



To: Public Works and Transportation Committee **Date:** June 22, 2015
From: John Irving, P.Eng. MPA **File:** 10-6125-07-02/2015-
Director, Engineering Vol 01
Re: **Pilot Multifamily Condominium Energy Advisor Program**

Staff Recommendation

That the development and implementation of a Pilot Multifamily Condominium Energy Advisor Program, as outlined in the staff report dated June 22, 2015 from the Director, Engineering, be endorsed.

John Irving, P.Eng. MPA
Director, Engineering
(604-276-4140)

REPORT CONCURRENCE	
CONCURRENCE OF GENERAL MANAGER 	
REVIEWED BY STAFF REPORT / AGENDA REVIEW SUBCOMMITTEE	INITIALS:
APPROVED BY CAO 	

Staff Report

Origin

This report proposes a pilot program to provide an Energy Advisor to multifamily condominiums as part of City efforts to reduce energy, emissions, and water consumption in Richmond.

This report supports Council's 2014-2018 Term Goal #4 Leadership in Sustainability:

Continue advancement of the City's sustainability framework and initiatives to improve the short and long term livability of our City, and that maintain Richmond's position as a leader in sustainable programs, practices and innovations.

4.2. Innovative projects and initiatives to advance sustainability.

Analysis

Background

Richmond's Climate & Energy Action

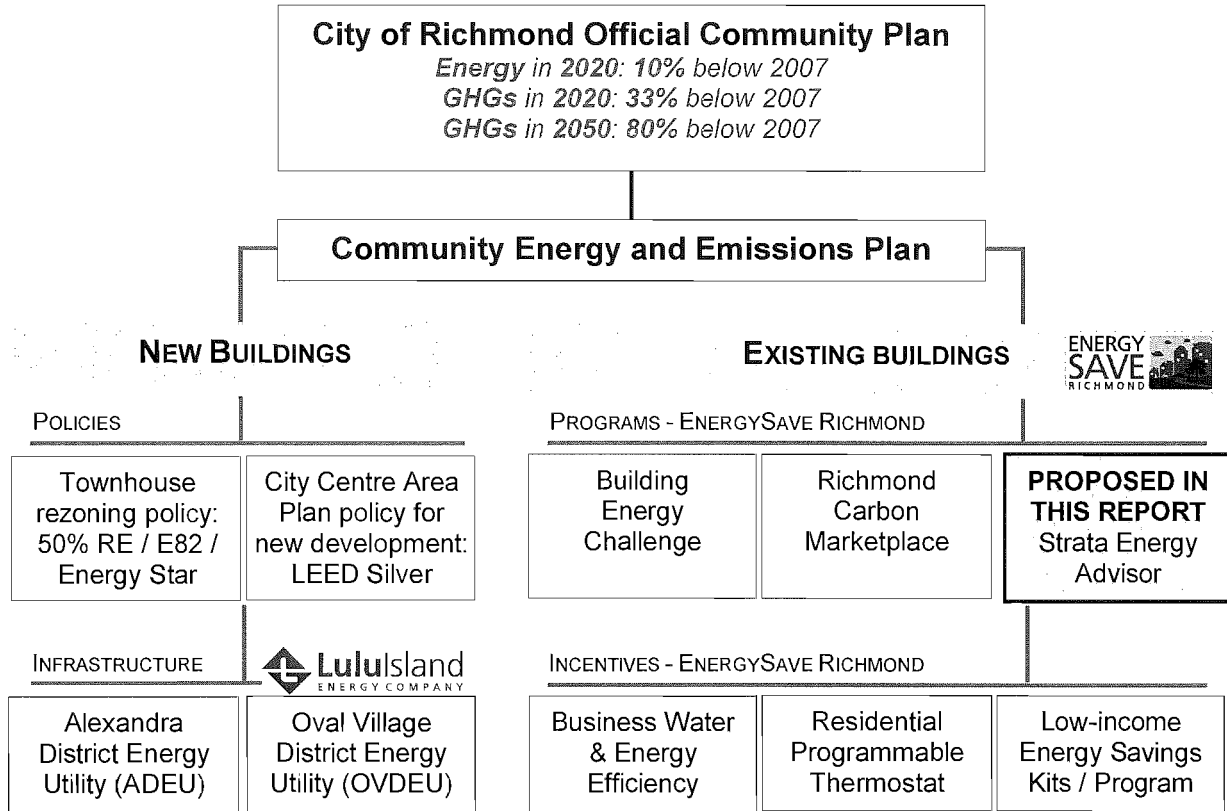
Richmond's 2041 OCP includes aggressive targets to reduce community GHG emissions 33 percent by 2020 below 2007 levels, and 80 percent by 2050. Additionally, the City has a target to reduce energy use 10 percent by 2020. The 2014 Community Energy and Emissions Plan (CEEP) identifies that deep energy improvements to most existing buildings are necessary for Richmond to meet these targets. Accordingly, Strategy #3 in the CEEP is to "Improve the Performance of the Existing Building Stock," and includes the following actions:

