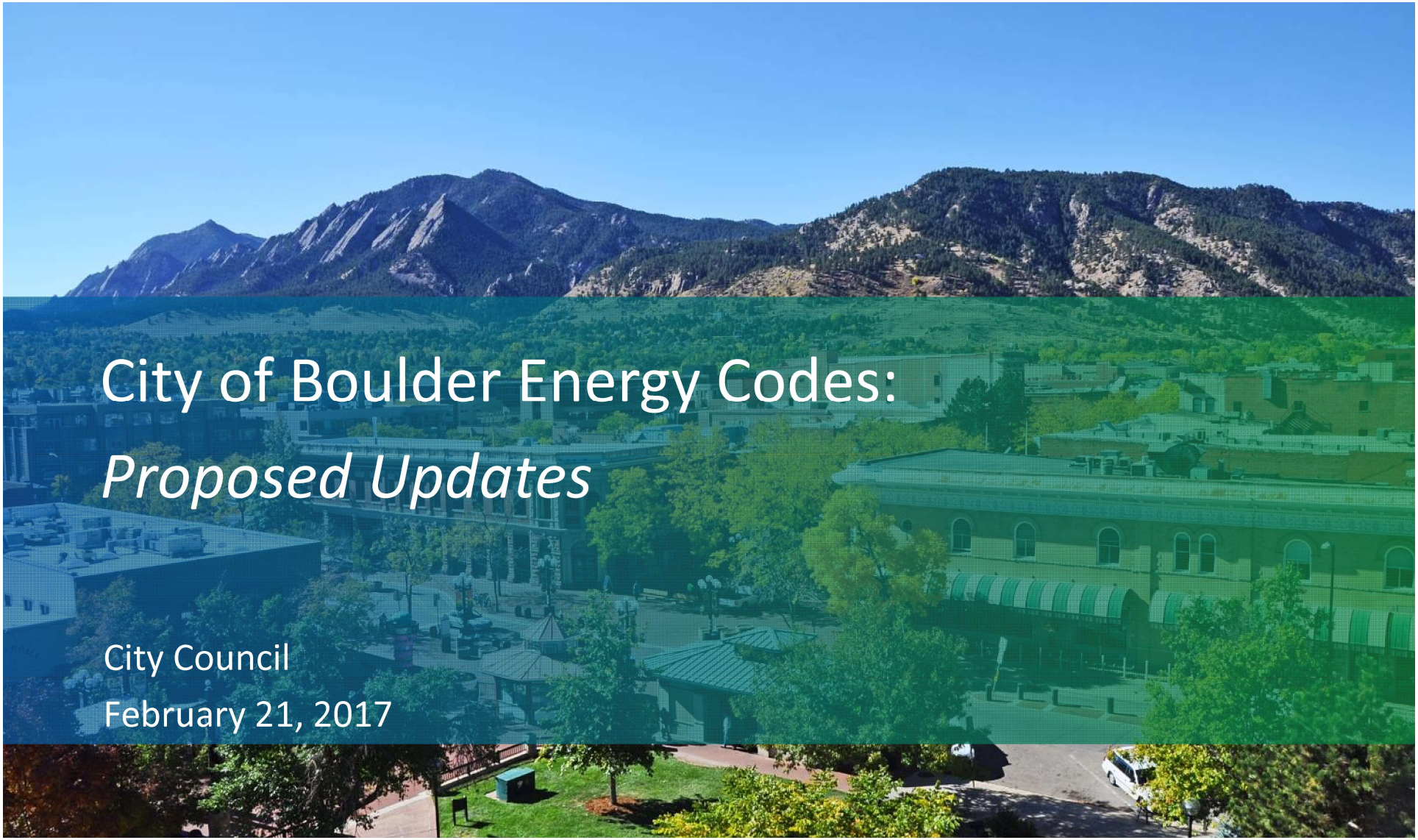


City of Boulder Energy Codes:
Proposed Updates

City Council

February 21, 2017

OUTLINE

- Background and Context
- Residential Code Updates
- Commercial Code Updates
- Estimated Cost Impacts
- Next Steps (including application of these codes to building already in the design process)

BACKGROUND AND CONTEXT

THE IMPORTANCE OF NET ZERO ENERGY CODES

CITY OF BOULDER CLIMATE AND ENERGY GOALS

80 x 2050
COMMUNITY EMISSIONS REDUCTION

80 x 2030
CITY ORGANIZATION EMISSIONS REDUCTION

100 x 2030
PERCENT CLEAN ELECTRICITY

Projected Emissions Savings (2013 – 2031):
~ 1 million metric tons CO_2e
~ 10% savings by 2050

