

ENERGY  
**STEP**CODE  
BUILDING BEYOND THE STANDARD

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**Brendan McEwen**

Sustainability Manager

City of Richmond

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# How are local governments affected?

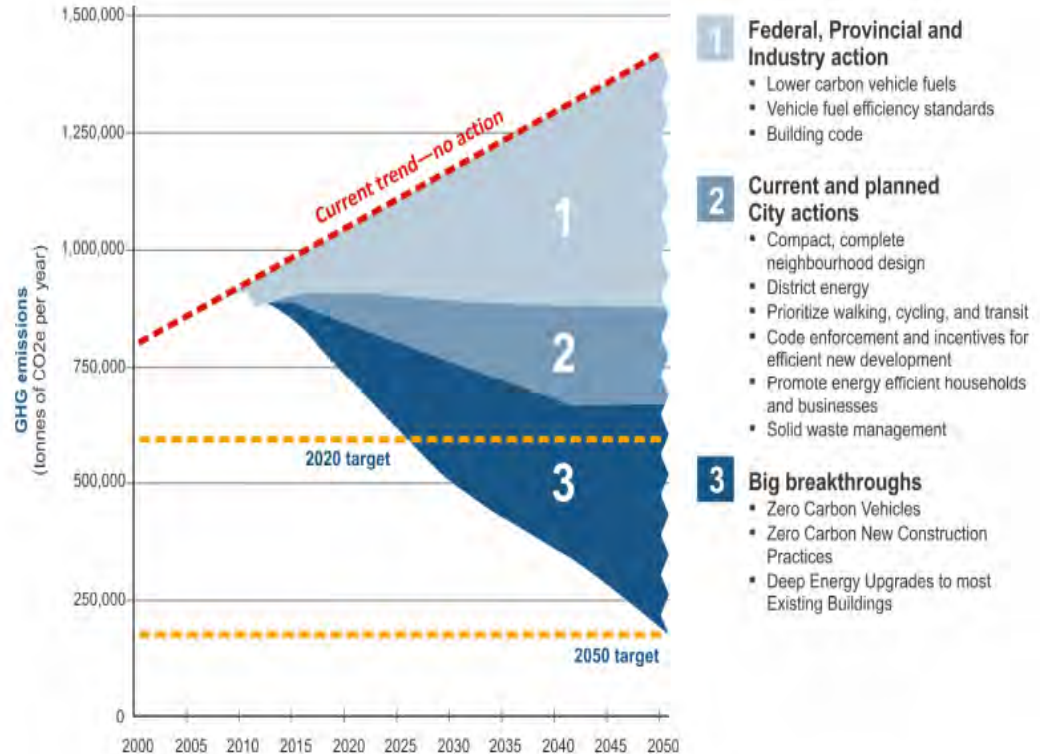
- Voluntary adoption
- Have a policy/incentive in place?
  - Transition to Step Code
- Considering a policy/incentive?
  - Step Code provides new powers, direction and support
- Aligns well with existing priorities



# GHG reductions from new buildings a key local government climate policy

- Climate targets cannot be achieved without deep emissions reductions from new buildings
- OCPs targets, Community Energy & Emissions Plans typically include actions for new development

## Richmond Emissions Trajectory



# Why implement Energy Step Code?

- Meaningful contribution to climate action
- Co-benefits – improved comfort, indoor air-quality, reduced energy spending
- Industry vetted
- Standard “Steps” & ability to establish bylaw requirements can simplify implementation
- Relatively less risk & resources to implement
- Local leadership required for subsequent province-wide requirements



# Transitioning Existing Policies



**City of Richmond:** Townhouse Rezoning Policy



**City of North Vancouver:**  
City-wide Density Bonusing



**City of Surrey:** Neighbourhood Density Bonusing



**Township of Langley, Kimberley,  
Sparwood, Invermere:**  
Building Permit Rebate

# Local Government opportunities ...



City of Surrey: Neighbourhood Density Bonusing

Homes



Big buildings  
"% above code"

