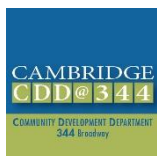


City of Cambridge  
Community Development Department  
**Development Standards  
and Costs**

April 4, 2023





# Introduction & Agenda

- Response to POR 2022 #267
  - Requested a comprehensive list of Cambridge policies that impact the cost of commercial and residential development
  - Requested comparing whether similar policies exist in Somerville and Boston
- Presentation Overview
  - Discussion of how development standards can impact cost (and value)
  - List of Cambridge development standards (both zoning and non-zoning) and comparison to Somerville and Boston
  - Initial conclusions and additional thoughts for consideration.
- Introduction of Staff Team
  - CDD – Housing, E&T, Zoning, and Economic Opportunity and Development
  - DPW
  - Finance & Assessing



# How Do Development Standards Affect Costs?



# The Value-to-Cost Balance

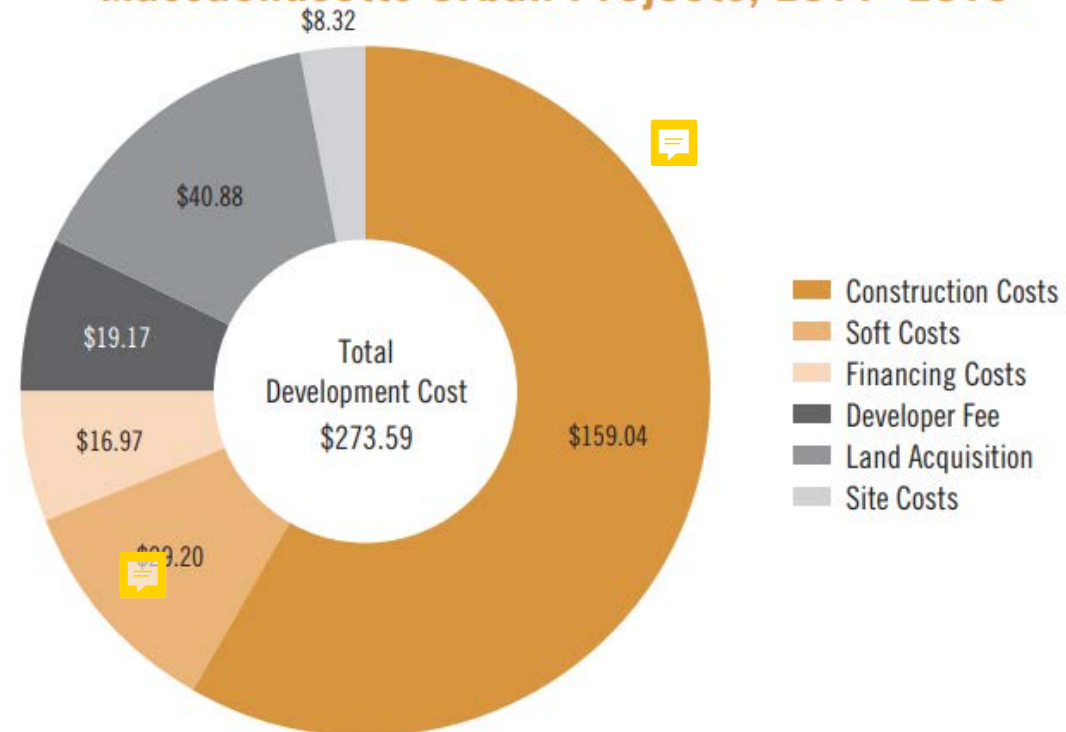
- Developers are concerned about both cost and value
- Value can mean different things to different developers
  - Market developers: value = future rent stream, future sale of asset for profit
  - Institutional developers: value = support for long-term mission
- Costs come before project completion (mostly), value comes after project completion
- Sometimes higher costs lead to greater value
- Aim is to optimize value over costs – “Highest and Best Use”