- Action 7: Promote building efficiency through outreach and education
- Action 8: Provide incentives for building retrofit action
- Action 9: Develop a residential energy conservation program to support housing affordability

Additionally, as a signatory to the Climate Action Charter, the City has committed to being "carbon neutral" in its corporate operations. Carbon neutrality is achieved by reducing emissions, and balancing remaining emissions with carbon credits. The Joint Provincial-UBCM Green Communities Committee has established protocols for how local governments can generate carbon balancing credits by supporting energy projects in their communities.

Elements of Richmond's climate and energy actions diagrammed in Figure 1 below.

Figure 1: Richmond’s Climate and Building Energy Actions Summary



The “EnergySave Richmond” Suite of Programs

The City has established “EnergySave Richmond” as an umbrella initiative (see logo in Figure 2), encompassing multiple different city energy programs. These programs are intended to help households and businesses save on energy costs, while reducing the community’s greenhouse gas emissions. Programs promoted under the EnergySave Richmond umbrella include the Building Energy Challenge, the Smart Thermostats pilot program, water and energy programs for households and businesses, and the Richmond Carbon Marketplace (see Figure 1). Additionally, the City communicates programs and opportunities provided by other partners through EnergySave Richmond, including: BC Hydro and FortisBC’s energy efficiency programs, and Metro Vancouver’s “Emotive: The Electric Vehicle Experience.” Staff intend to bring forward further programs under the auspices of EnergySave Richmond in the future for Council’s endorsement. Households and businesses can learn about and access these programs by visiting www.energy.richmond.ca. The Pilot Multifamily Condominium Energy Advisor Program is proposed as part of the EnergySave Richmond family of programs.



Figure 2: EnergySave Richmond Logo

Energy Upgrade Opportunities in Multifamily Stratas

Multifamily condominiums present an important energy savings opportunity for Richmond. Mid-rise and high-rise buildings constructed in Southwest British Columbia are estimated to be 37 percent more energy intensive than single family buildings, and present multiple opportunities for cost-effective energy efficiency. Almost half of all residences in the City belong to a strata, so deep improvements to existing stratas will be required if Richmond is to achieve its climate and energy targets.

Major building systems renewals present a unique opportunity for deep energy efficiency improvements. Renewals and replacements of roofing, cladding, exterior doors and windows, and/or heating, ventilation and cooling systems are often required when buildings reach 25 to 40 years of age. When such systems are being replaced, the incremental cost of implementing energy efficiency opportunities can decrease substantially and significant energy savings are possible. Moreover, in many cases, upgrades can improve indoor air quality and health outcomes. For example, a recent demonstration project undertaken as part of BC Hydro's Deep Multi Unit Residential Building Upgrade Project is piloting retrofit strategies for stratas at time of renewals; it is anticipated to achieve heating energy savings of 44 percent, realizing a return on investment of 19 percent (an approximately 5 year simple payback), while addressing ventilation deficiencies and improving indoor air quality.

It is estimated that more than 35 percent of strata units in Richmond are in buildings constructed before 1990, and many will commence renewals in coming years. Opportunities for energy improvements at time of renewal can be identified during the development of a depreciation report. A depreciation report is a legislated planning requirement for strata corporations in British Columbia (strata corporations with fewer than 5 strata lots, and those strata corporations who pass an annual three quarter vote, are exempt from the requirement). Depreciation reports involve an inventory and assessment of common property, and are used to establish long term planning and budgeting for renewals of common property. Stratas may choose to integrate assessments of energy efficiency and renewable energy opportunities into their depreciation reports, to inform energy upgrade opportunities at time of renewals.

