# Welcome to the 2023 Dan Leckie Forum

Advancing existing building performance standards in the Greater Toronto Hamilton Area



Welcome from TAF

+ Dan Leckie Family 1:30 pm

Case Study Presentations and Q+A 1:45 pm

Legal Presentation and Q+A 2:50 pm

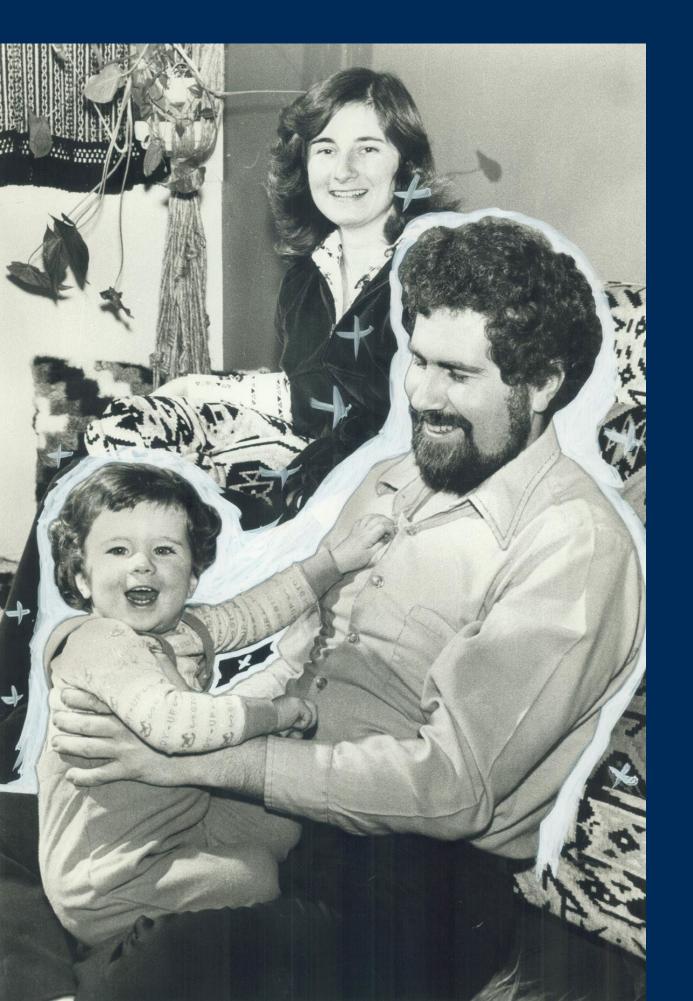
BREAK 3:00 pm

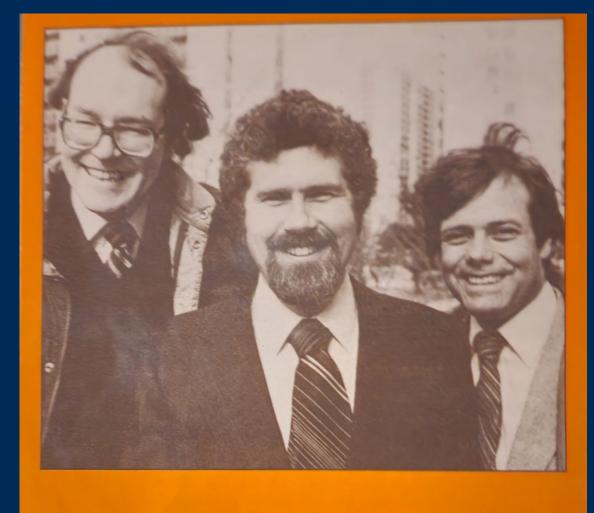
Breakout Sessions 3:15 pm

Closing Discussions 4:15 pm

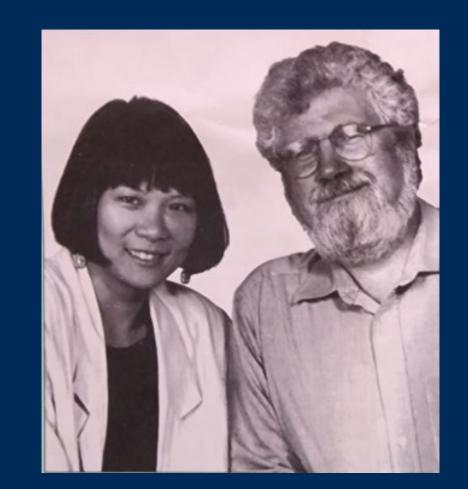
Network Reception + Cocktails 4:30 pm

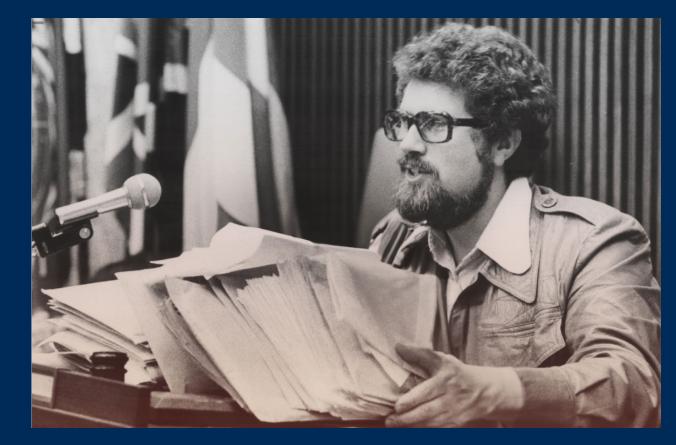
# Remembering Dan Leckie

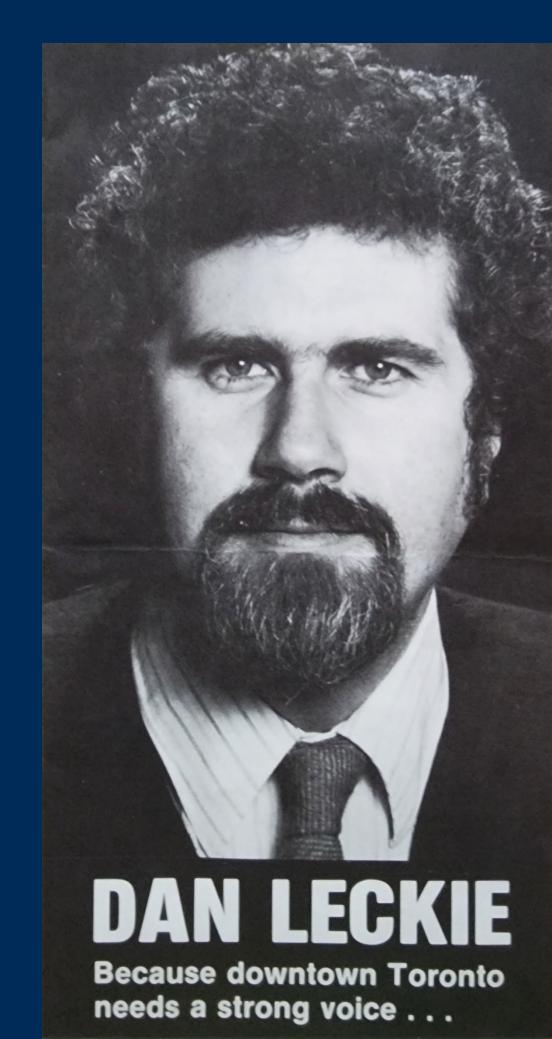




We're backing Dan Leckie on March 19th . . .







# Ekaterina Tzekova



Director of Research & Innovation, TAF

# Marshall Duer-Balkind



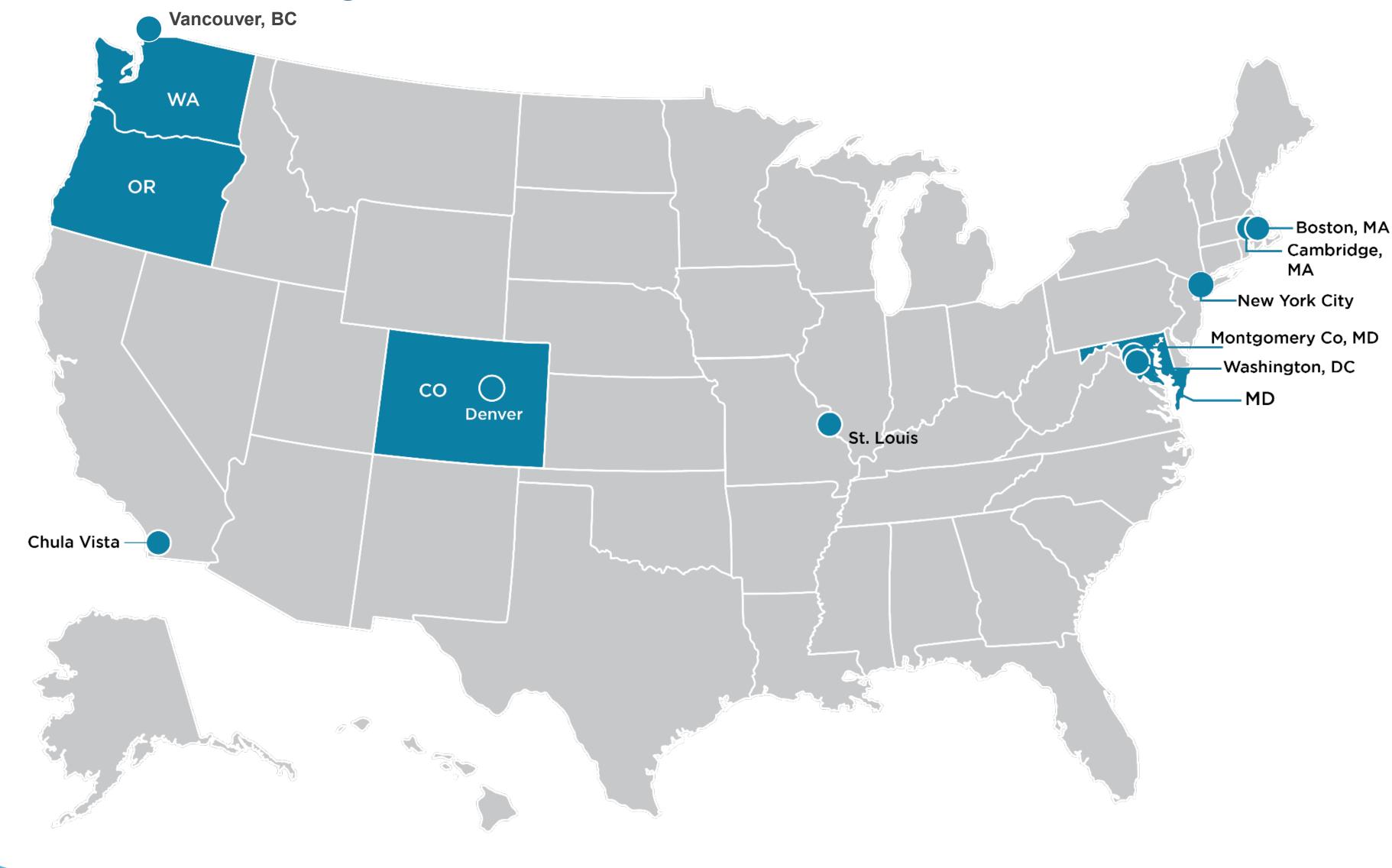
Director of Policy Programs, Institute for Market Transformation (IMT)