# What Costs Go Into Development?

- Construction is the largest cost component
- Specific costs vary project-by-project due to many factors

FIGURE 4.2

**Total Housing Development Costs  
Per Square Foot by Cost Component,  
Massachusetts Urban Projects, 2011–2015**



2015 Greater Boston Housing Report Card

Source: Dukakis Center Housing Cost Analysis

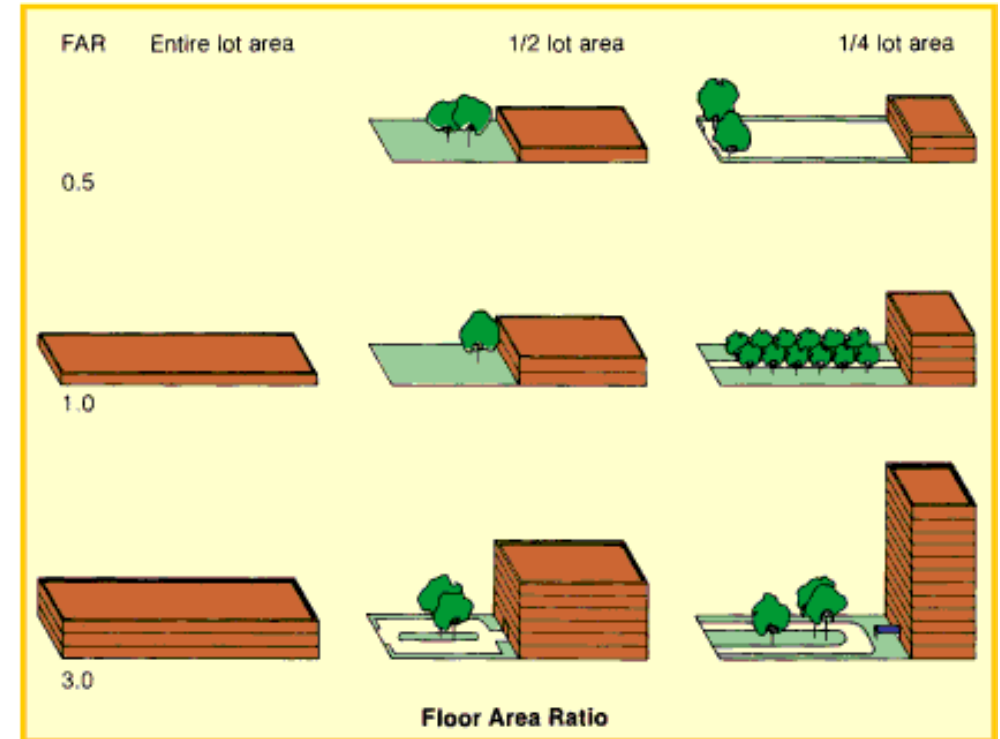


# What Factors Affect Cost?

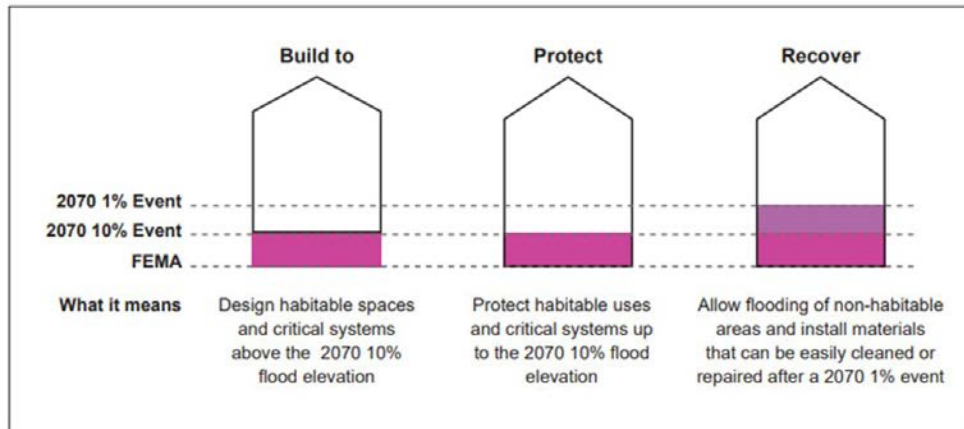
- Building use (e.g., commercial, residential) and market served (e.g., Class A, B)
- Building size and design features
- Market for construction labor and materials
- Land prices
- Cost of capital (e.g., interest rates, return on equity)
- Time between incurring costs and realizing value (e.g., design, permitting, construction, marketing and occupancy)
- Fees and other “soft costs”

