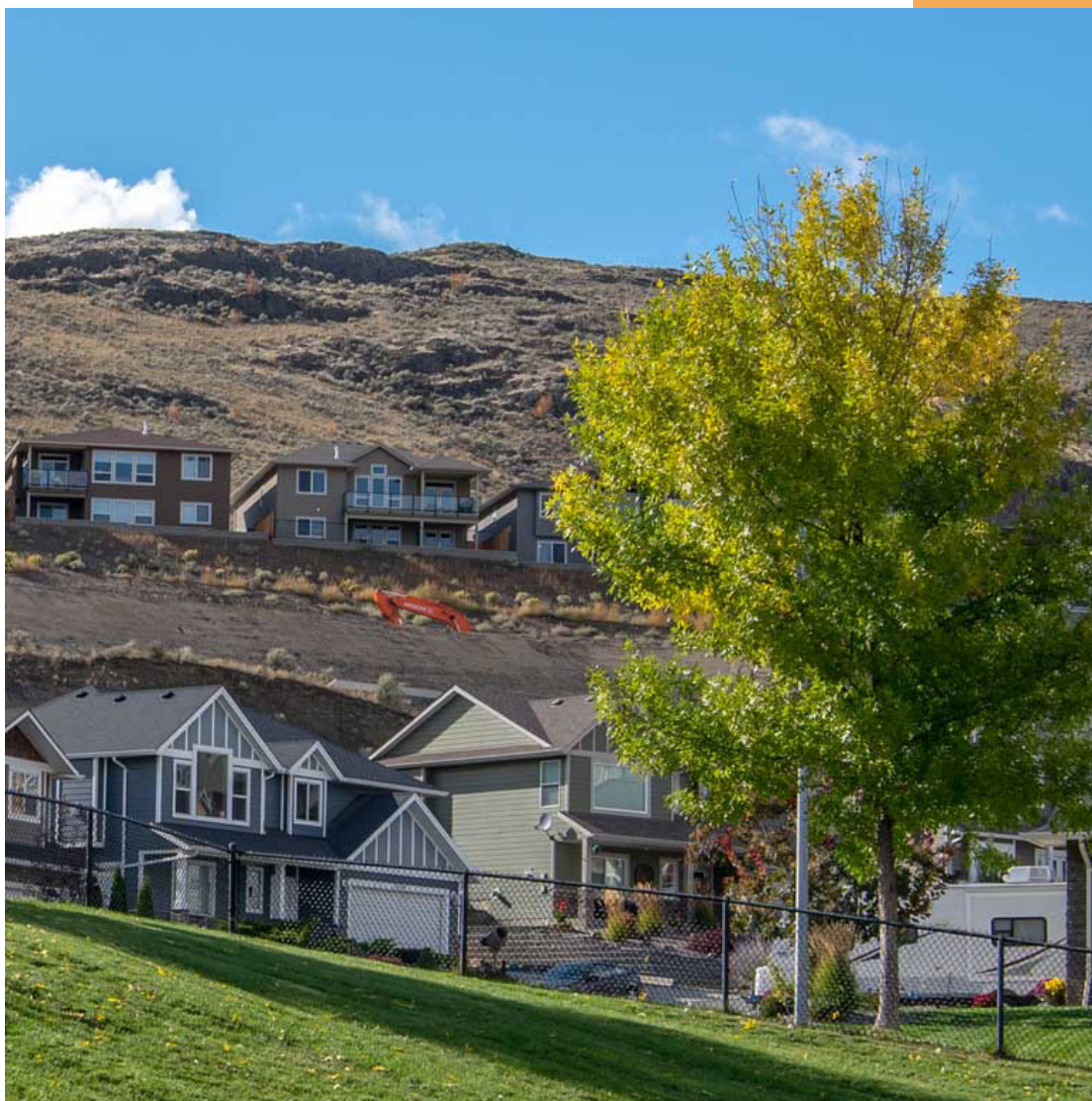


Renovate Smart Kamloops

Research and evaluation to increase the participation of the Renovate Smart Kamloops program



July 2021

Prepared by: Andrea Barriga Guerra,
UBC Sustainability Scholar

Prepared for: Derek de Candole,
Community Energy Specialist

Acknowledgments

The author would like to acknowledge that this report was conducted, edited and written on the traditional, ancestral, and unceded territory of the Secwépemc people as well as the Musqueam, Squamish and Tsleil-Waututh peoples.

The author would also like to thank Derek de Candole and the rest of the team for their mentorship, support, and guidance throughout this project.

This report was produced as part of the UBC Sustainability Scholars Program, a partnership between the University of British Columbia and various local governments and organizations in support of providing graduate students with opportunities to do applied research on projects that advance sustainability across the region. This project was conducted under the mentorship of the City of Kamloops staff.

The opinions and recommendations in this report and any errors are those of the author and do not necessarily reflect the views of City of Kamloops or the University of British Columbia.



Canada's Tournament Capital



THE UNIVERSITY
OF BRITISH COLUMBIA

Table of Contents

Acknowledgments	02
Introduction.....	04
RSK Participation Survey Analysis.....	06
Best Practices of Existing Efficiency Programs	10
Efficiency Vermont	10
Energy Trust Oregon.....	11
MASS Save	12
Toronto Residential Energy Retrofit Program.....	13
Recommendations.....	14
Conclusion.....	19
References.....	20
Appendix.....	21

Introduction

According to the City of Kamloops' Community Climate Action Plan (CCAP), buildings account for 29% of Greenhouse Gas (GHG) emissions in Kamloops and are the second largest source after transportation. To reduce emissions, existing buildings need to be retrofitted. Envelope upgrades to improve efficiency and the electrification of heating systems, primarily through cold climate heat pump technologies will be critical to reaching zero emissions. Recent events such as heatwaves and wildfires in British Columbia have reinforced the importance of retrofitting existing buildings. There are many benefits to retrofitting buildings in addition to the environmental benefits, including better interior air quality, lower energy bills, and increased thermal comfort. There is also growing consumer interest in home energy efficiency. However, low participation rates remain one of the most prominent challenges in almost all efficiency programs. The availability of incentives or loan programs do not necessarily translate to optimal participation, other non-financial barriers contribute to low uptake as well.

Studies suggest that social and informational barriers also pose challenges to people's willingness to participate. While traditional rebate programs target specific products or technologies, behavioural programs directly target customers' attitudes and perceptions toward energy consumption. Current trends suggest that energy efficiency programs have shifted towards integrating behavioural-based approaches to increase impact significantly. The recommended strategies integrate behavioural-based practices with promotion of specific products or technologies to increase participation in the RSK program.



The Renovate Smart Kamloops program (RSK), launched in November 2020, is one of Canada's newest community energy efficient programs. Created to advance existing buildings' comfort, energy performance and reduce GHG emissions in the City of Kamloops, this program provides homeowner information on energy upgrades and incentives. This report analyzes data gathered through RSK's participant intake survey and participant feedback survey, provides an overview of four successful energy retrofit programs and provides recommendations for how the RSK program might increase participation.

Initial Intake Survey Form

An initial intake survey is completed anytime someone is interested in a one-on-one consultation to learn more about how to increase their home's energy performance and the incentives available to them. This intake survey gathers information about participants and their homes to assist them better. As a relatively new program, RSK has compiled the interest of 37 participants so far. For a more comprehensive data summary of intake survey form please see appendix 1.

Report Limitations

This project was designed to be completed in 250 hours by a UBC sustainability scholar under the City of Kamloops mentorship. Due to the time constraints as well as the novelty of this program, there are limitations in the depth of research and findings.

