

Introductory Note

A trusted, non-partisan leader, the Institute for Market Transformation (IMT) focuses on innovative and pragmatic solutions that fuel greater investment in high-performance buildings to meet local market priorities. IMT offers hands-on technical assistance and market research, alongside expertise in policy and program development and deployment and promotion of best practices and knowledge exchange.

This presentation is part of a suite of resources for building performance standards. Additional resources include: Summary of IMT's Model Law for a Building Performance Standard (BPS), full Model Law and a Short Model Law. We also have a BPS overview infographic and video, and several policy briefs on how to incorporate social priorities into BPS.

IMT's full suite of building performance standard resources is available at www.imt.org/bps. In addition, IMT welcomes feedback via its Senior Advisor, Cliff Majersik at cliff@imt.org and via bps@imt.org.

Building Performance Standards: A Cornerstone to Climate Policy



June 2023

National Building Performance Standards Coalition

June 2023



Fundamental Change to How We Approach Buildings



Building Performance Standards are the most powerful policy tool available to drive improved building performance

Principles

1. Align with goals/commitments
2. Social and racial equity
3. Regulatory fairness
4. Jobs and economic growth
5. Maximize certainty
6. Transparency
7. Drive early action
8. Accommodate building life cycle events
9. Simplicity
10. Ease of compliance/implementation

What Makes a BPS Different?