# How Does Zoning Affect Value and Cost?

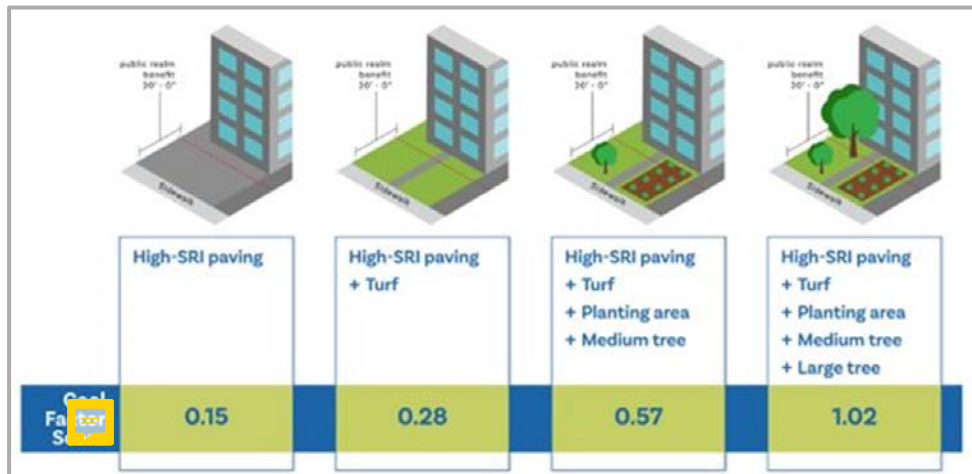
- Primarily: Sets controls for what **type** and **intensity** of land use is allowed
  - E.g., residential vs. institutional vs. commercial use
  - E.g., small buildings vs. larger buildings, allowed height and density
- Affects both value (e.g., bigger building = more rental income) and costs (e.g., bigger building = more expensive to build)
- Often, greater height and density means better value-to-cost margin due to economies of scale – but not always the case for every development



# How Does Zoning Affect Value and Cost?




- Secondarily: Sets **Development Standards** that affect project design and permitting
  - E.g., setbacks and dimensional limitations
  - E.g., environmental performance
  - E.g., affordable housing or other public contributions for increased development
  - E.g., review procedures
- Standards can add design constraints that affect costs in project-specific ways
- Public contributions can be easy or hard to quantify
- Some standards are not in zoning





# Other Policies Affecting Value and Cost

- Base building codes (incl. health, fire, energy) – standardized statewide, based on international models 
- Property taxes – applies to all land, not just development, but can affect land costs and future rents (depending on whether building owner or tenants pay taxes)
- Public amenities and services (e.g., parks, schools) – contribute to residential values in particular



# Comparison of Development Standards



# Public Contributions

- Inclusionary Housing and Linkage (Incentive Zoning) are the most common types of required contributions
- Inclusionary Housing obligation is met on an ongoing basis as units are kept affordable over time, typically subsidized by revenue from additional market units. Effects on total revenue are difficult to predict because they depend on future market conditions.
- Cambridge's policy is based on a feasibility analysis (2017) and includes an allowed 30% increase in development density.
- Costs of linkage contributions are easier to predict because they are usually a fixed one-time payment made at project permitting or completion.