# Building Performance Standards – Emerging Best Practices + DC Case Study



# North American Building Performance Standards





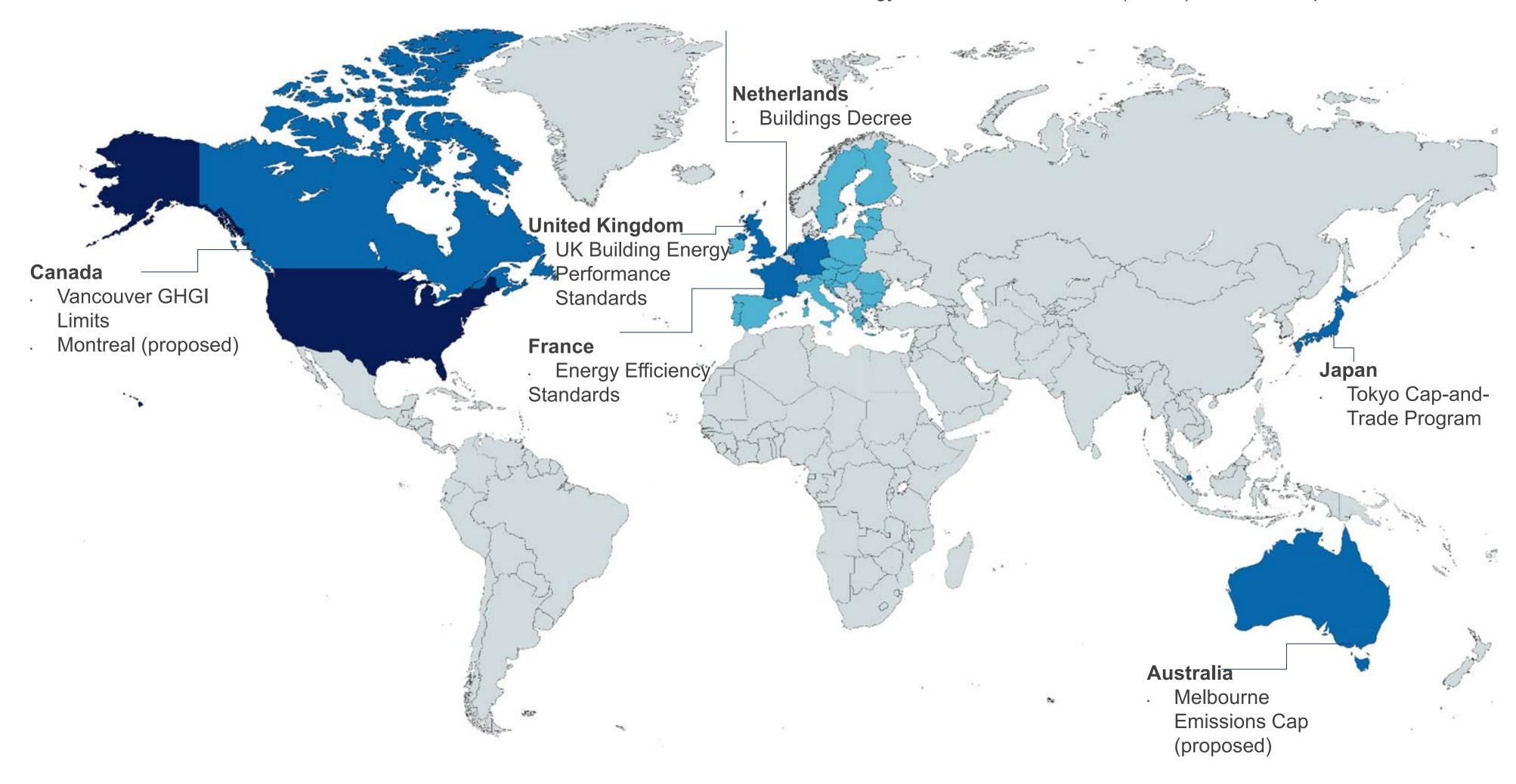
# National Building Performance Standards Coalition



# Beyond the U.S...

#### **European Union**

- Energy Performance Certificates
- . Minimum Energy Performance Standards (MEPS) under development





## Definition of a Building Performance Standard

A Building Performance Standard policy is a set of standards designed to reduce carbon emissions in large existing buildings by improving energy, gas and water use, and peak demand.

These standards become stricter over time, driving continuous, long-term improvement in the building stock, and complementing building energy codes.



## **BPS Policy Elements**











# Covered Buildings

 All buildings of given sizes and types

#### **Triggers**

- Date certain requirements
- Negative consequence for failure to meet standard

#### Standards

- Clear standards
- Increasing stringency over time

#### Metrics

- Energy Use Intensity (EUI)
- Greenhouse Gas Intensity (GHGI)
- ENERGY STAR Score
- Peak Load

#### Compliance Paths

- Multiple pathways
- Flexibility
- Exceptions / Exemptions



# 1

# BPS Policy Structures: Type 1 – Iterative Cycles

#### Structure

- Standard set based on median /
  - percentile performance
- Recalculated at end of each cycle

#### **Examples**

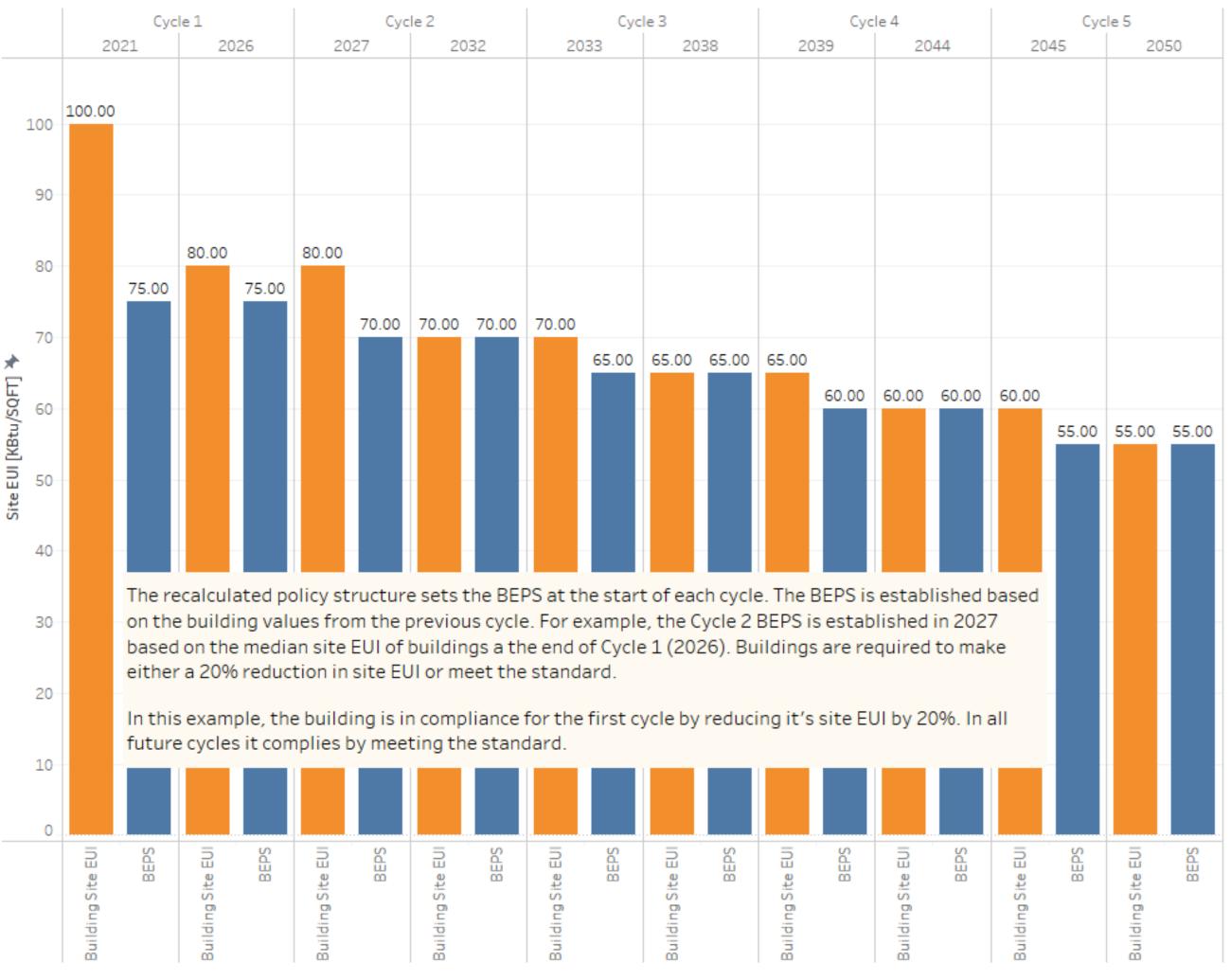
- Washington, DC
- · St. Louis
- State of Washington

#### **Pros**

- Flexible
- Adjusts to changes
- Based on relative performance of stock

#### Cons

- Difficult to predict long-term savings
- Does not support capital planning
- · Savings can flatten out over time

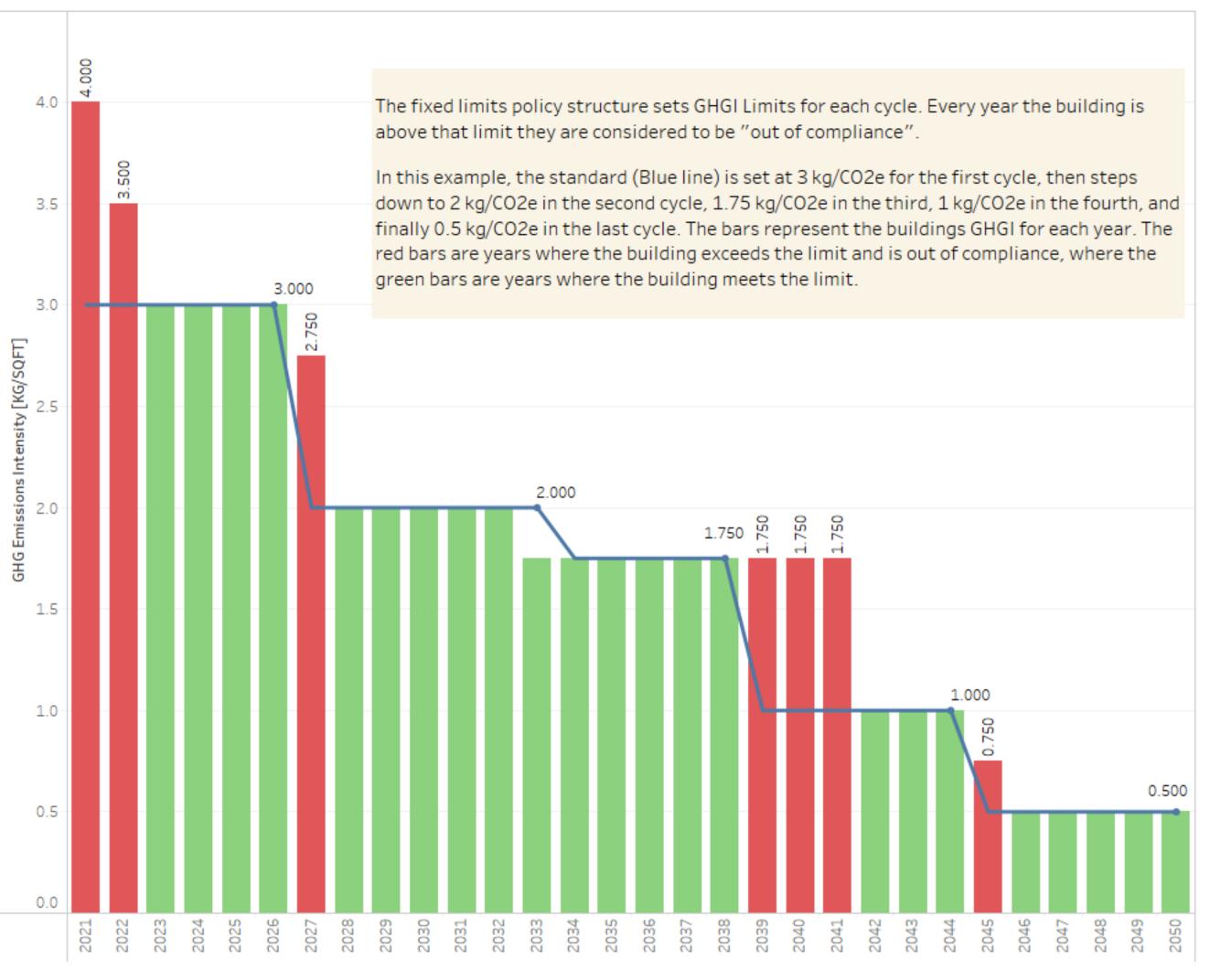


DC DOEE GHG Study



# BPS Policy Structures: Type 2 – Fixed Limits

#### Structure Fixed Limits set by year and property type, declining over time All existing policies are GHGI based **Examples** New York City Boston State of Colorado Vancouver Pros Long-term clarity Clearest alignment with climate target Least flexible Cons Grid GHGI can introduce uncertainty Complex analysis May require most expensive work



