APPENDIX E: NECC Sustainability Plan

As described in Business Requirements Section 3.2, Coquitlam is committed to reducing greenhouse gas emissions from corporate operations by 45% by 2030 (from 2007 levels), and be carbon neutral by 2050. To achieve these targets, and to showcase civic leadership in climate action, the Northeast Community Centre (NECC) must realize high levels of energy efficiency and should aim to be net-zero carbon in its operations, and the approach to achieve this should be outlined through a project specific Sustainability Plan.

The NECC Sustainability Plan will serve as a flexible framework that ensures environmental sustainability, climate mitigation, and climate resiliency considerations are deeply integrated throughout the project, from concept to operation, and will outline the technical and financial feasibility of key initiatives and design elements that supports the City in meeting its climate goals.

The Sustainability Plan should contain the following, at a minimum, along with supporting modelling and analysis:

- **Facility-level vision, objectives & targets:** in collaboration with City staff, define facility-specific sustainability vision, objectives, and targets aligned with existing policy goals. Outline relevant and applicable building codes, high performance building standards, and/or guidelines that could support the facility to meet these objectives and targets (eg, BC Energy Step Code, Zero Carbon Step Code, Zero Carbon Building Standard, LEED, Passive House, City of Vancouver Embodied Emissions Guidelines, etc.)*

- **Greenhouse Gas Emissions**: assess and quantify the life-cycle and embodied GHG's and outline strategies and opportunities to minimize emissions in the facility (eg, electrical heating and cooling solutions). Identify and quantify the GHG emissions impact of materials used in construction and propose the use of low-carbon construction materials where possible. If the facility cannot achieve net-zero carbon emissions during design, the consultant must provide a plan detailing the key pathways for the facility to decarbonize aligned with, or in advance of, the City's targets.**

- **Energy Efficiency**: outline strategies to minimize energy use in the facility, while maintaining operational performance and occupant comfort, quantifying energy savings. Opportunities to reduce operational costs should be prioritized (eg, passive design measures, waste heat recovery, etc).

- **Water Management:** outline strategies to conserve, minimize, and re-use water throughout the facility (eg, greywater recycling). Consider connectivity to the

surrounding park system and receiving creek waters including considerations for hydrology and stormwater management.

- **Climate Resiliency:** identify, assess and prioritize site specific climate risks and outline design and operational approaches to prepare for and adapt to the impacts of climate change. (eg, green infrastructure for flooding, heating/cooling for extreme weather events, air filtration for adverse air quality events, backup power, etc). The Consultant should also consider and align with the City's Climate Adaptation Strategic Plan, Hazard Risk Vulnerability Analysis, and other emergency and disaster management plans.

- **Renewable Generation:** Assess renewable generation opportunities available given site-specific features (eg, solar, wind, geothermal, or other sources).

- **Active and Sustainable Transportation:** Identify and discuss opportunities to prioritize the use of active and sustainable transportation to and from the facility (eg, connectivity to action transportation networks and park system, robust short- and long-term bike parking and storage facilities, e-bike charging facilities, micromobility hubs, EV charging stations, etc.), and consider universal accessibility for people with mobility challenges.

- **Co-benefits:** Identify and outline how proposed sustainability design measures achieves a multitude of additional benefits beyond energy savings and emissions reductions (eg, occupant comfort, sustainable materials management, biodiversity, socio-economic benefits, etc.)

- **Cost-benefit Analysis:** Conduct financial analysis of the capital costs, operational cost savings and additional benefits of identified sustainable design measures proposed, and compare against a baseline facility to support project decision making. Financial analysis should include lifecycle GHG costs, incremental capital costs, operations and maintenance costs, energy costs, and any potential revenues (eg, credits BC's Low Carbon Fuel Standard and/or the Federal Government's Clean Fuel Regulation program). Benefits that cannot be easily be quantified financially (eg, health benefits as a result of improved air filtration), should also be included in the analysis.

- **Commissioning, Measurement, and Verification:** Recommend commissioning activities to ensure building systems are performing as efficiently as possible. Outline Measurement and Verification activities to evaluate energy performance while building is in operation.

- **Funding Opportunities:** identify opportunities in which the City may be eligible to receive funding for sustainable design measures (eg., FCM Green Municipal Fund,

CleanBC Commercial New Construction Program, funding opportunities from BC Hydro or FortisBC, etc.)

- **Communications & Storytelling**: Identify opportunities to showcase NECC's sustainable design elements to help educate the public on environmental sustainability and the City's commitment to climate action.

The Sustainability Plan should be provided as a separate deliverable to be submitted as part of Schematic Design. As the project progresses, the plan should be updated at each Stage Gate, with sustainability impacts and cost estimates increasing in accuracy as the project progresses.

***NOTE 1:** As of writing, current City policies do not require new civic facilities to target high performance building certification. However, the City is interested in understanding the benefits and costs associated to design to these standards. The Consultant should provide an overview of the relevant standards to the project, and expected costs/cost savings, other co-benefits and impacts to NECC design, for staff consideration.

****NOTE 2**: Functional programing has been defined and established, and so the Consultant's approach to net-zero emissions design should take this into account.