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Urban Area Expansion Application – Peer Review for Elfrida Energy and Climate Change Assessment

At the request of the City of Hamilton (the “City”), Dillon Consulting Limited (Dillon) has undertaken a peer review of the Energy and Climate Change Assessment (ECCA) Report prepared by BuildAbility Corp. for the Elfrida Community Builders Group Inc., dated November 18, 2024. Dillon’s review is based on the requirements outlined in Appendix "A1" to Report PED24109, as well as the applicable energy and climate change policies set out under the Provincial Planning Statement (2024), the Urban Hamilton Official Plan, the City’s Climate Change Impact Adaptation Plan (2022), and the Community Energy and Emissions Plan. Our review included assessing the assumptions, methodologies, and alignment with established climate resilience and mitigation objectives.

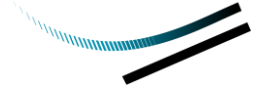
Energy and Climate Change Assessment

Introduction:

The purpose of this peer review is to critically evaluate the Phase 1 Energy and Climate Change Assessment (ECCA) Report for its methodological rigor, clarity, completeness, and alignment with relevant policies. Specifically, this review assesses whether the report effectively meets the objectives outlined in the Provincial Policy Statement (PPS), the Urban Hamilton Official Plan (UHOP), the Community Energy and Emissions Plan (CEEP), and the Climate Change Impact Adaptation Plan (CCIAP).

The scope of this review encompasses:

1. Evaluation of the methodologies and assumptions used in the ECCA Report.
2. Assessment of alignment with key municipal and provincial policy requirements.
3. Identification of gaps or areas requiring further clarification.
4. Analysis of both qualitative frameworks and quantitative data presented.



5. Recommendations for strengthening future phases, particularly regarding quantitative modeling, scenario analysis, and detailed roadmaps for achieving GHG reduction targets.

Phase 1 and Phase 2 Energy and Climate Change Assessment Requirements

Phase 1 of the Energy and Climate Change Assessment (ECCA) is required at the time of Official Plan Amendment submission and serves as a high-level, conceptual framework to demonstrate early alignment with the City's climate change goals. At this stage, detailed site information is typically unavailable, so Phase 1 focuses on identifying broad strategies for energy efficiency, emissions reduction, and climate resilience. It includes preliminary assumptions about land use, housing types, and servicing approaches, referencing municipal policies such as the Community Energy and Emissions Plan (CEEP) and Climate Change Impact Adaptation Plan (CCIAP).

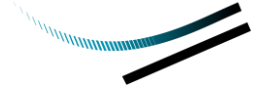
Phase 2 of the ECCA, to be completed at the Secondary Plan stage, requires a more detailed and technically robust submission. It must include site-specific energy modeling, quantitative greenhouse gas (GHG) emissions forecasts, renewable energy integration assessments, and clearly defined implementation pathways. Phase 2 is also expected to establish measurable targets, firm commitments to building performance standards, and timelines for phasing, ensuring that the development proposal moves from strategic intent to credible, actionable outcomes.

Assessment of Submission Materials:

The submitted ECCA report addresses the requirements stipulated by the Province and City of Hamilton. It integrates principles and objectives from the Provincial Planning Statement (PPS 2024), Urban Hamilton Official Plan (UHOP), the Climate Change Impact Adaptation Plan (2022), and the Community Energy and Emissions Plan (CEEP).

Evaluation of Methodology and Assumptions:

The ECCA outlines general climate modeling frameworks, energy efficiency strategies, and emissions reduction pathways; however, it falls short of demonstrating full methodological rigor. The report does not present detailed quantitative modeling or committed implementation pathways, limiting the robustness of its scenario analyses and long-term projections. While assumptions such as building energy use intensities



and renewable energy potential are broadly aligned with industry standards and municipal benchmarks, the document primarily discusses potential future measures without committing to specific actions. The report conforms to the general expectations for a Phase One Energy and Climate Change Assessment; however, to be considered credible moving forward, it will need to incorporate the detailed modeling, quantifiable targets, and firm commitments expected in Phase Two.

Assessment Against Policy Requirements:

Provincial Planning Statement (PPS 2024):

- **Policy 2.9:** The proposal has potential to be developed as a compact, transit-supportive development through proposed active transportation networks and high-density residential design, contributing to reduced greenhouse gas emissions.
- **Policy 2.9.1:** Climate resilience measures, including green roofs, permeable surfaces, and low-impact stormwater management techniques, reflect compliance with the PPS emphasis on climate adaptation.
- **Policy 3.8:** The report aligns with provincial directives by promoting renewable energy readiness, energy conservation, and infrastructure resilience, mentioning photovoltaic (solar-ready) roofs and district energy potential.