DC DOEE GHG Study



#### Structure

Building-specific trajectories, towards

final target by building type

#### **Examples**

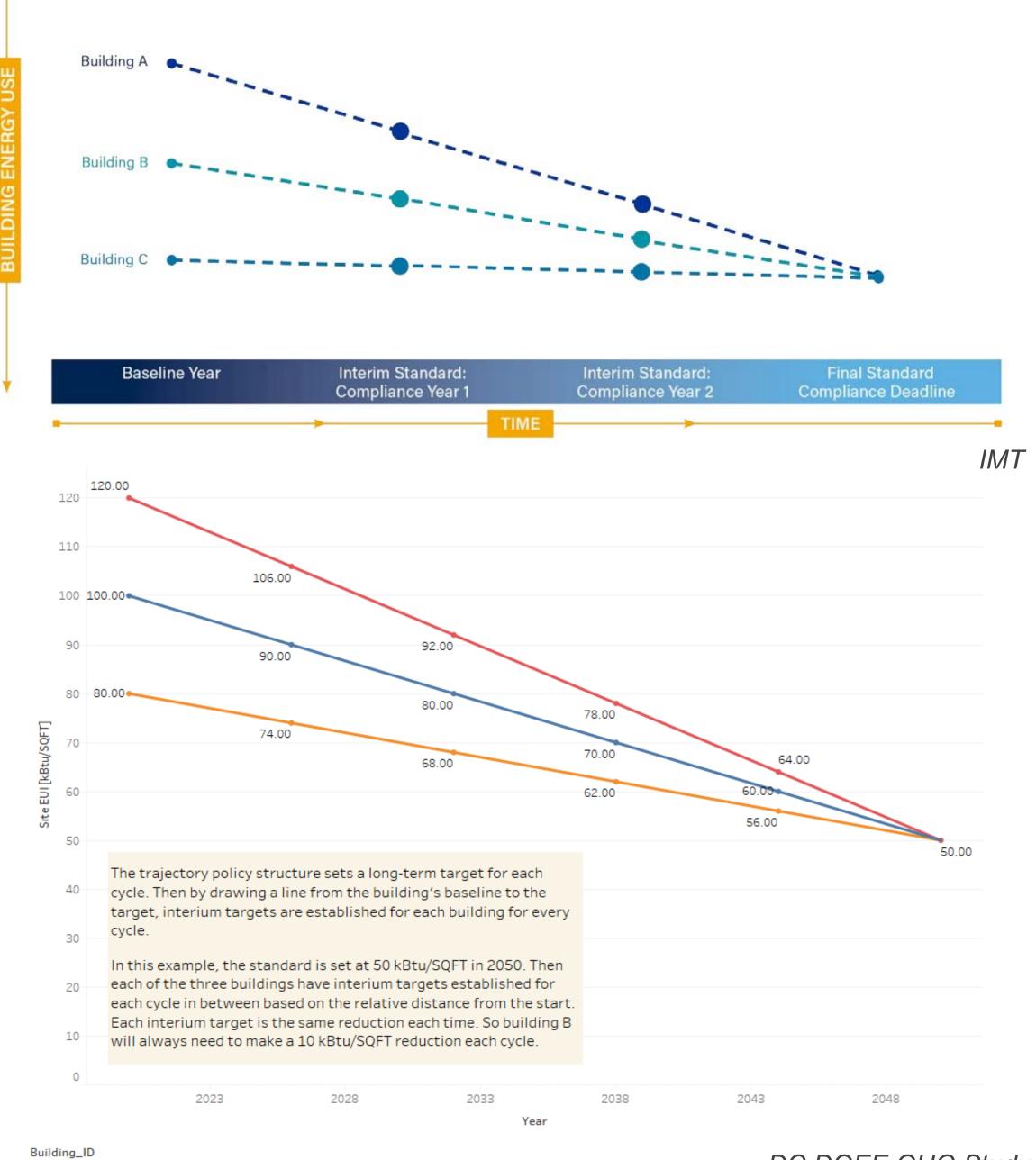
- Denver
- State of Maryland
- Montgomery County, MD

#### **Pros**

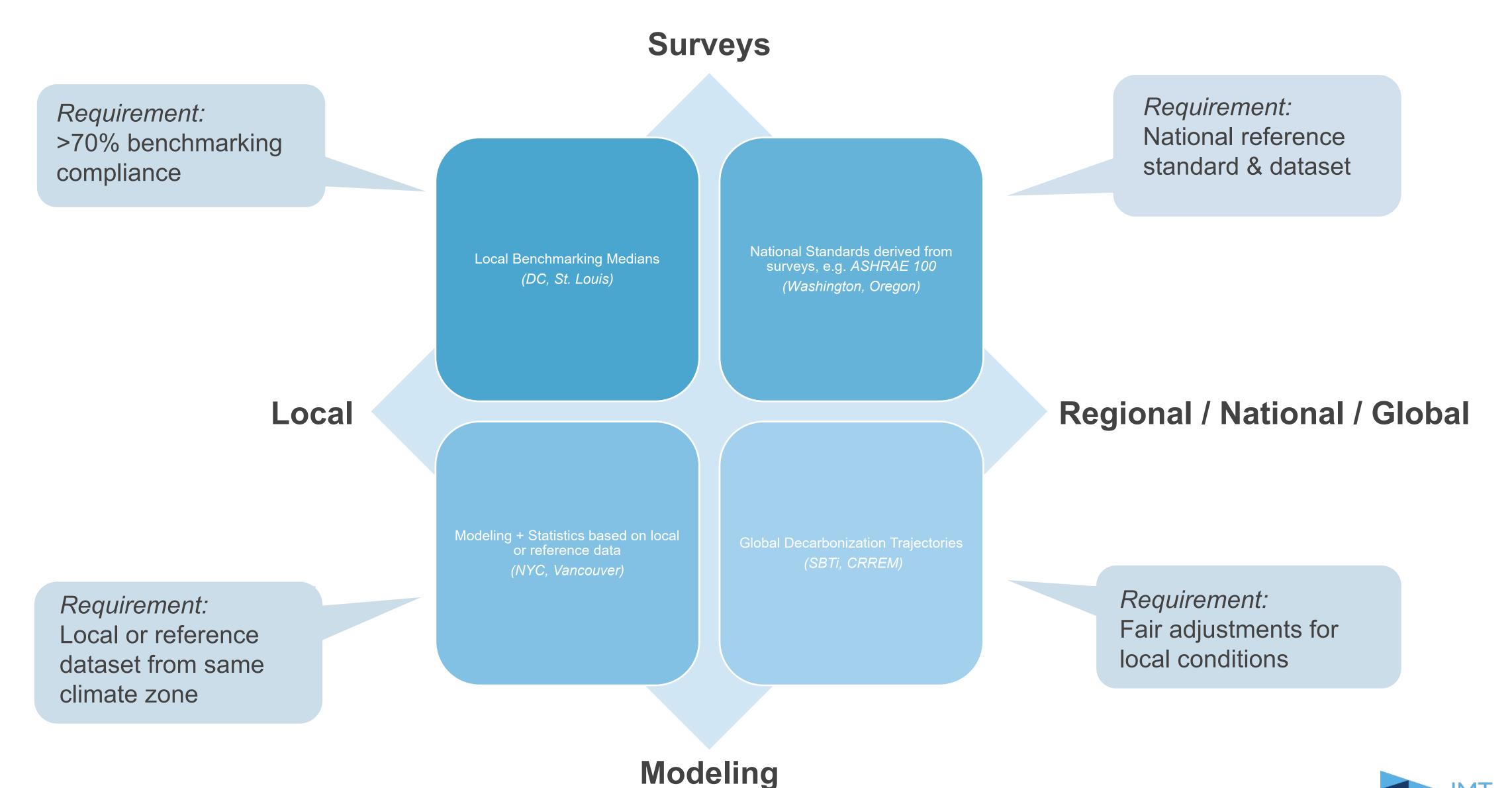
- Clear trajectories
- Customized + flexible
- Integrates with capital planning

#### Cons

 Complex to understand and to implement



# Approaches to Setting BPS Performance Thresholds







## DC Case Study

- Clean Energy DC Omnibus Amendment Act of 2018:
   1st Building Performance Standard in the U.S.
- Requires an establishment of a minimum threshold for energy performance that will be "no lower than" the local median ENERGY STAR score by property type (or equivalent metric).
- Penalties: \$10/sq. ft.
- Standards set and first compliance cycle began: January 1, 2021

