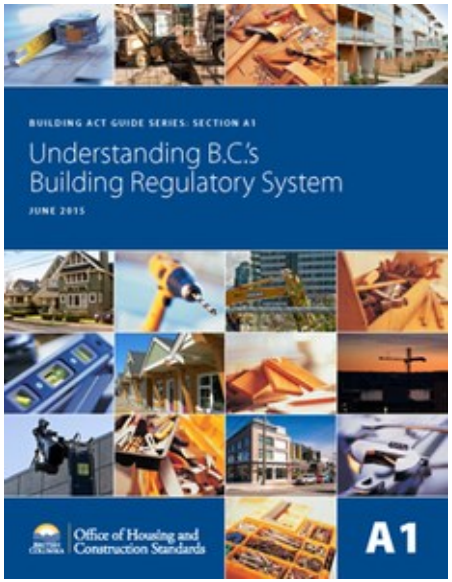
Energy Step Code Implementation Strategy

March 26, 2018

About the BC Energy Step Code

- *Climate Leadership Plan call for:*
  - "**Net zero energy ready**" buildings by **2032**;
  - Development of the **Energy Step Code** to get there.
- *Building Act* offers a consistent standard for achieving building energy goals for **new buildings** across BC



BC Energy Step Code

The ESC is a **transition policy** that provides an **incremental** and **consistent** approach to achieving more energy efficient buildings that go beyond the requirements of the **current BC Building Code**.

Prescriptive → **Performance**

Energy Modeling

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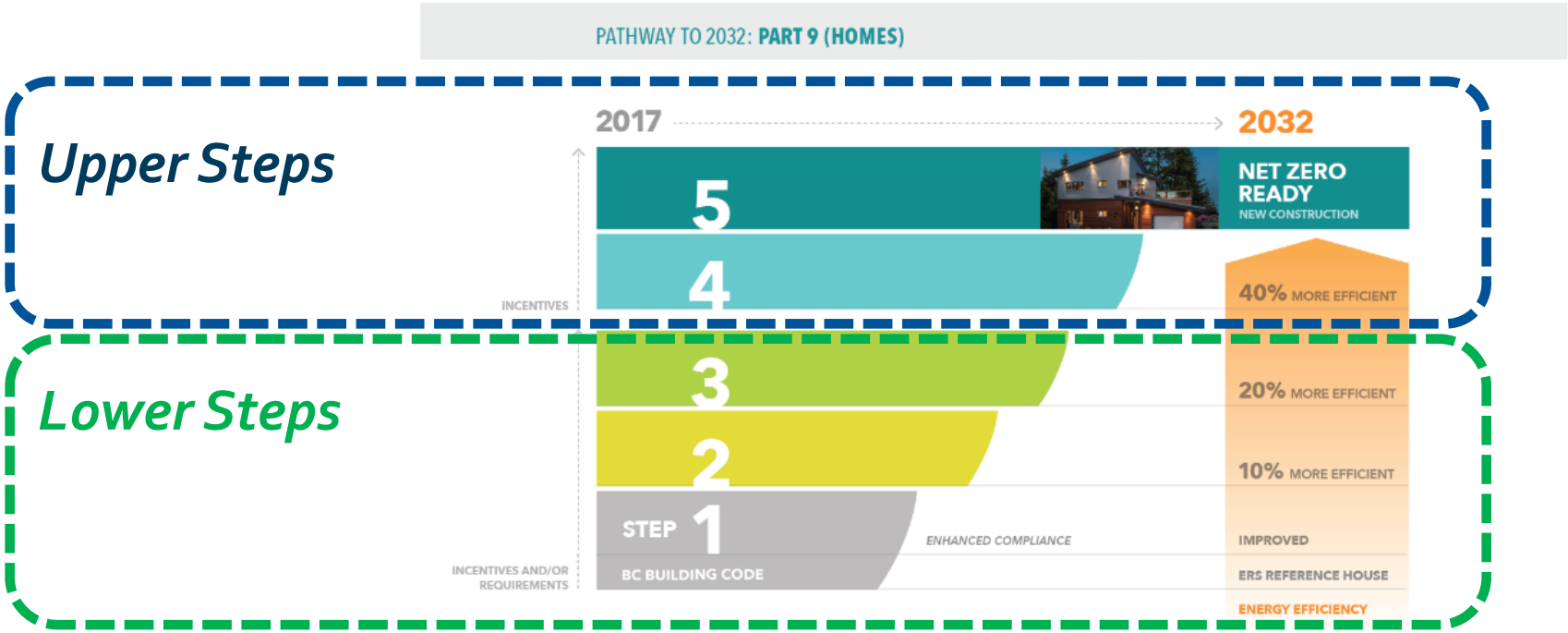
On-Site Testing

