

# Results-oriented leaders embracing technology to address climate threats

WRITTEN BY  
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Mayor Malcolm Brodie of the City of Richmond, British Columbia, and City staff, Peter Russell, Senior Manager of Sustainability, and Alen Postolka, District Energy Manager, discuss how the City's climate actions are transforming Richmond.

A

city with its sights firmly set on becoming a leader in the field of sustainability,

Richmond, British Columbia, has not only delivered outstanding results but also advanced a novel and replicable model for developing municipal district energy systems. Mayor Malcolm Brodie believes that taking action on climate change is vital due to Richmond's location as an island city that is one metre above sea level. "Farmers started building dikes over 100 years ago and we've continued





that program. Since then, the City implemented a flood protection strategy and a dike master plan to respond to climate change impacts,” explains Brodie. “We’re one of the few cities in our province that owns and operates a diking and drainage utility which provides secure funding for new capital projects.”

“Every year, we collect money from residents specifically for the utility and that allows us to invest an average of around US\$13mn annually in infrastructure improvements,” adds

Peter Russell, Senior Manager, Sustainability & District Energy.

“Our climate change mitigation work is just as important as our work in climate adaptation. We invest heavily in our district energy program, now bringing many benefits to our city.”

## **INTRODUCING OLD TECHNOLOGY IN AN EXPANDED CAPACITY**

Richmond’s first investment in district energy, the Alexandra District Energy Utility, employs geo-exchange technology which uses the earth’s



## EXECUTIVE PROFILE

**Malcolm Brodie, Mayor of Richmond**

Malcolm Brodie has been a member of Richmond City Council since 1996. Following a by-election, he was sworn in as Mayor on October 29, 2001 and was re-elected in 2002, 2005, 2008, 2011, 2014, and most recently in October 2018. Mayor Brodie has represented Richmond on the Board of Directors of Metro Vancouver since taking office in 2001. He currently serves on their Water Committee, Performance & Audit Committee, Finance & Intergovernmental Committee, Mayors' Committee, and the Industrial Lands Strategy Task Force. He has represented Metro Vancouver on the Municipal Finance Authority and the National Zero Waste Council, and is currently the Chair of both these organizations. He is also a member

of the TransLink Council of Mayors. Before election to Council, Mayor Brodie was a practising lawyer and had a long record of service to Richmond in the volunteer community. In honor of his contributions and achievements in the community, Mayor Brodie is a recipient of the Commemorative Medal for the 125th Anniversary of the Confederation of Canada, the Queen Elizabeth II Golden Jubilee Medal, the Queen Elizabeth II Diamond Jubilee Medal, and the Canada 150th Anniversary Medal.







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geothermal energy from deep below the surface to provide domestic hot water, space heating and cooling services to buildings in the service area. With over 700 boreholes, the City has utilized the technology on a larger scale than ever before, affirms Alen Postolka, District Energy Manager. “Geo-Exchange is a very simple technology and has existed for over 30 years on a smaller scale. We’ve implemented it in a much bigger way. It works by drilling a borehole into the ground around 250 feet deep and inserting high-density

polyethylene pipe loop in the boreholes,” says Postolka. “The water is circulated through the loops with the water going through the ground, extracting the heat.” You can find further information on how the geothermal system works here.

[www.luluislandenergy.ca/videos](http://www.luluislandenergy.ca/videos)

Richmond has now won 15 awards for its district energy work to date, including the 2016 System of the Year award from the International District Energy Association for the work completed at the Alexandra District Energy Utility. Richmond has led the





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**Malcolm Brodie,**  
Mayor, City of Richmond











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way for other cities to follow in its footsteps, says Russell. “Our awards are proof that we are doing the right thing, it’s important ‘third party validation’ that we are achieving the City Council’s goals for climate action and liveability. As a result of our success, we’ve experienced a high level of interest in our district energy program from cities like Edmonton, Halifax and other utility companies. We are now seeing those cities invest in similar technology,” says Russell. “This is how cities work, we share

information and are all willing to cooperate and support each other’s work. It’s led to us presenting our unique model at conferences and being profiled in articles with international distribution.”

### EXPANDING DISTRICT ENERGY SERVICES

An early opportunity emerged to get district energy planning work going in Richmond’s City Centre. As a host city for the 2010 Olympic Winter Games, the City committed to constructing a premier venue for the games: the

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#### EXECUTIVE PROFILE

**Peter Russell** is the Senior Manager, Sustainability and District Energy for the City of Richmond, B.C.; his team focuses on community, corporate and district energy programs and environmental protection. He is a trained environmental engineer, an award-winning professional planner and an experienced sustainability manager, having worked with the cities of Vancouver and Surrey, B.C., prior to Richmond. Russell also worked with cities across B.C. as a consulting planner for 10 years, developing sustainability, land-use and energy plans. Russell holds a Bachelor degree of applied science in environmental engineering and a Master degree in science in community and regional planning.





