

NZ0 Implementation – Key Actions

The successful implementation of the NZ0 Strategy across City departments will require a range of activities and strategies. This section outlines the key strategies needed to achieve the plan's objectives, including proposed changes to the City's capital planning and renewal processes with an emphasis on prioritizing low-carbon alternatives. Additionally, net-zero objectives will be incorporated into existing planning documents during updates to ensure alignment with the plan's long-term goals. The section also highlights essential enabling factors that will support the successful achievement of these goals.

1 Capital Planning & Renewal

- Net-zero objectives will be integrated into the City's capital planning and renewal framework, with a focus on an inclusion and evaluation of low-carbon alternatives. Low-carbon options that demonstrate a life cycle payback will be incorporated as standard business-as-usual solutions. Conversely, where substantial initial capital investment is required without a projected return on investment, such items will be explicitly highlighted for Council's consideration.

2 Plan Governance & Integration

- The NZ0 Strategy will be executed through a collaborative effort between the EMB and the Operational Groups, ensuring alignment with the City's net-zero goals. Each group will be guided by an annual carbon budget, informed by the NZ0 Pathway, to help track progress. Successful implementation will be supported by integrating net-zero strategies into existing policies, ensuring consistent and effective execution across all departments.

3 Data Monitoring & Plan Reporting

- Data monitoring and plan reporting will support the asset-based approach by emphasizing evidence-driven decision-making, using accurate data to guide planning and actions. Regular progress updates will maintain momentum, recognize successes, and identify areas for improvement, ensuring continuous progress toward long-term goals.

Capital Planning & Renewal

The NZ0 Strategy was developed using a bottom-up approach, analyzing data at the asset level for each operational group. Assets with energy consumption were assessed, and low-carbon alternatives were identified for upgrades and fuel transitions. These options were mapped to the asset management schedule to assess their GHG reduction potential. This approach also projected operational cost savings and incremental capital costs, showing that many low-carbon options offer significant savings over the asset's lifetime.

A low-carbon asset management approach will be integrated into the City's capital planning and renewal processes, ensuring that low-carbon options are selected whenever they offer life-cycle cost savings compared to traditional alternatives.

Through assessing this pathway, staff identified that low-carbon options often present potential cost savings over the lifetime of an asset. As an initial step, the City should evaluate the low-carbon alternatives within its capital and renewal processes. Furthermore, when life-cycle cost savings are evident, the City should prioritize selecting the low-carbon option. Even when low-carbon alternatives do not offer immediate cost savings, they should still be considered for their broader benefits, including supporting the City's net-zero goals and contributing to the well-being of the community.

The following points provide further details on specific assets, potential low-carbon options to be assessed, and suggested policy approaches for each group of assets.

- **Asset Renewal Projects:** For all corporate assets that consume energy, low-carbon solutions will be considered when an asset reaches the end of its life or needs replacement. If the life-cycle costs of low-carbon alternatives are lower than existing options, they will be prioritized and selected where technically feasible. Additionally, the City should assess infrastructure for net-zero readiness, such as upgrading transformers to accommodate future electrical needs and support low-carbon options, to future proof assets and enable cost savings.
- **New Assets: Buildings** – All new buildings and infrastructure will be designed to meet a net-zero energy standard where feasible, striving to generate as much renewable energy as they consume, using electricity from low-carbon sources. When on-site energy generation cannot fully meet a building's energy needs, renewable energy will still be utilized to cover as much of the energy demand as possible.
- **New Assets: Vehicles** – The City will strive to replace all ICE vehicles with functional EV equivalents whenever feasible. This transition will be guided by logistical considerations such as the availability of suitable EV models, operational requirements, the infrastructure needed to support electric vehicles, and maintaining and improving services levels to the community.
- **Emergency Replacement:** In situations where equipment failure necessitates immediate replacement under the City's emergency purchase provisions, staff will prioritize selecting low-carbon options, whenever feasible.

Plan Governance & Integration

The NZO Strategy will guide the Corporation toward achieving net-zero emissions over time. The EMB will collaborate with the existing NZO Strategy Operational Groups to ensure effective implementation of the plan. This joint effort will define how each group contributes to advancing the strategy, aligning with the City's overall net-zero goals. Successful implementation will also depend on integrating net-zero priorities into the City's existing policy framework, including Wastewater and Water Master Plans, Asset Management Plans, Waste Management Strategies, Fleet and Transit Plans, and Strategic Plans.