Focus to 2020: Part 9 Residential Buildings, Lower Steps

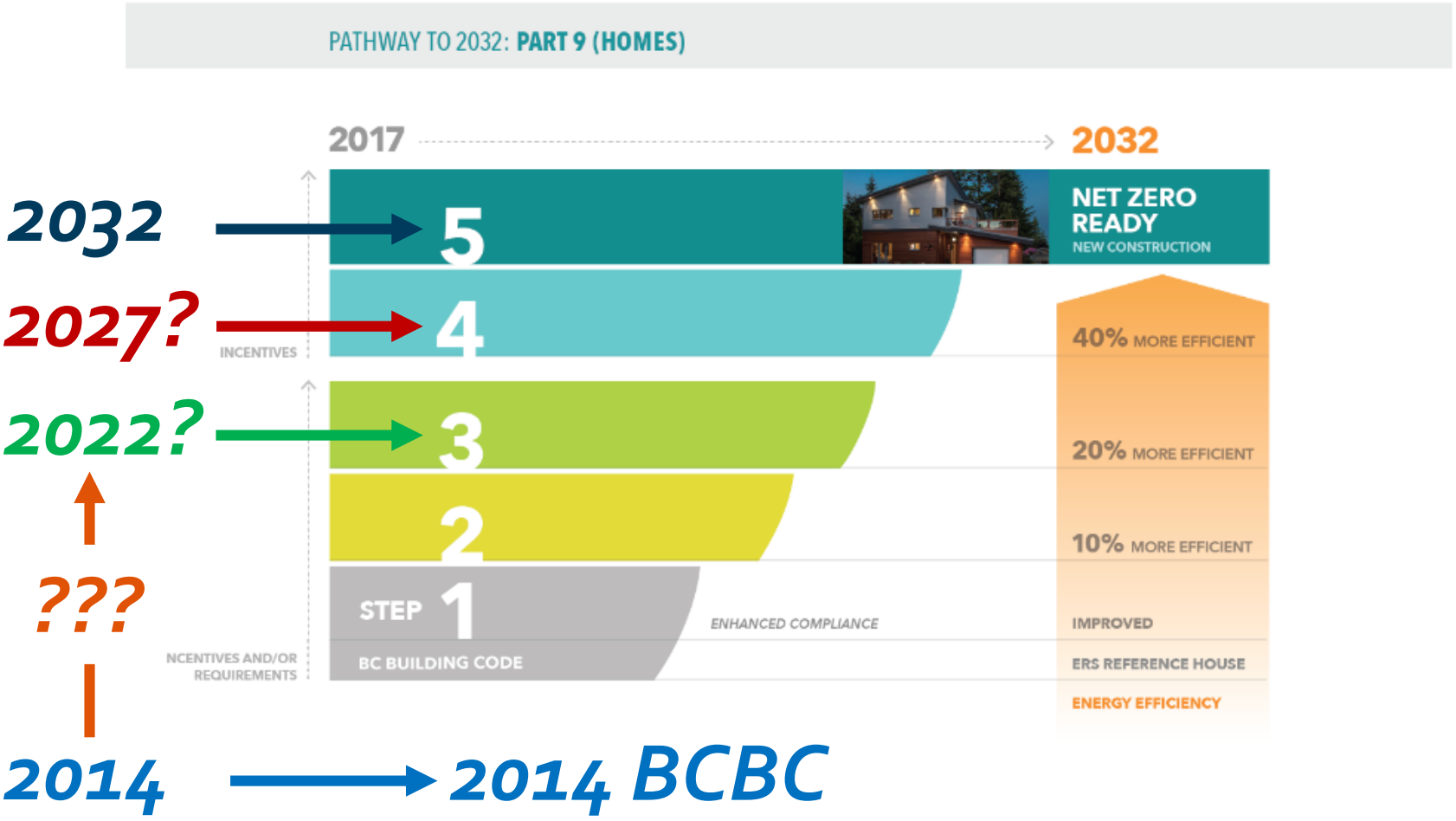


Step 1 – current BC Building Code via the performance path

Lower Steps (2/3) – use conventional materials and techniques

Upper Steps (4/5) – may require innovative materials and practices

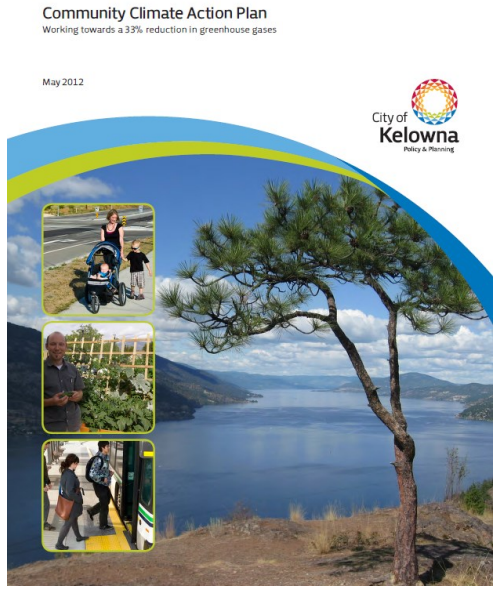
Where's The Code Headed?



Policy Support