# Local Government opportunities ...



District of Sparwood  
Building permit rebate  
EnerGuide 80

# Transitioning Existing Policies

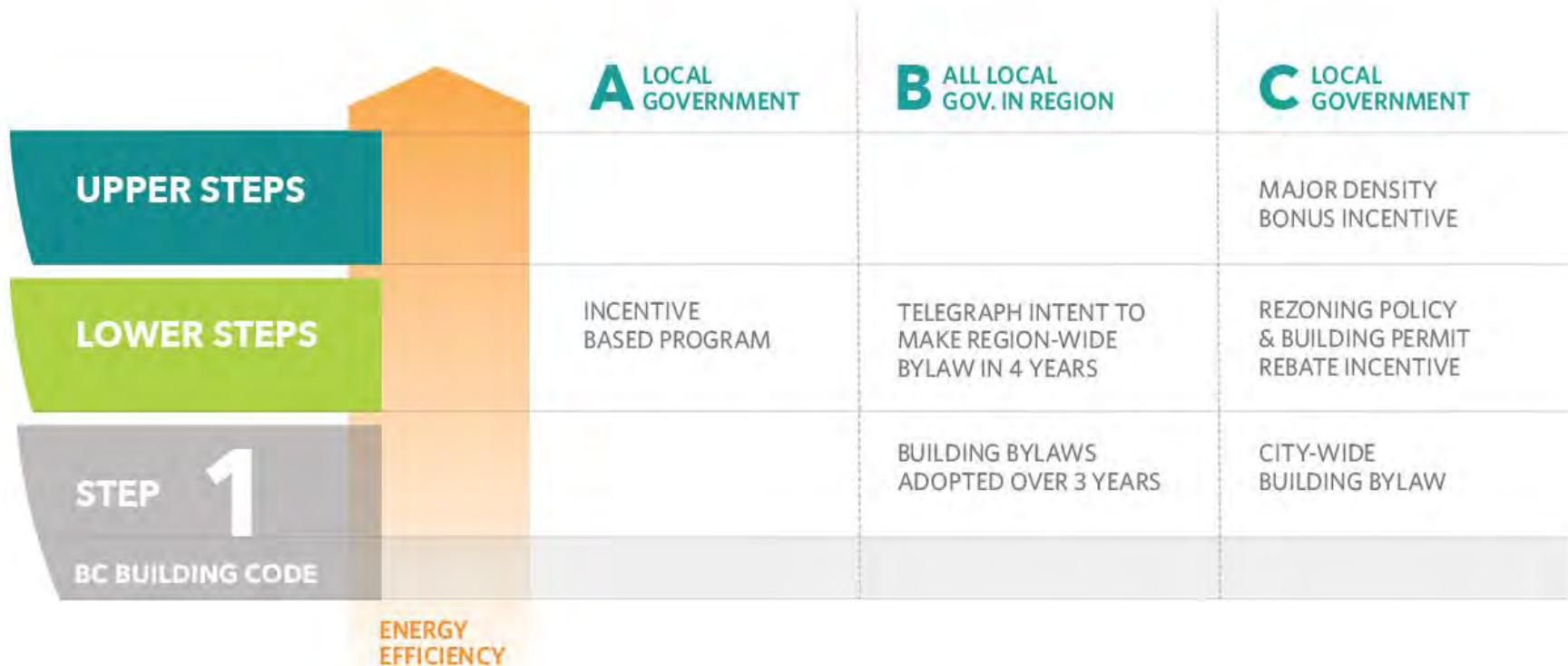
- **Kimberley, Sparwood** – Building Permit Rebate (Energuide 80)
- **Surrey** – West Clayton density bonus (Energy Star)
- **City of North Van** – Density Bonus (Energuide 80); Moodyville Rezoning (Passive House; OR LEED Gold & better than code energy; OR highest Step of Energy Step Code)
- **Maple Ridge** – Revitalization Tax Exemption Bylaw (LEED)
- **Township of Langley** – Building Permit Rebate (multiple standards); Devt. Permit Areas
- **New West** – Energy adviser incentive
- **District of North Van** – Density Bonus
- **Burnaby** – CD Rezoning (LEED)

## Builder Training Programs

- District of Sparwood, City of Kimberley, Regional District of East Kootenays, New West, Langley, Richmond, Fraser Valley Regional District



# Energy Step Code is a Flexible Tool



# Process to Establish Step Code Regime

- 1. Review resources on Energy Step Code – [energystepcode.ca](http://energystepcode.ca)**
- 2. Identify your objectives and preliminary approach**
- 3. Notify Energy Step Code Council (ESCC)**
- 4. Industry Consultation to further refine approach**
- 5. Define your implementation plan**
- 6. Notify the ESCC once the final bylaw, policy or program is approved**