Richmond Olympic Oval for speed skating events. To raise a portion of the funds to build the venue, the City leveraged a number of consolidated waterfront sites in 2006, selling some of the land to a multi-family residential developer, while retaining a major parcel in the centre on which to construct the Oval. Significant residual funds raised from the disposition were used to replenish and further grow the City's land inventory. The City then entered into a Memorandum of Understanding (MOU) with the developer to assess the viability of district energy in the area. "The Olympics opened many doors for the City, including the expansion of rapid transit in our city centre, now called the Canada Line," says Brodie. "The Canada Line bolstered our City Centre Area Plan by creating a lot of interest for developing in our downtown; staff saw the opportunity to 'get ahead' of development and they presented the Council with a business case that included a focus on renewable energy and competitive customer rates."

This foundational work led to the establishment of the City's 2nd district







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**Peter Russell,**  
Senior Manager,  
Sustainability & District Energy





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## EXECUTIVE PROFILE

**Alen Postolka** is the District Energy Manager with the Lulu Island Energy Company responsible for advancing the development of district energy systems in the City of Richmond, BC. He is a professional engineer, a certified energy manager and certified professional with 25 years of experience in mechanical engineering, building science and project management.

Postolka holds degree a Bachelor of Science in mechanical engineering from the University of Zagreb.







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energy service area, now called the Oval Village District Energy Utility that provides space heating and hot water services. The City also established the Lulu Island Energy Company as a wholly-owned municipal corporation to manage the all district energy initiatives on behalf of the City. The first building was connected in 2014 and the system now serves over 1.9mn sq ft buildings, which are primarily multi-family residential.

“We were already expanding our infrastructure in Alexandra District Energy Utility system, which had examined different options for how to finance, manage and deliver expanded services in city centre. This work led to our senior management and City Council to direct us to procure an operating partner with the necessary experience and resources,” explains Postolka. “Following a rigorous procurement process, Corix Utilities



**\$541mn**

Approximate  
revenue

**1879**

Year founded

**2,250**

Approximate number  
of employees







was selected and we started to negotiate and look at how they can help us to deliver this project,” added Postolka.

Corix is a privately held corporation, principally owned by the British Columbia Investment Management Corp., with offices in Vancouver, B.C., and Wauwatosa, Wis. Both parties would enter into an MOU to define roles and responsibilities in 2011, a process for working together and a compensation commitment to Corix should an agreement not be reached. The process for working together included two distinct stages: first, a due diligence phase that included infrastructure, business and financial planning, and, finally, development and execution of a long-term concession agreement. In 2014, Corix and the Lulu Island Energy Company executed a concession agreement that will see Corix design, build, finance and operate the system over 30 years, while Lulu Island Energy Company would manage the infrastructure. Richmond City Council is the regulator of utility rates. “Corix has been a great partner. We have a great working relationship with their team; they’ve served our customers well and have delivered our capital projects on time and on budget, in fact, often under budget,” says Russell.



## FUTURE PLANS

With a vision in mind for the future of the city, Postolka believes Richmond must adhere to its business plan to accelerate its growth in renewable energy. “We expect growth to continue,” he says. “We’re making sure that buildings outside of the current district energy system service areas that we can’t economically connect yet are built to be ‘district energy-ready’. This approach ensures the buildings are designed to be connectable in the future. They have in-building energy systems but that when our pipe comes to their front door, we can easily connect them to our low carbon district



“Geo-Exchange is a very simple technology and has existed for over 30 years on a smaller scale. We’ve implemented it in a much bigger way”

—  
**Alen Postolka,**  
District Energy Manager

energy system.” The City’s work is consistent with its 2041 Official Community Plan which defines Richmond’s land use and development, social, economic, and sustainability policies over the upcoming decades. Russell believes the city will continue to grow and develop in key areas. Through the plan, the City aims to add another 80,000 people throughout the city, with the vast majority being directed to the city’s high density, mixed use City Centre. “The city is





experiencing sustained investments, in new multi-family residential buildings, transit, and infrastructure improvements,” says Russel. “We intend to do the same for district energy.”

The City of Richmond benefited from a unique starting point: a city centre area ripe for redevelopment and a supportive City Council. Today, supplied with thermal energy from the City’s wholly owned Lulu Island Energy Company, district energy customers benefit from Richmond City Council’s mandate to

provide customer service excellence and competitive rates using low-carbon energy systems. “When it comes to our climate action work, there is an expression that ‘nations talk and cities act’... our approach is really important because we have to be poised to take our position in the 21st century as opposed to being stuck back in the 20th century,” concludes Brodie. ■

