

VERIFIER'S REPORT

SUMMARY

Kestrel Verifiers is of the opinion that the City of Edmonds, Washington Water and Sewer Revenue Bonds, 2020 (Green Bonds) (Certified Climate Bonds) conform with the Water Infrastructure sector criteria of the Climate Bonds Standard and align with three of United Nation's Sustainable Development Goals as follows:

Use of Proceeds

Proceeds will be used to construct a Carbon Recovery and Biosolids Pyrolysis Project at the City's Wastewater Treatment Plant (WWTP). The project will increase the operational efficiency of the WWTP and reduce overall emissions by sequestering carbon in biochar, a usable product of pyrolysis.

Process for Project Evaluation and Selection

The City has numerous environmental, climate, and sustainability plans and goals which will be advanced with the Carbon Recovery and Biosolids Pyrolysis Project. The bond-financed project was identified and selected for its ability to reduce emissions and improve operational efficiency at the WWTP.

Management of Proceeds

Proceeds from the Series 2020 Climate Bonds will be specifically directed to pay the costs of design, construction, property acquisition, and other related expenses necessary for the Carbon Recovery Pyrolysis Project. Bond proceeds will be held in a segregated Water and Sewer Utility Fund account

Reporting

The City will submit continuing disclosures to the Municipal Securities Rulemaking Board (MSRB). This reporting will be done annually on the Electronic Municipal Market Access (EMMA) system operated by the MSRB. A voluntary annual report on the Series 2020 Climate Bond is planned. Kestrel Verifiers will also provide one additional follow-up report as required by CBI.

Impact and UN SDGs

By implementing the Carbon Recovery and Biosolids Pyrolysis Project, the City is addressing its goals to reduce overall emissions, while increasing operational efficiency of the WWTP and protecting water quality.



ISSUER

City of Edmonds, Washington

OPINION ON

Water and Sewer Revenue Bonds, 2020 (Green Bonds) (Certified Climate Bonds)

SECTOR CRITERIA

Water Infrastructure

SDGs



EVALUATION DATE

October 2020

KESTREL VERIFIERS CONTACTS:

Monica Reid, CEO

monica@kestrel-inc.com

(+1) 541-399-6806

Evan Smith, Lead Verifier

evan@kestrel-inc.com

(+1) 530-919-9162

April Strid, Verifier

april@kestrel-inc.com

(+1) 503-860-1125

VERIFIER'S REPORT

Par:	\$13,945,000
Issuer:	City of Edmonds, Washington
Issue Description:	Water and Sewer Revenue Bonds, 2020 (Green Bonds) (Certified Climate Bonds)
Project:	Carbon Recovery and Biosolids Pyrolysis
Sector Criteria:	Water Infrastructure
Evaluation Date:	October 14, 2020

CLIMATE BONDS VERIFIER'S REPORT

The City of Edmonds, Washington (the City), plans to issue approximately \$ 13.9 million in City of Edmonds, Washington Water and Sewer Revenue Bonds, 2020 (Green Bonds) (Certified Climate Bonds) ("Series 2020 Climate Bonds").

The City proposes financing a capital improvement at its wastewater treatment plant (WWTP) with Certified Climate Bonds, an internationally accepted green bond standard. The purpose of this project, known as the Carbon Recovery and Biosolids Pyrolysis Project, is to replace a sanitary sewage incinerator with a pyrolysis process that reduces carbon emissions associated with disposal of biosolids and operation of the WWTP and produces biochar. Project benefits include increased operational efficiency, reduced energy use, improved sanitation services, reduced carbon emissions, and reduced overall pollution in the greater Edmonds, Washington area.

This Verifier's Report reflects Kestrel Verifiers' view of the City's projects and financing, allocation and oversight, and conformance of the bonds with the Climate Bonds Standard (V3.0), and the Water Infrastructure sector criteria. In our opinion, the Series 2020 Climate Bonds to be issued by the City are aligned with the Climate Bonds Standard and the Water Infrastructure criteria.

ABOUT THE ISSUER

The City of Edmonds is located in the southwest portion of Snohomish County, Washington immediately north of King County. The City was incorporated in 1890, but a sanitary sewer system was not developed until 1920. Its first primary sewage treatment plant was constructed in 1957. Today, the City Sewer Division captures and treats wastewater generated across the service area and is responsible for maintenance and operation of a regional wastewater treatment plant, 14 sanitary sewer pump stations, and over 186 miles of sanitary sewer mains serving over 9,800 customer accounts. The City's primary mission with wastewater treatment is to protect public health and the environment through sustainable and cost-effective water resource management.

The City is only one of three in the State of Washington, and one of 65 in the United States, to be recognized by the Water Environment Federation as operating a "Utility of the Future Today." This prestigious distinction recognizes the achievements of water utilities that are engaged in advancing resource efficiency and recovery, developing proactive relationships with stakeholders, and establishing resilient, sustainable, and livable communities.

Alignment to Relevant Plans

The City has set aggressive goals to reduce its environmental impact and is committed to protecting the natural environment. This commitment is reflected in City plans and resolutions which guide decision-making for investments into water treatment infrastructure and assets. The City has a well-established record of environmentally progressive approaches to policy and city operations. In 2006, the City Council adopted a resolution supporting the Kyoto Protocol and endorsing the US Mayors' Climate Protection Agreement. In 2008, a LEED Silver standard was set for city buildings and facilities, and in 2017, Edmonds committed to achieving or exceeding the Paris Agreement goals for decarbonization. The City's ongoing commitment to sustainability is reflected in its formally adopted plans which collectively address integrated watershed management, climate change mitigation/adaptation with an emphasis on energy efficiency, and greenhouse gas emissions reporting.