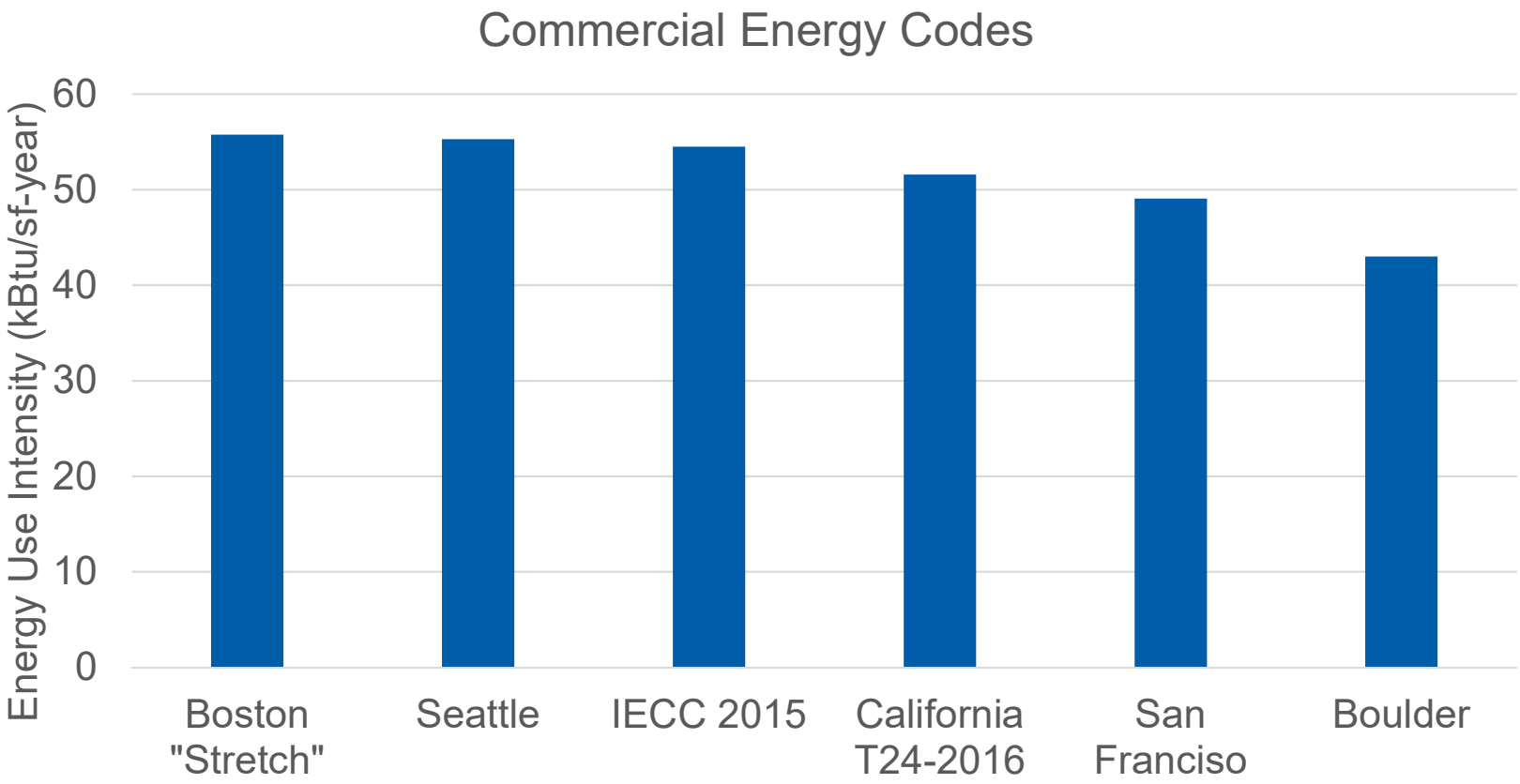
BOARD AND COMMUNITY OUTREACH

Date in 2016	Outreach Activity
March	Interviews with staff working for jurisdictions progressive energy and sustainability codes
April 27	Open House Board Meeting
May	Stakeholder Survey (sent to list of licensed contractors)
May	Stakeholder Meetings with Prominent Builders
Sept. 7	Environmental Advisory Board
Oct. 5	Landmarks Board
Dec 15	Planning Board

1ST READING QUESTIONS (COVERED IN PRESENTATION)

- Why a stand-alone code?
- What will the cost impacts be?
- How will the cumulative effect of multiple permits be handled?
- Questions about different scenarios for community solar
- What are the expected greenhouse gas emission savings?
- How will buildings already in the site review process be handled?