Requires Improvement Across a Wide Range of Buildings

Yields Deep Retrofits at Scale

Drives Private Value, Creating Investment in Private Buildings

Provides equitable and comprehensive climate action

Balances Flexibility and Immediate Action

Sends Long-Term Market Signal

BPS: A Platform for Building Regulation

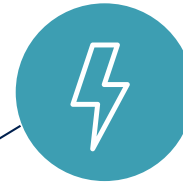
Decarbonization
+ Electrification



Inclusiveness
+ Equity

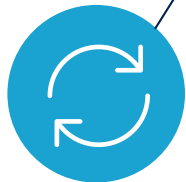


Grid Reliability +
Flexibility



BPS

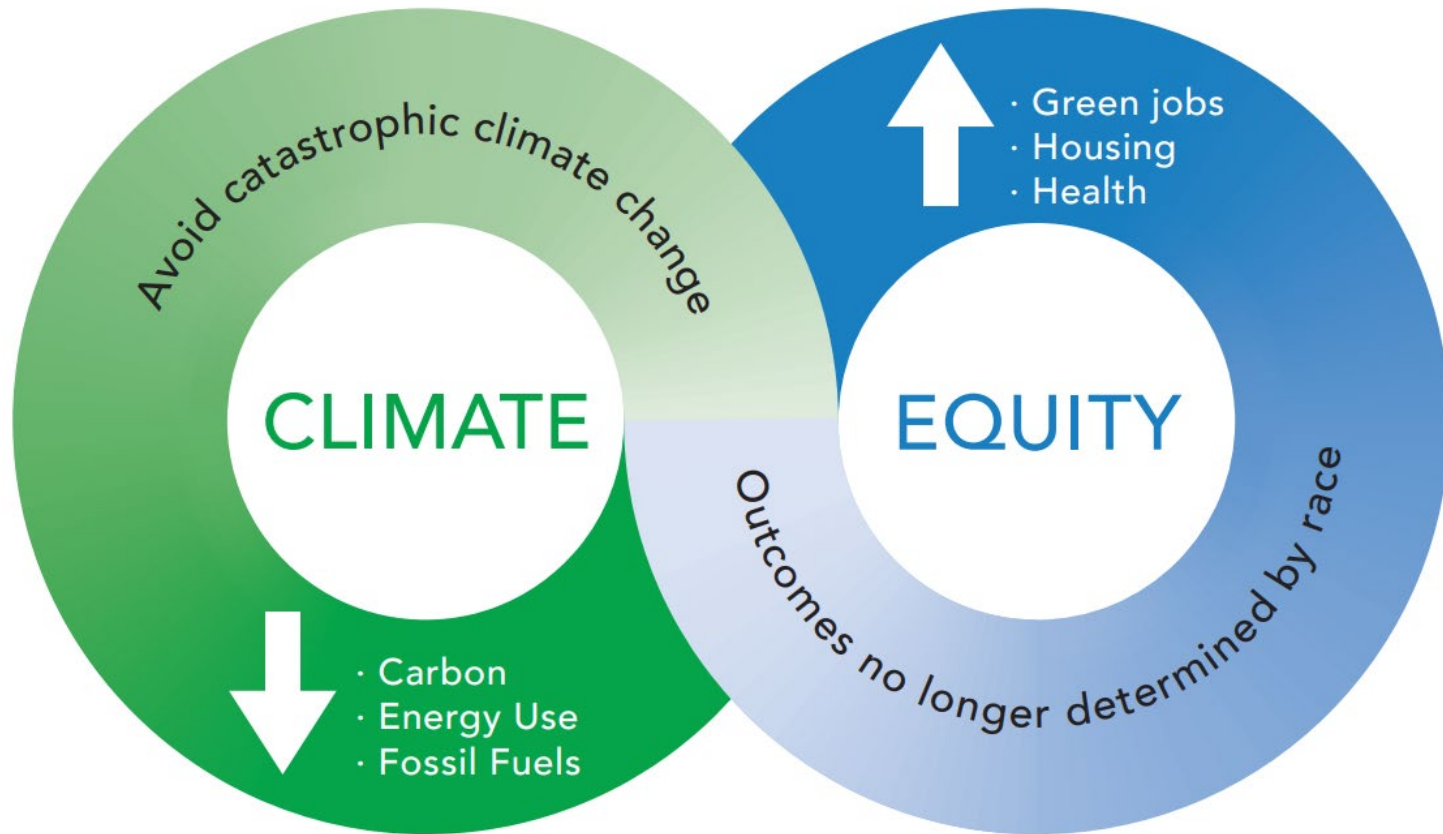
Resilience +
Public Health



Utility Bill
Affordability



BPS Approach: Better Buildings for All

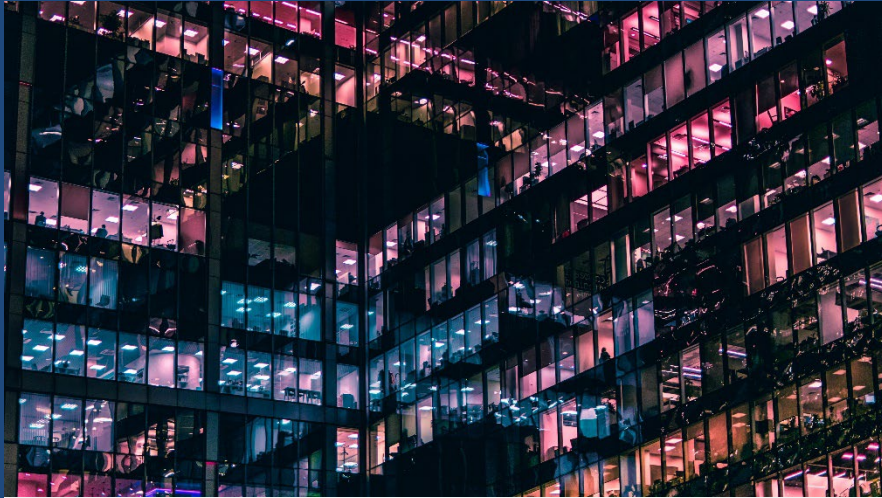


Source: [Building Performance Standards: Framework for Equitable Policies to Address Existing Buildings](#) (prepared for American Cities Climate Challenge)



Our Approach

How IMT's BPS Strategy Addresses Building Performance



Standards Based on Performance Metrics

- Site Energy Use Intensity
- Onsite and District Thermal GHGs
- Water Use Intensity
- Coincident Peak Demand
- Indoor Air Quality



Actions to Advance Social Priorities

- Anti-displacement, affordable housing protections packaged with ordinance
- Owners seeking additional flexibility required to advance other community priorities



Compliance Details

Final Performance Standards

For each performance metric, buildings must meet a long-term (15-30+ years in the future), final performance standard by a prescribed date.

Final performance standards are the same for each building type.

