day and maintained comparable structures, with the Series B (Green Bonds) experiencing a 3 basis point pricing benefit over the non-green tranche. Kestrel Verifiers provided the Green Bond Second Party Opinion.

Issuer	City of Boston, Massachusetts General Obligation Bonds, 2020A					Issuer	City of Boston, Massachusetts General Obligation Bonds, 2020B (Green Bonds - Kestrel Verified)				
Bond Type						Bond Type					
Par Amount	\$121,660,000					Par Amount	\$23,885,000				
Sale Date	12/9/2020					Sale Date	12/9/2020				
Dated Date	12/30/2020					Dated Date	12/30/2020				
M/S&P/F Ratings	Aaa/AAA/-					M/S&P/F Ratings	Aaa/AAA/-				
Call Option	11/1/2030					Call Option	11/1/2030				
Maturity	1-Nov					Maturity	1-Nov				
Maturity	Par Amount	Coupon	Yield	Spread (bps)		Maturity	Par Amount	Coupon	Yield	Spread (bps)	Spread to Non-Green
11/1/2021	8,600,000	5.00%	0.120%	(12)		11/1/2021					
11/1/2022	9,030,000	5.00%	0.130%	(1)		11/1/2022					
11/1/2023	9,505,000	5.00%	0.160%	-		11/1/2023					
11/1/2024	9,985,000	5.00%	0.180%	-		11/1/2024					
11/1/2025	4,490,000	5.00%	0.230%	-		11/1/2025	6,000,000	5.00%	0.200%	(3)	(3)
11/1/2026	5,940,000	5.00%	0.310%	-		11/1/2026					
11/1/2027	6,245,000	5.00%	0.410%	-		11/1/2027					
11/1/2028	6,570,000	5.00%	0.520%	(1)		11/1/2028					
11/1/2029	6,905,000	5.00%	0.630%	-		11/1/2029					
11/1/2030	1,255,000	5.00%	0.710%	-		11/1/2030	6,000,000	5.00%	0.680%	(3)	(3)
11/1/2031	6,340,000	4.00%	0.820%	+3		11/1/2031					
11/1/2032	6,595,000	4.00%	0.890%	+4		11/1/2032					
11/1/2033	6,820,000	3.00%	1.200%	+30		11/1/2033					
11/1/2034	7,035,000	3.00%	1.270%	+33		11/1/2034					
11/1/2035	1,320,000	5.00%	0.980%	-		11/1/2035	6,000,000	5.00%	0.950%	(3)	(3)
11/1/2036	5,930,000	2.00%	1.570%	+55		11/1/2036					
11/1/2037	6,050,000	2.00%	1.620%	+56		11/1/2037					
11/1/2038	6,170,000	2.00%	1.670%	+57		11/1/2038					
11/1/2039	6,295,000	2.00%	1.710%	+57		11/1/2039					
11/1/2040	580,000	5.00%	1.181%	-		11/1/2040	5,885,000	5.00%	1.150%	(3)	(3)

San Francisco Public Utility Commission

In September 2020, San Francisco Public Utility Commission issued several series of Water Revenue Bonds (Aa2 Moody's and AA- Standard and Poor's). SFPUC issued their \$150,895,000 2020 Sub-Series A Bonds, designated as a Green Bond, and their \$85,335,000 Sub-Series 2020 C Bonds (no green designation) on the same day. The final term bond for both series were comparable with the final term bond on the Sub-Series A (Green Bonds) achieving a 1 basis point benefit over the final term bond on the Sub-Series C Bonds. SFPUC has noted implied benefits of 5 to 7 basis points in pricing benefits from issuing Green Bonds in the past, and the 2020 Sub-Series A and C provides the market with a clear comparison to recognize the green pricing benefit.

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ABOUT KESTREL VERIFIERS



For over 20 years Kestrel has been a trusted consultant in sustainable finance. Kestrel Verifiers, a division of Kestrel 360, Inc. is a Climate Bonds Initiative Approved Verifier qualified to verify transactions in all asset classes worldwide. Kestrel is a US-based certified Women's Business Enterprise.

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