RSK Participation Survey Analysis

A survey of RSK past participants was conducted to gather qualitative and quantitative insights from the RSK participants on their program experiences. The survey focussed on understanding participants’ motivations, barriers, attitudes, and opportunities for improving the performance of their homes. A total of seventeen responses were collected during the two-week collection period.

Results & Findings

Motivations

When asked about their top three motivations for learning more about home upgrades, home comfort and reduced energy bills were most frequently picked as most important with 29% each reducing GHG’s was second with 24% selecting this as most important.

Other motivations identified included:

- Increase the value of the home

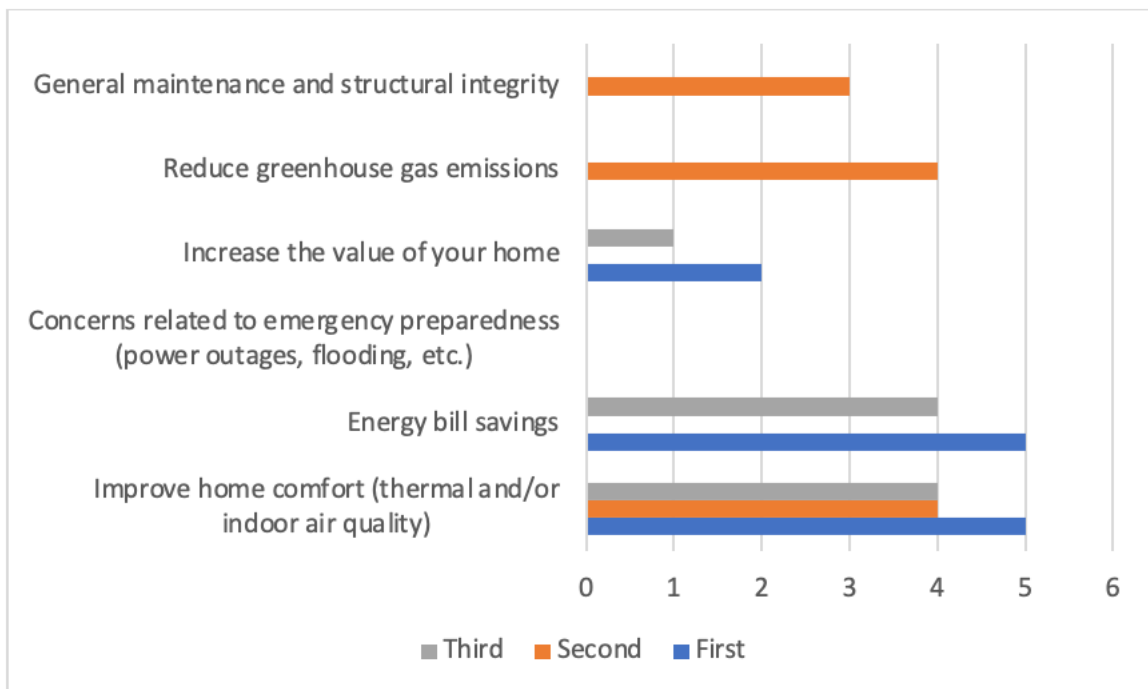


Chart 01. Motivations

Barriers

The top three barriers identified by participants were the cost of improvements, complicated process (confused about next steps) and difficult accessing rebates/incentives respectively.

Other barriers identified by respondents included:

- Lack of time to coordinate work
- Unsure of the benefits

Renovate Kamloops Program

Overall, survey respondents were satisfied with the consultation and workshop. 59% noted that they had implemented one or more of the recommendations suggested during their consultation or workshop.

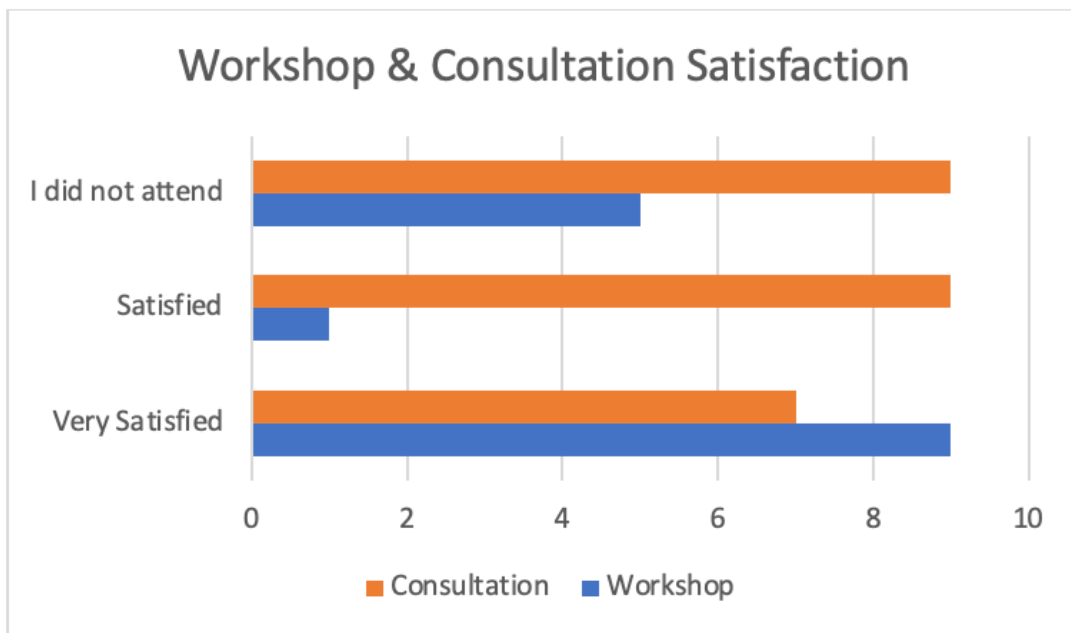


Chart 02. How satisfied were you with your one-on-one consultation/workshop?

When asked if there was an agency or professional whose purpose is to assist homeowners with their renovations by coordinating contractor quotes/work, providing advice and resources, and administering available incentives and rebates:

- 29% responded that it would be extremely helpful
- 18% responded that it would be very helpful
- 49% responded it would be somewhat helpful

The top three places participants reported first hearing about the RSK program was through “Email Promotion” (29%), “Newspaper” (23%), and “Website” (23%). Additionally, word of mouth and social media like Twitter and Facebook were mentioned. Overall, RSK participants were satisfied with their experience, and 47% ranked it five out of five.

A couple of testimonials include:

“I learned a lot in this program, including how to apply for rebates for services I’d already completed!”

“It was great to sit down with an expert to learn about what factors would make the biggest impact on our energy costs and consumption. Highly beneficial.”

Improvement Suggestions

Lastly, the survey participants were asked to provide improvement suggestions for the RSK program, and the most common responses were:

- Better rebate options or incentives
- Better or more access to contractors
- More hands-on support

Past & Current Renovations

Participants were also asked about their past and future renovations. This provides a small sample but an invaluable understanding of the upgrade that will be prioritized for the next couple of years.

For example, as seen below, windows and doors replacement and air sealing improvements are the top two upgrades' people are interested in renovating next. On the other hand, new furnaces or switching from a gas furnace were among the lowest upcoming renovations despite being one of the top for past renovations.