The City intends to use proceeds of the Series 2020 Climate Bonds exclusively to finance capital improvements that are aligned with these plans and which move the City toward its established goals.

ALIGNMENT TO CLIMATE BONDS STANDARD AND CERTIFICATION SCHEME

The City has engaged Kestrel Verifiers to provide a pre-issuance, independent verification on the alignment of the Series 2020 Climate Bonds with the Climate Bonds Standard and Certification Scheme—which utilizes the Climate Bonds Standard (V3.0) and associated Water Infrastructure sector criteria. The Climate Bonds Initiative (the “CBI”) administers the standard and sector criteria. Additionally, Kestrel Verifiers has examined alignment of the Series 2020 Climate Bonds with the United Nations Sustainable Development Goals (“SDGs”).

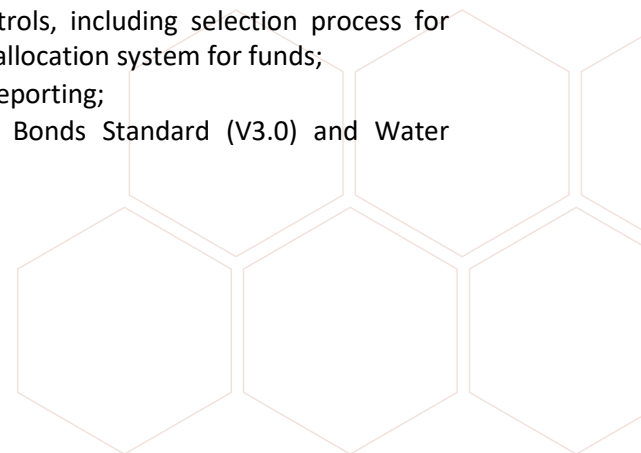
Kestrel Verifiers is a Climate Bonds Initiative Approved Verifier. The Kestrel review team included a water resources engineer and other environmental scientists. We performed a Reasonable Assurance engagement for the Series 2020 Climate Bonds to provide an independent verification as to whether the subject matter meets, in all material respects, the relevant criteria defined in Figures 1 and 2.

For this engagement, Kestrel Verifiers reviewed the City's Green Bond Framework and relevant plans, examined public and non-public information, and interviewed members of the City's management and finance teams. Our goal was to understand material sustainability impacts of the operations, the planned use of proceeds, procedures for managing proceeds, and plans and practices for reporting. This document contains Kestrel's opinion of the Series 2020 Climate Bonds.

Verifier's Responsibilities

Kestrel Verifiers' responsibilities for confirming alignment of the Series 2020 Climate Bonds with the Climate Bonds Standard and Water Infrastructure criteria include:

- assess and certify the City's internal processes and controls, including selection process for projects and assets, internal tracking of proceeds, and the allocation system for funds;
- assess policies and procedures established by the City for reporting;
- assess the readiness of the City to meet the Climate Bonds Standard (V3.0) and Water Infrastructure sector criteria; and
- express a Reasonable Assurance conclusion.



Relevant Climate Bonds Sector Criteria and Other Standards

The Series 2020 Climate Bonds align with the Climate Bonds Standard (V3.0) and Water Infrastructure criteria.



Independence and Quality Control

Kestrel Verifiers is providing an independent opinion on the conformance of the Series 2020 Climate Bonds with the Water Infrastructure criteria of the Climate Bonds Standard. For almost twenty years, Kestrel has worked at the intersection of finance and sustainability, helping clients with their green, social, and sustainability bond needs. Relevant to this project, Kestrel has experience helping municipal clients to advance water, energy and environmental projects.

Assurance Approach

Kestrel Verifiers' responsibility is to conduct a Reasonable Assurance engagement to determine whether the Series 2020 Climate Bonds meet, in all material respects, the requirements of the Climate Bonds Standard. Our reasonable assurance was conducted in accordance with the Climate Bonds Standard (V3.0) and the *International Standard on Assurance Engagements (ISAE) 3000: Assurance Engagements Other than Audits or Reviews of Historical Financial Information*.

Kestrel Verifiers has relied on information provided by the City. There are inherent limitations in performing assurance, and fraud, error or non-compliance may occur and not be detected. Kestrel Verifiers is not responsible or liable for any opinions, findings or conclusions that are incorrect. Our assurance is limited to the City's policies and procedures in place as of October 2020, ahead of the issuance of the Series 2020 Climate Bonds. The distribution and use of this assurance report are at the sole discretion of the City. Kestrel Verifiers does not accept or assume any responsibility for distribution to any other person or organization.

Use of Proceeds and Conformance to Sector Criteria

The Series 2020 Climate Bonds will finance the Carbon Recovery and Biosolids Pyrolysis Project which will replace an incinerator for biosolids at the wastewater treatment plant.

In 2013, City staff began to implement a program at the WWTP called "Pathway to Sustainability." The goal of this plan, which is also aligned with the City's overall sustainability plans, is to reduce energy use and carbon emissions at the WWTP. Three efficiency projects have been completed to date: 1) outdated lower efficiency blowers were replaced with smaller, more efficient ones, 2) the aeration system piping and delivery nozzles were replaced or repaired, and 3) biosolids dewatering equipment was replaced. These three projects combined have saved the City over \$200,000 per year in electricity costs and reduced greenhouse gas emissions by 1,146 tons per year. The bond-financed project is the fourth step in the City's Pathway to Sustainability at the WWTP.