# Inclusionary Housing

*Set-aside of housing in market development that is affordable to households at a specified area median income (AMI) range.*

	Cambridge	Boston	Somerville
<b>Applicability</b>	10+ units	10+ units	4+ units
<b>Standard</b>	20% of unit floor area at 50-80% AMI or with voucher (rental) or up to 100% AMI and priced to be affordable at 90% AMI (homeowner)	<b>Proposed:</b> 20% of unit floor area at avg. 60% AMI or with voucher (rental) or avg. 90% AMI (homeowner) <b>Current:</b> 13% of units up to 70% AMI, for projects needing relief	20% of units at three different price tiers based on AMI

Other: Also required in many other cities and towns throughout the region, typically 10-20%.

# Linkage/Incentive Zoning

*Required contributions to public funds to offset impacts of non-residential development, including demand for affordable housing and workforce development programs.*

	Cambridge	Boston	Somerville
<b>Applicability</b>	30,000+ SF	<b>Proposed:</b> 50,000+ SF <b>Current:</b> 100,000+ SF	30,000+ SF
<b>Standard</b>	\$33.34/net new SF for aff. hsg. (reduced for 30-60 KSF)	<b>Proposed:</b> \$25.86/SF (lab) or \$19.40/SF for aff. hsg. \$4.92/SF (lab) or \$3.69/SF other for workforce <b>Current:</b> \$13.00/SF for aff. hsg., \$2.39/SF for workforce	\$11.23/SF for aff. hsg. \$2.75/SF for workforce (over 15,000 SF) <b>Under review</b>

Other: **Everett** has a linkage contribution of \$2 to \$4 per square foot or \$1000 per residential unit.  
**Watertown** considering a linkage contribution of \$11.12/SF for affordable housing.



# Environmental Performance Standards

- Typical focus on sustainability, environmental impacts
- Based on public planning efforts – e.g., climate change, public infrastructure
- Often “performance-based,” meaning standards can be met in different ways – good design approaches can meet multiple standards at once
- Effects on development costs are variable and project-specific – need to assume what a developer would do without a standard in place
- Sometimes needs a specialized consultant and/or time for staff review
- Short-term development costs can be offset by increased value or other long-term benefit
- *Note: Some relevant non-zoning standards are included.*


# Sustainable Design Standards

*Holistic performance-based standards for sustainable building and site design that must be met in new development.*

	Cambridge	Boston	Somerville
<b>Applicability</b>	25,000+ SF	50,000+ SF	25,000+ SF
<b>Standard</b>	Design to LEED Gold (50+ SF) or Silver (25-50 KSF), Passive House, or Enterprise Green Communities; include a “Net Zero Narrative”	Design to LEED Certifiable; include a “Carbon Neutral Building Assessment”	Design to LEED Platinum (50+ SF) or Gold (25-50 KSF), Passive House, or Enterprise Green Communities

# Climate Resilience Standards

*Standards to promote resilience from future flooding, heat, and other climate-related impacts.*

	Cambridge	Boston	Somerville
<b>Applicability</b>	25,000+ SF development and all other new buildings (not minor renovations)	20,000+ SF or 15+ unit development in “Coastal Flood Resilience Zoning Overlay District”	General development standards
<b>Flood Resilience Standard</b>	Design to projected 2070 10% and 1% annual probability precipitation, sea level rise, storm surge flooding	Design to projected 2070 10% and 1% annual probability sea level rise flooding	Compensatory flood storage in FEMA zones A-AE
<b>Heat Resilience Standard</b>	Minimum  “Cool Score” in site and landscape design	N/A	Minimum “Green Score” in site and landscape design



# Green/Solar Roofs



*Standards to install green roofs and/or rooftop solar energy systems in development.*

	Cambridge	Boston	Somerville
<b>Applicability</b>	25,000+ SF new buildings	N/A	N/A
<b>Standard</b>	Green (planted) or solar roof required for 80% of available area (green required for commercial); reduction by special permit with offsetting payment	No requirement; solar requirement under consideration as part of Carbon Free Zoning package	Encouraged in Sustainable Design but not required

Other: **Watertown** has a solar roofs requirement.