Interim Performance Standards

Each building has its own trajectory for reaching the final standard based on its performance in the baseline year

Jurisdiction sets interim standards to drive buildings' progress

Key BPS Resources

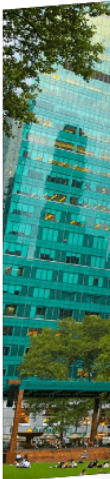


Putting Policy in Action: Building Performance Standard Implementation Guide



Summary of IMT's Model Ordinance for a Building Performance Standard

May 2023



Community Engagement Framework

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Short Model BPS Law

James Burton, Zachary Hart, Cliff Majersik, and Jessica Miller



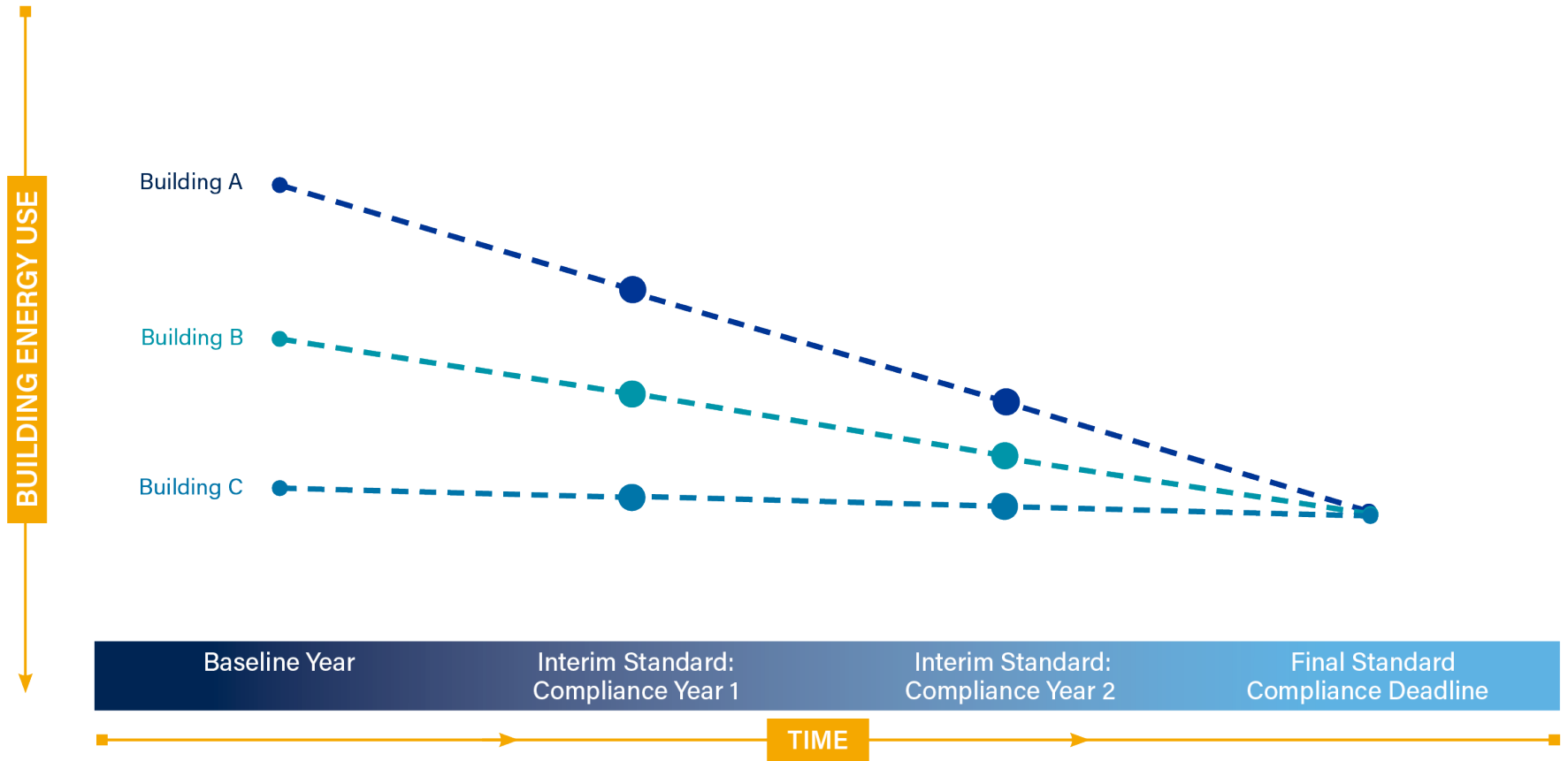
January 2021



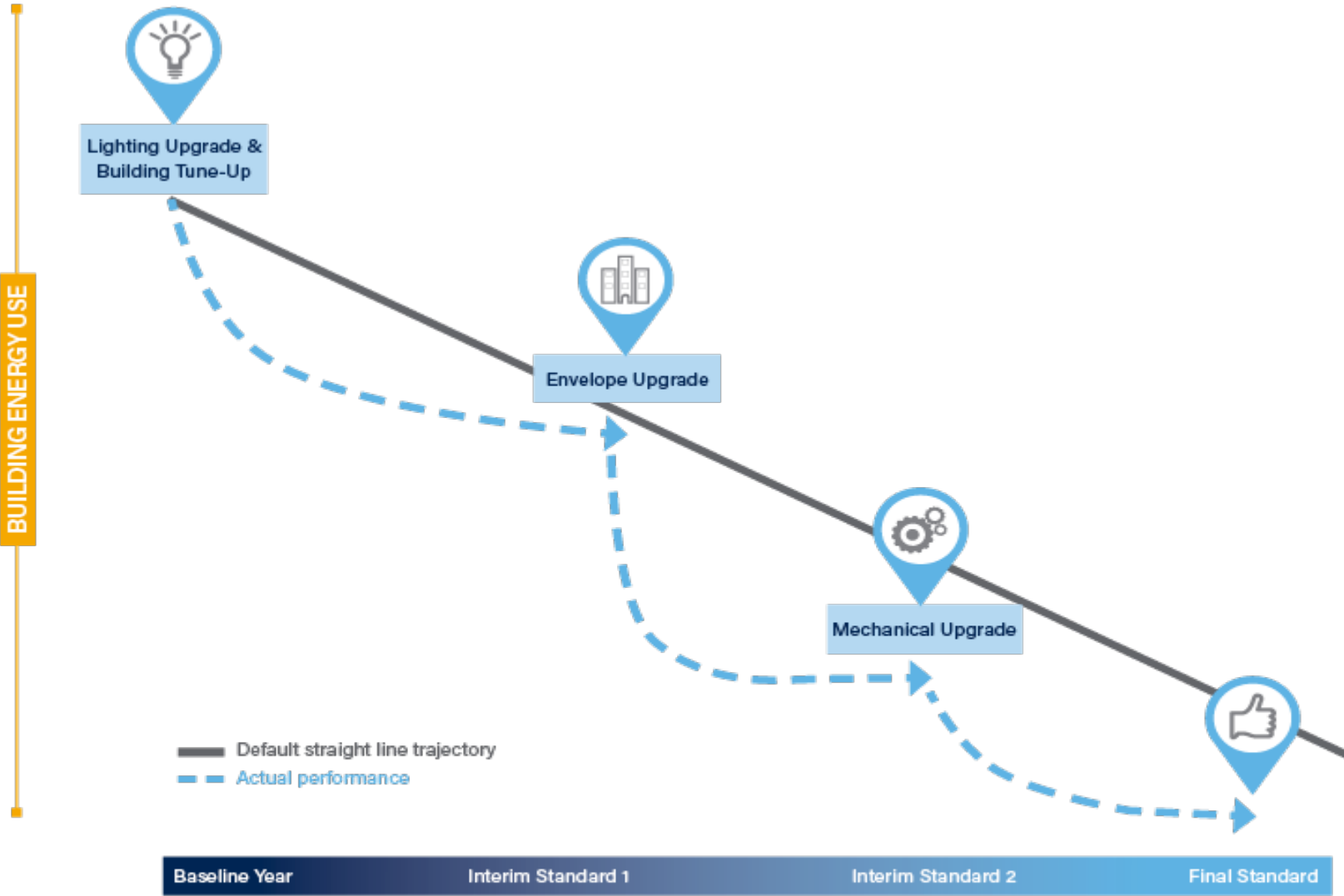
November 2022



Example: Final and Interim Standards for Three Office Buildings



Compliance Example



Compliance Details

Alternative Compliance Option:

Building owners seeking additional flexibility may propose a detailed **Building Performance Action Plan** to create customized requirements for a building

Compliance Flexibility: Building Performance Action Plan (BPAP)



- Method by which building owner can propose an alternative compliance plan to avoid penalties for missing upcoming standard(s)
- The BPAP, if approved, is a binding agreement between building owner and jurisdiction
- Newly created attachment to building's deed and any for-sale listings shall reference BPAP