In 2018, the Edmonds City Council made replacing the WWTP's sanitary sewage incinerator a priority and mandated an evaluation of alternative technologies that would be energy neutral or positive. City staff identified pyrolysis as the best method to replace the incinerator. Pyrolysis was chosen based on lower operation and maintenance costs and improved environmental benefit, which comes from the pyrolysis system generating biochar rather than ash.

Pyrolysis:

The pyrolysis process at the Edmonds WWTP involves heating biomass waste from the water treatment process in the absence of oxygen. Without oxygen present, the biomass does not combust as it would in the old incinerator. Instead, the chemical compounds that make up the biomass are broken down into syngas, bio-oil, and biochar.¹ The syngas and bio-oil can be used as a source of energy to reduce the plant’s energy consumption, and biochar is a valuable product for use in several sectors. Pathogens and other contaminants are removed during pyrolysis due to the high temperatures involved.

Biochar:

Biochar is a charcoal-like product of pyrolysis. Its practical uses include soil remediation and carbon sequestration. In typical incineration with oxygen, such as the WWTP’s old incinerator, biomass combustion releases carbon dioxide and methane into the atmosphere. While the pyrolysis process also releases CO₂ (up to 50% of the biomass), the remaining carbon in the biochar product is relatively stable and unlikely to result in additional GHG emissions. Furthermore, biochar applied to soils has potential to improve soil health and increase long-term carbon stores. Biochar is also used to remediate contamination in water and soils.²

By incorporating pyrolysis and producing biochar, the City accomplishes several key goals in their pathway to sustainability. Pyrolysis reduces overall electricity, natural gas, and diesel fuel usage at the WWTP, which reduces operating costs and as well as GHG emissions. Additionally, biochar may be marketed for local use.

Sector Criteria

Water Infrastructure Criteria

The City’s bond-financed activities align with the CBI Water Infrastructure Criteria under the Asset Class “Water Treatment / Installation or upgrade of water treatment infrastructure” as shown in Figure 1. An orange circle indicates that the eligibility of these assets or projects is conditional on meeting specific conditions pursuant to the Mitigation and Adaptation and Resilience requirements of the Criteria.

Assets	Example projects*	Mitigation	Adaptation & Resilience
Water treatment, including but not limited to: Drinking water treatment Desalination plants Water recycling systems Wastewater treatment facilities Manure/ slurry treatment facilities	<ul style="list-style-type: none"> Improving energy efficiency or shifting to low carbon fuel sources Installation or upgrade of water treatment infrastructure (excluding the examples listed above) 	●	●

Figure 1. Eligible Asset Types

Source: Table I, Climate Bonds Standard – Water Infrastructure Criteria, April 2018

- Water Infrastructure Mitigation Requirements

¹ USDA Agricultural Research Service, What Is Pyrolysis? 2017. <https://www.ars.usda.gov/northeast-area/wyndmoor-pa/eastern-regional-research-center/docs/biomass-pyrolysis-research-1/what-is-pyrolysis/>

² Tenic, E. Ghogare, R. Dhingra, A. Biochar—A Panacea for Agriculture or Just Carbon? 2020. Horticulturae, 6, 37.

Pursuant to the CBI, “The Mitigation Component of the Water Infrastructure Criteria is based on the impact that the use of proceeds will have on GHG emissions. For Mitigation criteria, they are eligible for certification only if: No net increase GHG emissions impact is expected.”

It is Kestrel Verifiers’ opinion that there will be a net decrease in GHG emissions. The Carbon Recovery Pyrolysis Project replaces an incinerator, and will result in reduced emissions. Since the treatment capacity remains the same, no net increase in GHG emissions impact is expected.

- Water Infrastructure Adaptation and Resilience Requirements
Pursuant to the CBI, “The Adaptation & Resilience Component of the Water Infrastructure Criteria is intended to show the asset’s resilience to climate. Such stakeholder impacts include their access to water in sufficient quantity and sufficient quality. From this perspective, ecosystems are also considered.”

Figure 2 shows the CBI decision tree for this component of the criteria. Assets and projects that are demarcated with an orange circle in the Adaptation and Resilience column and have an expected or remaining operational lifespan of more than 20 years, are subject to a Vulnerability Assessment / Adaptation Plan Evaluation.

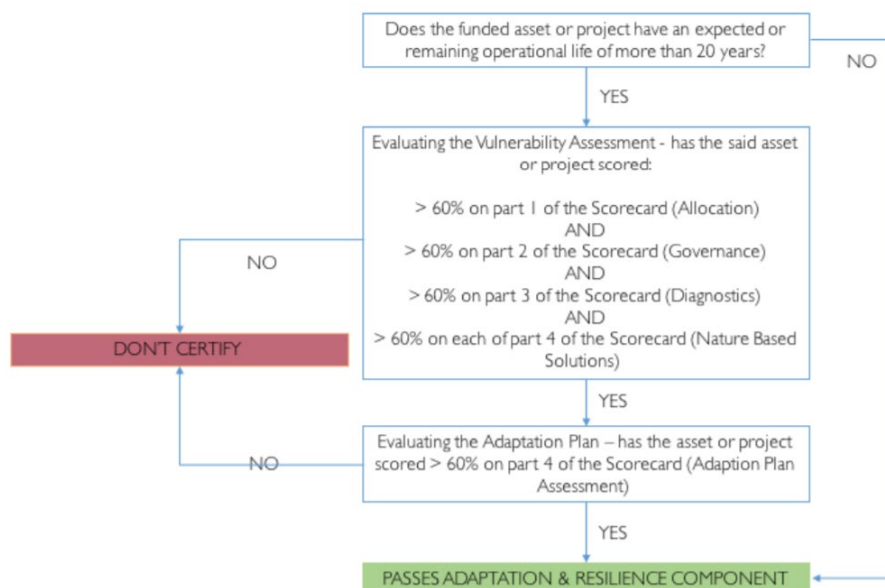


Figure 2. Decision tree for the Adaptation & Resilience component of the Water Infrastructure Criteria