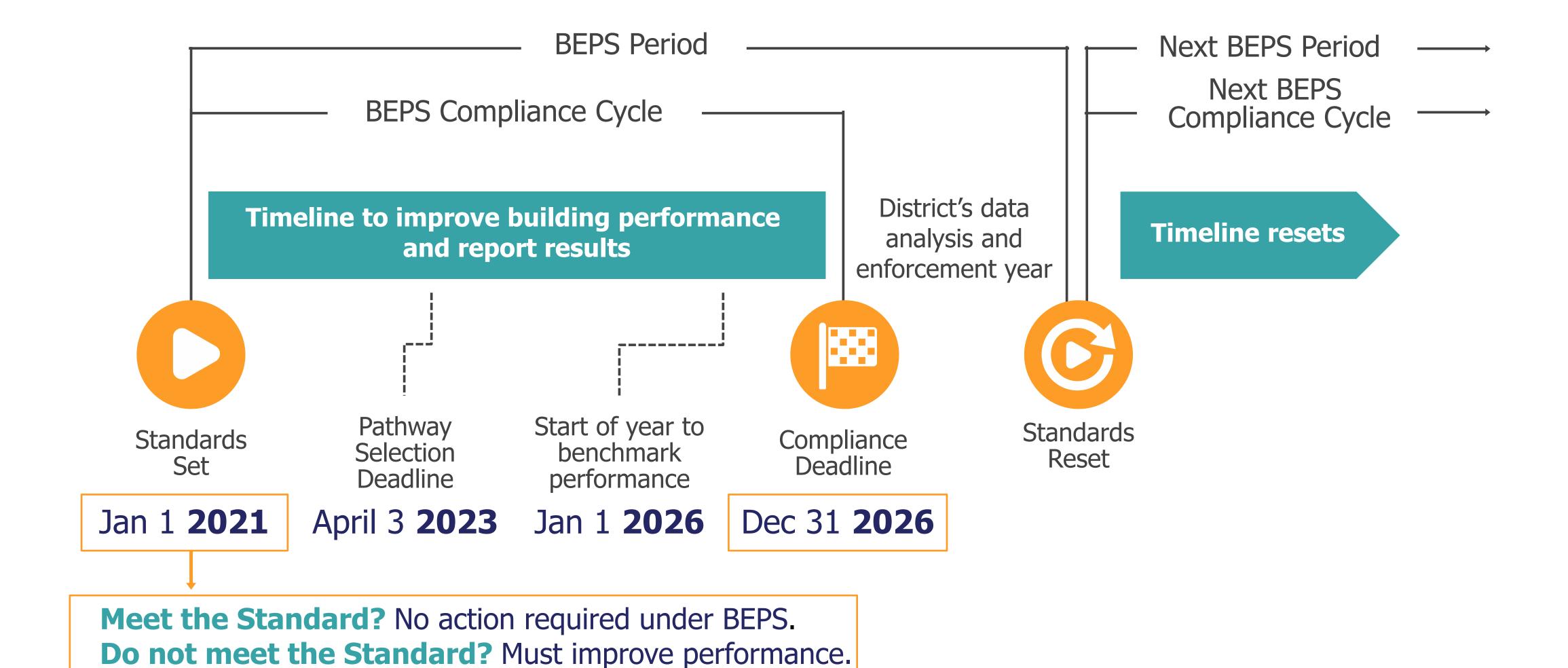


BEPS 2 BEPS



BEPS 4

## Compliance Cycle





## Size-based Timeframes



Have been benchmarking since 2013

BEPS Cycle started Jan. 1, 2021 Started benchmarking in 2021

BEPS Cycle starts: Jan. 1, 2027 Required to start benchmarking during 2024

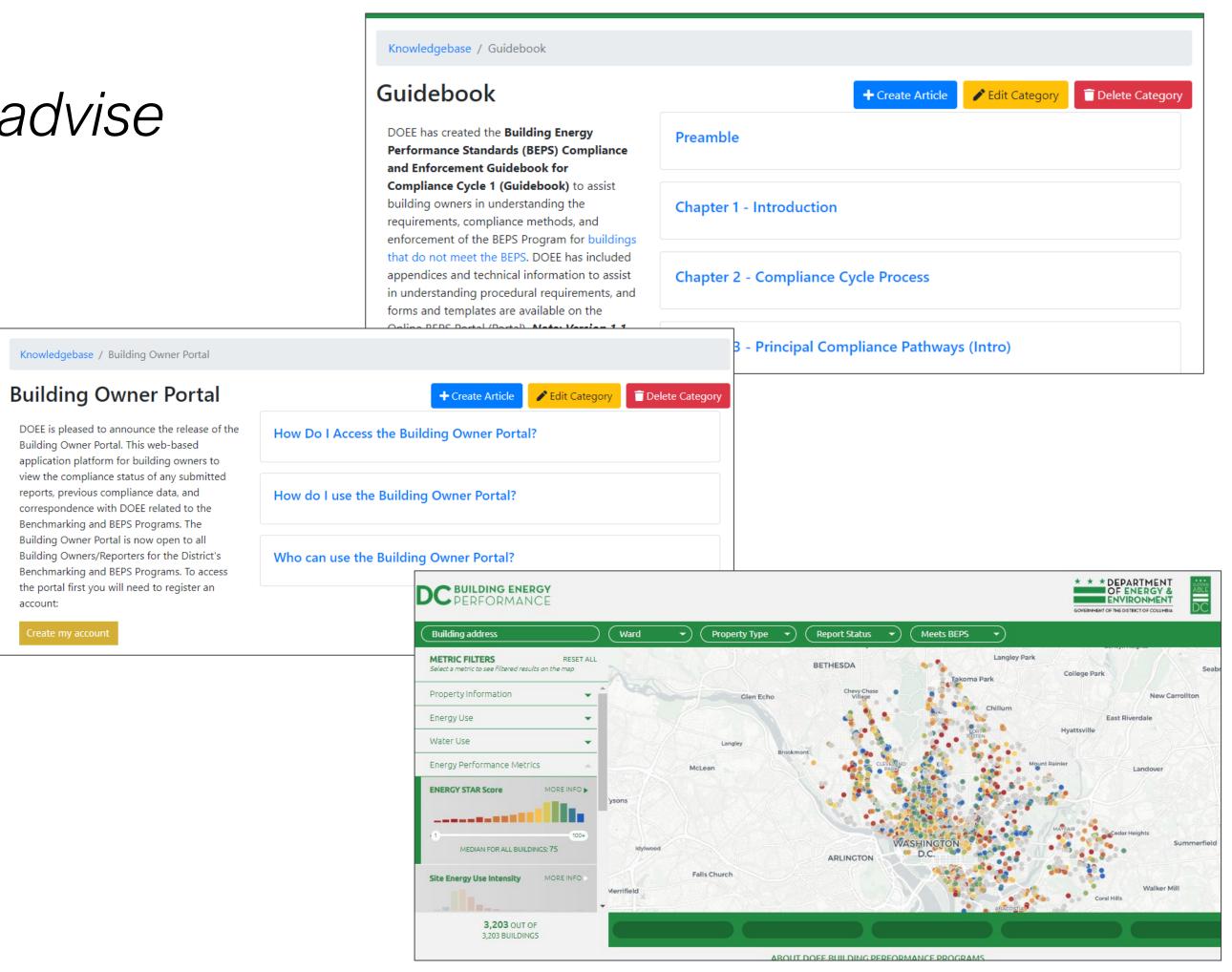
BEPS Cycle starts: Jan. 1, 2033



#### STAKEHOLDER ENGAGEMENT

BEPS Task Force appointed by Mayor to advise DOEE; met bi-weekly since 2019

- Metrics + Standards
- Compliance and Enforcement
  - . Delays of compliance
  - . Exemptions
  - . Penalties
- Other important topics:
  - . Campus-level compliance
  - . Affordable housing
  - . Solar/renewables
  - . Historical buildings





# DC Compliance Pathways

#### Principal Compliance Pathways



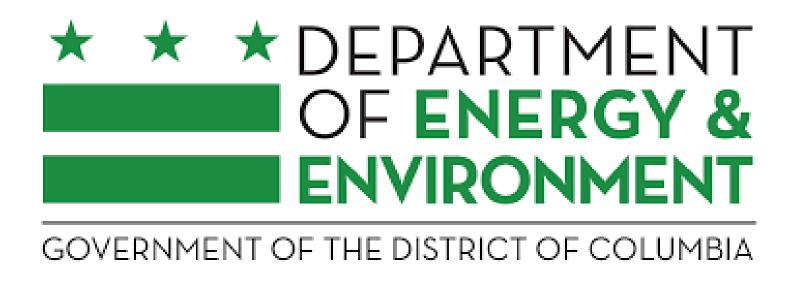
- Extended
- Deep Retrofit
- Custom



	Performance Pathway	Standard Target Pathway	Prescriptive Pathway	Alternative Compliance Pathway
Eligibility	All Property Types	Specific Property Types	All Property Types	Varies
Evaluation	Performance-based	Performance-based	Action-based	Custom
Metric	Site EUI	ENERGY STAR Score	N/A	Site or Source EUI
Goal	Reduce Site EUI by 20%	Reach the Standard for your property type	Completion of EEMs and Reporting with savings comparable to Performance Pathway	Comparable savings to Performance Pathway over 1 or more cycles



# Support Programs Available in DC





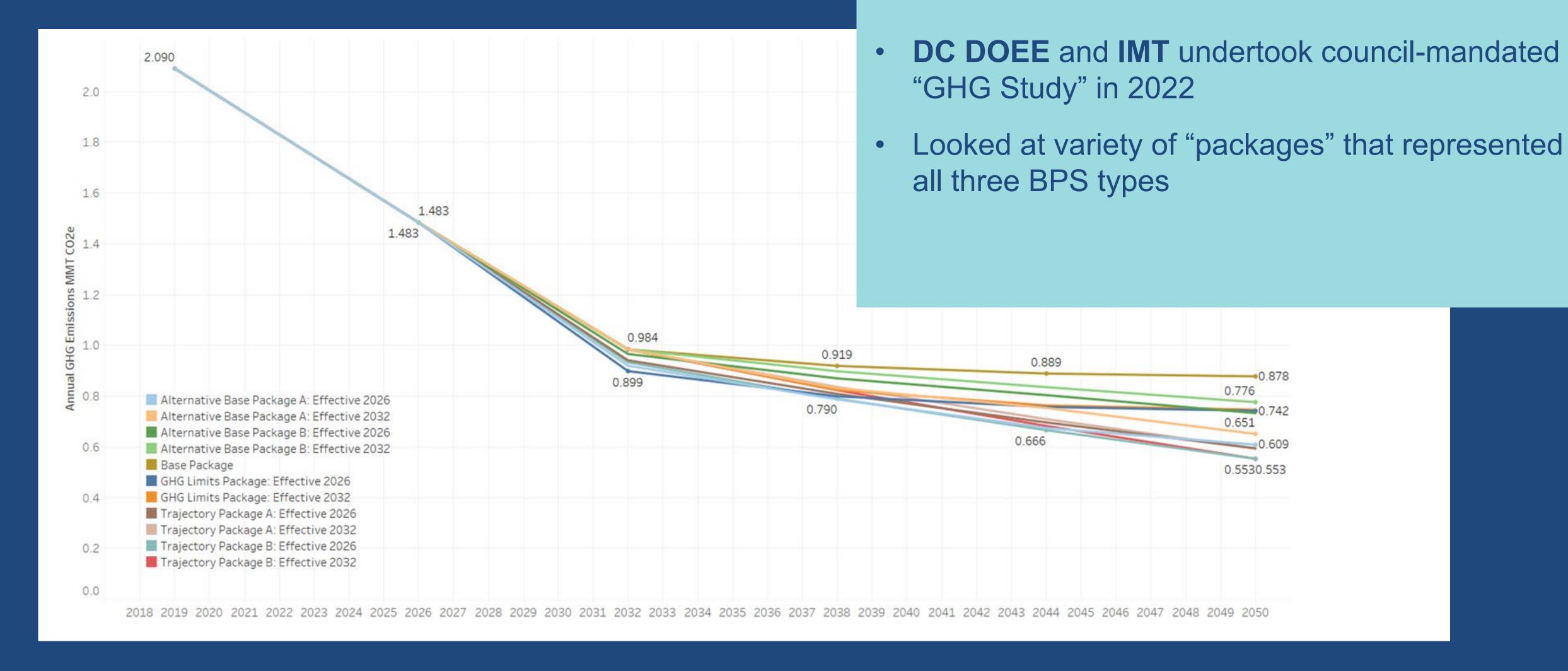








## GHG Study



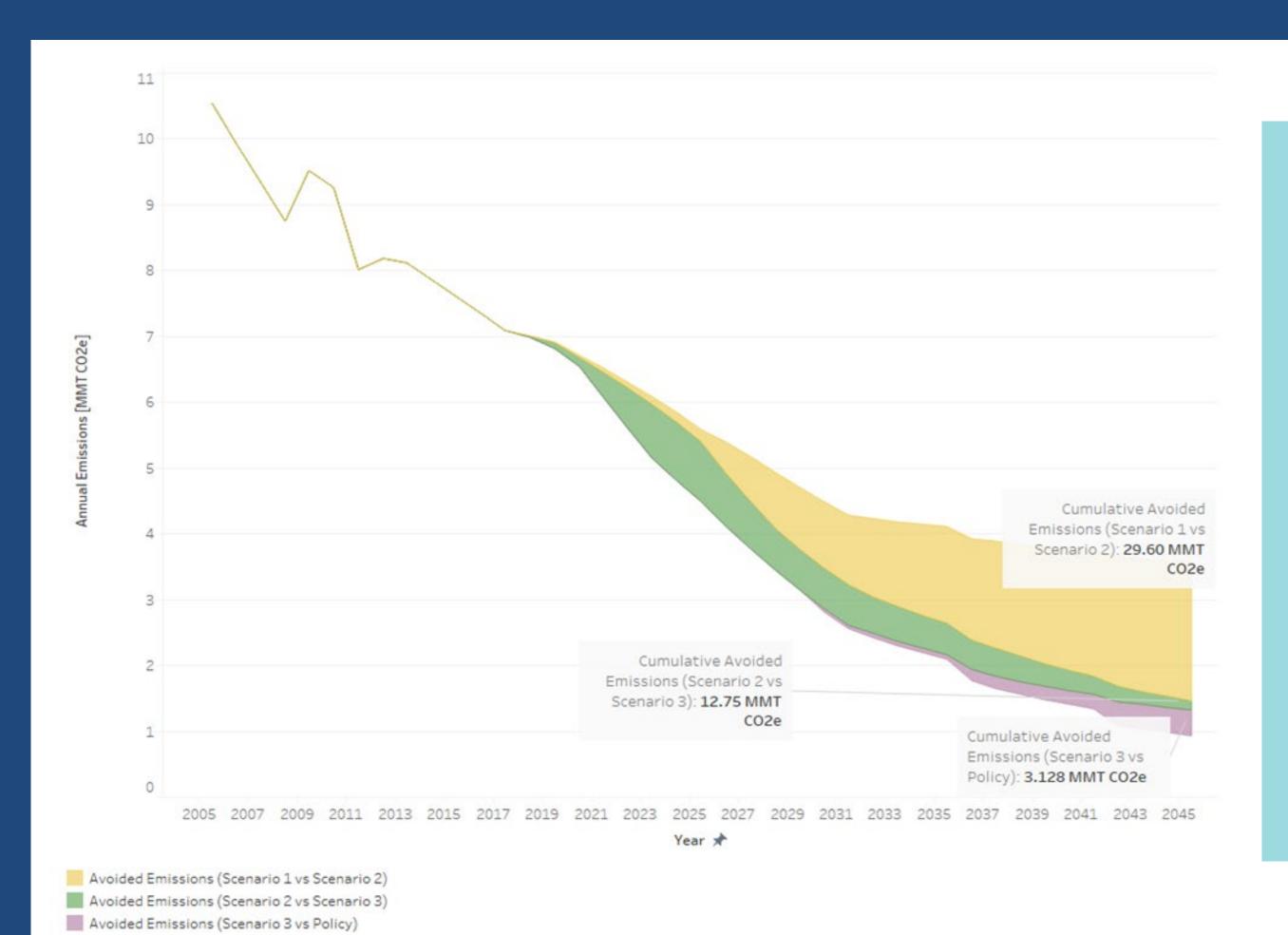


# GHG Study: Package Evaluation

Policy package:	Base Package	<b>Alternative Base</b>	<b>Alternative Base</b>	<b>GHG Limits</b>	Trajectory	Trajectory
		Package A	Package B	Package	Package A	Package B
Align with goals/commitments	No	No	No	Yes	No	Yes
Social and racial equity*	N/A	N/A	N/A	N/A	N/A	N/A
Regulatory fairness	Yes	No	Yes	Yes	Yes	Yes
Jobs and economic growth	Yes	Yes	Yes	No	Yes	Yes
Maximize certainty	No	No	No	No	Yes	Yes
Transparency	Yes	Yes	Yes	Yes	Yes	Yes
Drive early action	No	No	No	Yes	Yes	Yes
Accommodate building life cycle events	No	No	No	No	Yes	Yes
Simplicity	No	No	No	No	Yes	Yes
Ease of compliance/implementation	No	Yes	No	No	Yes	Yes
Regional Consistency	No	No	No	No	Yes	Yes
Promotes Electrification	Yes	Yes	Yes	No	Yes	Yes



## Next Steps for DC



- DOEE and stakeholders are evaluating a potential shift to a policy based on "Trajectory Package B":
  - Would set long-term Total Site EUI and On-site GHG Intensity targets by property type and establish interim building specific targets that must be met every six years



## Emerging Best Practice: Dual Metrics

Examples: Maryland (proposed regulations), Vancouver (for heating use), DC (under development)

1

# Onsite and District Energy GHGI Limit

- Declining to zero for all building types
- Simple percent reduction interim requirements on regular intervals

2

# Total Site EUI Limit, to promote efficiency

- Building-type specific final limits
- Uses "trajectory approach" for individualized interim targets
- Normalized for weather
- Adjusted for building use factors (under development)



#### IMT Resources

#### http://imt.org

- Model BPS Law
- BPS Implementation Guide
- Community Engagement
   Framework
- Process Guide
- Conflict Resolution Guide
- And many more....