- OCP 2030 (currently being rewritten)
  - Improve the energy efficiency and environmental performance of new buildings (objective 5. 16)
  - Improved the energy efficiency and reduce community GHG emissions (objective 6.2)

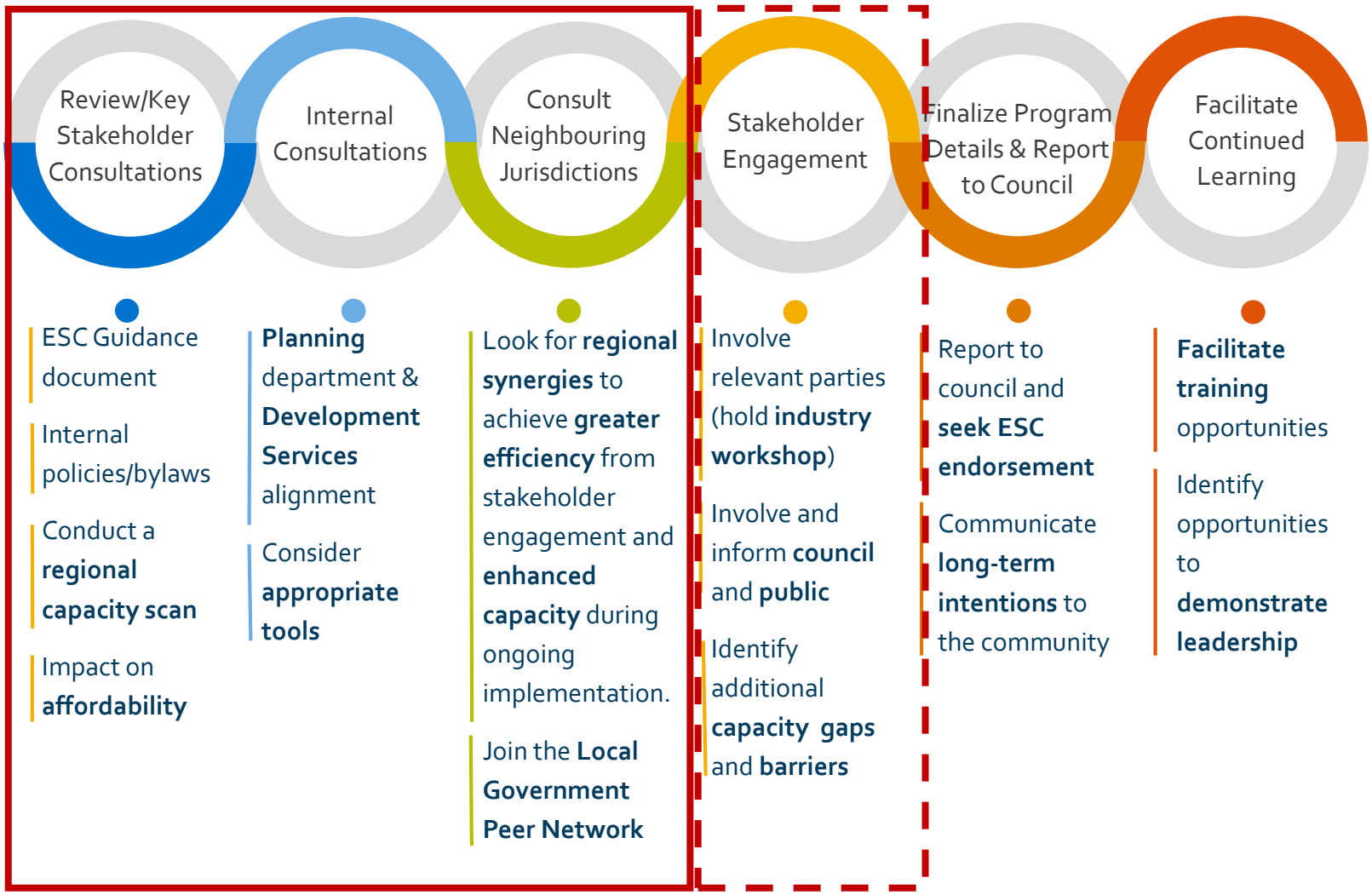
- Implementing the BC Energy Step Code will be recommended as part of the draft Community Climate Action Plan update.