Source: Figure 1– CBI Water Infrastructure Criteria, April 2018

As the operational life for the WWTP and the carbon recovery project is greater than 20 years, a vulnerability assessment was conducted. This is attached in Appendix A of this Verifier’s Report. The City scored 67 points out of 100 points, exceeding the threshold of 60% in each category as required for certification. This is shown in the summary table in Appendix A.

Process for Project Evaluation and Selection

The City believes in transparency to both constituents and investors regarding its process for project evaluation and selection. It is part of the City’s approval process to ensure that all of its financed activities

comply with internal environmental and social directives. All of the City's environmental and social policies and related reports can be found at: <http://www.edmondswa.gov/services/sustainability.html>

In addition to meeting the City's long-term needs, the Series 2020 Climate Bonds will be used for projects that address and meet the following goals and objectives:

1. Protect the environment, climate, and community health through effective water resource management.
2. Address climate mitigation and sustainability issues in the City through prioritizing carbon recovery and sequestration.
3. By certifying the Series 2020 Climate Bonds as Climate Bonds in the category of Water Infrastructure, the City hopes to inform investors of the environmentally beneficial and climate-aligned aspects of projects and highlight the City's responsible management of water resources, cognizant of climate change.

The City utilizes a robust and transparent annual process to prioritize capital improvements for financing, and maintains long-range financing plans through its Planning Division. Reducing the City's carbon footprint through energy conservation practices in City operations is identified in the Strategic Plan as a major action needed, and as such, is a priority for bond financing.

Projects to be financed are evaluated and selected based on:

- a) Alignment with the current Strategic Plan
- b) Business case studies and community benefits (identify need, options, and preferred solution);
- c) A thorough vetting process including stakeholder consultation and public hearings; and
- d) Review by the Mayor and Budget Staff and final approval by City Council

The City staff compiles project recommendations which are presented to the Operations Committee.

The Operations Committee reviews project details and operating procedures.

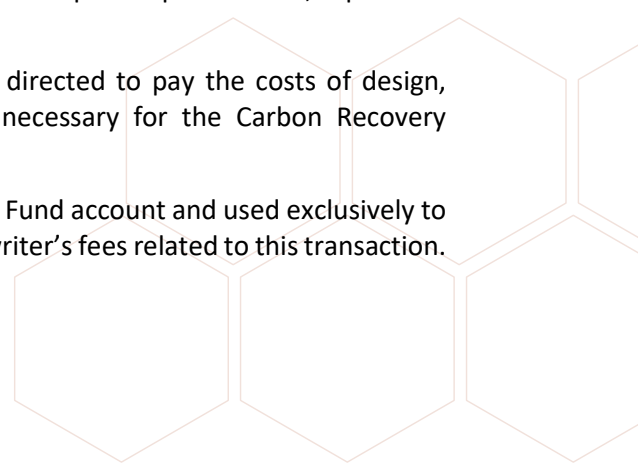
As an organization, the City of Edmonds is committed to public health and the environment through world-class, cost-effective wastewater treatment. The City considers the local and regional impacts of its practices. The City's guiding beliefs associated with sustainability support the vision of reducing environmental impacts. The projects to be financed with the Series 2020 Climate Bonds meet this vision and subsequent criteria.

Management of Proceeds

The City's management of proceeds follows Generally Accepted Accounting Principles and Government Finance Officers Association (GFOA) recommendations for best practices. Net proceeds will be tracked by the City's Finance team, and 100% of funds will be allocated to fund the capital improvements, capitalized interest, and financing costs.

Proceeds from the Series 2020 Climate Bonds will be specifically directed to pay the costs of design, construction, property acquisition, and other related expenses necessary for the Carbon Recovery Pyrolysis Project.

Bond proceeds will be held in a segregated Water and Sewer Utility Fund account and used exclusively to finance the eligible green projects, the costs of issuance and underwriter's fees related to this transaction.



The City may invest Series 2020 Green Bond proceeds in permitted short term investments as defined by the City, with capital preservation as the priority. Permitted investments are restricted to the following types of securities and transactions:

1. U.S. Treasury Obligations
2. Federal Instrumentality Securities
3. U.S. Government Agency Securities
4. Prime Commercial Paper
5. Local Government Investment Pools

The City provides a Comprehensive Annual Financial Report (CAFR). The Government Finance Officers Association awarded a Certificate of Achievement for Excellence in Financial Reporting to the District for its 2018 CAFR.

Reporting

Continuing Disclosures and Voluntary Impact Reporting

So long as the Series 2020 Climate Bonds are outstanding, the City will submit continuing disclosures to the Municipal Securities Rulemaking Board (MSRB). This reporting will be done annually on the Electronic Municipal Market Access (EMMA) system operated by the MSRB.