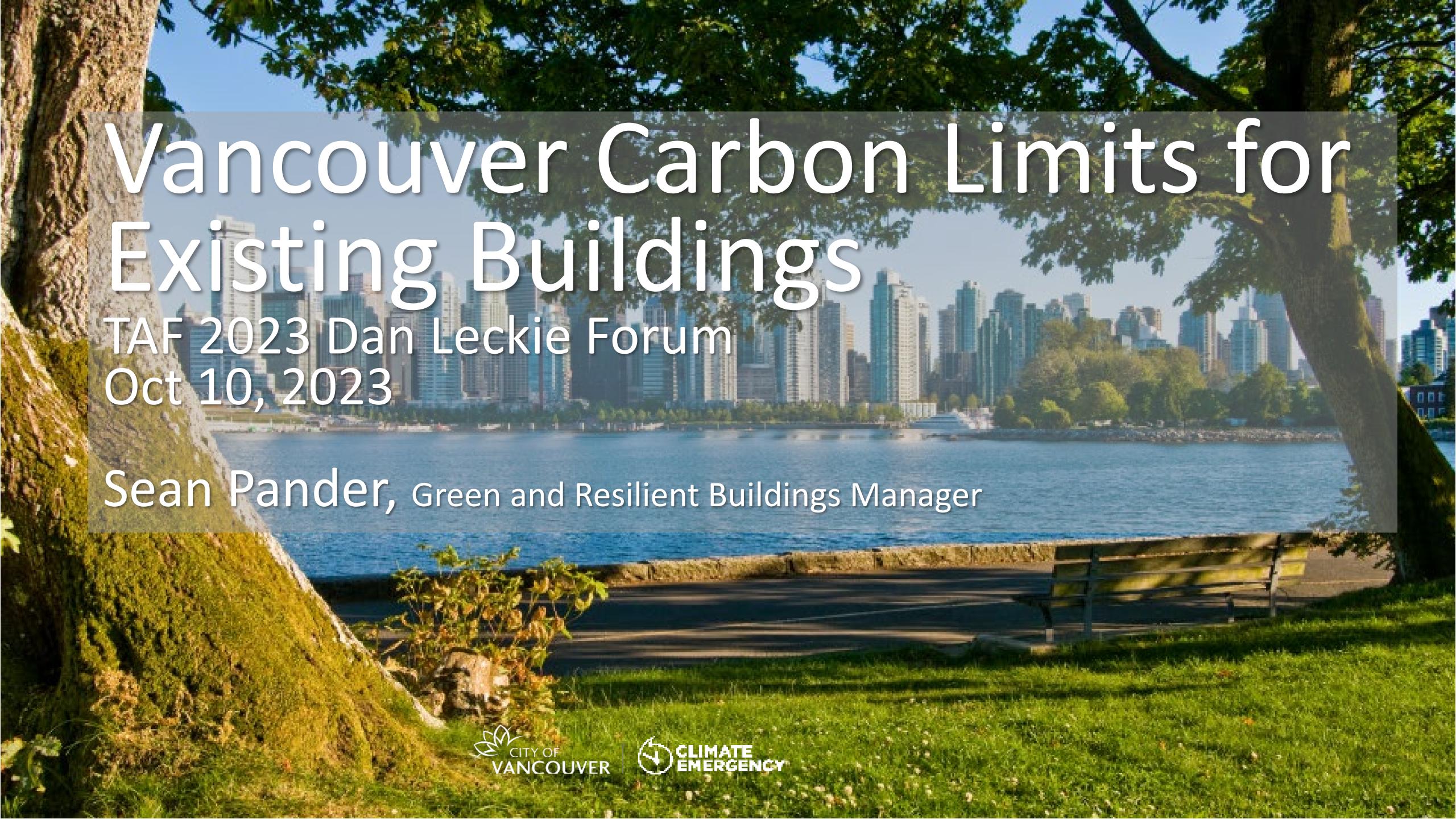




# Sean Pander



Green & Resilient Buildings Manager, City of Vancouver



# Outline

1: Regulatory Overview and Rationale

2: Stakeholder Engagement

3: Industry Support



# **Energy and Carbon Reporting**

2024

Commercial >100k ft<sup>2</sup>

2025

Commercial >50k ft<sup>2</sup>

Multifamily >100k ft<sup>2</sup>

2026

Multifamily >50k ft<sup>2</sup>

### Carbon Pollution Limits

2022

Council Approval

2026 GHGI LIMITS

Office + Retail >100k ft<sup>2</sup>

2040 GHGi + HEAT ENERGY LIMITS

Office + Retail >100k ft<sup>2</sup>

#### 2026 GHGi Limit

#### LIMITS FOR OFFICE + RETAIL > 100,000 FT<sup>2</sup>

Office  $25 \text{ kg CO}_2/\text{m}^2/\text{year}$ 

Retail 14 kg CO<sub>2</sub>/m<sup>2</sup>/year

#### RATIONALE

- Fast & easy limits impact 25% highest GHGi buildings
- Does not require capital improvements
- Compliance is *flexible* recommissioning, renewable gas (RNG), low-carbon district heat, or \$350/t/yr operating permit
- Price signal to act



# 2040 GHGi and Heat Energy Limit (HEL)

#### LIMITS FOR OFFICE + RETAIL > 100,000 FT<sup>2</sup>

GHGi Limit 0 kg CO<sub>2</sub>/m<sup>2</sup>/yr

Heat Energy Limit 0.09 GJ/m<sup>2</sup>/yr (1 GJ/ft2/yr)

#### **RATIONALE**

- HEL requires ~ 85% reduction in heat energy
- HEL allows gas for peaking, GHGi requires renewable energy
- Cost effective/neutral retrofits aligned with capital replacements
- Regulatory clarity



www.zebx.org/resources/

## REGULATORY ROADMAP (recommendations early 2025)

- Additional commercial occupancies for GHGi and HEL
- Reduce size threshold to 50,000 ft2
- Midterm GHGi limits (eg 2030 office and retail)
- Equipment replacement regulations for smaller commercial, MURBs and detached housing

#### RATIONALE

- Expanded and additional regs needed for 50% GHG reduction by 2030
- Smaller building owners need simplicity
- MURB equipment regs (DHW, MAU, decorative gas) for affordability
- Commercial RTU regulations most small commercial emissions



# 2. Stakeholder Engagement

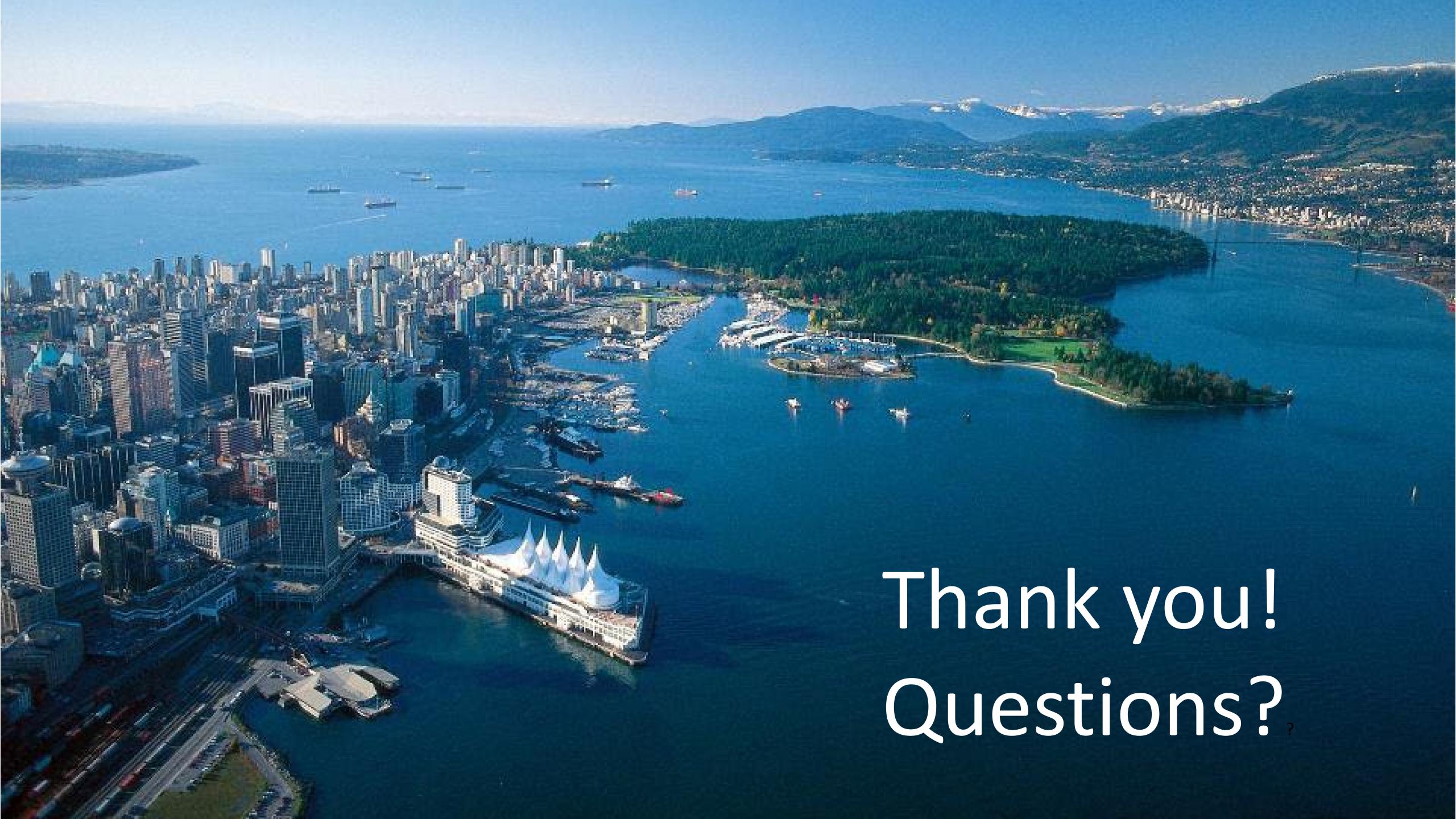
- a) Collaborative engagement/learning journey developed with BOMA BC
- b) External Advisory Committee (BOMA, key owners, retrofit engineering firms, mechanical contractor association, district energy utilities) + observers
- c) Principles, consultant architype retrofit bundles, deep retrofit plan results, case studies
- d) Time + multiple info sources/formats + responsiveness + transparency = understanding, confidence, trust and support
- e) Traditional open engagement (publish draft regs, open workshops, etc)



# 3. Industry Support

- a) Collaborative process
- b) Clarity
- c) Sensible regulations
  - cost effective
  - aligned with capital replacements
  - flexible
  - consistent with owner deep retrofit studies/projects
- d) Aligned with investor ESG priorities, carbon pricing, emergent regional/provincial/federal regulations
- e) Transparency in needed refinements and process
- f) Commitment and plan for (small) owner supports