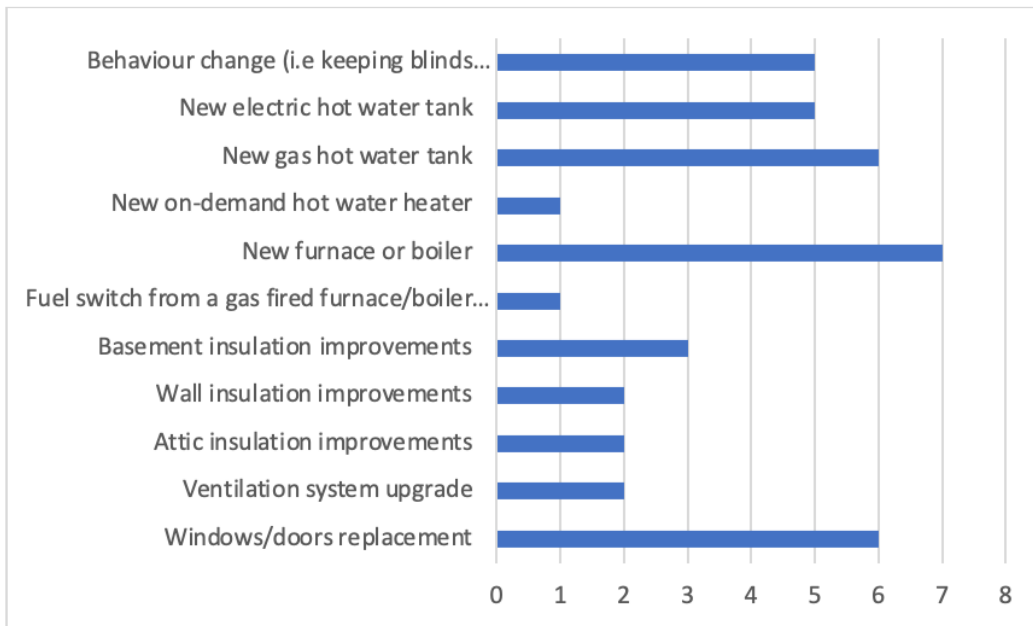


Chart 03. Which of the following have you completed in the past 10 years?

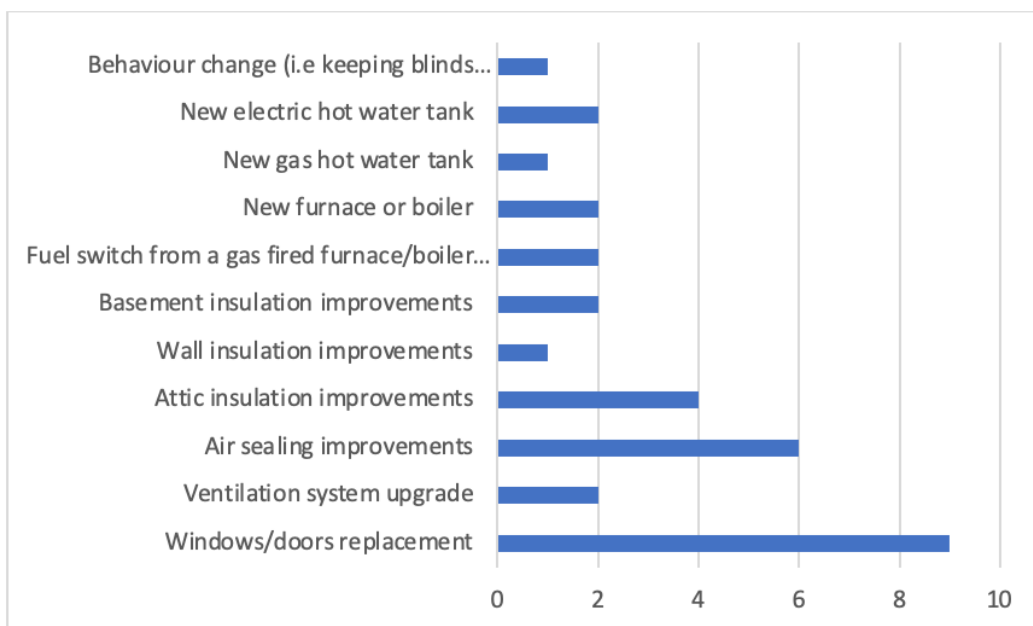


Chart 04. Are you currently planning any of the following improvements over the next 1 - 2 year?

Best Practices of Existing Energy-Efficiency Programs

Four programs intended to promote home energy efficiency upgrades were analyzed to better understand alternative or additional program design features that could inform future improvements or initiatives for RSK.

Efficiency Vermont

Efficiency Vermont was launched in 1999 by the Vermont legislature and the Vermont Public Utility Commission that offers thermal efficiency services to Vermont residents to reduce the use of fossil fuels, improve home comfort, and save on heating costs. Their services include energy assessments, financing, income-based assistance, project support, and education and events.

Efficiency Vermont had a notably high participation rate, and they served over 72,000 customers and 27.9% of households in 2019. The “2019 Savings Claim Summary” report found that they sent the program promotion mailer to over 50,000 customers in 2019. Between 2000 and 2019, they achieved 18.9 million MWh, 29 million MMBtu of energy savings and 12 million metric tonnes of CO₂ reduction.

Program Highlights:

- Provide contractor training, consumer education and outreach
- Provide training and continuing education support to heat pump installers who are members of Efficiency Excellence Network and encourage customers to select these installers
- They offer free webinars and educational workshops for consumers and professionals. Workshops for community groups address actions consumers can take in homes to save money and energy, along with information on technical and financial aids
- Strategically engages manufacturers, distributors, and contractors to develop collaborative sales, marketing, inventory management, and training approaches

Energy Trust Oregon

Energy Trust of Oregon is a non-profit organization working closely with various partners, including participating utilities, trade and program allies, the Northwest Energy Efficiency Alliance, the Oregon Public Utility Commission, and government agencies. Since launching in 2002, Energy Trust of Oregon has helped more than 744,400 homes and buildings with cost reduction by saving energy and using clean, renewable resource. Their target market sectors include residential, commercial/public, industrial/agricultural, and renewable energy, and they strongly focus on the renewable energy sector.

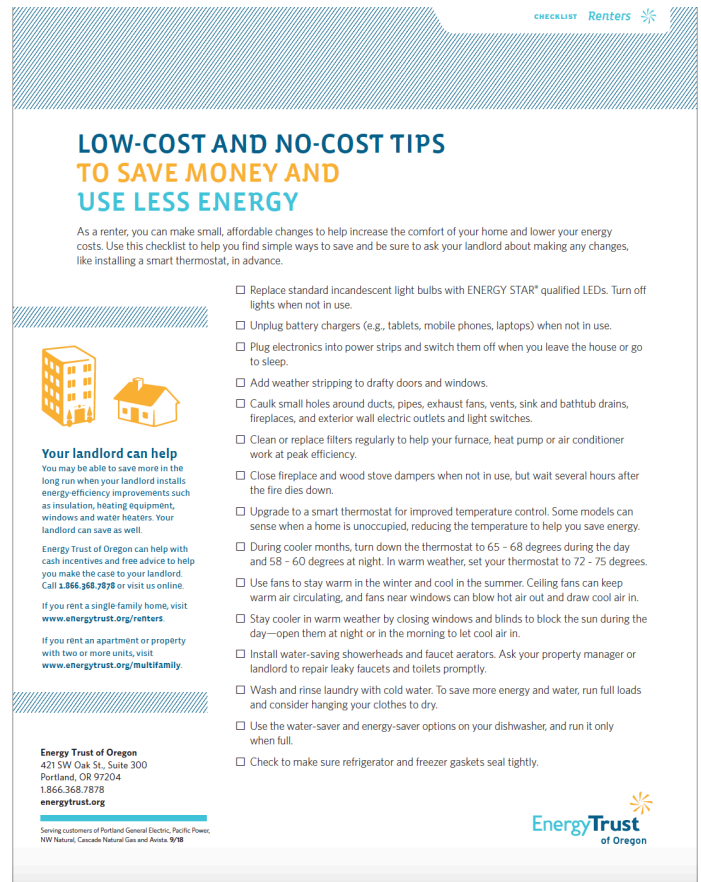


Fig 01. Example of a factsheet

Program Highlights:

- They provide Energy Saver Kit and air sealing services at no cost and offers various other rebate and incentive programs for appliances, lighting, insulation and window upgrades, heating and cooling systems, and water heating and treatment
- Provides comprehensive factsheets and step-by-step guides for residents on existing incentives and rebate programs on their website

MASS Save

Mass Save was founded by local electric and natural gas utilities and energy efficiency service providers: Berkshire Gas, Cape Light Compact, Eversource, Liberty Utilities, National Grid and Unitil. In collaboration with Mass Save, Massachusetts was ranked number one in State Energy Efficiency Scorecard by the American Council for an Energy Efficient Economy (ACEEE) for nine consecutive years. These programs and services are managed and delivered by electric and gas sponsors (working closely with the Massachusetts Department of Energy Resources), providing the energy expertise to help you save energy and money. The funding is supported from a charge on customers' energy bills.