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At the global and national levels, a carbon budget has been set to limit emissions and keep average global temperature rise to below 1.5°C, and the City's plan strives to meet these same objectives. The City aims to achieve net-zero emissions by 2050, in alignment with global climate goals. Undertaking a robust bottom-up approach the 2025 plan will not fully align with these objectives, due to existing technological limitations, as well as current operational and financial constraints.

By developing the NZO Strategy through a data-driven, evidence-based methodology, the City is able to fully understand and assess current constraints while taking practical and achievable steps toward its net-zero aspirations now. The NZO Strategy establishes a solid foundation for integrating net-zero practices across the organization, while fostering the development of the knowledge, structures, and capacities necessary to accelerate the transition in the future.

- **Carbon Budgeting:** Establish a system with each operational group to create a budget tied to their emissions or related metrics, fostering accountability and ownership of targets. As groups report their progress, this approach will increase the value of reporting, drive greater commitment to the targets, and enhance overall responsibility towards achieving the City's net-zero objectives.
- **Net-Zero Planning Integration:** Integrate net-zero pathway actions into all relevant corporate strategies and master plans to ensure alignment with the City's long-term sustainability and climate goals. This includes embedding specific actions for reducing emissions, promoting low-carbon technologies, and enhancing energy efficiency across all sectors.
- **Carbon Credits:** Develop a comprehensive carbon credit management framework or policy that outlines the methodology for acquiring, tracking, and utilizing carbon credits. This framework will ensure transparency, accountability, and alignment with the organization's net-zero goals. It will establish clear criteria for selecting carbon offset projects, provide guidelines for verifying and reporting carbon credit usage, and create a process to ensure that credits effectively contribute to emission reductions.

Data Monitoring & Plan Reporting

The NZ0 Strategy was developed through comprehensive data analysis and evidence-based insights, ensuring a solid foundation for moving the City forward on a net-zero pathway. The EMB and the Operational Groups have a strong history of continuous improvement in tracking assets related to energy use and biogas production. While gaps remain, these have been identified and are recognized as operational priorities for future iterations of GHG emissions inventorying and NZ0 Pathway enhancements. This approach provides valuable insights driven by data and evidenced based practices and enables future improvements to the accuracy and breadth of reporting.

The asset-based approach prioritizes evidence-driven decision-making, relying on accurate data to guide actions. Regular progress reporting maintains momentum, highlights successes, and identifies areas for improvement, ensuring continuous progress toward long-term goals.

- **Annual Reporting:** EMB will provide an annual report to Council on corporate GHG emissions and progress toward achieving the NZ0 pathway. This report will include detailed data on emissions across relevant sectors, updates on the implementation of the NZ0 Strategy, and any adjustments made to improve performance in reducing the City's carbon footprint.
- **NZ0 Plan Updates:** The NZ0 Strategy will be updated every five years and will align with required CDM reporting updates. This report will include detailed data on emissions across relevant sectors, updates on the implementation of the NZ0 Strategy, and any adjustments made to improve performance in reducing GHG emissions.
- **Fleet Monitoring:** Implement an asset-based energy and GHG monitoring system for fleet and transit vehicles. This system will track energy costs associated with fuel and electricity usage, assigning these costs to each department to be incorporated into their annual budgets.
- **Biogas Monitoring:** Improve the monitoring of biogas at the landfill, as well as fugitive and process-related wastewater emissions, including:
 - Investigate the feasibility of utilizing remote sensing technology to detect and measure fugitive biogas emissions from landfill sites and wastewater treatment plants, ensuring accurate data collection and timely identification of emission sources.
 - Installing continuous monitoring systems to measure biogas generation, flaring, and capture at landfill sites to better track methane emissions and optimize mitigation efforts.
 - Investigate feasibility of installing on-site measuring equipment for tracking emissions from the wastewater treatment process, including methane and nitrous oxide, and conducting regular audits to assess emission levels.
- **Scope 3 Emissions:** Develop a comprehensive system for tracking and managing Scope 3 emissions, which encompass indirect emissions from activities such as the supply chain, contractor travel, and embodied carbon emissions.