## 2. Richmond's Objectives & Approach

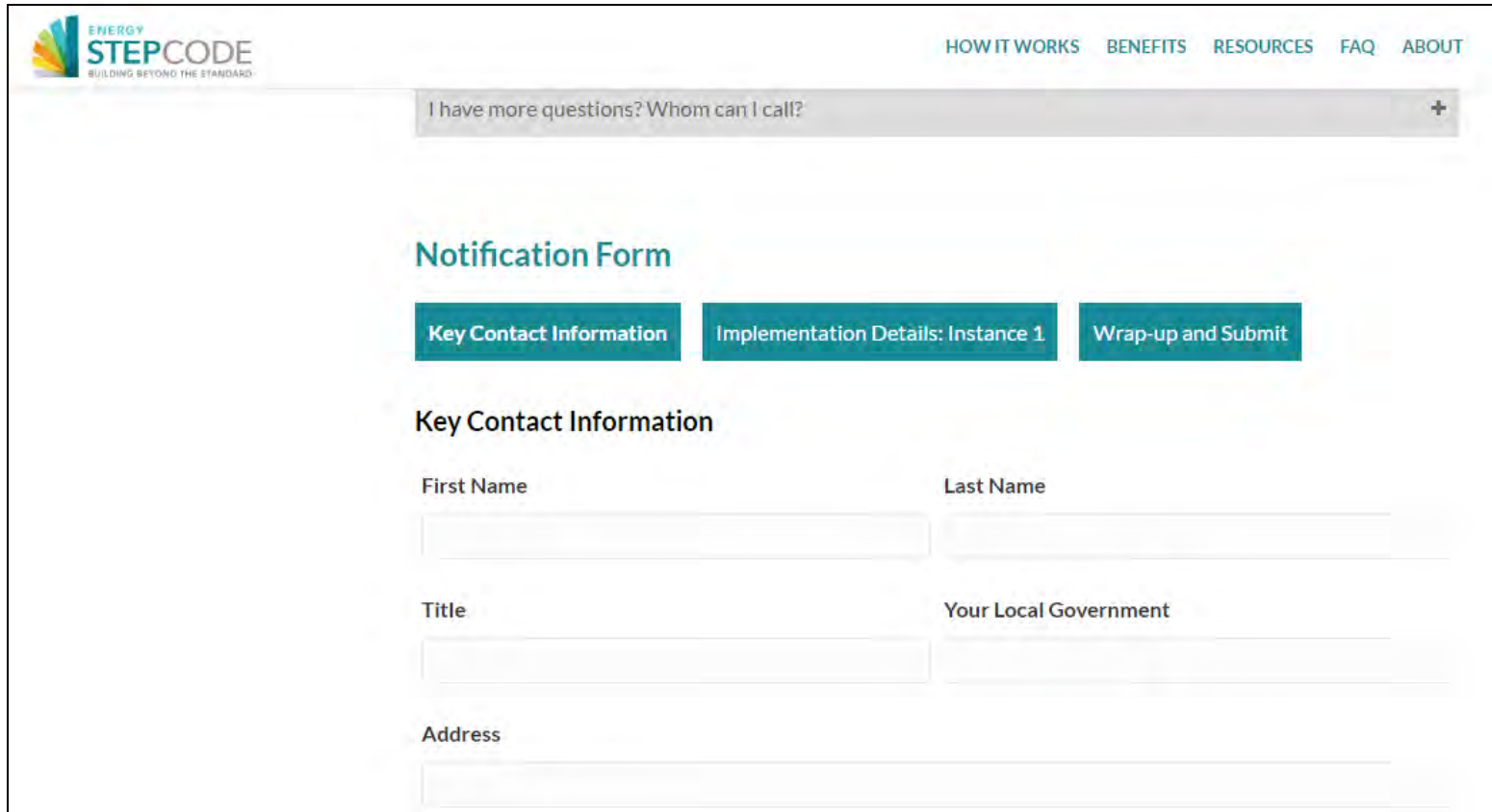
- **OCP Targets** - 80% reduction in GHGs by 2050 below 2007 levels
- **Community Energy & Emissions Plan**
  - **Strategy 2:** Increase Energy Efficiency in New Developments
    - **Action 4:** Promote energy efficiency in all rezoning
    - **Action 5:** Develop incentives for new developments to exceed Code energy requirements