# Emissions Accounting



*Requires reporting on estimated lifecycle emissions for existing buildings.*

	Cambridge	Boston	Somerville
<b>Applicability</b>	50,000+ SF non-residential	N/A	N/A
<b>Standard</b>	A whole building lifecycle analysis of the estimated emissions generated by the construction of a Green Building Project.	Not required	Not required

# Stretch Energy Code (Non-Zoning)

*Communities can opt into a Specialized State Energy Code. To meet code, new buildings and major renovations must be fossil fuel-free or fully wired for future electrification and with solar installed if using fossil fuels. The state is also allowing some communities to opt into a fossil fuel free demonstration program that would prohibit the use of fossil fuels in newly constructed buildings (research labs and medical facilities exempt).*

	Cambridge	Boston	Somerville
<b>Applicability</b>	All development subject to energy code	All development subject to energy code	All development subject to energy code
<b>Stretch Code</b>	Opted in effective July 1, 2023	Considering opt-in	Considering opt-in
<b>Fossil Fuel Free Demonstration</b>	Can apply to program by Sep. 2023	Petitioning to participate in program	Petitioning to participate in program

Other: **Brookline** and **Watertown** have also voted to opt into the Specialized Energy Code. Many others are considering adoption this year. **Arlington, Lexington, Brookline, Newton, West Tisbury, Lincoln, Aquinnah, Acton,** and **Concord** are also eligible to apply to fossil fuel free demonstration. **Boston** is seeking permission to apply, if not all of the initial 10 apply.

# Building Energy Use (Non-Zoning)


*Requirements that building disclose and/or reduce their energy use and greenhouse gas emissions from energy.*

	Cambridge	Boston	Somerville
<b>Applicability</b>	25,000+ SF or 50+ units	20,000+ SF or 15+ units	N/A
<b>Standard</b>	<p><b>Current:</b> disclose annual greenhouse gas emissions</p> <p><b>Proposed:</b> phased reduction of greenhouse gas emissions to net zero by 2035 or 2050 (based on building size and use)</p>	<p>Meet GHG/sf emission reduction thresholds in 5-year trajectories beginning in 2025 – net zero in 2050</p>	No requirement

Other: Newton, Lexington, and other communities considering energy use disclosure requirements. State-wide energy use disclosure requirements in development for large buildings.

# Stormwater Requirements (Non-Zoning)

*Infrastructure standards to manage the discharge of stormwater from private lots into the public storm drainage system.*

	Cambridge	Boston	Somerville
<b>Applicability</b>	All Projects 	All projects	All projects
<b>Standard</b>	50,000+ SF, 10+ parking spaces, or special permit must mitigate peak discharge from post development 25-year storm to pre-development 2-year storm; Same standard also recommended/ advised for all smaller projects	< 100,000 SF must infiltrate 1" of runoff prior to discharge; 100,000+ SF must infiltrate 1.25" prior to discharge	< 10,000 SF GFA must recharge 0.75-1.5" of runoff onsite; 10,000+ SF must mitigate peak discharge from post development 10-year storm to pre-development 2-year storm

# Sewer Inflow and Infiltration (I/I) Mitigation (Non-Zoning)

*State requirements for the MWRA system to mitigate impacts of additional sewer flow from new developments on already taxed infrastructure. State requires mitigation at a rate of 4:1 of the net increase of sewer flow.*

	Cambridge	Boston	Somerville
<b>Applicability</b>	15,000+ gallons per day sewer flow increase	15,000+ gallons per day sewer flow increase	15,000+ gallons per day sewer flow increase
<b>Standard</b>	Complete work to remove required I/I from Sewer System; City actively working on establishing a bank to collect mitigation funds to support larger more complex I/I removal projects	Pay \$9.64 per gallon of mitigation to city-managed bank	Pay \$14.35 per gallon of mitigation to city-managed bank