Program Highlights:

- They marketed utility programs through local networks and information channels
- Offered various educational programs for local schools to teach young residents about energy efficiency and how their actions affect the environment. This provides opportunities for the young generation to grow more environmentally and energy efficiency consciously
- An Energy Specialist assesses the current energy use of customer's home and installs energy-saving products at no cost. Participants receive no-cost targeted air-sealing service as well as an instant incentive for 75% off approved insulation improvements or up to 90-100% based on household income

Residential Energy Retrofit Programs – City of Toronto

Launched in 2014, the Residential Energy Retrofit Programs have provided financing to support capital improvements (retrofits) for residential properties with energy efficiency and water conservation benefits. The Programs operate as two streams: the Home Energy Loan Program (HELP) for eligible houses; and the High-rise Retrofit Improvement Support Program (Hi-RIS) for multi-unit residential buildings. To date, almost \$14.9 million in financing has been committed to projects with over 202 properties participating in the program, which has resulted in an emissions reduction of over 4,000 tonnes of CO₂ equivalent. More specifically, HELP makes it easy and affordable for homeowners to pay for these home improvements over time and access rebates offered by utility companies with low fixed interest rates and terms of up to 20-years amortization on qualifying measures.

Program Highlights:

- Provides a contractor info kit as well as resources on application process
- The loan will be attached to the participants property, not to the property owner. This means that if they sell their home before the loan is repaid, the new owner will assume the balance of the loan
- Offer webinars and events to educate and raise awareness of program
- Dedicated team member guides participants through every step of the way

Recommendations

Based on the survey results and analysis and US-Canada program review, several opportunities have been identified for Renovate Smarts Kamloops to consider as potential strategies to improve participation and service.

A. Awareness Campaigns

Due to the novelty of the RSK program an awareness campaign is needed to maximize outreach. The main goal of an awareness campaign is to deliver as much information to many households, so all available channels must be utilized to maximize exposure and impact.

1. Start with social media like Facebook, Twitter, Instagram and Tiktok to build presence, following and interest. Ensure that messages are uniform across all media.
2. Create content that educates people about energy efficiency, touching on the positives of implementing energy-efficient improvement while touching upon the challenge of climate change.
3. Expand to broadcast media, including television or radio and print media like newspapers and billboards.
4. Develop testimonials from residents and highlight success stories throughout the campaign.
5. Plan in-person interaction with residents through community events. This will be a perfect opportunity to disseminate information, collect commitments and register residents on the program's social media channels.
6. Explore the feasibility of raising awareness among children and youth through classroom education.

B. Identifying Participants & Messaging

A report from the Environmental Energy Technologies Division Lawrence Berkeley National Laboratory, noted the importance of grouping residents to reach out to as central to the program's success. Strategic segmenting provides a better understanding of how to tailor messages more effectively and influence more positive decisions.

The following are a variety of segments to consider to create more tailored messaging and marketing:

Segment by demographic and socioeconomic categories

- By age groups
- By ethnicity
- By income level
- By education level

Segment by energy efficiency adoption

- Early adopters or those who have already implemented measures
- Laggards or those who have not taken any steps towards efficiency

Segment by priorities

- Aspirational or those who value sustainability and the environment
- Comfort and value seekers or those who are investment-driven, practical and think about the long-term
- Cost-driven or those who think about the short-term and looking for quick fix or immediate savings

Messaging and language in promoting a program can be a powerful tool, considering what message will deliver the most significant impact to each audience is important. Ensure that the program sells something people want by targeted messaging with statements such as:

- **Comfort:** “Increase your family’s comfort and wellbeing.”
- **Practical Investment and security:** “Invest on efficiency to protect your most valuable asset.”
- **Self-reliance:** “Reduce your energy dependence.”
- **Social norm:** “All of your neighbours are making home energy improvements.”
- **Health:** “Protect your family from mold allergies and asthma.”
- **Environment:** “Eliminate energy waste and protect the environment for future generations.”

Finally, one of the social barriers to participation is people’s distrust of others, specifically program spokespersons. With the combination of the right messages and individuals, the program’s marketing can play a noteworthy role in gaining residents’ trust. One way to achieve this is to use a leader in the community or someone people trust and relate to as a messenger.

Possible recruits as trusted community members could include:

- Council members
- School representatives
- Church leaders
- Community leaders

C. Identify Incentives

Although effective messaging and marketing are key, additional incentives may be necessary to motivate action by residents, at least over the short term. There are several ways the city can offer financial and non-financial incentives that are affordable relative to the program's budget.

1. Free Efficiency Products

The City can provide free products such as LED lightbulbs, smart thermostats, and other technologies to entice more people to participate in the behavioural programs. These products can serve as “on-ramps” to deeper energy-saving measures by changing perception and starting a conversation with homeowners.

2. Reward Points System

Another way to create interest among residents about specific behaviour change efforts is to have a reward system that assigns points to households that make behaviour changes that reduce energy use. Residents earn points by simple measures like attending an outreach or neighbourhoods' event, saving energy by turning off lights or unplugging appliances, or getting an energy assessment and installing efficient products. The City can partner with local businesses to allow participating residents to redeem accumulated points for cash or products.

3. Subsidy for Assessment Cost

The cost of an energy assessment can discourage households from taking the first step of upgrades. The City could offer a rebate of \$50 to 100 households as a starting point to gauge interest.

4. Access to loans

Access to financing such as loans is also essential to overcome the upfront cost barrier for households. This can be addressed by working with banking institutions to join outreach events as seen in the City of Toronto.

D. Implement Low-cost Nudges

Although effective messaging and marketing are key, additional incentives may be necessary to motivate action by residents, at least over the short term. There are several ways the City can offer financial and non-financial incentives that are affordable relative to the program's budget.

Nudges can be an effective way for the program to stimulate interest in energy efficiency. The following basic nudges could be started as soon as possible:

1. Initiate a commitment campaign to gather pledges from households to implement at least one simple energy-saving measure: attend an awareness session, neighbourhood-to-neighbourhood event, schedule an energy assessment or adopt basic or enhanced home upgrades (e.g. appliances, insulation, heating or cooling). This strategy can be different from the same utility efforts by showcasing the benefits early adopters in the city are already gaining. Inviting them to speak and share their experiences would provide a more relatable example for interested residents.
2. Send posters through mail or e-mail that contain brief information about simple ways people can start saving energy at home. This could be followed by a one-page infographic or guide that provides more details about the benefits and savings from different home improvements and upgrades while including information about available rebate programs through BC Hydro and FortisBC and how to access them.

E. Providing a Designated Advisor or Consultant

Provide a bridge between contractors and homeowners to simplify the process. Consider hiring a full-time employee or the use of a third-party organization well-versed in the process, in addition to potential volunteer programs of community champions.