# Richmond's Regime – For Stakeholder Consultation

	Aprrx. Energy Step Code Performance Level Today	2018	~2021	~2025
Part 9 detached homes, duplex	BC Building Code	Step 1	Step 3	Step 4
Part 9 <i>very large</i> homes	BC Building Code	Step 2 or 3	Step 3 or 4	Step 4 or 5
Part 9 townhomes	~Step 2-3 (Rzng Policy)	Step 2 or 3	Step 3 or 4	Step 4 or 5
Part 3 residential >6 story	~Step 1-2 (RZng in City Centre) BC Building Code (outside CC)	Step 2	Step 3	Step 4
Part 3 residential ≤ 6 story	~Step 1-2 (RZng in City Centre) BC Building Code (outside CC)	Step 2 or 3	Step 3 or 4	Step 4
Part 3 commercial	~Step 1-2 (RZng in City Centre) BC Building Code (outside CC)	Step 2	Step 3	Step 3
City Buildings	~ Step 2-3 (High Performance Civic Bldng Policy)	Aim for highest Step		

# 3. Notify ESCC



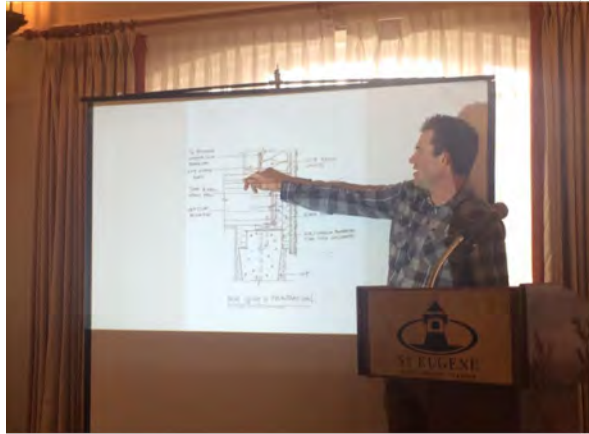
The screenshot shows the ENERGY STEP CODE website interface. At the top left is the logo with the tagline "BUILDING BEYOND THE STANDARD". At the top right are navigation links: "HOW IT WORKS", "BENEFITS", "RESOURCES", "FAQ", and "ABOUT". Below the navigation is a grey search bar containing the text "I have more questions? Whom can I call?" and a plus sign icon. The main content area features a "Notification Form" section with three teal buttons: "Key Contact Information", "Implementation Details: Instance 1", and "Wrap-up and Submit". The "Key Contact Information" button is selected, leading to a form with the following fields:

- First Name
- Last Name
- Title
- Your Local Government
- Address

# 4. Industry Consultation

- **Outline Energy Step Code & proposed regime; get feedback**
  - UDI Liaison committee workshops
  - Homebuilders workshops
- **Industry capacity review** – review capacity to deliver Energy Step Code
  - CEAs, air-tightness testing services, etc.
  - ESCC resources to assist (Capacity Scan, etc.)
- **Training & skills development**
  - Energy Star for New Buildings workshops
  - Sponsoring air-tightness training
  - Funding air-tightness testing for early adopters
  - BC housing resources

# Homebuilder Trainings...



# 5. Getting Ready for Implementation

- **Mapping Development & Building Approvals processes for new developments**
  - Provincial model building energy compliance reports
  - BOABC training
- **Provide staff with appropriate training**
  - Buildings staff (BOABC training; other energy efficient building trainings)
  - Development planners; front of house; etc



# Richmond's Compliance Process Map (Part 3)

REQUIREMENT	REZONING (OR DEVELOPMENT PERMIT WHERE REZONING NOT REQUIRED)		BUILDING PERMIT		OCCUPANCY	
	DOCUMENT SUBMISSION	CITY REVIEW	DOCUMENT SUBMISSION	CITY REVIEW	DOCUMENT SUBMISSION	CITY REVIEW
<b>ENERGY &amp; CARBON TARGETS</b>	Preliminary energy model  Summary page detailing performance against targets	✓ Are building EUI's less than specified maximums?	"Sealed" worksheet that confirms an Engineer has modelled the building and that it conforms to policy  Final Design energy model summary page detailing performance against targets	✓ Has the worksheet been received?  ✓ Are building EUI's less than specified maximums?	"Sealed" Final Energy Model highlighting changes between "Design" and Final" model	✓ Are building EUI's less than specified maximums?
<b>AIR TIGHTNESS TESTING</b>	Secure commitment to conduct an air tightness test	✓ Has the commitment been received?	Air Tightness Testing Plan  Proof that an air tightness testing contractor has been retained	✓ Has a plan been submitted?  ✓ Has a contractor been retained?	Submission of an Air Tightness Testing Report	✓ Has the Report been completed?
<b>COMMISSIONING</b>	Secure commitment to submit building to commissioning	✓ Has the commitment been received?	Commissioning Plan  Proof that a Commissioning Agent has been retained	✓ Has a plan been submitted?  ✓ Has an agent been retained?	Submission of a Commissioning Report  Outline of how outstanding operational issues will be resolved	✓ Has the Report been completed?  ✓ Has the outline been received?
<b>ENERGY BENCHMARKING</b>					Proof that an ENERGY STAR® Portfolio Manager account has been created.  Proof that the City has been named as a "Reviewer"  Proof that utilities have been linked to the account.	✓ Has an account been created?  ✓ Has the city been named as a "reviewer"?  ✓ Have utilities been linked to the account?