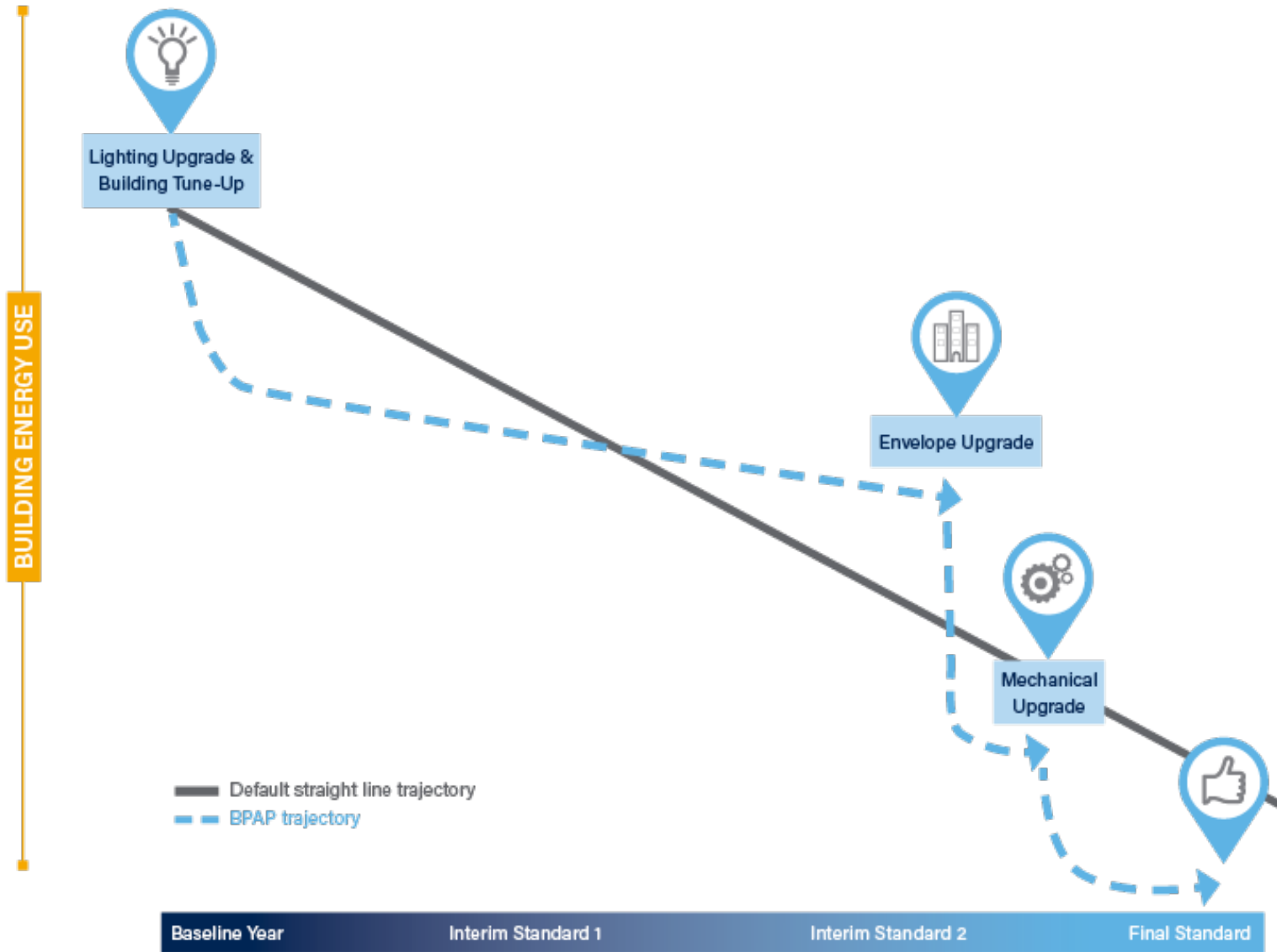
Building Performance Action Plan (continued)



Must include:

- A physical description of the building including an inventory of major equipment
- Technical recommendations for meeting or exceeding applicable standards
- A timeline for when planned improvements will be completed
- Certain actions owner will take to advance community priorities such as equity, public health, resilience

BPAP Compliance Example



What if a Building Does Not Meet the Standard?