### Rae-Anne Miller



Public Energy Initiatives Manager, City of Toronto

# City of Toronto Emissions Performance Standards

Dan Leckie Forum October 10, 2023

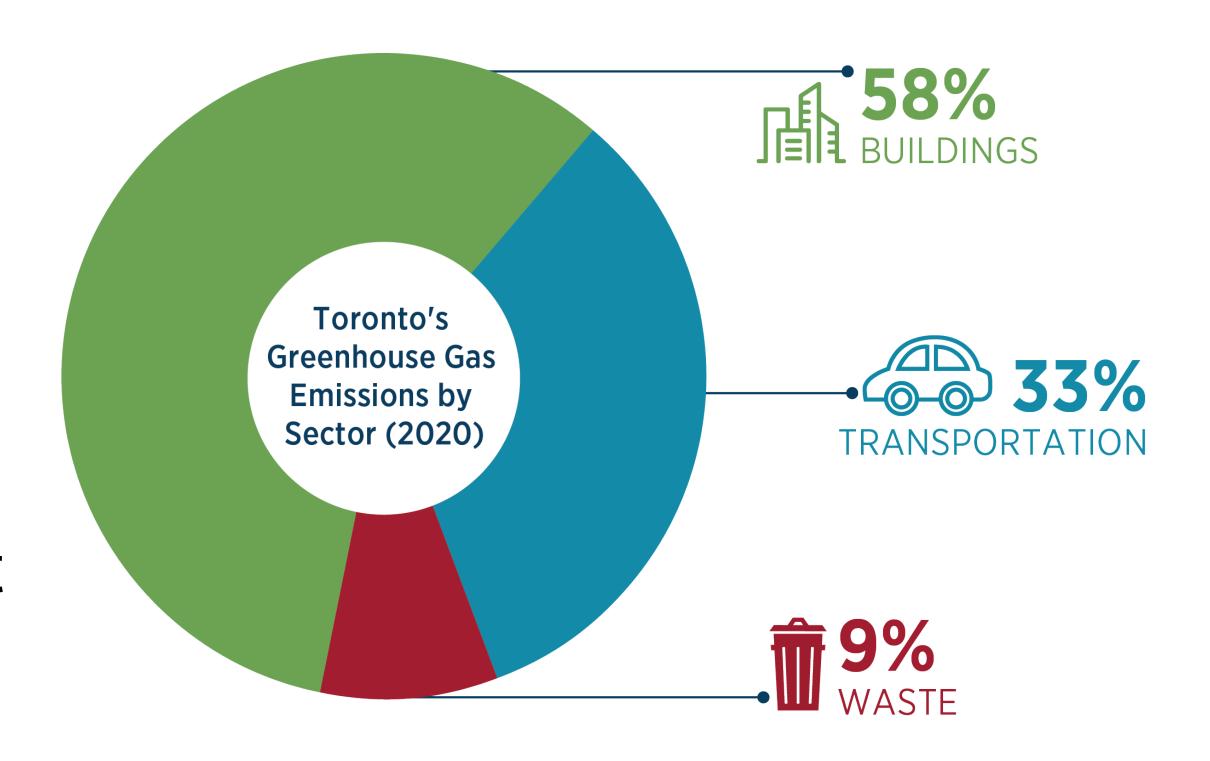
Prepared by:
Environment & Climate Division
City of Toronto





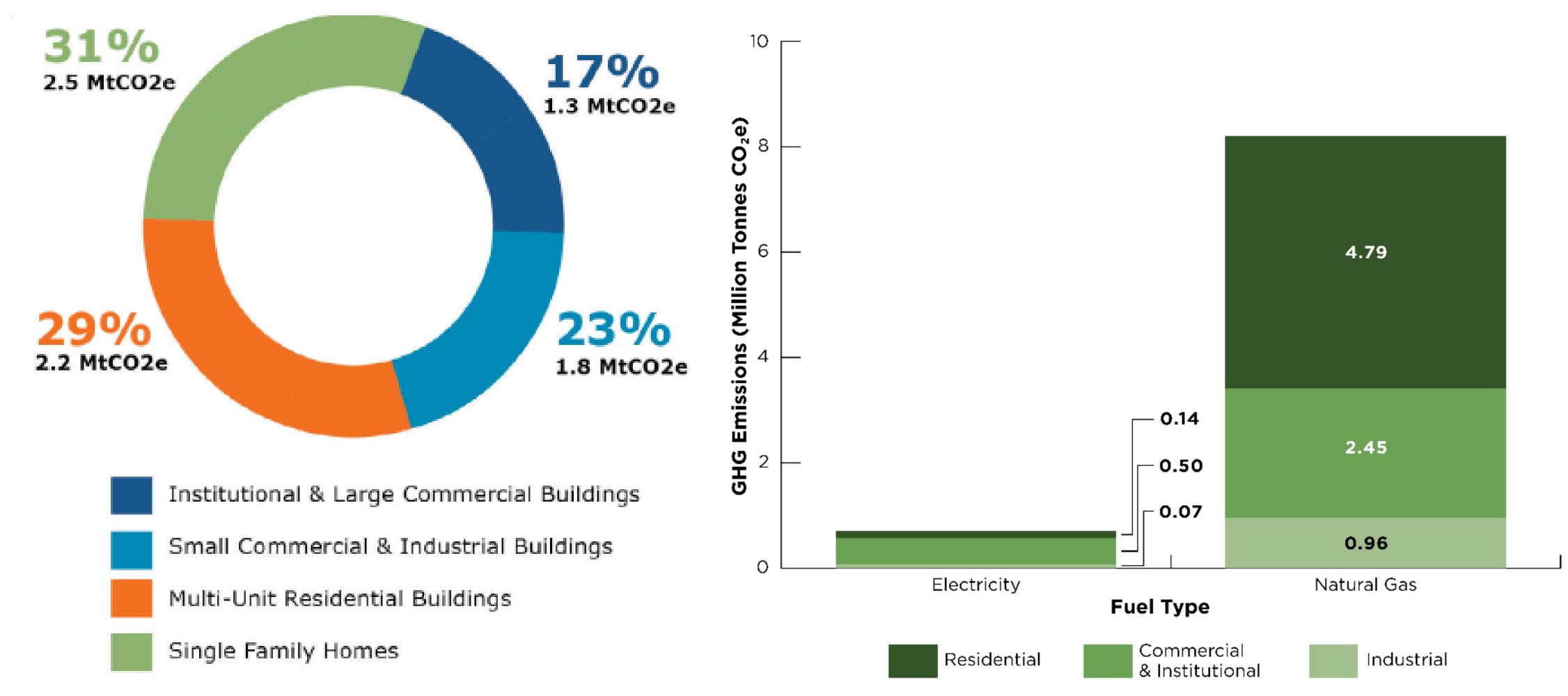
#### Context

- The City's TransformTO Net Zero Strategy sets out the actions required to reach net zero greenhouse gas emissions by 2040.
  - This ambitious target is the basis for one of the City's strategic priority areas
- Buildings are the largest source of GHG emissions in Toronto today, accounting for 58 per cent of total community-wide emissions.





### Emissions breakdown for buildings





#### Scale of Transformation



 Annual investments between \$4-9 billion per year will be needed over the next 17 years to realize a net-zero future, with most investments needed in the near term

 This includes the retrofitting of 476,000 homes and buildings, or about 27,000 building retrofits each year until 2040



## Policy Context

- The Net Zero Existing Building Strategy (adopted July 2021) outlines a set of 9 policy actions required to decarbonize the building sector. All actions are required together.
  - Building Data to understand current state and benchmark performance across building categories
  - Emissions Performance Standards for buildings to make improvements that result in energy and emissions reductions.
  - Supports to buildings undertake low-carbon retrofits (e.g. retrofit concierge, financing, incentives, permit navigation, etc.)
  - Education, workforce & supply chain development
  - Advocate for action from other levels of government (i.e. low-carbon electricity generation)



# Toronto's Updated Long-term Financial Plan (LTFP)

LTFP recommendations propose to accelerate the timeline to introduce Emissions Performance Standard by-laws, through:

- Expanded building-level emissions performance reporting (Q4 2023)
- Introduction of an emissions performance standards by-law (2024)

Report Update on the <u>Net Zero Buildings Strategy and Implementation of Mandatory Emissions Performance Standards</u> (2023.IE6.4)

- Adopted at Infrastructure & Environment Committee on September 20
- Going to City Council on October 11, 12, 13



## Emissions Performance Reporting

- City/Province co-developed original concept in 2015/2016 which became a Provincial regulation
- Environment & Climate will propose a by-law to Council in Q4 2023
- Data supports buildings owners and the City to understand building performance
- Inform the evolution of City programs and supports



#### **Emissions Performance Standards**

- Emissions performance standards (EPS) set emissions limits for buildings and will require owners to improve emissions performance over time
- Targets become stricter over time, driving continuous, long-term improvement in buildings.
- Building owners who can't/choose not to comply with standards are subject to financial repercussions
- Revenues from these to be reinvested in community climate action
- Toronto plans to apply EPS to all buildings, from the largest office towers to low-rise residential homes.



## Key Considerations & Challenges

• City's authority under the Section 8(2)(5) of the City of Toronto Act, 2006 (COTA)

 Standards should establish achievable targets considering both Toronto's ambition and business case challenges

Equity and Affordability



## Key Considerations & Challenges

 Private sector engagement is required and necessitates phasein of requirements

Electricity grid needs to have sufficient capacity and be robust.

Buildings need adequate time to perform retrofits



## Engagement

- Broad stakeholder engagement will be conducted across multiple sectors to ensure all voices are heard
- The City will be establishing a number of working groups and has committed to developing a group with a specific focus on equity.
- Currently engaging with internal and external stakeholders to inform the broader engagement plan.

#### What we've heard so far:

- Early engagement is important
- Engage resident and tenant groups and focus on housing affordability and equity
- Engage trade and labour organizations as well as workforce development organizations for under represented groups



# City of Toronto's Proposed Implementation Timeline for Emissions Performance Standards By-Law

By-law Development Task			Proposed Implementation Timeline									
	Q3 2023	Q4 2023	Q1 2024	Q2 2024	Q3 2024	Q4 2024	Q1 2025		July 1 2026	July 1 2027	2030	Ongoing
Emissions Performance Standards (EPS)												
Define elements of by-law												
Internal stakeholder engagement												
Public and external stakeholder engagement												
Draft by-law												
Establish materials and programs to support compliance												
Report to Committee / Council with proposed by-law for approval												
By-law comes into effect (example schedule for initial compliance period)												
Large / High-Rise Sector												
Institutional Sector												
Multi-unit Residential												
Small Commercial												
Low-Rise Residential												
Ongoing compliance (periods increase stringency of emissions limits over time)												



# Thankyou





Discussion

#### Dan Leckie Forum 2023

#### Panelist Q+A



Marshall Duer-Balkind

Institute for Market Transformation

Sean Pander

City of Vancouver

Rae-Anne Miller

City of Toronto

# Krystal-Anne Roussel



Lawyer,
Canadian Environmental Law Association (CELA)



# Recommendations for Municipalities:

Mandatory Building Performance Standards

Presented by Krystal-Anne Roussel Date:

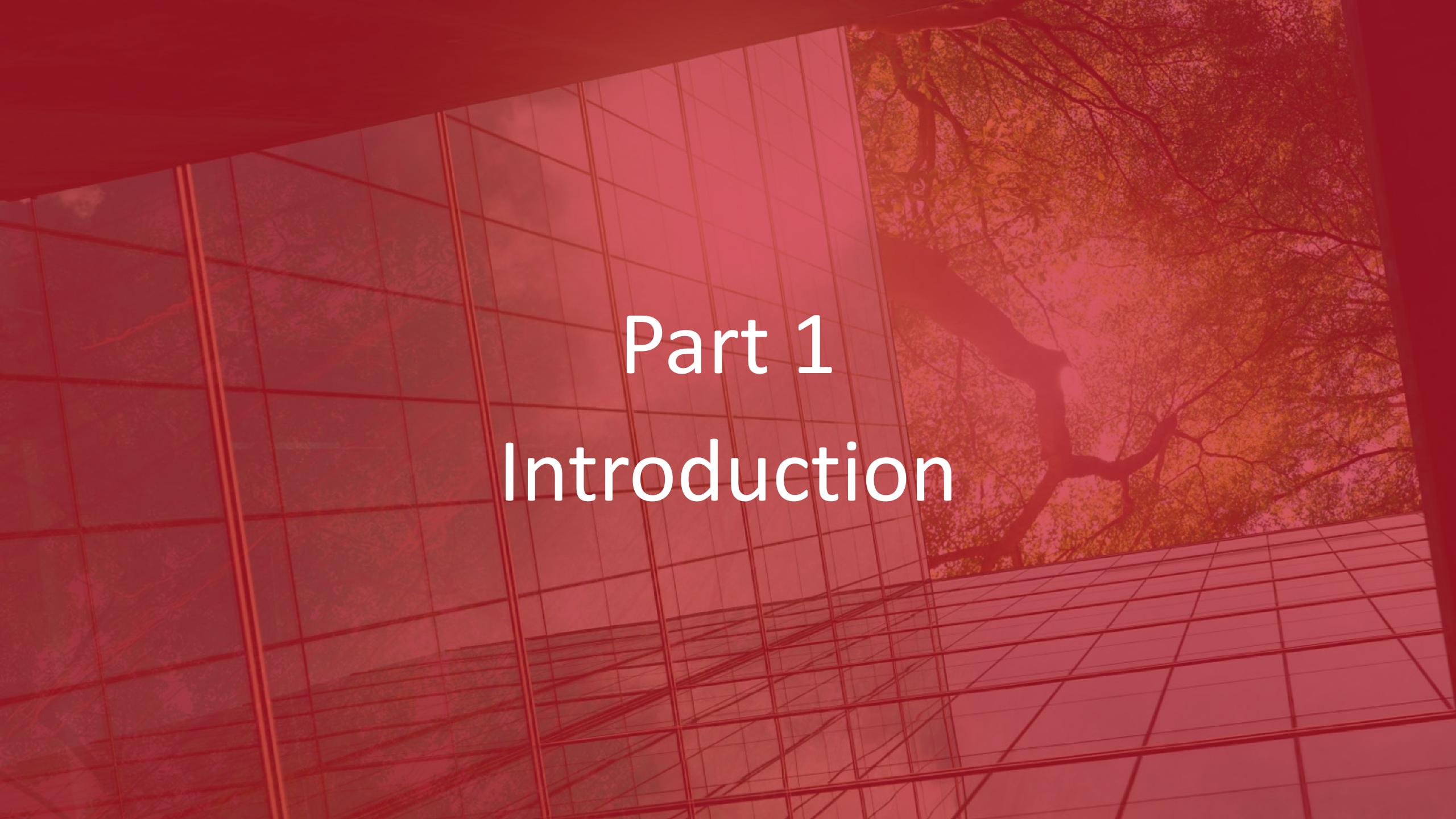
October 10, 2023



#### Overview

01	02	03
Introduction	Legal Authority	Implementation
About CELA	The Municipal Act	<ul> <li>Scope &amp; Application</li> </ul>
	<ul> <li>Ontario Building Code</li> </ul>	<ul> <li>Compliance &amp;</li> </ul>
	<ul> <li>Jurisprudence</li> </ul>	Enforcement





#### About CELA

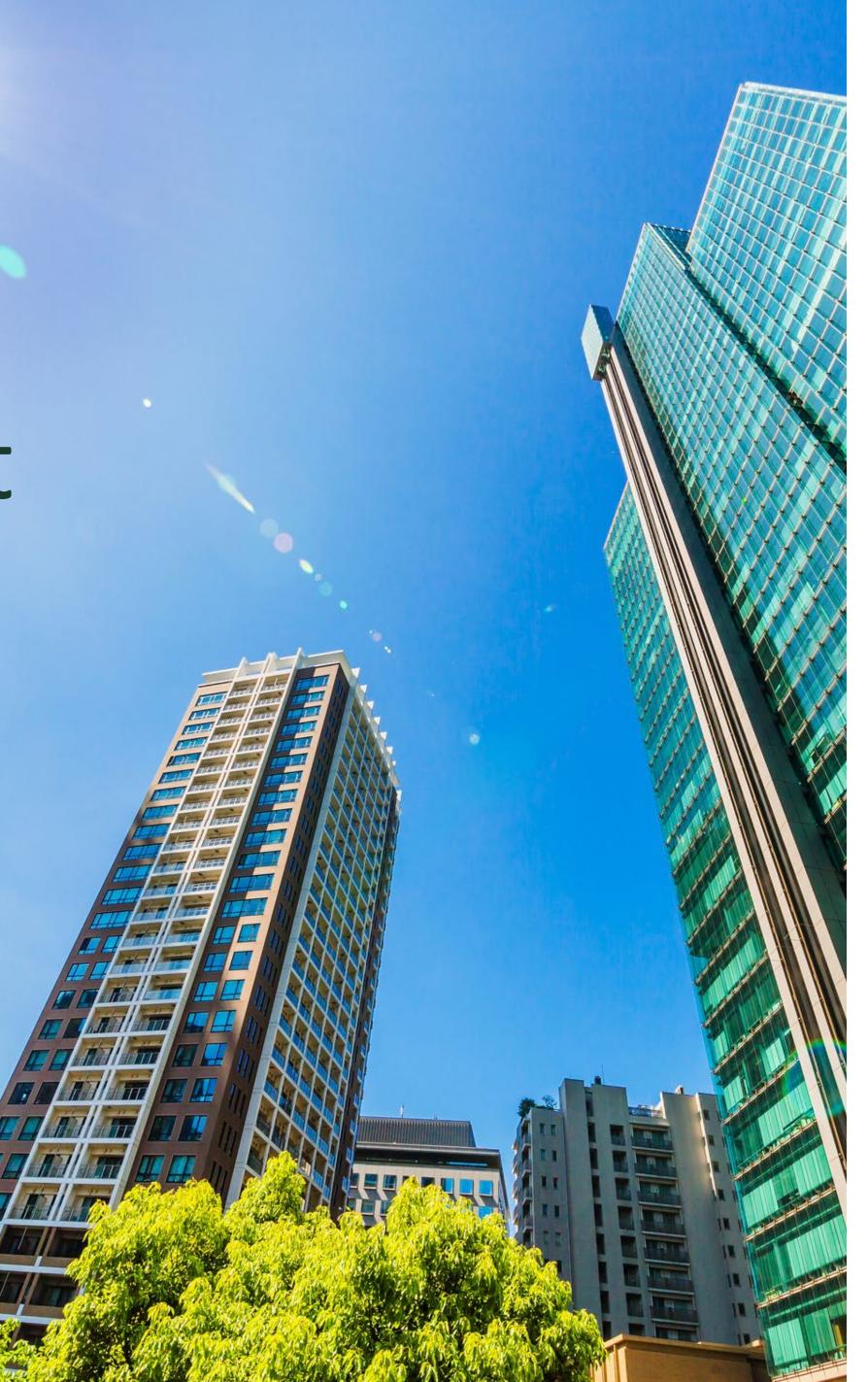
- Specialty legal aid clinic dedicated to environmental equity, justice, and health
- Founded in 1970, funded by Legal Aid Ontario since 1978
- CELA provides free legal services relating to environmental justice in Ontario, including representing qualifying low-income and vulnerable communities in the courts and before tribunals. CELA also provides free summary advice to the public and engages in legal education and law reform initiatives







The Municipal Act

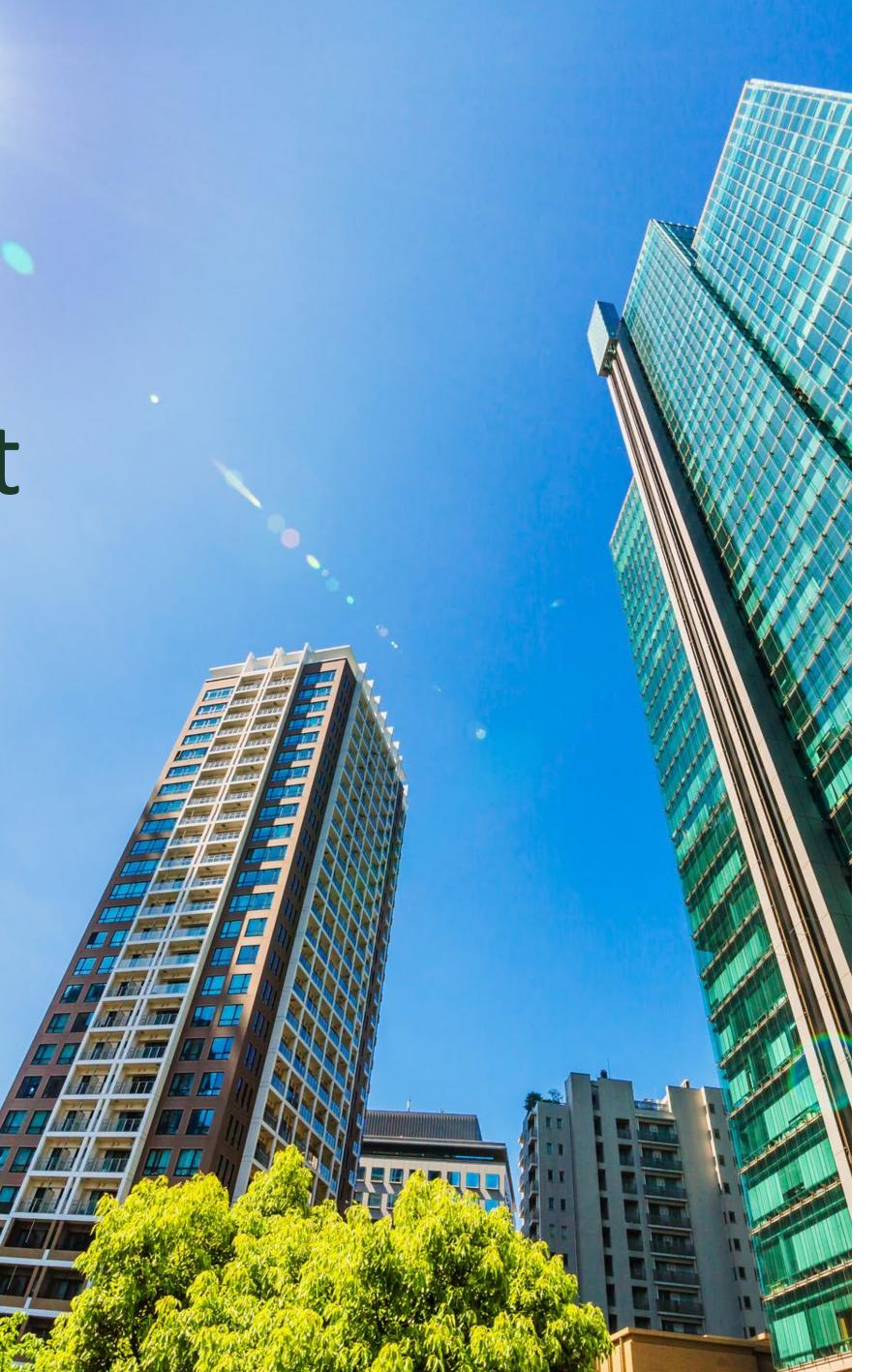


- Sets out the roles and responsibilities of municipal governments in Ontario
- Outlines a broad and deferential approach to municipal powers:

8(1) "The powers of a municipality under this or any other Act shall be interpreted broadly so as to confer broad authority on the municipality to enable the municipality to govern its affairs as it considers appropriate and to enhance the municipality's ability to respond to municipal issues"



The Municipal Act



- Provides the ability for a
  municipality to pass by-laws
  respecting various matters,
  including the "environmental
  well-being of the municipality,
  including respecting climate
  change."
- The Municipal Act further allows municipalities to participate in long-term energy planning for their community, including "consideration of energy conservation, climate change, and green energy."