Kamloops homeowners engaged in this study found the concept of a central coordinator very attractive. This would address one of the barriers that they noted which was the complexity of the process and would benefit having an event planner-type approach to retrofit coordination to reduce the process's overall complexity. This is particularly correct given the need to ensure retrofits are completed in a logical succession that avoids additional costs and significant energy savings.

For example, New York's Energy FIT program has found a means of minimizing the number of decision points for program participants by appointing a single point of contact for the whole process. First, applicants fill out an online form to begin the intake process, followed by a phone interview to gather further details, assess eligibility, and create a relationship between the homeowner and the program. Next, a 90-minute walk-through is conducted using a mobile data collection tool, followed by the retrofits themselves that are documented. Finally, applicants fill out a survey following the renovation and receive an analysis of their utility bill one year later to determine energy savings. The program's efficiency resulted in retrofit processes completed in three days, from initial homeowner contact to completed retrofit.

Other examples of programs with a point person include:

1. Transition Town in Totnes, UK who had a community-led program where community champions by the host organization lead participants through the program
2. Heat Smart in the City of Northampton, MA where the city had Heat Smart coaches in each community acting as points of contacts between installers and participants

Conclusion

Based on the survey results, and US-Canada program review, there are several opportunities identified for Renovate Smart Kamloops to consider as potential improvements to increase participation, reduce GHG emissions and support City climate change targets. The team should consider implementing the recommendations in phases over the next couple of years.

A summary of key recommended steps for the short term and based on the research and analysis presented in this report are as follows:

- **Awareness campaigns:** The main goal of an awareness campaign is to deliver as much information to as many households, so all available channels must be utilized to maximize exposure and impact.
- **Identifying participants and messaging:** Strategic segmenting provides a better understanding of how to tailor messages more effectively and influence more positive decisions.
- **Identify incentives:** There are several ways the City can offer both financial and non-financial incentives that are affordable relative to the program's budget.
- **Implementing nudges:** Nudges can be an effective way for the program to stimulate interest in energy efficiency.
- **Providing a designated advisor or consultant:** Providing a bridge between contractors and homeowners to simplify the process.

This report provides a broad framework on how to increase participation through a variety of methods through marketing, behavioral changes and incentives. The recommendations range from low effort and low cost to higher effort and higher cost. However, it should be noted that all these recommendations will require time and/or funding to see higher participation and outcomes. Therefore, the next steps should include research into the cost of funding these recommendations and creating a timeline to implement them in the next couple of years.

References

CALP. Integral Groups. (April 2019). Building Energy Retrofit Bundling Programs for Residential Emissions Reductions: Report & Recommendations for the City of Vancouver.

Chai, K., & Yeo, C. (2012). Overcoming energy efficiency barriers through systems approach—a conceptual framework. *Energy Policy*, 46 (2012), 460-472.

City of Toronto. Home Energy Loan Program. <https://www.toronto.ca/services-payments/water-environment/environmental-grants-incentives/home-energy-loan-program-help/>

Chu, B. (October 9, 2017). What is ‘nudge theory’ and why should we care? Explaining Richard Thaler’s Nobel economics prize-winning concept. *The Independent*. Retrieved from <https://www.independent.co.uk/news/business/analysis-and-features/nudge-theory-richardthaler-meaning-explanation-what-is-it-nobel-economics-prize-winner-2017-a7990461.html>

Conzemius Van de Grift, S., Dougherty, A., & Marquis, D. (2014). Know before you go: how upfront investment in market research and segmentation can improve outcomes in small business direct install programs (ACEEE Summer Study on Energy Efficiency in Buildings). Washington, DC: American Council for an Energy-Efficient Economy.

Efficiency Vermont (June 2020). <https://www.encyvermont.com/>

Energy Trust of Oregon (June 2020). <https://www.energytrust.org>

European Environment Agency. (2013). Achieving energy efficiency through behaviour change: what does it take? (EEA Technical Report No. 5/2013). Luxembourg: Publications Office of the European Union.

Hoicka, C., Parker, P., & Andrey, J. (2014). Residential energy efficiency retrofits: how program design affects participation and outcomes. *Energy Policy*, 65, 594-607.

Lawrence Berkeley National Laboratory. (2010). Driving demand for home energy improvements: motivating residential customers to invest in comprehensive upgrades that eliminate energy waste, avoid high bills, and spur the economy. Berkeley, CA: LBNL.

References

Mass Save (June 2020). <https://www.masssave.com/>

Mass Save (June 2020). <https://www.masssave.com/-/media/Files/PDFs/Save/Residential/MAAssistancePrograms.pdf?la=en&hash=A589F54C554310C56D5F4526687CB5599BE82333>

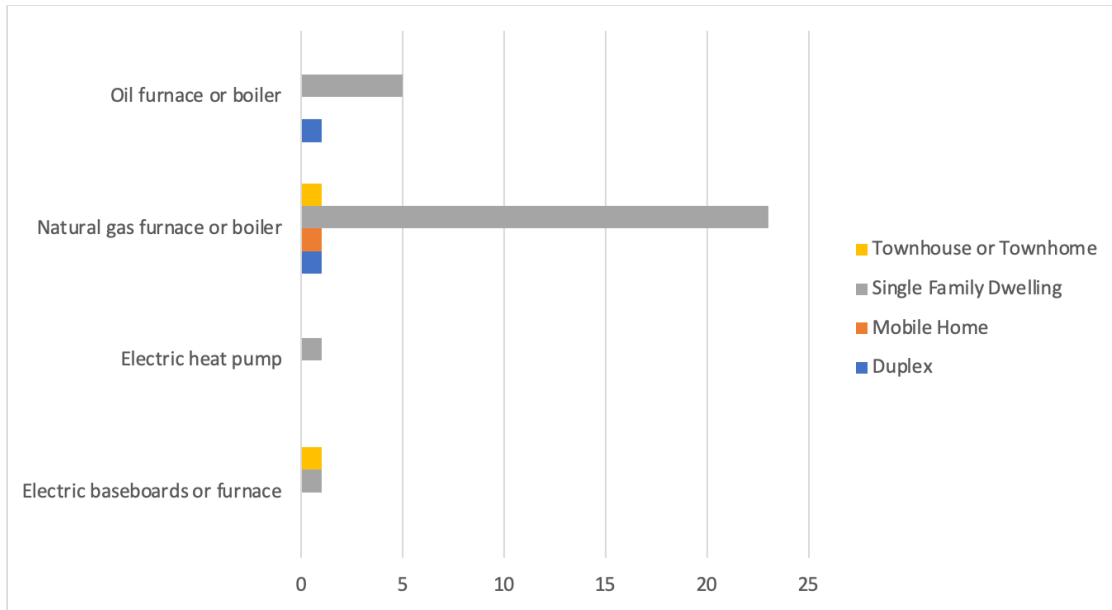
Rockzsfforde, Reagan. (August 2018). Improving Energy Efficiency Participation in the District of West Vancouver. West Vancouver, BC. University of British Columbia: Sustainability.

Thaler, R., & Sunstein, C. (2008). Nudge: improving decisions about health, wealth, and happiness. New Haven, CT: Yale University Press.