If a building misses an interim or final performance standard, its owner must pay an **alternative compliance payment**.

Payment amount shall proportionally reflect

- The number of standards with which the owner failed to comply
- The magnitude of non-compliance for each un-met standard
- The assessed value of the property

The payment amount must be high enough to create an incentive to comply by meeting the standards rather than making the payment.





Recommended Performance Metrics



Recommended Metrics for Performance Standards

- Maximum Normalized Site Energy Use Intensity
- Maximum Onsite Greenhouse Gas Emissions
- Maximum Coincident Peak Electric Demand
- Maximum Coincident Peak Local Electric Demand
- Water Use Intensity
- Ventilation

Maximum Normalized Site Energy Use Intensity (kBtu/sq. ft./year)

- Owners have more control over site EUI than source EUI
- Site EUI favors electrification because it is not adjusted for energy losses from transmission and distribution
- ENERGY STAR Portfolio Manager can normalize site EUI for weather for all properties. IMT is collaborating with building owners, state and local governments, trade organizations, and the EPA to determine the feasibility of normalizing for other property use characteristics such as hours of operation and number of workers.



Maximum Onsite and District Thermal Greenhouse Gas Emissions

- Requires owners to reduce and ultimately phase-out use of fossil fuels such as gas
- Works with site EUI to encourage electrification and require the reduction of overall energy consumption
- Does not set a standard for GHGs attributable to electricity purchased from the grid in part because time of use data is not widely available



Maximum Coincident Peak Electric Demand

Maximum Coincident Peak Local Electric Demand

- Coincident Peak Electric Demand is a property's electricity demand when total system demand on the **utility** serving the property was at its highest point for the year
- Coincident Peak **Local** Electric Demand is a property's electricity demand when total system demand on the **electric substation** serving the property was at its highest point for the year
- These metrics allow jurisdictions to limit buildings' electricity demand at peak times
- Most jurisdictions will have to wait to implement standards until necessary data, metering technology and digital communications infrastructure are widely available



Water Use Intensity (kgal/sq. ft./year)

- In areas where reducing water consumption is a priority, IMT recommends a performance standard based on buildings' water use intensity



Ventilation ($\text{CO}_2 < 1,000 \text{ ppm}$)