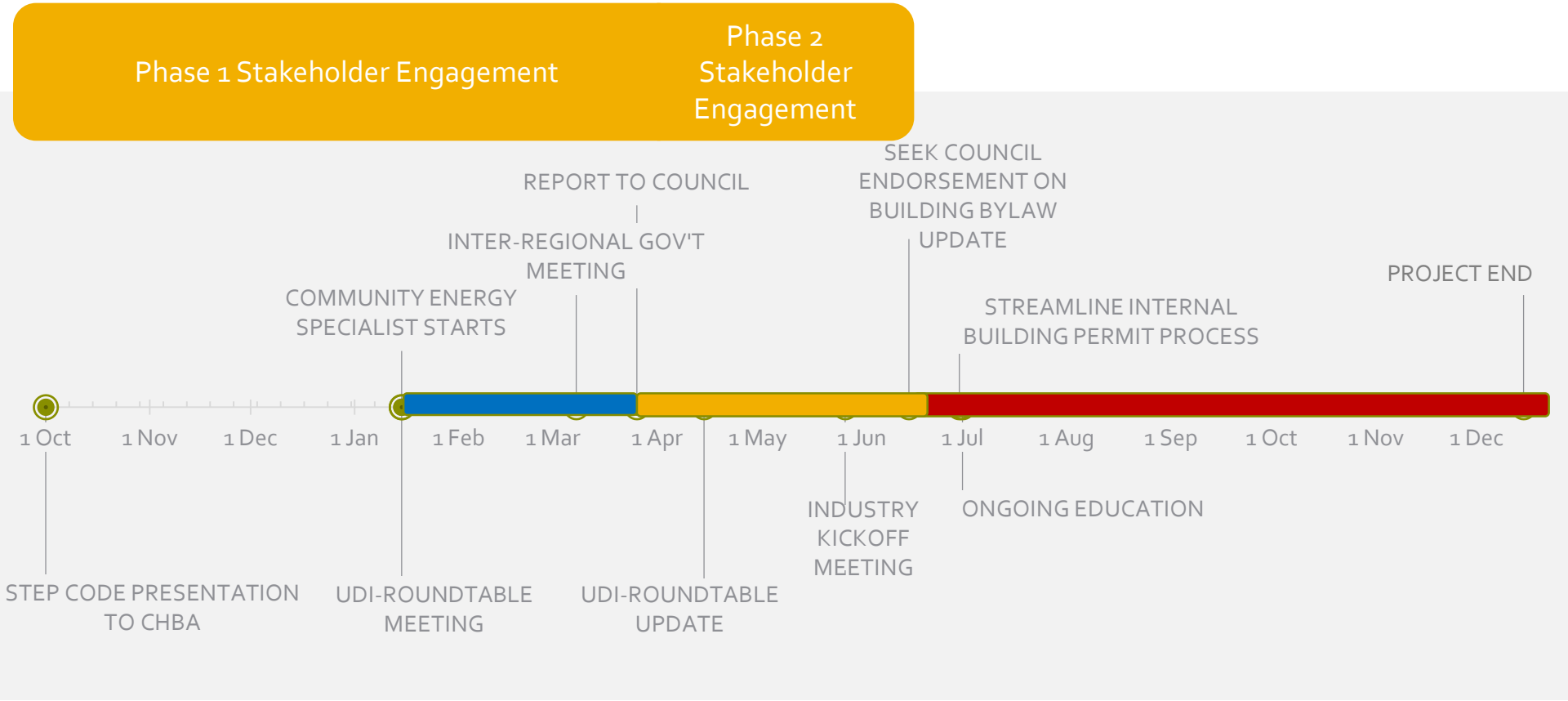
Ancillary Benefits of Energy Step Code

- Offers **predictability** with the 2032 net zero energy ready timeline.
- Provides **consistency** through a **single standard**.
- Contributes to **regional economic development.**
- Owners and occupants benefit from **lower operating costs**.
- Better performing homes are **more comfortable**, **quieter**, and have **improved air quality**.

Implementation Strategy



Implementation Strategy Timeline



Engagement to Date

- October 5, 2017 - Mo Bayat presented on Step Code to the CHBA.
- January 11, 2018 - the City participated in the BC Housing-sponsored Energy Step Code seminar in Kelowna.
- January 15, 2018 – UDI hosted a Step Code roundtable discussion with industry, local and regional government staff.
- Jan 15 onward – the Community Energy Specialist has:
  - Met with internal staff to explore incentives, regulations, and administrative needs;
  - Engaged key stakeholders (UDI, CHBA-CO, Energy Advisors, ASTT-BC, Okanagan College, and a number of builders and designers).
  - Joined the Provincial Energy Step Code Peer Network.
- Mar 8, 2018 – Regional partner meeting to discuss regional approach

Anticipated Challenges

1. Additional construction **costs**.
2. Certified energy advisor **capacity**.
3. Inadequate **training** on energy efficient building among building professionals/municipal staff.
4. Defining energy advisor role in assuring **compliance.**

1. Additional Construction Costs

- *Metrics Research Study (2017)*
  - Parametric analysis looking at hundreds of thousands of design possibilities.
  - Found lowest incremental capital costs (% change) for each Step for Climate Zone 5 across the various Part 9 building archetypes.

Lowest incremental capital costs (% change) for each Step for Climate Zone 5.						
Step	Small Single Family Dwelling	Medium Single Family Dwelling	Large Single Family Dwelling	Quadplex	6 Unit Row House	10 Unit MURB
1	0.4%	0.2%	0.2%	0.2%	0.2%	0.1%
2	0.8%	0.0%	-0.3%	0.7%	0.5%	0.3%
3	2.4%	0.0%	-0.3%	0.7%	0.5%	0.3%
4	7.1%	1.5%	0.7%	2.9%	1.7%	0.5%
5	16.2%	4.9%	6.9%	--	4.4%	2.0%

