

## **SUSTAINABLE BUILDING POLICY 2013 UPDATE**

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### **EXECUTIVE SUMMARY**

The Sustainable Building Policy (the Policy) annual report provides a status update on The City of Calgary's progress towards sustainable building objectives. This is achieved by highlighting key annual achievements and outlining the future objectives in encouraging the longer-term sustainability of City owned and funded infrastructure.

In 2013, The City achieved six additional Leadership in Energy and Environmental Design (LEED®) certifications. Since the approval of the Policy in 2004, The City, and Civic Partners have achieved 21 LEED certified buildings and one BuiltGreen® certification. In addition to the certification of buildings, The City continues to champion the incorporation of best practices into new constructions and renovations by applying lessons learned from certified buildings and by referencing design guidelines developed and maintained by Administration.

A cost/benefit analysis of achieving LEED Gold over LEED Silver certification in new construction projects was completed in 2013. This work concluded that the Policy target of LEED Gold (as established in 2008) provides value in terms of triple bottom line benefits in return for incremental expenditures in comparison to the previous LEED Silver target.

In 2013 the Sustainable Building Partnership Program achieved triple bottom line benefits including: savings in energy and operating costs through retrofits at City facilities and new supply opportunities, improvements in customer safety through an intensive LED lighting program at Calgary Transit LRT stations, and improvements in indoor environmental quality for tenants of affordable housing.

The Policy will continue to be reviewed and updated into the future while considering alternative rating systems, such as LEED Canada for Homes, as well as new and emerging ratings systems including LEED Version 4. With energy related costs and impacts an increasingly prevalent issue, the future will also focus on the development of energy management strategies and action plans. These bodies of work will provide decision makers with greater direction on energy supply, conservation and efficiency options that will yield the greatest return on investment. The future focus will ensure the Policy best addresses the diversity of The City's building projects and that The City is well enabled to achieve longer-term sustainability goals, as identified in the 2020 Sustainability Direction and imagineCalgary.

### **ADMINISTRATION RECOMMENDATION(S)**

That the SPC on Utilities and Corporate Services:

1. Receive the Sustainable Building Policy 2013 Update for information, and
2. Recommend that Council amend the Sustainable Building Policy to instruct Administration to report back to the SPC on Utilities and Corporate Services on a bi-annual basis with a status report.

### **PREVIOUS COUNCIL DIRECTION / POLICY**

On 2008 February 25, Council approved revisions to the 2004 Sustainable Building Policy as recommended in UE2008-01, Sustainable Building Policy – Update. Council also directed Administration to provide annual updates. These updates have been provided every year since 2009.

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### BACKGROUND

The purpose of the Policy is to ensure that facility planning, design, construction, management, renovations, operations, and demolition is carried out in a sustainable manner. The Policy considers all triple bottom line impacts, enhances The City's reputation as a fiscally responsible municipal government, and addresses the health and well being of the people who use and occupy City-owned or funded buildings. Infrastructure & Information Services is the steward of the Policy.

When the Policy was first approved by Council in 2004, it applied only to new construction projects greater than 500 m<sup>2</sup> with a target of LEED® Silver. In 2008, the Policy was amended to include a LEED Gold target for new constructions and additional targets for major renovations and affordable housing projects.

The Sustainable Building Partnership Program (The Program) managed by Infrastructure & Information Services was collaboratively developed with input from key stakeholders across The City to advance objectives of the Policy and the City's Sustainability Direction. The Program focuses on identifying and implementing upgrades to improve the performance of existing City-owned infrastructure thereby improving the triple-bottom-line. Planning for The Program began in 2008 and is funded from a \$19 Million Municipal Sustainability Initiative grant.

