



### **Corporate Analytics & Innovation**

#### Infrastructure Support Service Line

To date, CAI has provided engineering, data and information solutions to support the future of a resilient and sustainable city

Council has directed CAI as the Policy Stewards of the Sustainable Building Policy (CS005) (the Policy), to report back to the Standing Policy Committee on Utilities & Corporate Services on a biennial basis on performance metrics related to the state of sustainable infrastructure and buildings owned and operated by The City of Calgary.







# **Piloting Net-Zero Annual Emissions & Energy Targets**

- High efficiency buildings
- On-site renewable electricity
- Ground source thermal energy









## The City is continuing to demonstrate leadership in energy and environmental design through our building portfolio





than 1.2 million ft<sup>2</sup>

16 affordable housing units certified under LEED for Homes



The annual GHG The annual energy saved by certified green emissions avoided by



certified green building is

equivalent to taking over

00 vehicles off

the road

68 projects certified since the launch of The Sustainable Building Policy, setting an example for industry with many firsts.

500 Calgary homes

buildings is enough

to power more than

7.

Specs **Calgary's Sustainable Building Policy** Includes multiple sustainability principles Net Zero Emissions aligned with Climate Resilience Goals. & Energy Optimize for energy efficiency and Reduce potable water use through conservation, specifically through passive conservation and efficiency design, thereby reducing and avoiding GHG emissions measures Leadership In Energy & Environmental Design Encourage the Integration of green Maintain and Improve blodiversity stormwater infrastructure č Address occupant comfort, provide Select sites that have access to alternative access, and maintain social wellbeing in transportation and consider the impact of Updates to site selection on the environment, people design and operations and the building Better Address a Changing Divert waste from landfills during Design for resiliency to changing Climate economic, social, and environmental construction, occupancy and demolition conditions

Performance

**Policy includes** minimum performance standards for City owned and funded buildings that are evolving over time

#### Sustainability Principle:



Optimize for energy efficiency and conservation, specifically through passive design, thereby reducing and avoidIng GHG emissions

Detailed energy modeling and options analysis

Performance Target:

Achieve a 40% reduction from National Energy Code



We are continuing to explore how to address a changing climate and it's impact on building occupants through a proposed change in Policy









We are working with all energy users to develop an investment and management strategy to reduce energy and emissions

achieving cost savings for:



\$10,000/year

\$15,000

\$20,000/year

\$11,000/year



Continued investments and partnerships in delivering distributed and utility scale options while evaluating future options to revise our electricity services agreement for continued supply of renewable electricity. The project is 4,320 kW in size, includes 10,800 solar modules covering seven hectares, which is over 13 football fields in size;

Enough power is generated every year to power over 800 average Calgary homes;

The project reduces over 3,300 tonnes of greenhouse gas emissions per year, that is equivalent to taking over 3,700 passenger vehicles off the road;

The \$4,185,000 invested by City with \$2.18M invested by the Alberta Municipal Solar Program will yield a 13.1% internal rate of return and a payback in < 10 years.

#### Calgary's largest solar





**Partnering with Communities to** enable grass roots action and financial capacity to make an impact including investments at Civic Partner and Community **Association Sites** 

Based upon the optimal design, the Project is anticipated to have a capital cost of \$3,922,000 and to generate cash flow of ~\$100,000 annually based upon a combination of energy revenue from selling power to Telus Spark.

Net revenues will be reinvested into other community owned/run solar power project across Calgary (through the Renfrew Generation Trust)

#### Renfrew Solar Garden @Spark







# Partnering with other services lines to support alternative fleet options analysis

### 2020 Alternative Fleet Fuel Analysis for Garbage Pickup

\$50,000 invested by Provincial Government to evaluate options

\$0.5M invested by federal government to procure electric trucks

### 2019 Electric Bus Pilot Program Kickoff

Raised \$7M from Provincial Government to implement an electric shuttle bus pilot with Transit.



Partnering with ENMAX in creating value from our GHG mitigation and renewable energy projects  The City continues to develop a growing portfolio (\$7M + to date) of emissions offsets and environmental commodities, demonstrating the investing in climate change creates value.



That the Standing Policy Committee (SPC) on Utilities & Corporate Services (UCS) recommend that:

Council approve the proposed amendments to the Sustainable Building Policy (CSOO5) to ensure the Policy better aligns with the Climate Resilience Strategy.