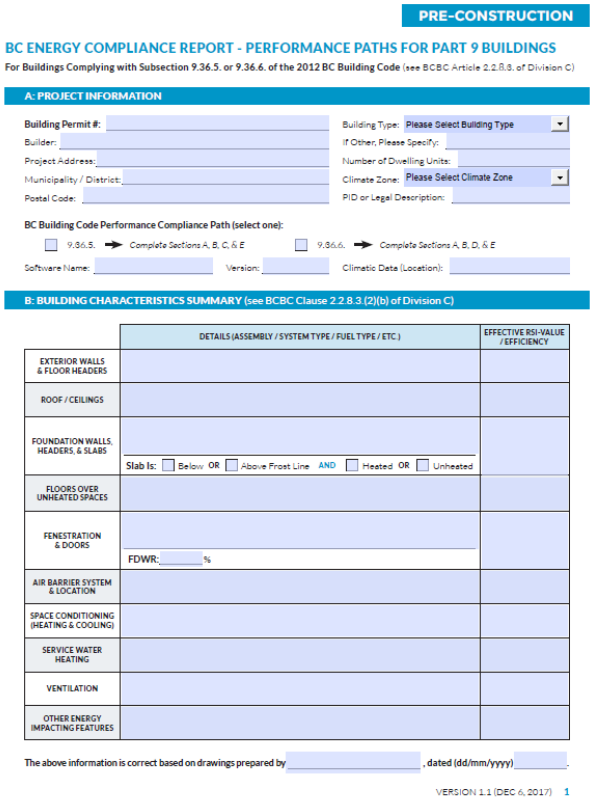
2. Assessing Energy Advisor (EA) Capacity

- City of Kelowna issued **~700 Part 9** building permits in 2017.
- Currently **7 certified EAs** serving the area.
- City Green (Victoria) suggests **6 to 12 EAs per 1,000** Part 9 buildings to be assessed.
- Full certification to become EA typically 6 – 12 months.
  - Recent CHBA training: **March 19th** in Kelowna (10 registrants)

3. Knowledge Gaps

- Central Okanagan builders may already be building to the Lower Steps (Steps 1 - 3).
- Process of **working with an EA.**
- **Designing** for compliance.
- Building to a higher performance standard, particularly regarding **airtightness.**

4. Compliance Reporting



PRE-CONSTRUCTION

BC ENERGY COMPLIANCE REPORT - PERFORMANCE PATHS FOR PART 9 BUILDINGS

For Buildings Complying with Subsection 9.36.5. or 9.36.6. of the 2012 BC Building Code (see BCBC Article 2.2.8.3. of Division C)

A: PROJECT INFORMATION

Building Permit #: | Building Type: Please Select Building Type
Builder: | If Other, Please Specify:
Project Address: | Number of Dwelling Units:
Municipality / District: | Climate Zone: Please Select Climate Zone
Postal Code: | PID or Legal Description:

BC Building Code Performance Compliance Path (select one):

☐ 9.36.5. ➔ *Complete Sections A, B, C, & E* ☐ 9.36.6. ➔ *Complete Sections A, B, D, & E*

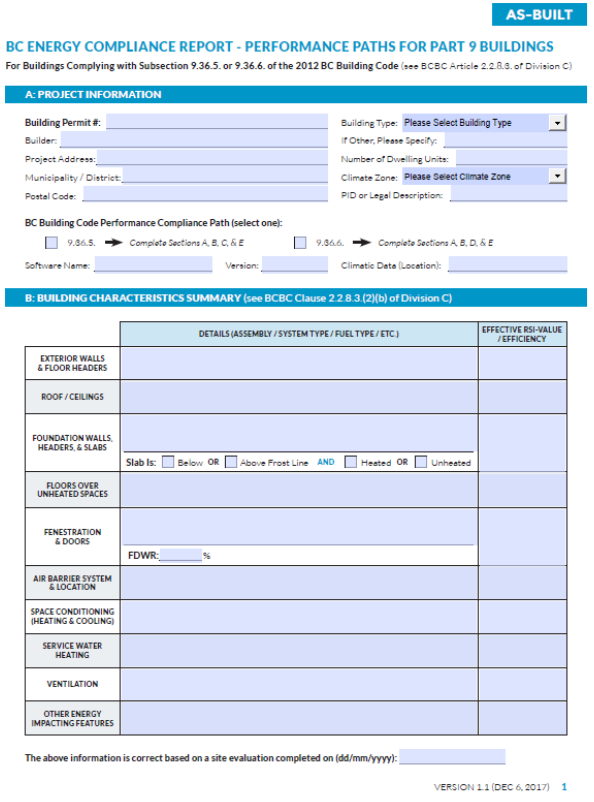
Software Name: | Version: | Climatic Data (Location):