The City will undertake to produce, until the pyrolysis carbon recovery project has been completed and commissioned, a voluntary annual report detailing how the Series 2020 Green Bond proceeds were used to finance the project. No failure by the City to comply with this undertaking will constitute a default in respect of the Series 2020 Climate Bonds. Such information will be posted to the EMMA system of the Municipal Securities Rulemaking Board, accessible at emma.msrb.org. This report will be posted along with other City filings.




Within 24 months of the bonds closing, Kestrel Verifiers will provide one post-issuance Update Report to the Climate Bonds Initiative. The City will also post this report voluntarily on EMMA.

Impact and Alignment with UN SDGs



In a related area, and recognized by the City, the *2030 Agenda for Sustainable Development* adopted by all United Nations member states in 2015 provides “a shared blueprint for peace and prosperity for people and the planet.” The United Nations’ Agenda describes 17 Sustainable Development Goals (SDGs). As shown in the City’s framework and operations, the goals and practices of the City align with many of the SDGs. For the purposes of the Series 2020 Climate Bonds offering, the projects align most closely with three SDGs:



UN SDG Goals	GBP Project Category (SDG Targets)	Possible Indicators*
	<ul style="list-style-type: none"> • Sustainable Water and Waste Water Management (Targets 6.1, 6.2, 6.3, 6.4, 6.5, 6a, 6b) 	<ul style="list-style-type: none"> • Number of people provided with adequate and equitable sanitation • Volume of wastewater treated for reuse
	<ul style="list-style-type: none"> • Pollution Prevention and Control (Target 11.6) • Sustainable Water and Waste Water Management (Target 11.5) 	<ul style="list-style-type: none"> • Waste that is prevented, minimized, reused or recycled before and after the project • Number of individuals positively impacted by reduced GHG emissions
	<ul style="list-style-type: none"> • Climate Change Mitigation (Targets 13.1, 13.3) 	<ul style="list-style-type: none"> • Annual GHG emissions reduced as a result of the 2020 Project

CONCLUSION

Based on the Reasonable Assurance procedures we have conducted, in our opinion, the Series 2020 Climate Bonds conform, in all material respects, with the Climate Bonds Standard, and the bond-financed activities are aligned with the Water Infrastructure sector criteria.

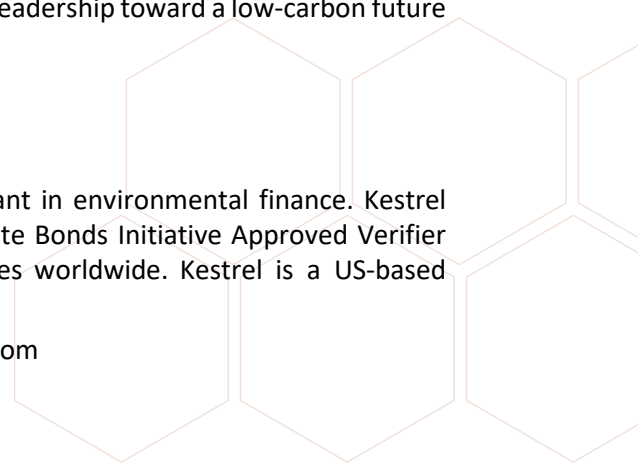
The City’s vision of a healthier, cleaner, more resilient region is supported with the financing of the Carbon Recovery and Biosolids Pyrolysis Project. These Series 2020 Climate Bonds exceed the requirements of the Climate Bonds Standard. The City of Edmonds is demonstrating leadership toward a low-carbon future by implementing this project.

ABOUT KESTREL VERIFIERS



For 20 years Kestrel has been a trusted consultant in environmental 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 Women’s Business Enterprise.

For more information, visit www.kestrelverifiers.com



DISCLAIMER

This opinion aims to explain how and why the discussed financing meets the Climate Bonds Standard based on the information which was available to us during the time of this engagement (October 2020) only. By providing this opinion, Kestrel Verifiers is not certifying the materiality of the projects financed by the Climate Bonds. It was beyond Kestrel Verifiers' scope of work to review issues relating to regulatory compliance and no surveys or site visits were conducted. Furthermore, we are not responsible for surveillance on the project or use of proceeds. Kestrel Verifiers relied on information provided by the City. The opinion delivered by Kestrel Verifiers does not address financial performance of the Series 2020 Climate Bonds or the effectiveness of allocation of its proceeds. This opinion does not make any assessment of the creditworthiness of the City, or its ability to pay principal and interest when due. This is not a recommendation to buy, sell or hold the Series 2020 Climate Bonds. Kestrel Verifiers is not liable for consequences when third parties use this opinion either to make investment decisions or to undertake any other business transactions. This opinion may not be altered without the written consent of Kestrel Verifiers. Kestrel Verifiers certifies that there is no affiliation, involvement, financial or non-financial interest in the City or the projects discussed. Language in the offering disclosure supersedes any language included in this Verifier's Report.