COMPARISON TO OTHER ENERGY CODES

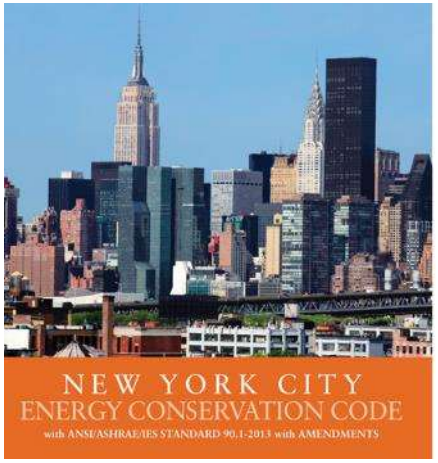


Residential: Proposed new code requires an Energy Rating Index (ERI) between 0 and 60. Boulder County requires 0 to 50. Santa Monica, CA requires net zero for all new homes.

PROPOSED ENERGY CODE UPDATES

PROPOSED OVERARCHING ENERGY CODE CHANGES

Adopt a stand-alone energy code



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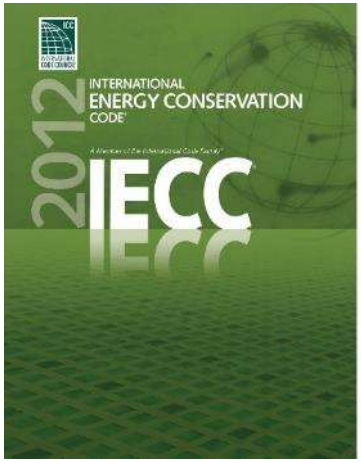

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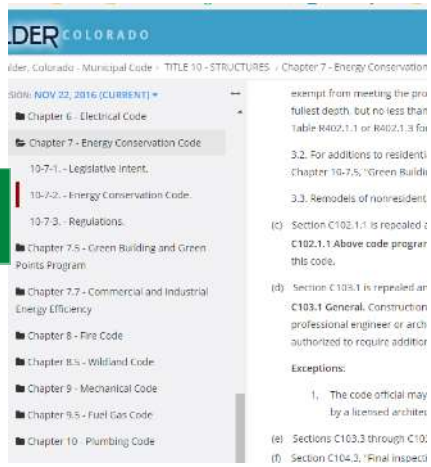


Regulate multifamily units (MFUs) under the commercial energy code

vs

PROPOSED RESIDENTIAL ENERGY CODE UPDATES

Remove Green Points system and streamline non-energy requirements.

Reduce the maximum allowable Energy Rating Index (ERI) for new homes and additions.

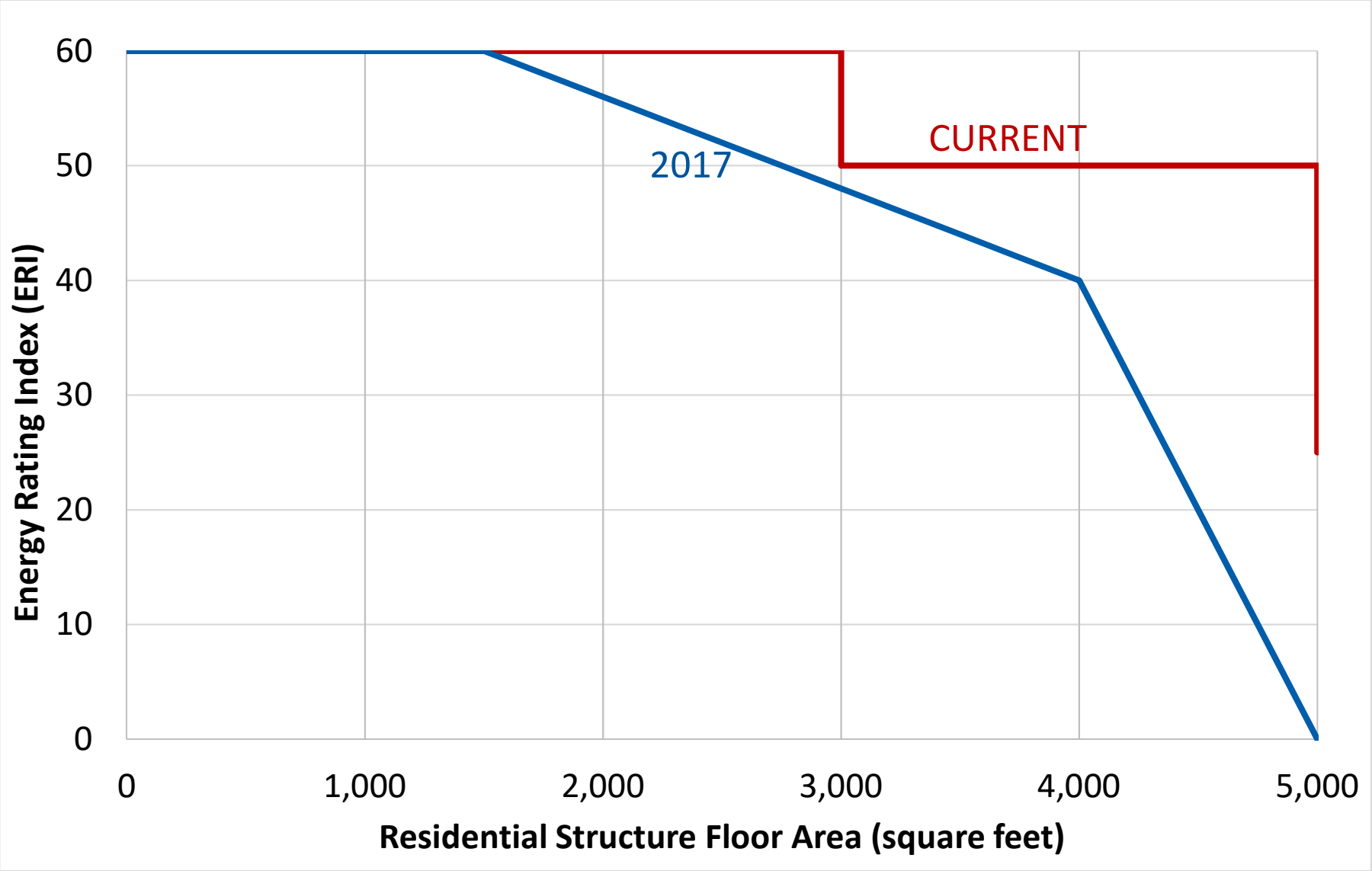
Revise the requirements for alterations.