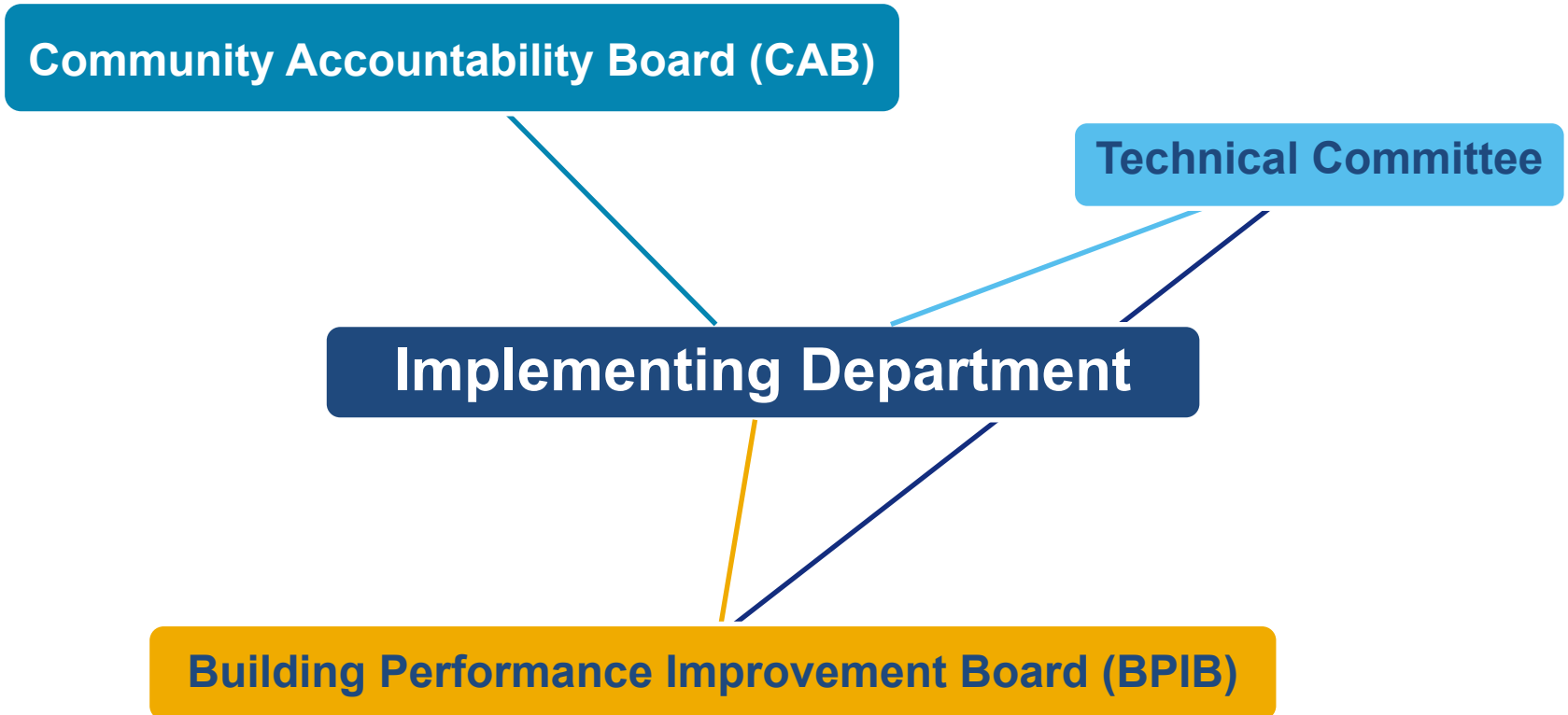
- Single standard ($\text{CO}_2 < 1,000 \text{ ppm}$) doesn't ratchet down over time, but each cycle there are fewer alternative compliance options (e.g. ASHRAE 62.1)
- Jurisdiction may choose to add additional IAQ metrics in later cycles such as PM2.5, Formaldehyde, or CO
- Timely during the pandemic as good IAQ and ventilation reduce the spread of respiratory viruses





People and Structure

Composition of Administrative Entities



Community Accountability Board (CAB)



- Composed of experts in racial and social equity, representatives of local community organizations
- CAB tasked with reviewing impact of the proposed law on disinvested communities and recommending actions to increase equity. Sample tasks:
 - Allocate funds earmarked for disinvested communities
 - Produce periodic report evaluating equity impacts
 - Advise on selection of members to Building Performance Improvement Board
 - Advise on rules and complementary programs and policies

Building Performance Improvement Boards (BPIB)



Advisory board composed of experts in building science & real estate

- Advises the Department on implementation of the BPS
- Recommends final performance standards to the Department
- Recommends complementary programs and policies
- Reviews appeals of any BPAP rejected by the Department

Technical Committee

- Sub-group of BPIB consisting of technical experts
- Recommends final performance standards to the BPIB
- Reviews properties' proposed Building Performance Action Plans and recommends approval/disapproval



Advancing Social Priorities

Social Priorities Related to BPS Policies

Health

- Create assessment requirements in early BPS compliance cycle to build dataset and move jurisdictions to target setting in later phases

Housing Affordability

- Preliminary recommendations around compliance flexibility are built into base ordinance
- Exploring tenant protections to recommend as complementary policy tools

Resilience

- Exploring how climate threats and impacts can inform policy
- Researching how city resilience needs can be alternative compliance options (i.e. cooling center)

Economic Development

- Researching alternative compliance options + workforce requirements

Roadmap for Creating Equitable and Effective Building Performance Standards

Creating successful building performance standards consists of five main activities centering inclusive outreach and engagement throughout the process.

1 Inclusive Outreach & Engagement

- Engage communities
- Engage businesses
- Engage utilities

2 Planning & Coordination

- Make project plans
- Coordinate with internal, external, and community partners
- Conduct data analysis and research

3 Policy Development

- Determine policy parameters
- Respond to community and stakeholder feedback
- Draft legislation and regulations

4 Policy Adoption

- Introduce legislation
- Attend to legislative process until adoption and enactment of legislation
- Maintain communication with communities and stakeholders

5 Policy Implementation

- Manage reporting, compliance, and enforcement processes
- Coordinate supporting programs
- Maintain ongoing engagement with communities and stakeholders