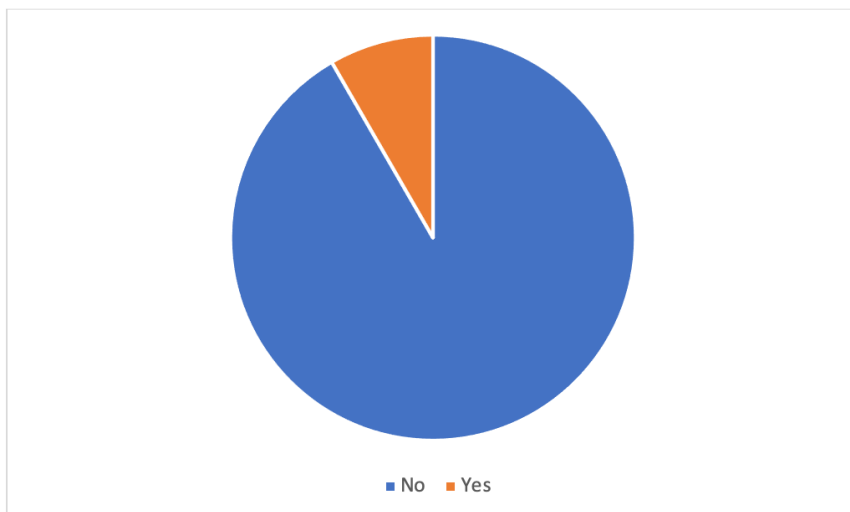
Appendix

Appendix. 1 Initial Intake Form Data Analysis Summary

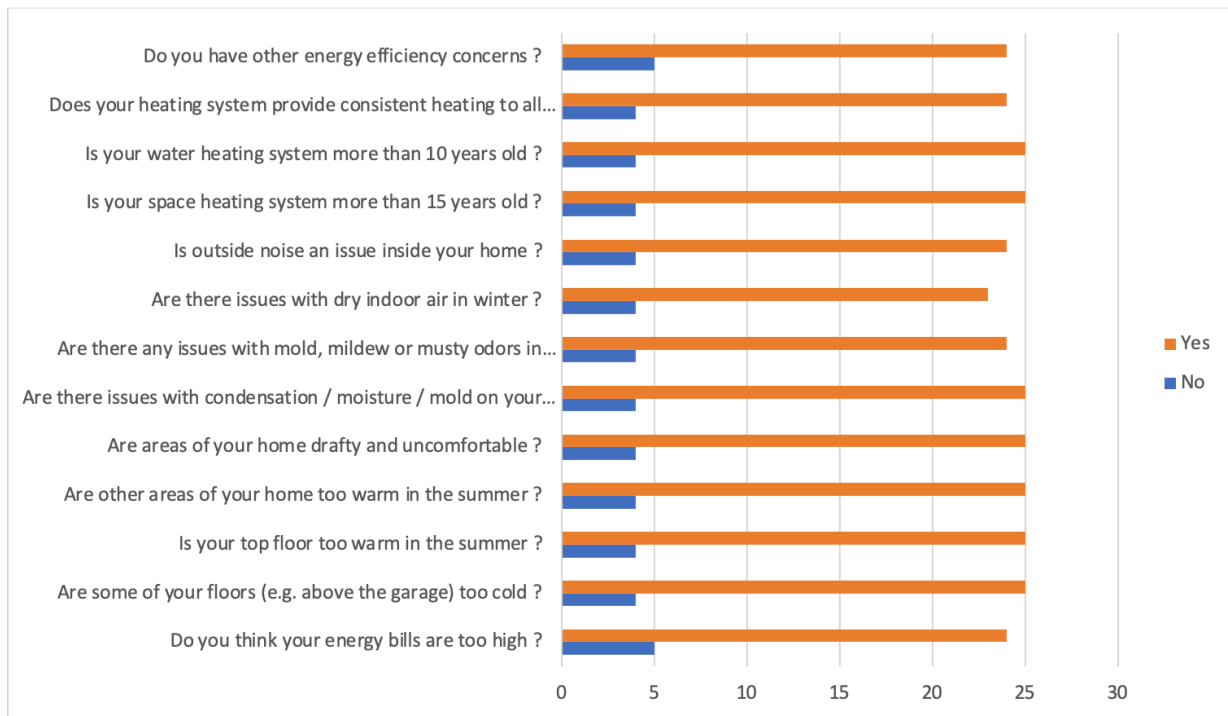
What type of building is your home and how do you heat it?



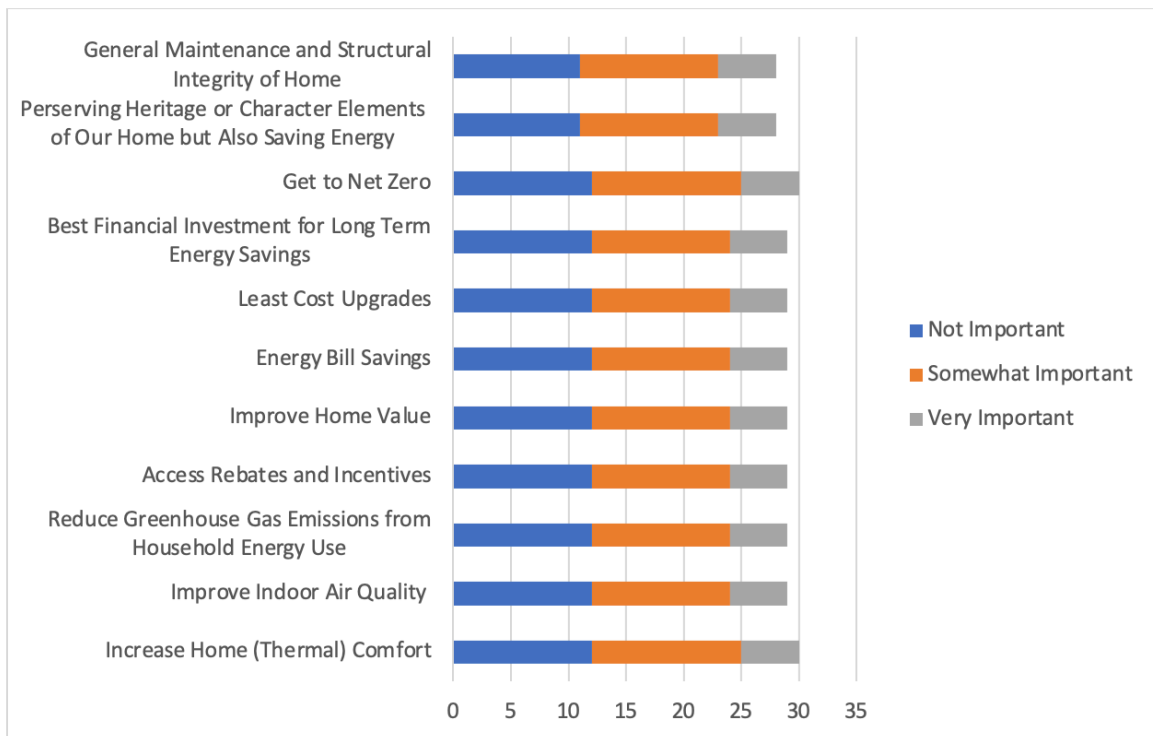
Have you had an EnerGuide Home Evaluation before?