Allow off-site renewable energy.

RESIDENTIAL: ELIMINATE POINT STRUCTURE

Requirements	Current	Proposed
Energy Performance	ERI/HERs	ERI/HERs
Waste Management	Mandatory	Mandatory
Landscaping	Optional point	Mandatory (Title 9)
Solar Photovoltaic "Ready"	Optional point	Mandatory
Electric Vehicle Charging (NEW)	NA	Mandatory (IRC)
Water Efficiency	Optional point	Mandatory (IRC)
New Radon Mitigation (NEW)	NA	Mandatory (IRC)
Material Efficient Framing	Optional point	New ERI ratings will incorporate these features
Indoor Air Quality	Optional point	
Design Process and Education	Optional point	
Sustainable Products	Optional point	Not required
Solar Thermal "Ready"	Optional point	Not required

RESIDENTIAL: PROPOSED ERI REQUIREMENTS FOR NEW CONSTRUCTION



RESIDENTIAL: PROPOSED REQUIREMENTS FOR ADDITIONS AND ALTERATIONS

- Additions < 1,000 sf shall meet prescriptive requirements
- Additions ≥ 1,000 sf will use a single lookup table/online tool to determine required ERI (more stringent for larger homes)
- Change the metric for how alteration requirements are determined, from measured floor area to the percentage of the project valuation *(calculated from permits filed within a two-year period)*
- Require mandatory efficiency measures for all alterations, including energy advising and/or energy assessments (depending on project valuation)

RESIDENTIAL: ALLOW OFF-SITE RENEWABLES

- Allowed once on-site options are exhausted
- Exceptions may be needed if Community Solar is oversubscribed

Community Solar

~~Approved Carbon Offset Funds~~

~~Renewable Energy Credits (RECs)~~

PROPOSED COMMERCIAL ENERGY CODE UPDATES

The requirement for new commercial buildings (30% more efficient than ASHRAE 90.1-2010) is not changing.

1	Scope of requirements for alterations will be based on the percent of the project cost to the total assessed value
2	Revise the prescriptive energy code requirements (when it is allowed and the requirements themselves)
3	New requirements for: • Heating and cooling (HVAC) system shutoff • New buildings must be solar “ready” • New buildings must have EV charging infrastructure • Water fixture efficiency

COST BENEFIT ANALYSIS

BENEFITS

- GHG Savings
- Reduced energy costs
- Improved occupant comfort
- Improved worker productivity
- Higher property value and lease rates

Type of Building	Potential Cost Increase
New Homes	~1-2.5% of construction costs
New Commercial Buildings	Electric Vehicle Charging Requirements: ~$850 per space (10% of spaces) + $4,000-6,000 for one Level II charging station
Residential and Commercial Alterations	Will vary depending on the project valuation – could be no change, or if this triggers new construction requirements, the cost increase could be significant.

NEXT STEPS

- Adopt changes to energy and building codes (3rd Reading)
- Code changes take effect 60 days after adoption
  - Exception: Any project that has been through a certain point in the design process will be subject to the current codes
- March – May: Staff and customer training

EXCEPTION FOR PROJECTS IN DESIGN PROCESS

OPTIONS FOR CUTOFF POINT

1. Site Review Application – language in the errata sheet
2. Site Review Approval
3. Building Permit Application – language in the 2nd reading ordinance

** There are currently 21 projects between steps 1 and 3.*

DISCUSSION AND Q & A