**Note that this is based on state requirements for sewer connections to the MWRA system.**


# Combined Sewer Overflow (CSO) Tank Standards (Non-Zoning)

*Requirements to provide on-site sewer volume storage in areas of combined drainage and sewer systems to protect from CSO events.*

	Cambridge	Boston	Somerville
<b>Applicability</b>	Development in areas of known combined sewer system surcharges	N/A	N/A
<b>Standard</b>	Storage on site for 8 hours of peak sewer flow from the site (recommended)	N/A	N/A

# Tree Protection (Non-Zoning)

*Standards related to the maintenance and removal of significant trees on private property.*

	Cambridge	Boston	Somerville
<b>Applicability</b>	Removal of significant trees	N/A	Removal of significant trees
<b>Requirement</b>	Permit required; mitigation by tree replacement and/or payment 	N/A	Permit required; mitigation by tree replacement and/or payment (1-, 2-, or 3-family property exempt)

Other: Some other Massachusetts cities and towns have tree ordinances.





# Transportation Mitigation / Management

- Typically requires a transportation impact study (TIS) that informs a negotiated mitigation package specific to the site and project
- TIS alone can be costly and time-consuming, usually needing a paid consultant and time to conduct traffic counts
- Traffic mitigation usually negotiated on a case-by-case basis
- Programs like PTDM can have substantial benefit for low cost, but need ongoing commitment (costs add up over time); conversely, can also increase value for larger projects because it helps reduce traffic impacts
- Parking requirements can have high costs because auto parking is costly to build, especially in structures – but can add value to projects
- Bicycle parking requirements add cost but less than auto parking, because they require less space and fewer structural/mechanical needs

# Transportation Impact Review/Mitigation

*Requirements to analyze and mitigate transportation impacts of a development (usually auto traffic).*

	Cambridge	Boston	Somerville
<b>Applicability</b>	Typically 50,000+ SF, some smaller projects	50,000+ SF	Unspecified
<b>Requirement</b>	TIS scoped, conducted, and submitted for Planning Board review; mitigation included in special permit conditions	Transportation Access Plan as part of BPDA approval	Planning Board must make transportation impact findings for some special permits

# Parking and Transportation Demand Management (PTDM) (Non-Zoning)

*Requirements to implement programs that support sustainable modes of transportation and reduce demand for auto travel.*

	Cambridge	Boston	Somerville
<b>Applicability</b>	Creation of 20+ new parking spaces*	50,000+ SF	50,000+ SF, 20+ unit, or 50+ hotel room
<b>Requirement</b>	PTDM/TDM plan with a demand reduction program and ongoing monitoring/reporting to the City	“TDM points system” target part of BPDA review	“Mobility Management Plan” approval

*\*5-19 spaces requires a small plan and no monitoring*

# Parking and Bicycle Parking Requirements

*Standards related to provision of off-street automobile and bicycle parking spaces.*

	Cambridge	Boston	Somerville
<b>Applicability</b>	General development standards	General development standards	General development standards
<b>Auto Parking</b>	No requirement citywide	Some requirements, lower near transit	Some requirements, lower near transit
<b>Bicycle Parking</b>	Citywide requirements for “short-term” and “long-term” for all uses	Citywide requirements for “visitor” and “employee/resident” for all uses	Citywide requirements for “short-term” and “long-term” for all uses

Other: Parking required in most other cities and towns throughout the region.