### INVESTIGATION

#### ***Completed Projects***

In 2013 The City and its Civic Partners achieved eight LEED® certifications, all within or above The Policy requirements at the time the project was initiated. These certified buildings include:

City Owned	Civic Partners	Highlighted Achievements
Saddle Ridge Multi-Services Centre (New Construction, Silver)	Centennial Arena Expansion (Major Renovation, Certified)	Facilities enabled to achieve:  Energy cost savings ranging from 34% to as high as 61% per year (47% average) and 49% average water savings when operated within optimal parameters.  85% average construction waste diversion from landfill.
Apparatus Repair & Maintenance Facility (New Construction, Gold) <sup>1</sup>	South Fish Creek Major Renovation (Major Renovation, Certified)	
Manchester Central Stores (New Construction, Silver)	Westside Recreation Centre Expansion (Major Renovation, Silver) <sup>2</sup>	
South Calgary Emergency Response Station (New Construction, Gold)	TELUS Spark Centre (New Construction, Gold)	

#### ***Projects under Development***

There are 32 additional City owned or funded projects targeting LEED® certification in various stages of planning, design, and construction. Administration is working towards achieving the

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<sup>1,2</sup> Projects exceeded policy target of LEED Certified for Major Renovations

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levels of certification appropriate to each project. The associated businesses responsible for these new projects continue to demonstrate that the Sustainable Building Policy targets are achievable.

### ***Policy Reviews***

In 2012 June, Council requested a cost/benefit analysis of building new construction to the LEED Gold standard as compared to the LEED Silver standard. A literature review was conducted, hypothetical LEED Silver equivalents for four of The City's LEED Gold certified buildings were defined, cost and benefit data was collected, and the triple bottom line impacts were assessed. The results of the cost/benefit analysis were presented to the Priorities and Finance Committee in March 2013, which indicated from \$10 to \$12 in triple bottom line benefits were achieved for every incremental dollar spent. This study also indicated that the green building certification process demonstrates value. Given the significant investment made by The City in building and operating infrastructure, the certification acts as a means by which to confirm that The City has received from our contractors what we were targeting with relation to investments into longer-term sustainability of building operations.

### ***Sustainable Buildings Partnership Program***

In 2013, the Sustainable Buildings Partnership Program delivered triple bottom line benefits through strategic investments in improving the longer-term sustainability of City owned infrastructure. Some accomplishments in 2013 include:

- An intensive upgrade program across nine Transit facilities<sup>3</sup>, with additional phases of work extending into future years. By the end of 2013, this Sustainable Buildings Partnership Program funded initiative has enabled Calgary Transit to save an estimated average of \$200,000 per year in electricity and maintenance costs in addition to improving the safety of Calgary Transit customers through improved lighting at LRT stations. Through this work, Roads also developed specifications for LED street lighting upgrades being implemented through an extended trial in 2014;
- Investments in the Village Square Leisure Centre's lighting control systems and new technologies are estimated to save Recreation an average of \$95,000 per year in electricity and maintenance costs and increase levels of lighting for staff and patrons.
- Replacement of windows and patio doors at the Hilhurst 1, a Calgary Housing Company facility, will improve the energy efficiency<sup>4</sup> of the building and significantly reduce noise from a busy road, thereby improving the comfort of tenants;
- Ensuring a more efficient, cost effective and resilient supply of heat in comparison to on-site systems, Sustainable Buildings Partnership Program investments enabled the connection of Andrew Davidson building to the ENMAX District Energy System, helping reduce operating costs by \$220,000 over the span of the contract; and
- The completion of 12 energy audits and alternative energy studies at recreation centres identified over \$700,000 in potential savings opportunities.

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<sup>3</sup> Including Somerset, Fish Creek, Shawnessy, Anderson, Heritage, Southland, Dalhousie, and Franklin station parking lots and Canyon Meadows parkade.

<sup>4</sup> Improvements to the energy efficiency of Hilhurst 1 could not be estimated, but will be monitored on an on-going basis.

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### **Other funded projects underway include:**

Investments into the Corporate Energy Information System that tracks costs and usage, departmental energy management planning, building envelope upgrades, combined heat and power systems, and larger scale solar power generation plants at operational work centres.

### ***Building Sustainability through Engineering***

As stewards of the sustainability of City infrastructure, Infrastructure & Information Services continues to deliver expertise in infrastructure design, operations, and energy management to City business and Civic Partners.