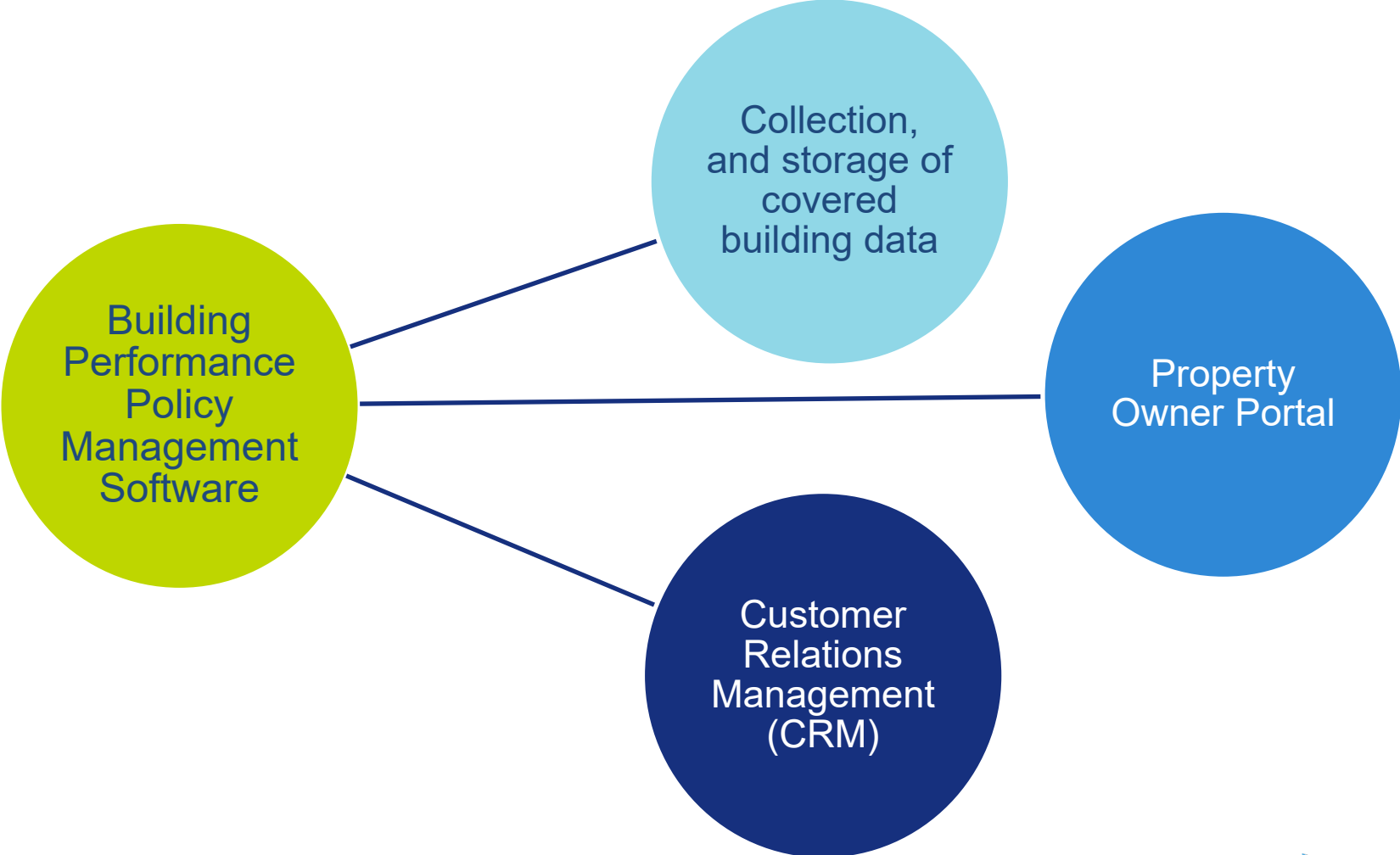
Transformative Solutions

Meaningful community engagement unleashes unprecedented capacity to develop and implement solutions to current crises.



Data Management & IT

Policy Management Software





Creating a High-Performance Building Hub

High Performance Building Hub

Drives
successful
implementation

Operates
outside of the
government

One-stop shop
for resources

Accelerates
local capacity
with outside
knowledge

Provides
training &
technical
assistance

Augments
limited funding