Urban Hamilton Official Plan (UHOP):

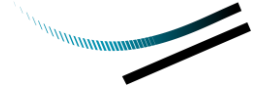
- **Sections 1.2, 1.6, 2.1, 1.2.9, and 1.2.8:** The report complies by positioning the development within the broader context of urban growth, infrastructure planning, and sustainable community design, notably through land use recommendations.
- **Policy 3.2.9 and B.3.7:** Met through advanced building standards, passive solar designs, and integration of sustainable transportation and energy systems.
- **Chapter E:** Alignment is clear in prioritizing transit-oriented development, interconnected active transportation infrastructure, and community energy strategies.

Climate Change Impact Adaptation Plan (2022):

The assessment aligns with Hamilton's adaptation goals, addressing all four resilience themes:

- **Built Environment:** Met through climate-adaptive building strategies, incorporating resilient materials and thermal comfort considerations.

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- **People and Health:** Includes strategies to manage urban heat island effects and improve community resilience through tree canopy enhancements.
- **Natural Environment & Agriculture:** Demonstrates conservation of natural areas and tree canopy expansion for carbon sequestration.
- **Energy & Economy:** The report incorporates renewable energy feasibility, aligning with the municipal vision of sustainable economic development.

Community Energy and Emissions Plan (CEEP 2022):

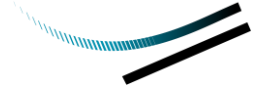
This alignment is addressed across applicable "Low-Carbon Transformations".
Examples include:

- **Innovating Industry:** Appropriately not addressed due to non-industrial context.
- **Transforming Buildings:** Strategy for deep energy retrofits, electrification, and renewable energy systems in residential developments.
- **Changing How We Move:** Plans for EV charging infrastructure, public transit networks, and complete streets promoting active transportation.
- **Revolutionizing Renewables:** Identifies the feasibility of district energy, geothermal systems, and solar-ready building guidelines.
- **Growing Green:** Achieved through preservation and enhancement of natural areas and urban forestry initiatives.
- New dwellings to be 60% more energy efficient in 2031,
- Commercial buildings to be 60% lower in energy use by 2050

Identification of Gaps or Areas for Clarification:

While the Phase 1 ECCA addresses stipulated policy frameworks and submission requirements, further details will be required in subsequent phases, specifically:

- Detailed implementation strategies and phasing plans for energy infrastructure.
- Expanded analysis of specific energy efficiency technologies at the building scale.



- Further exploration of utility integration specifics for renewable energy and district energy systems.

Qualitative and Quantitative Analysis:

Qualitative Aspects:

The ECCA Report provides a high-level qualitative framework guiding the community towards sustainability and low environmental impact, specifically aligned with the City of Hamilton's Community Energy and Emissions Plan (CEEP), Climate Change Impact Adaptation Plan (CCIAP), Urban Hamilton Official Plan (UHOP), and the Provincial Planning Statement (PPS). Qualitative components include:

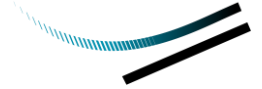
- Promotion of energy-efficient urban growth, active transportation, low-carbon building designs, and climate-resilient infrastructure.
- Integration of sustainability considerations into land use planning and infrastructure development.
- Consideration of renewable energy solutions including solar, district energy systems, and heat pumps.
- Design strategies for resilience and adaptation to climate impacts.

Quantitative Aspects:

The ECCA Report lacks detailed quantitative modeling and rigorous numerical data analysis to underpin GHG reduction targets. It identifies broad emission reduction goals without specific calculations or scenario modeling directly within the initial Phase 1 report. Quantitative analysis can be completed to develop a baseline for discussion with project team and municipality.

Goals and Objectives:

The vision is the development of a compact, mixed-use, and transit-supportive community designed for low environmental impact. Primary goals include energy and carbon reduction, low-carbon energy solutions, sustainable mobility, natural environment protection, and climate resilience.



Roadmap and Milestones:

The report describes future detailed planning in Phase 2 but currently lacks a clearly defined Energy Transition Roadmap with explicit timelines or milestones.

Modeling for Specific GHG Reductions:

Explicit GHG reduction models or calculations were not presented. Detailed projections based on quantifiable strategies are absent at this stage.