In addition to major energy upgrades that are most cost-effective at time of renewals, many relatively simple, lower-cost energy improvements can be made at any time. These improvements can include common area and in-suite lighting retrofits, water fixture replacements, and re-commissioning or "retuning" of building mechanical systems. Simple energy efficiency opportunities exist in almost all multifamily condominiums, even those that are quite new.

Challenges Facing Multifamily Stratas

Multifamily stratas face unique challenges to implementing energy upgrades both at time of major renewals as well as lower-cost short-term measures. Frequently, strata councils do not have the expertise to recognize energy efficiency opportunities, and property management companies may not have sufficient incentive to develop and implement energy saving projects. Moreover, decision-making processes involving strata councils, management companies and individual strata owners are often complex, which often extends decision-making timeframes and

can delay or prevent building upgrades from taking place. Energy service providers note that the complicated decision-making processes and long lead times for projects can make it challenging for the private sector to provide stratas with energy services. Additionally, owners who consider their suite a shorter-term investment often believe that the market will not recognize the added value of upgrade measures, and may be hesitant to invest in the building for these reasons. Lastly, integrating energy considerations and costs into depreciation reports is not currently standard practice. For these reasons, far fewer energy upgrade projects occur in multifamily stratas than is economically rational.

Other regional initiatives

Many organizations across British Columbia and within the Metro Vancouver region recognize the need for programs to educate multifamily stratas on energy upgrade opportunities, and assist them in developing and implementing energy upgrade projects. The Condominium Home Owners Association (CHOA) has proposed to implement a British Columbia-wide outreach and education program, encompassing the following program elements:

- Case studies and guidelines for strata energy retrofit projects.
- A marketing campaign promoting the idea of energy upgrades.
- Public forums and consultations with strata corporations, strata managers, consultants, depreciation planners and local governments.
- A system to identify and track stratas interested in energy upgrades.

Correspondingly, Metro Vancouver has allotted funding for a multifamily strata program from 2015 to 2017 through its Sustainability Innovation Fund, and energy utilities currently offer incentives for many upgrades to stratas.

Proposed City of Richmond Pilot Strata Energy Advisor Program

It is proposed that the City develop a pilot Strata Energy Advisor Program. The pilot program will match candidate stratas with an Energy Advisor who will help stratas evaluate, decide on, and implement energy upgrade projects. The Energy Advisor will be delivered through staff and supporting agencies augmented by consulting support. Services may include:

- Screening and building assessment tools to identify energy opportunities in existing multifamily strata buildings.
- Assistance integrating energy upgrade considerations and energy analysis into depreciation reports and stratas' capital planning.
- Assist with evaluation and preparation of business cases for energy saving options.
- Engaging with strata councils and their members in their decision-making regarding energy upgrade projects.
- Providing advice on procuring and evaluating proposals for professional and construction services to perform energy upgrade work.
- General outreach and presentations.
- Other energy and emissions related advice.

The City will work closely with the Condominium Homeowners Association, Metro Vancouver, and energy utilities BC Hydro and FortisBC to maximize the value that the participating stratas will realize. The Condominium Homeowners Association's program is envisioned as a separate suite of educational and "culture change" services that can help recruit stratas into more detailed energy advising services offered by the City and Metro Vancouver. It is anticipated that the City's pilot will offer an opportunity to test and develop the strata energy advisor model, and subsequently inform future programs.

Staff anticipate the program initially engaging with multiple stratas, and subsequently screening those stratas with good opportunities for upgrades. Ultimately, the pilot program is intended to provide deeper Energy Advisor services to a cohort of approximately two to four stratas, and to thereby assess the viability of strata energy upgrades and the energy advisor program model. Staff will subsequently report back to Council with a recommendation on whether to expand the pilot, and/or other opportunities to enhance energy performance in multifamily stratas.

Financial Impact

The project will involve staff time and minor related costs already approved in the operating budget.

Conclusion

This report proposes that a Multifamily Condominium Energy Advisor Pilot Program be developed and implemented. The proposed program will benefit from other related initiatives and is intended to address the unique barriers facing strata corporations in undertaking energy upgrade projects in Richmond.



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