# Ontario Building Code

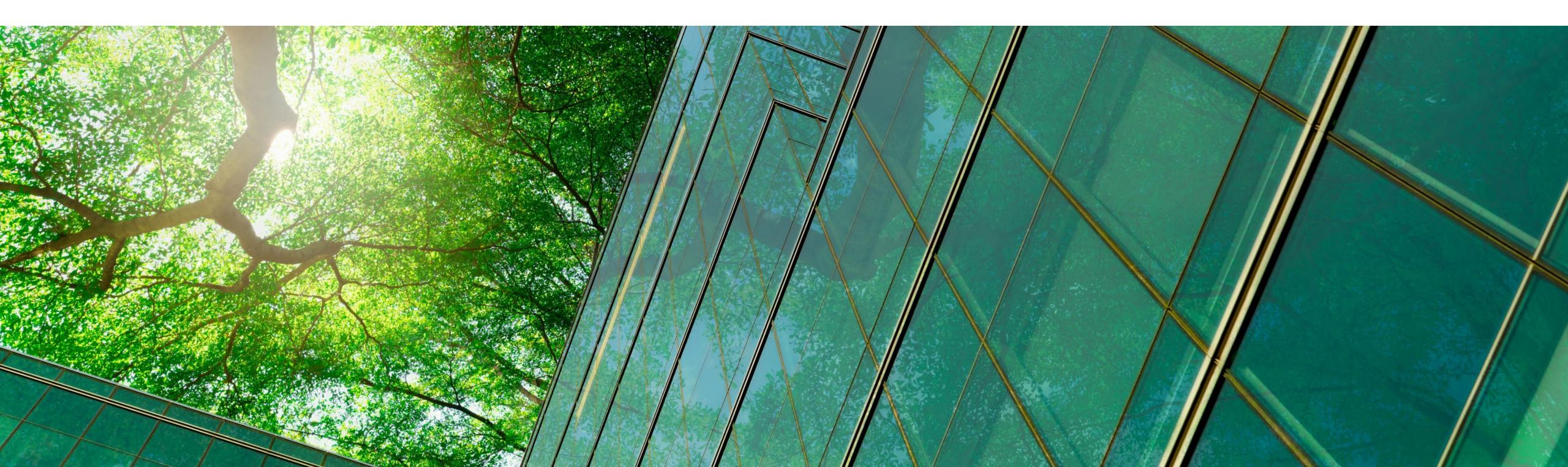
- The Ontario Building Code Act, 1992, S.O. 1992, c. 23 (the "OBCA") and O. Reg. 332/12 (the "Building Code") lay out the legislative framework governing the construction, renovation, demolition and change of use of buildings in Ontario
- Municipalities are responsible for the enforcement of the OBCA and the Building Code within their jurisdiction
- Section 15.1 of the OBCA gives municipalities the power to enact by-laws relating to standards for the maintenance and occupancy of property





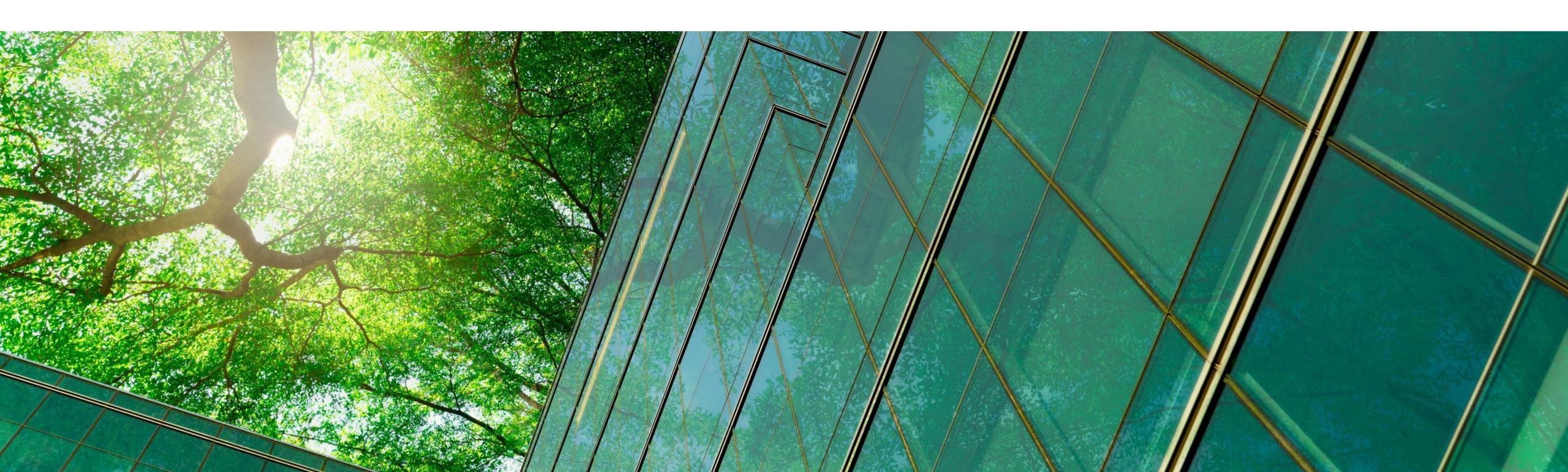
#### MUNICIPALITIES HAVE BROAD POWERS TO ADDRESS ENVIRONMENTAL ISSUES

- SprayTech v Hudson, [2001] 2 SCR 241
  - Protecting the environment is a major challenge that requires action from all levels of government
  - Municipalities, as the level of government closest to affected citizens, have a legitimate role in enhancing environmental protection provided by other levels of government



#### MUNICIPALITIES MAY APPLY NEW STANDARDS TO PRE-EXISTING BUILDINGS

- Rexlington Heights Ltd v Ontario, [2005] OJ No 4223
  - "It is undisputed that the City can legislate so that the new property standards apply to pre-existing buildings"
  - Must use very clear language if they intend for new property standards to apply to existing buildings



#### MUNICIPALITIES MUST AVOID CONFLICT WITH PROVINCIAL STANDARDS

- Must not conflict with higher-level regulations, such as those established by the Ontario Building Code Act (OBCA), the Building Code, or the Province of Ontario's Energy & Water Reporting and Benchmarking regulation (O. Reg. 506/18)
- Must be an operational conflict between a municipal bylaw and a provincial law, rendering them incompatible for instance, one says "yes" while the other says "no"
- The conflict must be genuine; mere potential inconsistency is insufficient to invalidate the by-law





#### MUNICIPALITIES MUST AVOID CONFLICT WITH PROVINCIAL STANDARDS

- Municipal by-laws must avoid being merely duplicative of provincial and/or federal legislation
- As long as the two laws do not conflict in such a way so as to result in an 'impossibility of dual compliance', multiple jurisdictions can address different aspects of the same subject matter, or even the same subject matter with more stringency required by one level than the other

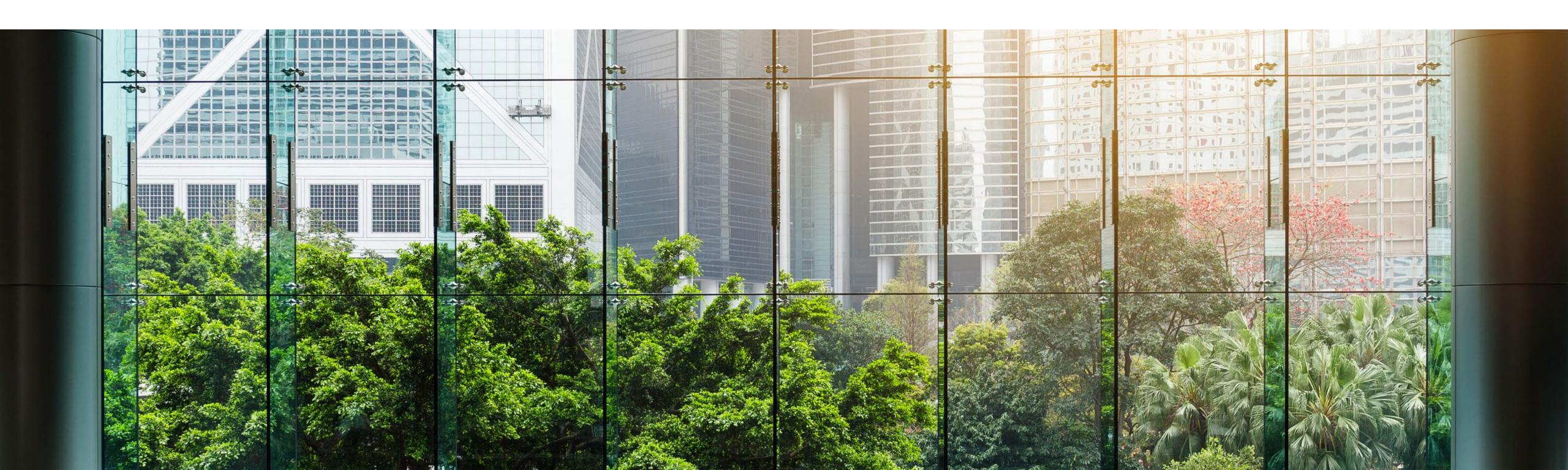




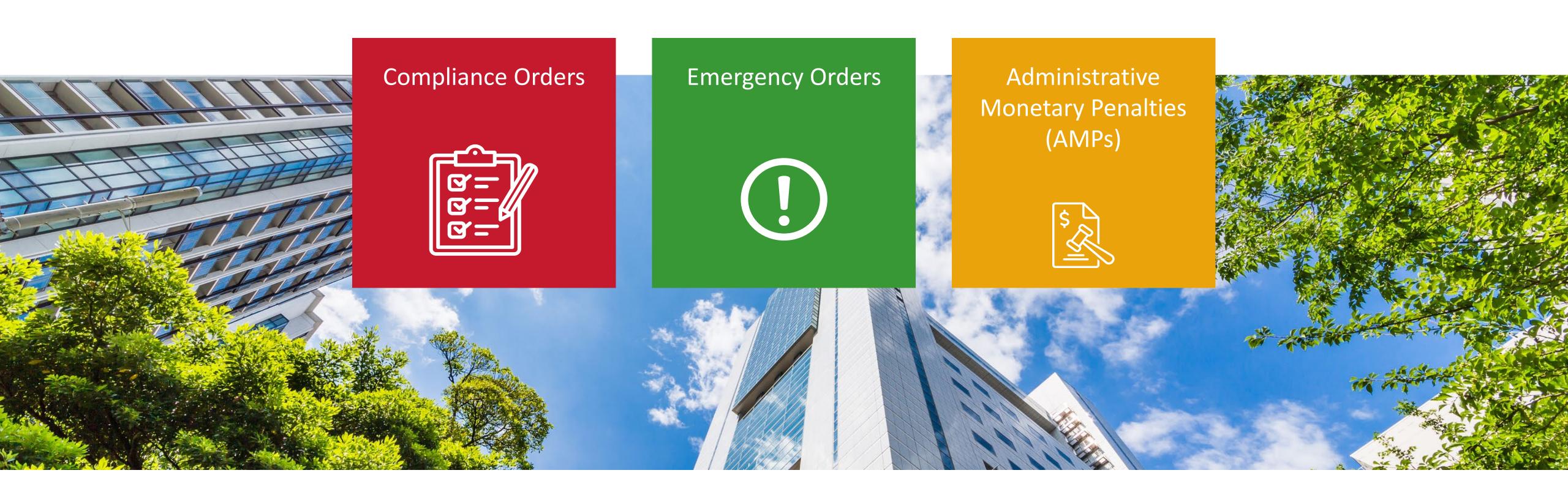


# Scope & Application

- Cannot distinguish between different types of building ownership, such as rental properties versus owneroccupied properties
- Section 35 (1) of the OBCA provides that the OBCA and the Building Code supersede all municipal by-laws respecting the **construction or demolition of buildings**.
- "Construction" under the OBCA encompasses various building activities, including erection, installation, extension, or material alteration or repair of a building.



## Compliance & Enforcement







#### Contact Us

For any questions or clarifications on our report.

#### Website

www.cela.ca

Phone Number

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1-844-755-1420

**Email Address** 

info@cela.ca

Discussion Dan Leckie Forum 2023

## Legal Q+A



Krystal-Anne Roussel

Canadian Environmental Law Association (CELA)

#### Policy Design

Target setting, metrics, + timelines

Compliance mechanisms

Verification processes + data gathering

Non-compliance fees

# Affordability & Equity

Protection of low-and-middle income renters

Holistic cost-benefit analysis

Future proofing against rising utility costs

Climate resiliency

#### Industry Readiness

Workforce size, training, + skills development

Availability of products + building materials

Access to capital

Technical + financial support for building owners

The Atmospheric Fund

Dan Leckie Forum 2023

# Thanks for joining!

 Stay tuned for post-event materials: Taf.ca



A regional climate agency investing in lowcarbon solutions for the Greater Toronto and Hamilton Area + illuminating paths to scale implementation.

#### Team

Experienced team cocreates with private, public and non-profit sector stakeholders to reduce carbon emissions.

#### **Impact**

We invest in, grant, influence policies, and run programs to advance promising concepts.

#### Flexible Funding

We're game to collaborate to define innovative funding structures that help businesses establish important ideas.

#### LC3

Low Carbon Cities Canada network member.



# Welcome to the 2023 Dan Leckie Forum

Lau Leckie
FORUM