Requirements for Improvement:

To enhance the ECCA Report, the following recommendations are made:

1. Clarify the ECCA's Methodology and Integration with City Policies

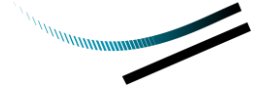
- Clearly outline how the proposed development aligns explicitly with Hamilton's existing climate commitments and policies (e.g., the **Community Energy and Emissions Plan (CEEP)** and the **Climate Change Impact Adaptation Plan**).
- Demonstrate that the methodological approach meets or exceeds the standards required by the City's planning frameworks and climate objectives.

2. Provide a Detailed Quantitative Analysis

- Include explicit quantifiable analyses demonstrating how each proposed measure will contribute to emissions reductions, specifying clearly how these align with the City's net-zero by 2050 targets.
- Develop clear and measurable interim targets and performance indicators for emissions reductions and climate resilience measures.

3. Enhance Technical Detail in Phase 1

- Although Phase 1 is typically higher-level, more detail and clarity are required about anticipated energy solutions, including specific targets for solar installations, district energy systems, ground-source heat pumps, and other proposed renewable energy technologies.
- Include preliminary feasibility assessments and site-specific considerations (e.g., suitable locations and scale of technologies).



4. Explicitly Address Climate Resilience and Adaptation

- Provide detailed and clearly defined resilience strategies addressing built-environment risks, including mitigation of flood risks, extreme heat, and other climate hazards, consistent with Hamilton's Climate Change Impact Adaptation Plan.
- Clarify how resilience measures will be integrated into infrastructure design, construction practices, and community planning.

5. Clarify Low-Carbon Transportation Measures

- Detail transportation emission reduction strategies explicitly, clearly identifying how infrastructure and land use will support active transportation, transit, electric vehicles, and reduced car dependency.
- Provide explicit projections or benchmarks that show anticipated reductions in GHG emissions from sustainable transportation infrastructure.

6. Strengthen Implementation and Phasing Plan

- Clearly outline how Phase 1 measures will set the foundation for more detailed Phase 2 measures, identifying exactly what additional elements (such as community layout specifics, detailed housing types, density projections) will be included in subsequent phases.
- Provide specific timelines and defined milestones within the phased implementation plan.

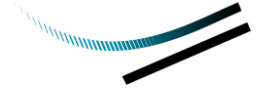
7. Expand on Economic and Financial Feasibility

- Include a more thorough financial analysis, clearly outlining projected costs and benefits of the proposed climate and energy measures, to address concerns raised in the peer review letter regarding clarity on economic feasibility.
- Provide preliminary cost-benefit analyses and identify potential sources of funding, grants, or financing for sustainable development practices.

8. Improved Stakeholder Consultation and Engagement

- Document a robust stakeholder consultation process and clearly describe how feedback informed the proposed climate actions and targets.
- Highlight participation of diverse stakeholders (e.g., residents, businesses, local experts, Indigenous communities) in developing sustainability and climate measures.

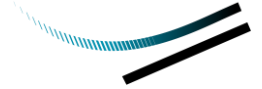
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9. Increase Documentation and Transparency

- Ensure all assumptions, modeling data, and references used to support conclusions in the ECCA are clearly cited and transparently documented.
- Include appendices with all relevant supporting studies, analyses, or technical references, facilitating review and verification by city officials.

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Conclusion:

The Phase 1 Energy and Climate Change Assessment Report for Elfrida falls short of fulfilling the expectations of the initial criteria outlined in Appendix "A1" to Report PED24109. In providing a high-level framework that aligns conceptually with Hamilton's energy transition, climate adaptation, and mitigation objectives, as articulated through the Community Energy and Emissions Plan (CEEP) and Climate Change Impact Adaptation Plan (CCIAP) the report lacks any ability to provide a plan on how the proposed boundary expansion will impact the City of Hamilton's ability to achieve carbon neutrality.

The report appropriately recognizes its role as a preliminary "living document," reflecting the early planning stage where detailed site-specific information is not yet available. However, the broad strategies for energy efficiency, renewable energy integration, and emissions reductions don't provide a proper starting point or baseline that would allow for a pathway to fulfill the City of Hamilton goals as presented in the various Plans referenced.

In summary, the Phase 1 ECCA would not fully meet the City's current procedural requirements for this stage, its credibility and utility as a planning tool are not supported by the information provided and would leave a significant gap to move into Secondary Planning around Energy and Climate Change.

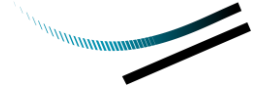
Sincerely,

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Partner

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