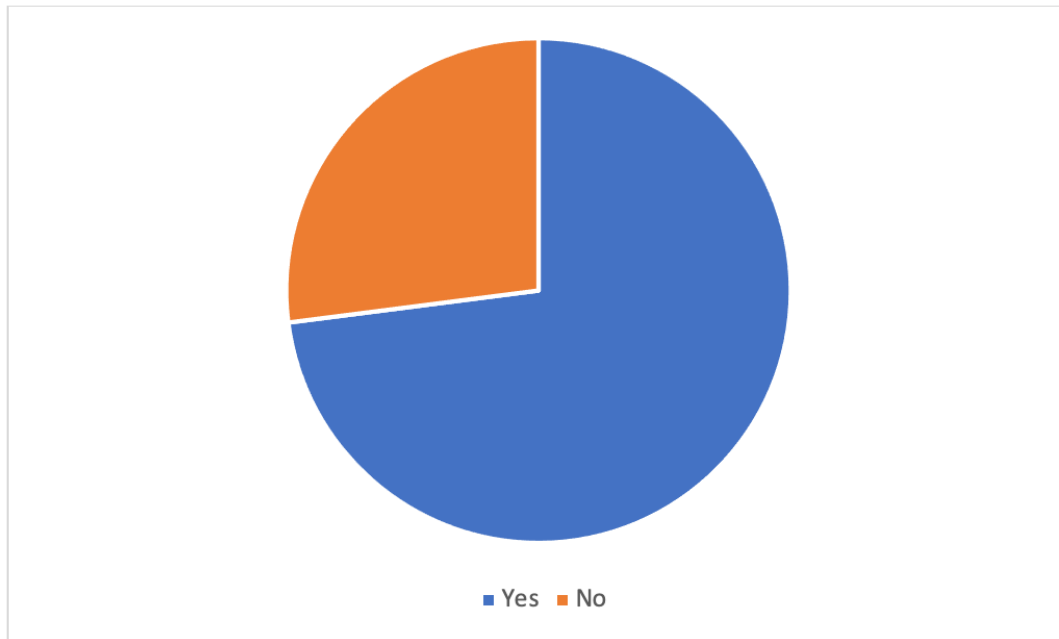
Concerns or Issues with Your Home



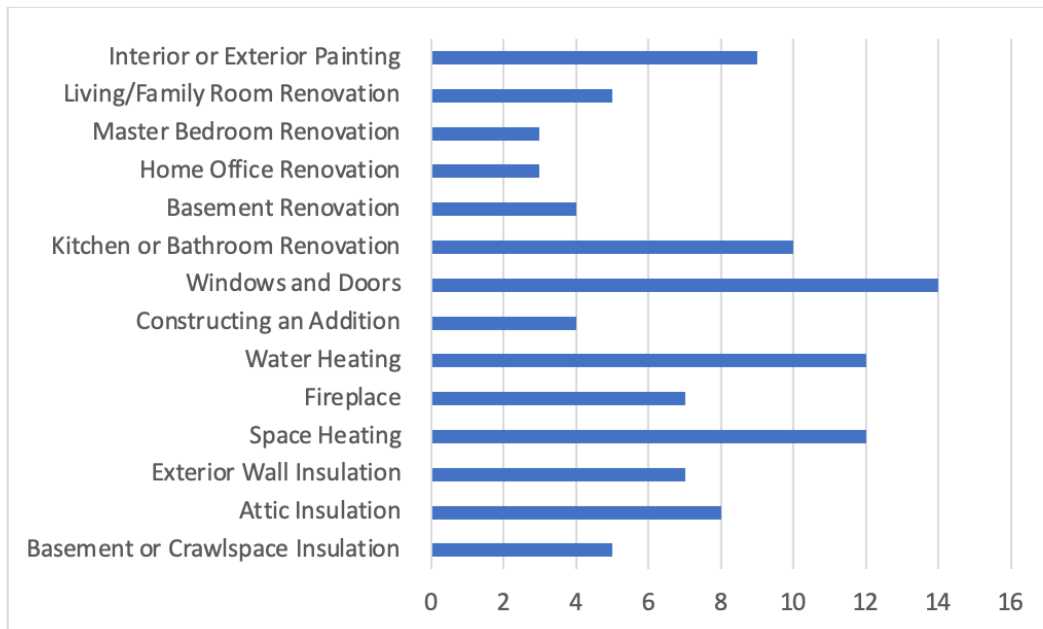
Personal Motivations and Improvement Goals for the Home



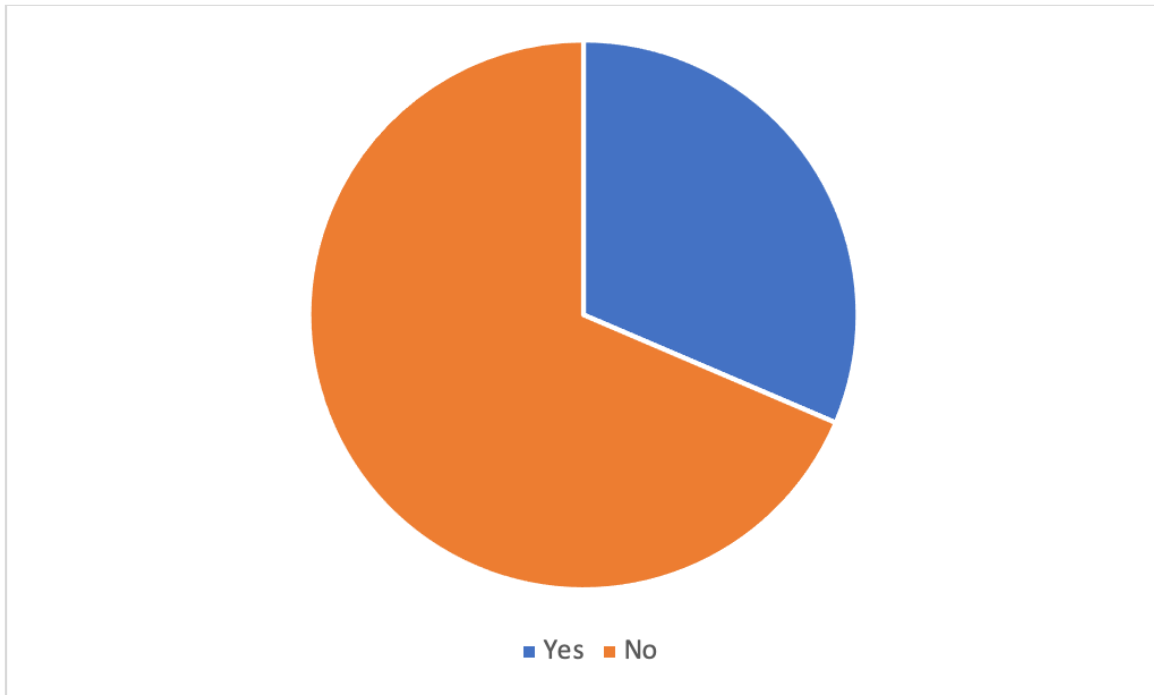
Are you currently planning any home renovations?



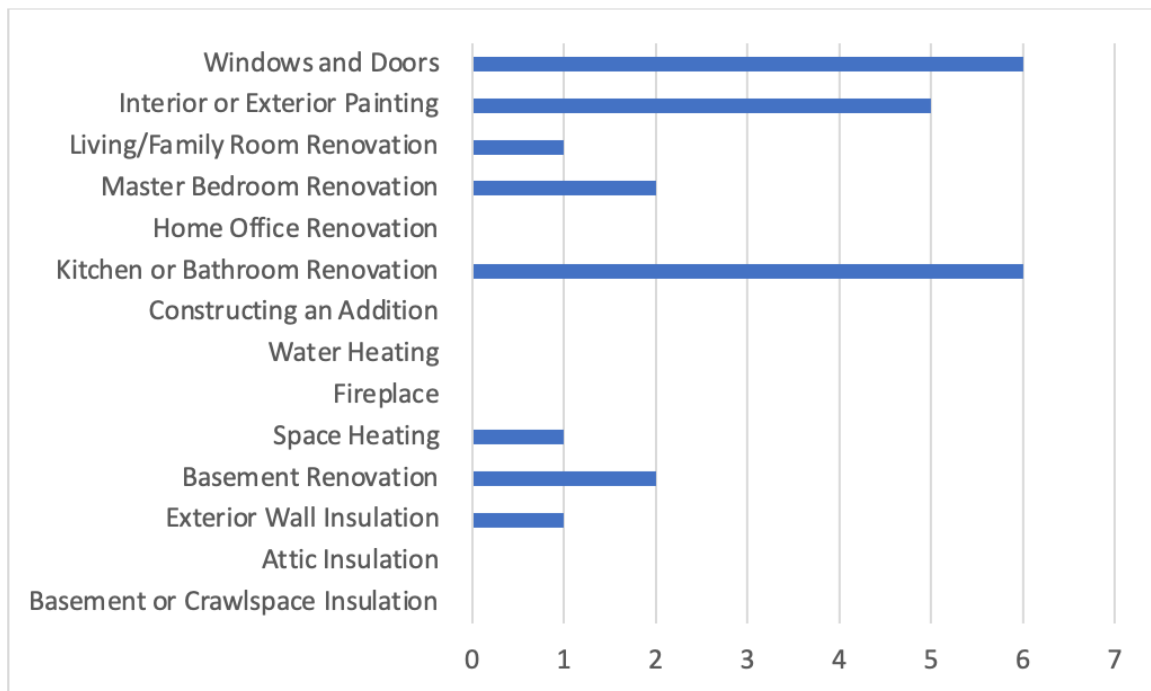
Plans for renovations:



Have you recently completed any home renovations?