APPENDIX A. Climate Bonds Standard Water Infrastructure Adaptation & Resilience Scorecard

CRITERIA: The project must score at least 60% of the maximum potential score in all parts of the Scorecard. Section 4 is needed for “Nature Based and Hybrid Infrastructure” only (see Criteria for detail)

Vulnerability Assessment SECTION 1: ALLOCATION					
(To be completed for all Water Infrastructure assets)					
		Max Score	Actual Score	Requirement: Evidence and/or Disclosure	Comments
1.1	Are there accountability mechanisms in place for the management of water allocation that are effective at a sub-basin and/or basin scale?	1	1	Disclosure	<p>There are several plans outlining management of water allocations.</p> <ul style="list-style-type: none"> http://www.edmondswa.gov/images/COE/Government/Departments/Public_Works/Water_Utility/pdf/Edmonds_Water_System_Plan_October_2017_Final_10-31-17_2.Reduced.pdf https://awwd.com/about-us/document-library/#25-comprehensive-plan https://everettwa.gov/DocumentCenter/View/2465/Everett-2007-Comp-Water-Plan-Final-Vol-1-Public?bidId= https://awwd.com/wpfd_file/edmonds-awwd-wholesale-water-supply-contract-eff-9-20-2010/ <p>The City of Edmonds, WA purchases 100% of its drinking water directly from Alderwood Water Wastewater District, who in turn, purchases their water directly from the City of Everett. The City of Everett sources their potable water from the Spada Reservoir located at the headwaters of the Sultan River about 30 miles east of Everett. From the Spada Reservoir, the water travels through a pipeline to the City of Everett Treatment facility at the Chaplain Reservoir, and then to the Alderwood Water & Wastewater District, and ultimately at the City of Edmonds distribution system.</p> <p>The Water Division at the City of Edmonds is responsible for maintenance and operation of constant and safe delivery of potable water to over 10,000 customer accounts.</p> <p>The direct purveyor of the source water, The City of Everett, has sound water management practices for the Spada Reservoir, as specified in their 2007 Comprehensive Water Plan, that was most recently updated in 2014.</p>
1.2	<p>Are the following factors taken into account in the definition of the available resource pool?</p> <ul style="list-style-type: none"> a. Non-consumptive uses (e.g., navigation, hydroelectricity) b. Environmental flow requirements c. Dry season minimum flow requirements d. Return flows (how much water should be returned to the resource pool, after use) 	7	7	Evidence	<p>The City of Edmonds distributes potable water to customers via 138 miles of distribution main and stores water for distribution in three 1.5-million-gallon reservoir tanks and one three-million-gallon reservoir and one pumping station. The City is subject to:</p> <ul style="list-style-type: none"> A. The Spada Reservoir has a hydroelectric dam and this is taken into account of the available resource pool. The City of Edmonds uses this source water for consumptive and non-consumptive uses such as irrigation accounts. B. The City of Everett (source water entity) monitors flow of the Sultan River, which is the source of water for the Spada Reservoir. C. The City of Everett (source water entity) forecasts flow requirements based on seasonal weather patterns and snowpack. D. Not applicable to the City of Edmonds. E. The City tracks seasonal variability in regards to water supply and demand. F. The Sultan River is a tributary that connects to the Skykomish River. The Skykomish River flows west and connects with the Snohomish River. The Snohomish River discharges into the Puget Sound. G. Discussed and considered as part of adapting plans in City of Edmonds’ 2010 Climate Change Action Plan. http://www.edmondswa.gov/climate-action-plan-2010.html

	<ul style="list-style-type: none"> e. Inter-annual and inter-seasonal variability f. Connectivity with other water bodies g. Climate change impacts 				
1.3		1	1	Evidence	http://www.edmondswa.gov/climate/climate-action.html City of Edmonds City Council Resolution on accordance with Paris Climate Agreement.
1.4	Is there a distinction between the allocation regimes used in “normal” times and in times of “extreme/severe” water shortage?	1	1	Evidence	Pg. 4-1 of the City of Edmonds Water System Plan discusses seasonal water usage and demand.
1.5	Are there plans to define “exceptional” circumstances, such as an extended drought, that influence the allocation regime? (E.g., triggers water use restrictions, reduction in allocations according to pre-defined priority uses, suspension of the regime plan, etc.)	1	1	Evidence	Appendix 6-3 of the City of Everett’s Comprehensive Water System Plan has a Drought Response Plan that outlines water use restrictions and other steps to curtail water allocations during drought periods.
1.6	For international / trans boundary basins, is there a legal mechanism in place to define and enforce water basin allocation agreements?	1	1	Disclosure	There are no international boundaries that apply to this water basin.
1.7	Are water delivery agreements defined on the basis of actual in situ seasonal / annual availability instead of volumetric or otherwise inflexible mechanisms?	1	1	Evidence	The City of Everett signed a water delivery agreement with Alderwood Water and Wastewater District for a maximum peak day demand of 106 mgd. The City of Edmonds is a wholesale customer of Alderwood Water and Wastewater District that receives a maximum peak day demand of 9 mgd, depending on seasonal availability.
1.8	Has a formal environmental flows (e-flows)/sustainable diversion limits or other environmental allocation been defined for the relevant sub-basin or basin? (If there is a pre-existing plan, then has the environmental flows program been updated to account for the new project?)	1	1	Evidence	The City of Everett and Snohomish Public Utilities District (SPUD) are co-licenses of the Jackson Hydroelectric project, which includes the Culmback Dam and water and power facilities at Spada Reservoir. The license and agreement between the City of Everett and SPUD sets diversion limits for the dam.
1.9	Have designated environmental flows / allocation programs been assured / implemented?	1	1	Evidence or Disclosure	The license for the Jackson Hydroelectric is being implemented.