B: BUILDING CHARACTERISTICS SUMMARY (see BCBC Clause 2.2.8.3.(2)(b) of Division C)

	DETAILS (ASSEMBLY / SYSTEM TYPE / FUEL TYPE / ETC.)	EFFECTIVE RSI-VALUE / EFFICIENCY
EXTERIOR WALLS & FLOOR HEADERS		
ROOF / CEILINGS		
FOUNDATION WALLS, HEADERS, & SLABS	Slab Is: ☐ Below OR ☐ Above Frost Line AND ☐ Heated OR ☐ Unheated	
FLOORS OVER UNHEATED SPACES		
FENESTRATION & DOORS	FDWR: %	
AIR BARRIER SYSTEM & LOCATION		
SPACE CONDITIONING (HEATING & COOLING)		
SERVICE WATER HEATING		
VENTILATION		
OTHER ENERGY IMPACTING FEATURES		

The above information is correct based on drawings prepared by _____, dated (dd/mm/yyyy) _____.

VERSION 1.1 (DEC 6, 2017) 1



AS-BUILT

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FENESTRATION & DOORS	FDWR: %	
AIR BARRIER SYSTEM & LOCATION		
SPACE CONDITIONING (HEATING & COOLING)		
SERVICE WATER HEATING		
VENTILATION		
OTHER ENERGY IMPACTING FEATURES		

The above information is correct based on a site evaluation completed on (dd/mm/yyyy): _____

VERSION 1.1 (DEC 6, 2017) 1

"The undersigned has produced and/or reviewed the House Performance Evaluation for the above-mentioned project, created based on the project's design as provided by the Designer of Record. The undersigned has verified that the project complies with the Subsection 9.36.5. of Division B, as detailed in the 2012 BC Building Code." – from City of North Vancouver Compliance Report

Moving the Bar - Opportunities

- City-Wide Building Bylaw
- Building Permit Rebates
- Energy Advisor Subsidy/Rebate
- Revitalization Tax Exemption
- Facilitating Training Opportunities
- Density Bonuses
- Rezoning Requirements
- Thick Wall Exclusion

Municipalities Consulting to Adopt the Step Code

- City of Richmond - June 16, 2017
- City of North Vancouver - July 4, 2017
- City of Campbell River - July 10, 2017
- City of Duncan - August 24, 2017
- District of North Vancouver - September 1, 2017
- City of Victoria - September 27, 2017
- District of Saanich - September 27, 2017
- Comox Valley Regional District - October 3, 2017
- District of North Saanich - October 4, 2017
- Resort Municipality of Whistler - October 5, 2017
- District of West Vancouver - October 24, 2017
- Township of Langley - November 7, 2017
- District of Squamish - November 9, 2017
- City of New Westminster - November 28, 2017
- City of Surrey - December 7, 2017
- City of Kelowna - January 22, 2018
- City of Penticton - January 27, 2018
- City of Burnaby - March 1, 2018
- City of Kimberley - March 12, 2018
- City of Vernon – March 19, 2018

Adopted – Council Notified/Consulting

City of Kelowna's Proposed Approach

Building Bylaw Amendment

Pt 9 Building Type	Apr 1, 2019	Oct 1, 2020	2022
SFD/2/3/4-plex	Step 1	Step 3	-
Carriage house	Step 1	Step 2	Step 3
Townhouse/Low-Rise Apartment	Step 1	Step 3	-

Continued Engagement

- **Inform pertinent stakeholders** of the proposed policy timeline;
- Offer **educational opportunities** that will help support an understanding of the requirements;
- **Identify complementary supports** for more energy efficient development; and
- Gather feedback on the **tools and resources needed to support a smooth transition** to Energy Step Code adoption.

Next Steps

- Following the stakeholder engagement, City staff will **return to Council** (anticipated for Summer 2018) **to recommend a revision to the Building bylaw**, adopting and requiring Step 1 of the Energy Step Code, beginning April 1, 2019.
- Additionally, an **educational program** to support a smooth transition to Energy Step Code adoption **will be developed**.

Questions?

For more information, visit **kelowna.ca**.