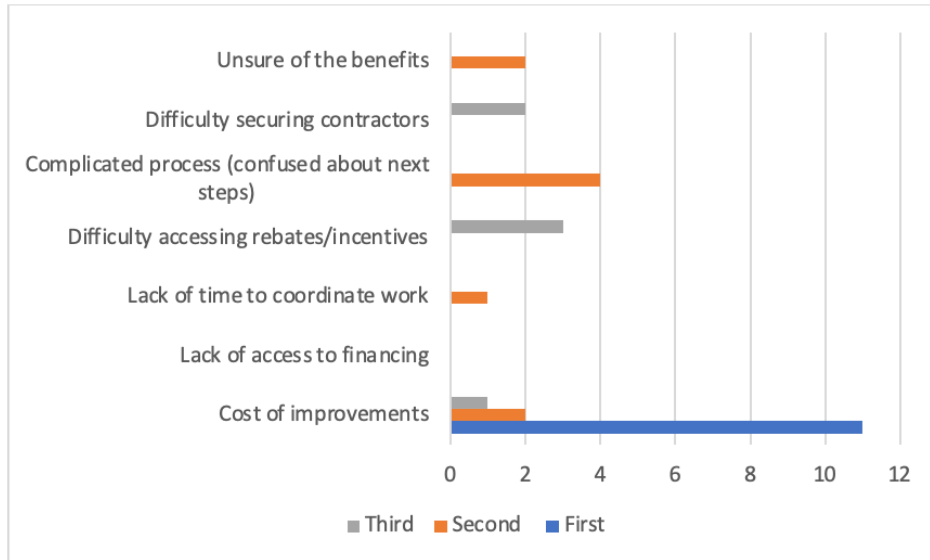


Recent renovations:

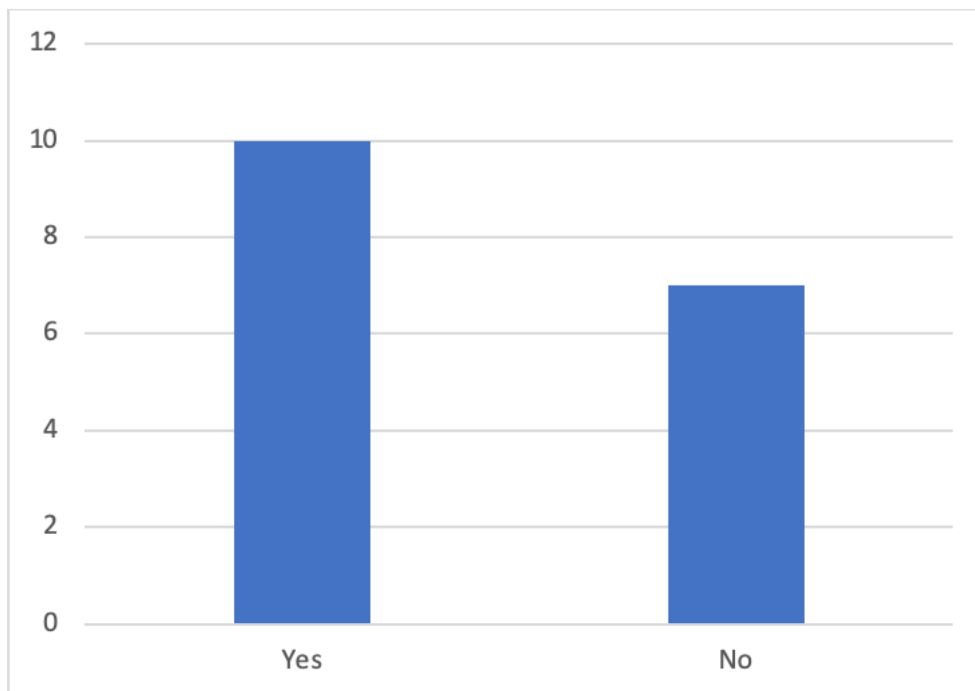


Appendix. 2 Additional RSK Participation Data Analysis

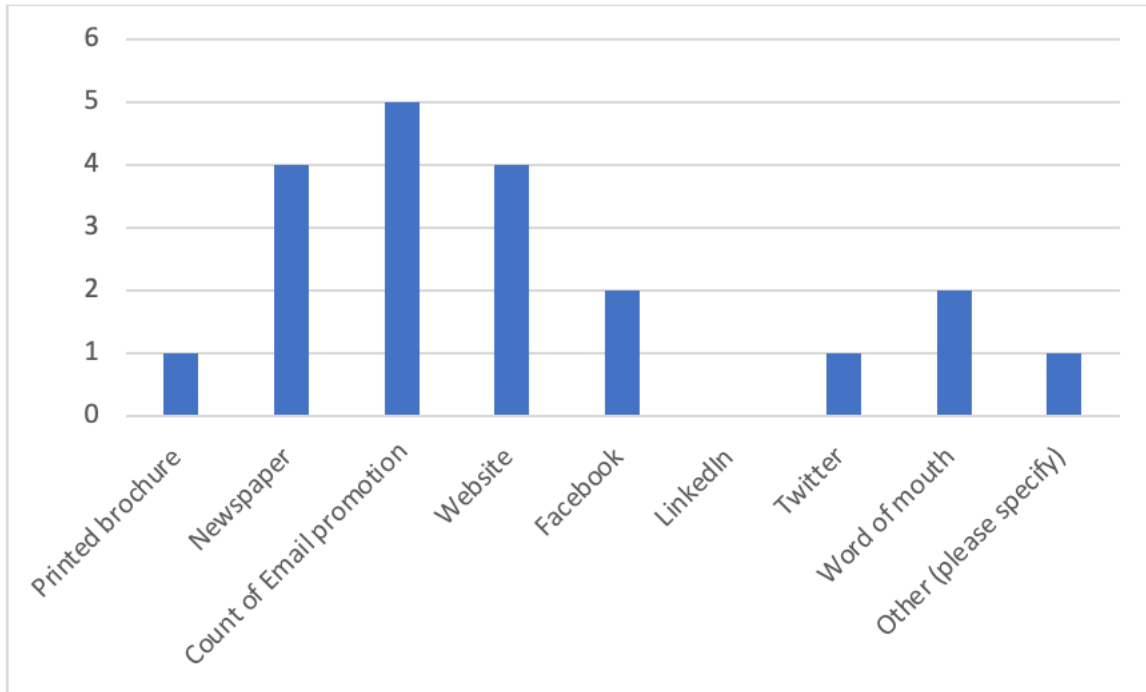
Barriers to implementing energy efficiency upgrades



Have you implemented any of the recommendations from the workshop or your consultation?



How did you find out about the RSK program?



What information would be most helpful for people researching on ways to improve their home performance?