In 2013, this group has provided advisory services valued at over \$1.77 million (based on reasonable market rates) at an approximate cost of \$1 million to Infrastructure & Information Services' operating budget, enabling more durable and efficient buildings into the future. These services have been provided to capital projects including emergency services buildings, new recreation centres, major renovations, and public art in addition to the development of design guidelines applicable to City owned buildings.

This group also continues to ensure the streamlined delivery of utilities and energy management solutions to City businesses, while supporting the largest reduction in greenhouse gas (GHG) emissions across City operations. In 2013, the green energy contract represented a greenhouse gas emission reduction of 396 kilotonnes CO<sub>2</sub>e, helping keep The City on track to meeting 2020 GHG reduction targets. A thermal supply contract was also negotiated and is expected to save The City approximately \$1.9 million over the term of the contract.

### ***Into the Future***

To ensure the Policy continues to reflect the application certification programs and practices of the day while ensuring value is achieved in triple bottom line benefits, The Policy will continue to be reviewed and updated in light of emerging and alternative certification standards including LEED Version 4 and LEED for Homes. Effective in mid 2015, all new projects must register under LEED Version 4. The proposed policy review will ensure The City is prepared for the transition to a new and potentially more rigorous standard.

As The City is better enabled to monitor the energy and environmental performance of buildings through Infrastructure & Information Services Corporate Energy Information System, opportunities to optimize performance through continuous monitoring and verification programs will be evaluated. This will ensure The Policy best addresses the diversity of The City's building projects and continues to support the achievement of longer-term sustainability goals.

Infrastructure & Information Services is consulting with City businesses in developing strategies and action plans to address The City's growing demand for energy. These bodies of work will help guide decision-making on energy supply, conservation and efficiency investments into the future. This work will also encourage maximizing the return on investment in addressing the longer-term sustainability targets specified in imagineCalgary and the 2020 Sustainability Direction.

### **Stakeholder Engagement, Research and Communication**

Throughout 2013, Infrastructure & Information Services engaged City staff and external partners to increase awareness of the Policy, share best practices and lessons learned, provide policy

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support and technical knowledge, and to develop sustainable building metrics to quantify Policy achievements and evaluate Policy targets.

### Strategic Alignment

The Sustainable Building Policy supports and aligns with the following Council policies and priorities:

Triple Bottom Line Policy	imagineCalgary	Municipal Development Plan	The Environmental Policy
2020 Sustainability Direction	Calgary Accord GHG Reduction Targets	80/20 by 2020 Waste Diversion Targets	Water Efficiency Plan 30/30

### Social, Environmental, Economic

#### Social

Sustainable buildings contribute to an inclusive city by supporting access to City services along public transportation routes and also supporting a city of vibrant neighbourhoods through inclusion of open spaces within the site. Sustainable buildings provide improved interior environments and contribute to improved occupant comfort, health and productivity.

#### Environmental

Sustainable buildings contribute to improving air quality, ensuring efficient land stewardship, protecting water resources through water conservation, protecting open space, improving energy efficiency and reducing Calgary's overall ecological footprint.

#### Economic

Sustainable buildings and best practices guides the development of cost-effective facilities that will provide long-term cost savings to Calgarians.

### Financial Capacity

#### Current and Future Operating Budget:

The report contains no requests for additional operating funds.

#### Current and Future Capital Budget:

Requests for any additional capital funding to support the development of the Sustainable Building Policy will be addressed through the Corporate Services Action Plan for 2015 to 2018.

### Risk Assessment

There are no significant risks associated with the recommendation provided in this report.

### REASON(S) FOR RECOMMENDATION(S):

Sustainable Building Policy 2013 Update is being provided to the SPC on Utilities and Corporate Services to fulfill the requirements of the Policy, which requires Administration to report on the status of the Policy annually. However, due to construction and certification timelines, there aren't a large number of new LEED certifications to report on annually. An amendment to the Policy to facilitate a bi-annual update will ensure that resources are more effectively allocated to policy and program management in place of reporting.

### ATTACHMENT

None