# Energy Compliance Report

- Online Checklist tools
- Energy Step Code Compliance Report signed by Certified Energy Advisor
  - Submitted at Building Permit
  - Revised As-Built Report at Occupancy
  - Includes performance metrics:
    - Envelope metrics (TEDI or PTL)
    - Equipment metrics (% Better than Reference House or MEUI)
    - Air-Tightness Target
    - Air-Tightness Achieved
    - Energy Step Code Achievement

Municipality Name/Logo  
Department

**HOUSE PERFORMANCE REPORT (AS-BUILT)**  
For buildings complying with the BC Energy Step Code or the BC Building Code (BCBC) Section 9.36 Verification  
Last updated November X, 2016

*Instructions* 1. To be signed and completed by an Energy Advisor registered with Natural Resources Canada  
2. To be submitted at substantial completion, accompanied with supporting documentation, including, but not limited to, the Building Characteristics Summary, EnerGuide v15 report, Homeowner Information Sheet.

**PROJECT INFORMATION**

Project Address: \_\_\_\_\_ Building Permit #: \_\_\_\_\_

TARGET AT BUILDING PERMIT	ACHIEVED PERFORMANCE
EnerGuide Rating Target (GJ/year):	EnerGuide Rating (GJ/year):
EnerGuide Reference House (GJ/year):	EnerGuide Reference House (GJ/year):
Rated GHGs (tonnes/year):	Rated GHGs (tonnes/year):
% Comp to Ref House (no baseloads):	% Comp to Ref House (no baseloads):
% Comp to Ref House (with baseloads):	% Comp to Ref House (with baseloads):
Mechanical Energy Use Intensity: (ERS Rating less baseloads, kWh/m <sup>2</sup> /year)	Mechanical Energy Use Intensity: (ERS Rating less baseloads, kWh/m <sup>2</sup> /year)
Thermal Energy Demand Intensity: (Heating Demand, kWh/m <sup>2</sup> /year)	Thermal Energy Demand Intensity: (Heating Demand, kWh/m <sup>2</sup> /year)
Total Energy Use Intensity (GJ/m <sup>2</sup> /year):	Total Energy Use Intensity (GJ/m <sup>2</sup> /year):
Peak Thermal Load (W/m <sup>2</sup> ):	Peak Thermal Load (W/m <sup>2</sup> ):
Airtightness Target (ACH@50Pa):	Airtightness (ACH@50Pa):
Air Tightness Target (NLA@10Pa):	Air Tightness (NLA@10Pa):
Step Code Tier Target #:	Step Code Tier # Achieved:
EnerGuide P #:	EnerGuide N #:

Room-by-Room Heat Loss:  Yes  No  
(Calculation as per CSA F280-12)

**ENERGY MODELLING SUMMARY**

Energy Modeling Software (Version): \_\_\_\_\_ Climatic data (Location): \_\_\_\_\_

Reference Building	Proposed Building
HVAC (Energy Use + Fuel Source in GJ/year)	HVAC (Energy Use + Fuel Source in GJ/year)
Hot Water Heating (Energy Use + Fuel Source in GJ/year)	Hot Water Heating (Energy Use + Fuel Source in GJ/year)
<b>TOTAL</b> (Energy Use in GJ/year)	<b>TOTAL</b> (Energy Use in GJ/year)

Equivalent to EnerGuide v15 rating without baseloads

Equivalent to EnerGuide v15 rating without baseloads

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**Thank you**

**Brendan McEwen**  
**[bmcewen@richmond.ca](mailto:bmcewen@richmond.ca)**