# Design/Development Review

- Development often triggers a review process
- Often this involves a discretionary permit (e.g., special permit), but sometimes is advisory
- Review is guided by urban design objectives, compatibility with site-specific context, input from the community
- Review can add time, but can take less additional time if it runs concurrently with the design process
- Design changes can add to design and construction cost
- Discretionary permits can add both time and uncertainty as to whether a project will be approved, and could have the risk of appeal

# “Major” Development Review

*Procedures that trigger comprehensive review of larger-scale projects.*

	Cambridge	Boston	Somerville
<b>Applicability</b>	50,000+ SF (or 20,000+ SF in BA, BA-1, BA-2)	50,000+ SF	Varies by district
<b>Requirement</b>	Review and approval by Planning Board based on general conformance with citywide urban design objectives	Review and approval by BPDA Board	Design Review as a component of Master Plan Special Permit, Special Permit, and Site Plan Approval

# “Minor” Development Review

*Procedures that trigger some type of design review for smaller or medium-scale projects.*

	Cambridge	Boston	Somerville
<b>Applicability</b>	Examples of thresholds: Height over 4-5 stories in Harvard, Central Squares; 6+/12+ townhouse or multifamily units in some residential districts	20,000+ SF or 15+ units	Varies by district
<b>Requirement</b>	Review and approval by Planning Board based on site design criteria	May require review and approval by BPDA staff	Design Review as a component of Master Plan Special Permit, Special Permit, and Site Plan Approval

# Advisory Review

*Procedures that trigger some type of non-binding design review.*

	Cambridge	Boston	Somerville
<b>Applicability</b>	Development in “Areas of Special Planning Concern”; Affordable Housing Overlay Projects	Unspecified	Unspecified
<b>Requirement</b>	Non-binding review by staff, public, advisory committee, or Planning Board	Unspecified	Unspecified



# What Applies at Different Scales?

Development Scale	Standards that Apply
<b>Any construction</b>	Climate Resilience (new buildings only), Specialized Stretch Code (July 2023), Advisory Review (in Areas of Special Planning Concern, Affordable Housing Overlay)
<b>6+ units</b>	Townhouse Special Permit (Res. B only)
<b>10,000+ SF/10+ units</b>	Inclusionary Housing (residential only)
<b>12+ units</b>	Multifamily/Townhouse Special Permits (Res. C, C-1, C-1A Districts only)
<b>20,000+ SF</b>	Project Review Special Permit (BA, BA-1, BA-2 Districts only)
<b>25,000+ SF</b>	Green Building Requirements, Green Roof Requirement (new buildings only), Building and Site Plan Requirements
<b>30,000+ SF</b>	Incentive Zoning (non-residential only)
<b>50,000+ SF</b>	Project Review w/Transportation Impact Mitigation, Infrastructure Requirements, Emissions Accounting

# Example Projects



## 1 Cedar Street

- 8 new residential units
- Advisory Review (Mass. Ave. Overlay)
- BZA setback relief



## 116 Norfolk Street

- 24 new residential units (affordable)
- Green Building Project
- Climate Resilience (advisory)
- Advisory Review (AHO)







## 585 Third Street

- 500,000 SF commercial
- Incentive Zoning Project
- Green Building Project
- Green Roof (reduced by SP)
- Climate Resilience (advisory)
- Transportation Impact Review
- Planning Board SP Approval (Project Review + PUD)




# Conclusions

# Costs are Hard to Quantify

- Standards overlap – the net increase in construction cost may be different than the sum of each individual requirement
- Some requirements affect revenue rather than costs – e.g., inclusionary 
- Some standards can increase construction costs but reduce operating costs (e.g., green building standards can reduce future utility costs) 
- Some standards can add value as well as costs – e.g., higher rent for LEED-rated or resilient buildings 
- In the long run, higher development costs due to regulatory requirements might be offset by lower land costs – though it takes time to play out 

# What Matters to Developers the Most?

- **Predictability** – knowing what the standards will be long before conceiving a development project (e.g., phase-in period)
- **Clarity** – avoiding standards that are open to broad interpretation
- **Flexibility** – standards that can be adapted to different types of scenarios and conditions, avoiding the need to seek relief 
- **Consistency** – review process has a determinate length and avoids adding unexpected costs during the process

