What is a Retrofit?

- Significantly reconfiguring the interior
- Rearranging windows for increased daylight
- Updating inefficient heating and cooling systems
- Installing low-flow faucets
- Adding attic insulation
- Upgrading lighting systems
- Water temperature
- Thermostat programming

Increasing cost and impact
The Benefit: GHG Emissions Reduction

% of 2023 GHG Emissions Reduction Target

<table>
<thead>
<tr>
<th>Existing Building Initiatives</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develop a Community Energy Retrofit Strategy</td>
<td>4.4%</td>
</tr>
<tr>
<td>Partner with Fortis BC on delivery of programs</td>
<td>1.7%</td>
</tr>
<tr>
<td>Investigate financing models to support city-wide deep energy retrofits</td>
<td>1.1%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>7.2%</strong></td>
</tr>
</tbody>
</table>

City of Kelowna
Other Benefits

Stimulating the Economy

- Every $1 million invested in energy efficiency generates $3-4 million of economic growth.¹
- 13 jobs are created for every $1 million invested in energy efficiency.²

Money in your Pocket

- Living in an energy efficient building can lower your heating bills by more than 50%.³
- Energy efficient buildings and homes experience higher resale value and last longer.⁴

Comfortable Buildings

- Canadians spend 90% of their time indoors. An energy efficient building keeps you warmer in winter and cooler in summer.⁵
- Energy efficient buildings stay more comfortable and safe during a blackout or disaster.⁶

https://www.pembina.org/pub/efficient-buildings-infographic

City of Kelowna
The Challenge

To meet the 2023 GHG emissions reduction targets for existing buildings, 1% of Kelowna’s existing residential building stock will need to be retrofitted annually, with each achieving at least a 30% improvement in energy efficiency:

Average # of residential renovation permits in Kelowna between 2014 and 2018:

539 669
The Challenge

To meet the Provincial GHG Emissions Reduction Targets for existing buildings, 3% of the existing residential building stock will need to be retrofitted annually, with each achieving at least a 30% improvement in energy efficiency:

1,617

Average # of residential renovation permits in Kelowna between 2014 and 2018:

669
Other Barriers and Challenges

- High capital cost of energy-efficient upgrades
- Low cost of energy in Kelowna
- Lack of consumer knowledge about the benefits and opportunities
- Lack of skilled and knowledgeable contractors to advocate for and complete energy retrofits
- Lack of jurisdictional authority for municipalities to require energy retrofits.
- “Misplaced incentives” in rental market
Long-Term Impact

90,000 Total Units by 2040
70% of Units will be Pre-2018 Housing Stock

Actions for Pre-2018 Housing Stock
1. Community Retrofit Strategy (City-led 2019)
2. Provincial Retrofit Code (BC Gov 2024)
Options
Regulation: Energy Codes

“New standards for building upgrades will be developed by 2024, guided by the model National Energy Code.”

- CleanBC
## Regulation: Vancouver Example

<table>
<thead>
<tr>
<th>Total Renovation Cost</th>
<th>Energy Retrofit Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $5,000</td>
<td>None</td>
</tr>
<tr>
<td>$5000 to $24,999</td>
<td>EnerGuide Home Evaluation</td>
</tr>
<tr>
<td>$25,000 to $49,999</td>
<td>EnerGuide Home Evaluation + air sealing</td>
</tr>
<tr>
<td>More than $50,000</td>
<td>EnerGuide Home Evaluation + air sealing +</td>
</tr>
<tr>
<td></td>
<td>improve attic insulation</td>
</tr>
</tbody>
</table>
Regulation: Other Tools

- Large Buildings: Energy Benchmarking
  - Gather and disclose energy use
  - Compare against similar buildings

- Residential Dwellings: Home Energy Labelling
  - Assessment
  - Rating
  - Disclosure (e.g., time of sale or listing)
Incentives

▶ Rebates
  1. Support existing Provincial and utility rebates
  2. Top-up existing rebates
  3. Offer our own unique rebates

▶ Tax Exemptions
Financing: Local Improvement Charge

1. Province enacts legislation authorizing a residential LIC/PACE Program

2. A local government creates a residential LIC/PACE Program

3. A homeowner identifies energy upgrades to implement and applies for financing

4. Program admin approves the financing and the local gov. assigns a tax assessment to the property

5. The homeowner completes the approved energy upgrades

6. The homeowner repays the cost of the upgrades, plus interest, over time through a tax assessment on the property tax bill
## Education and Awareness

<table>
<thead>
<tr>
<th>Information Distribution Assets</th>
<th>Educational Assets</th>
<th>Educational Interventions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Simple, punchy messages that culminate into a call to action</td>
<td>Digital Asset: information heavy websites.</td>
<td>Capacity building for building owners and industry professionals (i.e., events).</td>
</tr>
<tr>
<td></td>
<td>Physical Asset: a location that allows people to see energy-efficient upgrades.</td>
<td></td>
</tr>
<tr>
<td><strong>Examples</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social media</td>
<td>Digital:</td>
<td></td>
</tr>
<tr>
<td>Direct mail</td>
<td>• betterhomesbc.ca</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Physical:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Demonstration site</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lunch and learns</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Public access lectures</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tours</td>
<td></td>
</tr>
</tbody>
</table>
Community Energy Mapping

• PROJECT: Partnering with Natural Resources Canada to develop a prototype for an online map-based decision tool for building stock energy efficiency.

• GOAL: Make residential energy end-use and efficiency opportunities visible on a map using available, federal, municipal, and open data.

• VALUE: Easily identify areas and households that have higher modeled energy usage, so we can prioritize retrofit outreach efforts.
Recommended Approach
Recommended Approach: Regulation

Conduct a legal assessment to determine if the City can require an EnerGuide Assessment at the time of renovation permit.

Seek clarity from the Province on the direction regarding local government jurisdiction for benchmarking and home energy labelling.
Recommended Approach: Incentives

- Expand Kelowna’s rebate top-ups to the Province’s CleanBC rebates.
- Explore options to link energy retrofits with upgrades of buildings on Kelowna’s Heritage Register.
Recommended Approach: Financing

- Investigate financing models and other funding sources that would support city-wide deep energy retrofits.
Recommended Approach: Education & Awareness

Expand education / awareness initiatives.

Continue the development of a prototype community energy end-use map with NRCan.
Summary

- The Community Energy Retrofit Strategy is a key component of the *Community Climate Action Plan*, and has many other benefits.
- There are various options for the City to help reduce energy and GHG emissions from existing buildings.
- In developing the Strategy, the City needs to consider its limited authority, while also taking a leadership role to ensure retrofits are occurring at the required rate.
Questions?

Chris Ray
Community Energy Specialist | City of Kelowna
250-469-8825 | cray@kelowna.ca

For more information, visit kelowna.ca.
National and Provincial direction

- Pan Canadian Framework
  - Federal plan to reduce GHGs
  - Retrofitting existing buildings

- Clean BC
  - Provincial plan to reduce GHGs and energy
  - Indications of a Retrofit Code for existing buildings, and home energy labelling
Delivering on our plans

► Kelowna’s Community Climate Action Plan
  ► Develop a Community Energy Retrofit Strategy
  ► Partner with Fortis BC on delivery of Programs
  ► Investigate financing models to support city-wide deep energy retrofits

► Kelowna’s Healthy Housing Strategy
  ► Implement Step Code to increase energy efficiency and reduce household carrying costs.
Council Priority: Environmental Protection

- Goal: adaptable in the face of climate change
  - Greenhouse gas emissions are decreasing
  - Resiliency & adaptability to climate change