1.10	Has a mechanism been defined to update the environmental flows plan periodically (e.g., every 5 to 10 years) in order to account for changes in allocation, water timing, and water availability?	1	1	Evidence	Licenses are required every 50 years.
1.11	Is the amount of water available for consumptive use in the resource pool linked to a public planning document? (E.g., a river basin management plan or another planning document – please indicate)	1	1	Evidence	City of Everett Water Plan https://everettwa.gov/DocumentCenter/View/2465/Everett-2007-Comp-Water-Plan-Final-Vol-1-Public?bidId=
1.12	If present, is the river basin plan a statutory instrument that must be followed rather than a guiding document?	1	0	Disclosure	N/A. There is no river basin plan for the Sultan River.
Total Allocation Score		18	/17		
Eligibility Criterion 1 passed/not passed			94 %		



Vulnerability Assessment SECTION 2: Governance

(To be completed for all Water Infrastructure assets)

		Max Score	Actual Score	Requirement: Evidence and/or Disclosure	Comments
2.1	<p>Have water entitlements been defined according to one of the following?</p> <ul style="list-style-type: none"> ● Purpose that water may be used for ● Maximum area that may be irrigated ● Maximum volume that may be taken in a nominated period ● Proportion of any water allocated to a defined resource pool 	1	1	Disclosure	The City of Edmonds and the Alderwood Water and Wastewater District have a Water Supply Agreement that indicates the volume of water to be purchased, which includes an average daily demand of 3.6 million gallons per day, and a maximum peak demand of 7.2 million gallons per day. The Agreement specifies that this water may be used for a wide variety of purposes pursuant to the city's customers, and both parties may negotiate water allocations.
2.2	<p>Is the surface water system currently considered to be neither over allocated nor over-used? N.B. Over-allocated would be if e.g. current use is within sustainable limits but there would be a problem if all legally approved entitlements to abstract water were used. Over-used would be if existing abstractions exceed the estimated proportion of the resource that can be taken on a sustainable basis.</p>	1	1	Evidence	The Sultan River is not considered to be over-used or over-allocated.
2.3	<p>If monitored and the investment uses groundwater, is the groundwater water system currently considered to be neither over- allocated nor over-used?</p> <p>N.B. Over-allocated would be if e.g. current use is within sustainable limits but there would be a problem if all legally approved entitlements to abstract water were used. Over-used would be if existing abstractions exceed the estimated proportion of the resource that can be taken on a sustainable basis.</p>	1	1	Evidence	The investment uses surface water only.
2.4	<p>Is there a limit to the proportion (e.g. percentage) of water that can be abstracted?</p>	1	1	Evidence	No regulations found stating % of Spada Reservoir. Storage capacity is 50 billion gallons. Annual average extraction is 53 million gallons per day.
2.5	<p>Are governance arrangements in place for dealing with exceptional circumstances (such as drought, floods, or severe pollution events), especially around coordinated infrastructure operations?</p>	1	1	Disclosure	The City of Edmonds and SPUD Water Supply Agreement addresses exceptional circumstances. However, the City of Edmonds does not own or operate the water source supply infrastructure. To deal with the coordinated infrastructure operations for the distribution system, the City of Edmonds is complying with the America Water Infrastructure Act to address emergency response for the water utility.
2.6	<p>Is there a process for re-evaluating recent decadal trends in seasonal precipitation and flow OR recharge regime, in order to evaluate "normal" baseline conditions?</p>	1	1	Evidence	Discretion and agreements between the City of Everett (source water entity) and Alderwood Water and Wastewater District (City of Edmonds' wholesale).
2.7	<p>Is there a formal process for dealing with new entrants?</p>	1	1	Disclosure	The sole discretion of the City of Everett and Alderwood Water and Wastewater District and available water as needed.
2.8	<p>For existing entitlements, is there a formal process for increasing, varying, or adjusted use(s)?</p>	1	1	Disclosure	Yes, pg. 5 of the agreement discusses future facility acquisitions.

2.9	Is there policy coherence across sectors (agriculture, energy, environment, urban) that affect water resources allocation, such as a regional, national, or basin-wide Integrated Water Resources Management (IWRM) plan?	1	0	Evidence	No.
2.10	Are obligations for return flows and discharges specified and enforced?	1	1	Disclosure	Return flows are discussed in water supply plans with the City of Everett and SPUD.
2.11	Is there a mechanism to address impacts from users who are not required to hold a water entitlement but can still take water from the resource pool?	1	1	Disclosure	No users outside of existing agreements are entitled to take water from the resource pool.
2.12	Is there a pre-defined set of priority uses within the resource pool? (E.g., according to or in addition to an allocation regime)	1	0	Disclosure	Not readily available
2.13	If there are new entrants and/if entitlement holders want to increase the volume of water they use in the resource pool and the catchment is open, are these entitlements conditional on either assessment of third party impacts, an Environmental Impact Assessment (EIA) or an existing user(s) forgoing use?	1	0	Evidence	Not readily available.
2.14	Are withdrawals monitored, with clear and legally robust sanctions?	1	1	Evidence	The City of Everett and SPUD oversee dam diversions, based on the approved license from the Federal Energy Regulatory Commission.
2.15	Are there conflict resolution mechanisms in place?	1	1	Disclosure	Yes, pg. 18 dispute resolution in Water Supply Agreement between the City of Edmonds and Alderwood Water and Wastewater District.
Total Governance Score		15	/12		
Eligibility Criterion 2 passed / not passed		80	%		

Vulnerability Assessment SECTION 3: TECHNICAL DIAGNOSTICS

(To be completed for all Water Infrastructure assets)

		Max Score	Actual Score	Requirement: Evidence and/or Disclosure	Comments
1	Does a water resources model of the proposed investment and ecosystem (or proposed modifications to existing investment and ecosystem) exist? Specify model types, such as WEAP, SWAT, RIBASIM, USACE applications). Scale should be at least sub-basin.	1	1	Evidence	A hydraulic capacity analysis of the City's existing sewer network was undertaken with the use of XPSWMM, version 14.10 by XPSolutions. http://www.edmondswa.gov/images/COE/Government/Departments/Development_Services/Planning_Division/Plans/2013_Sewer_Comp_Plan_9-18-13_FINAL-Main_Document.pdf
3.2	Can the system model the response of the managed water system to varied hydrologic inputs and varied climate conditions?	1	1	Evidence	The system can model the response of the managed collections system to varied hydrologic inputs.

3.3	Are environmental performance limits (ecosystem, species, ecological community) and/or ecosystem services specified?	1	1	Evidence	Page 7-3 of the Edmonds 2013 Sewer Comp Plan discusses data loaded into the model.
3.4	Can these performance limits be defined and quantified using the water resources model?	1	1	Evidence	Yes
3.5	Have these limits been defined based on expert knowledge and/or scientific analysis?	1	1	Evidence	Yes. In order to perform model calibration to observed flows, the "Runoff" (Rnf) mode of XPSWMM was utilized to introduce hydrologic flow into the model. The Rainfall Dependent Inflow and Infiltration (RDII) module of XPSWMM was used to represent wet weather response in the system. This module relies upon the RTK method of hydrograph generation.
3.6	Are these performance limits linked to infrastructure operating parameters?	1	1	Evidence	Yes
3.7	Are these limits linked to an environmental flows regime?	1	1	Evidence	Yes. They are modelled with peak day flows.
3.8	For new projects, is there an ecological baseline evaluation describing the pre-impact state?	1	1	Evidence	N/A
3.9	For rehabilitation / reoperation projects, is there an ecological baseline evaluation available before the projects was developed?	1	1	Evidence	N/A
3.10	Has there been an analysis that details impacts related to infrastructure construction and operation that has been provided?	1	0	Evidence	No
3.11	Are lost species and/or lost or modified ecosystem functions specified for restoration in the environmental evaluation?	1	1		Loss of species is addressed in the EIS. https://nepis.epa.gov/Exe/ZyNET.exe/94004NV6.TXT?ZyActionD=ZyDocument&Client=EPA&Index=1976+Thru+1980&Docs=&Query=&Time=&EndTime=&SearchMethod=1&TocRestrict=n&Toc=&TocEntry=&QField=&QFieldYear=&QFieldMonth=&QFieldDay=&IntQFieldOp=0&ExtQFieldOp=0&XmlQuery=&File=D%3A%5Czyfiles%5CIndex%20Data%5C76thru80%5CTxt%5C0000039%5C94004NV6.txt&User=ANONYMOUS&Password=anonymous&SortMethod=h%7C-&MaximumDocuments=1&FuzzyDegree=0&ImageQuality=r75g8/r75g8/x150y150g16/i425&Display=hpfr&DefSeekPage=x&SearchBack=ZyActionL&Back=ZyActionS&BackDesc=Results%20page&MaximumPages=1&ZyEntry=1&SeekPage=x&ZyPURL
3.12	Have regional protected areas / nature reserves been included in the analysis for impacts from the investment asset and future climate impacts?	1	1	Evidence	Yes. See EIS
3.13	Does the model include analysis of regression relationships between climate parameters and flow conditions using time series of historical climate and stream flow data?	1	0	Evidence	No.

3.14	Does the model include climate information from a multi modal ensemble of climate projections (eg from the Climate Wizard or the World Bank's Climate Portal) to assess the likelihood of climate risks for the specified investment horizons (s)?	1	0	Evidence	No.
3.15	Are changes in the frequency and severity of rare weather events such as droughts and floods included?	1	1	Evidence	Yes,
3.16	Are sub-annual changes in precipitation seasonality included?	1	1	Evidence	Yes.
3.17	Is GCM climate data complemented with an analysis of glacial melt water and sea level rise risks, where appropriate (e.g., high or coastal elevation sites)?	1	1	Evidence	N/A
3.18	Is paleo-climatic data (e.g., between 10,000 and >1000 years before present) included?	1	0	Evidence	No
3.19	Is the number of model runs and duration of model runs disclosed?	1	1	Evidence	Yes
3.20	Has a sensitivity analysis been performed to understand how the asset performance and environmental impacts may evolve under shifting future flow conditions?	1	1	Evidence	The model addresses sensitivity of model, but does not directly discuss the asset
3.21	Is directly measured climate data available for more than 30 years and incorporated into the water resources model?	1	0	Evidence	No.
3.22	Has evidence demonstrated that climate change has already had an impact on operations and environmental targets? Are these impacts specified and, to the extent possible, quantified? These impacts should be responded to directly in the Adaptation Plan.	1	0	Evidence	No.
3.23	Does the evidence suggest that climate change will have an impact on operations and environmental targets over the operational lifespan? Are these impacts specified and, to the extent possible, quantified? These impacts should be responded to directly in the Adaptation Plan.	1	0	Evidence	No.



3.24	Is there a discussion of the uncertainties associated with projected climate impacts on both operations and environmental impacts?	1	0	Evidence	No.
Total Governance Score		24	/16		
Eligibility Criterion passed / not passed		67	%	Passed	

