



Simone Early

Architect and Assistant Director of AESU & Sustainability &  
the Bureau of Housing Design and Construction

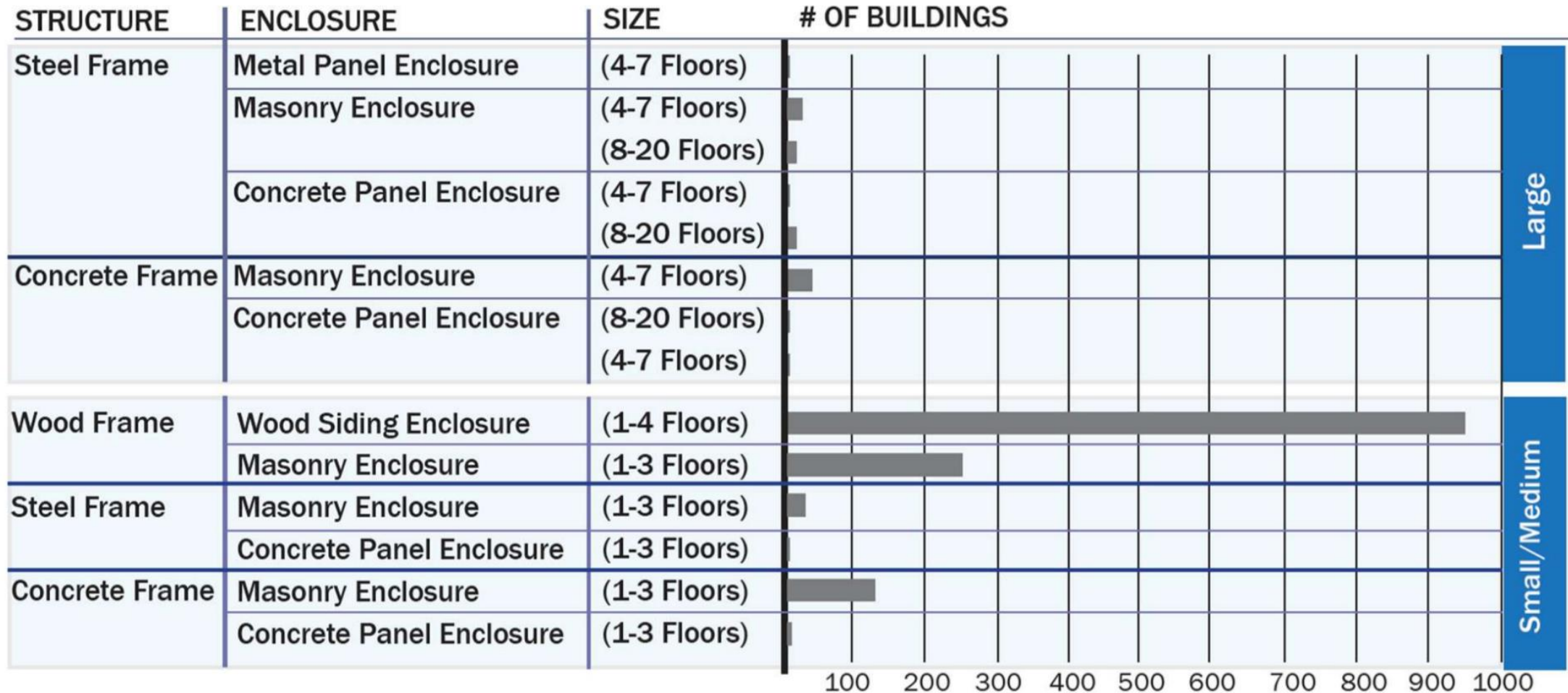
# Legislated Developments of the Commonwealth

200 Family/  
667 Elderly & Special Needs  
689 Special Needs  
705 Family

80,000 residents in 1430  
developments/ 45,300  
apartments



# LHA Buildings by Construction Type



# LHA Buildings by Construction Type

## SMALL/MEDIUM BUILDINGS

The most common construction type for small/medium buildings is wood frame, wood or masonry enclosure. Small building developments are likely to have multiple small buildings with individual mechanical and electrical equipment.



Example: Lee Fort Terrace - Salem Housing Authority is characterized as Small/Medium by wood frame, masonry enclosure, single story.

## LARGE BUILDINGS

The most common construction type for large buildings are steel or concrete masonry structure with masonry enclosure. Large building developments are likely to have elevators and centralized mechanical and electrical equipment.



Example: McCarthy Building - Melrose Housing Authority is characterized as Large by masonry frame, masonry enclosure, seven stories.

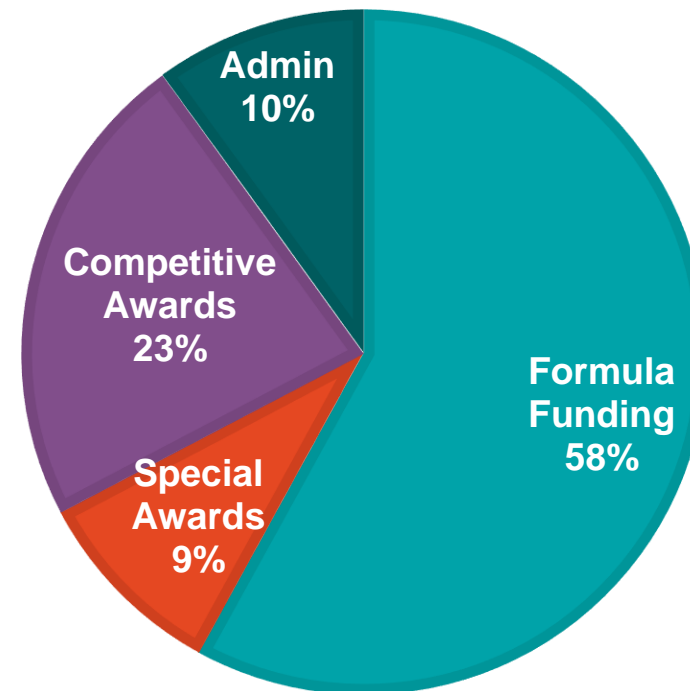
# Project Pipeline and Funding

## PIPELINE

- We have a large pipeline of about 1,800 active projects statewide at any given time.
- Estimated construction costs from \$50k-over \$10M
- 63 House Doctor Firms

## CAPITAL FUNDING: ~\$110M Annually

■ Formula Funding ■ Special Awards ■ Competitive Awards ■ Admin



# FY 21 Special Projects

Project Name	Terms	Type
Accessible Unit Initiative	Program caps of \$150K/667 unit and \$300K/705 or 200 unit	CIP
2nd Elevator Initiative	\$800k Typical	Targeted
Creative Placemaking	up to \$500K per project	Competitive
Gateway Cities	\$10 M max	Competitive
Health and Safety	Up to \$50k	Competitive
HILAPP	1:2.5 max leverage	Competitive

Project Name	Terms	Type
Septic Upgrades	By project	Targeted
SUST- Comprehensive Sustainability Initiative (CSI)	\$25k per unit max	Competitive
Sustainability	\$150k cap.	SUST Application
SUST- Resiliency	By project	Targeted
Vacant Unit	\$65k/unit max	CIP
PEHO 2	Multi-Million/ Leveraged Funds	Competitive



# Design Guidelines

56 Document Update Just Completed – Publishing Soon

Roughly by CSI category

Sustainability and New Resiliency guidelines wrapped in

Aging in Place Checklist

Decision Making Tool for Contaminated Soils

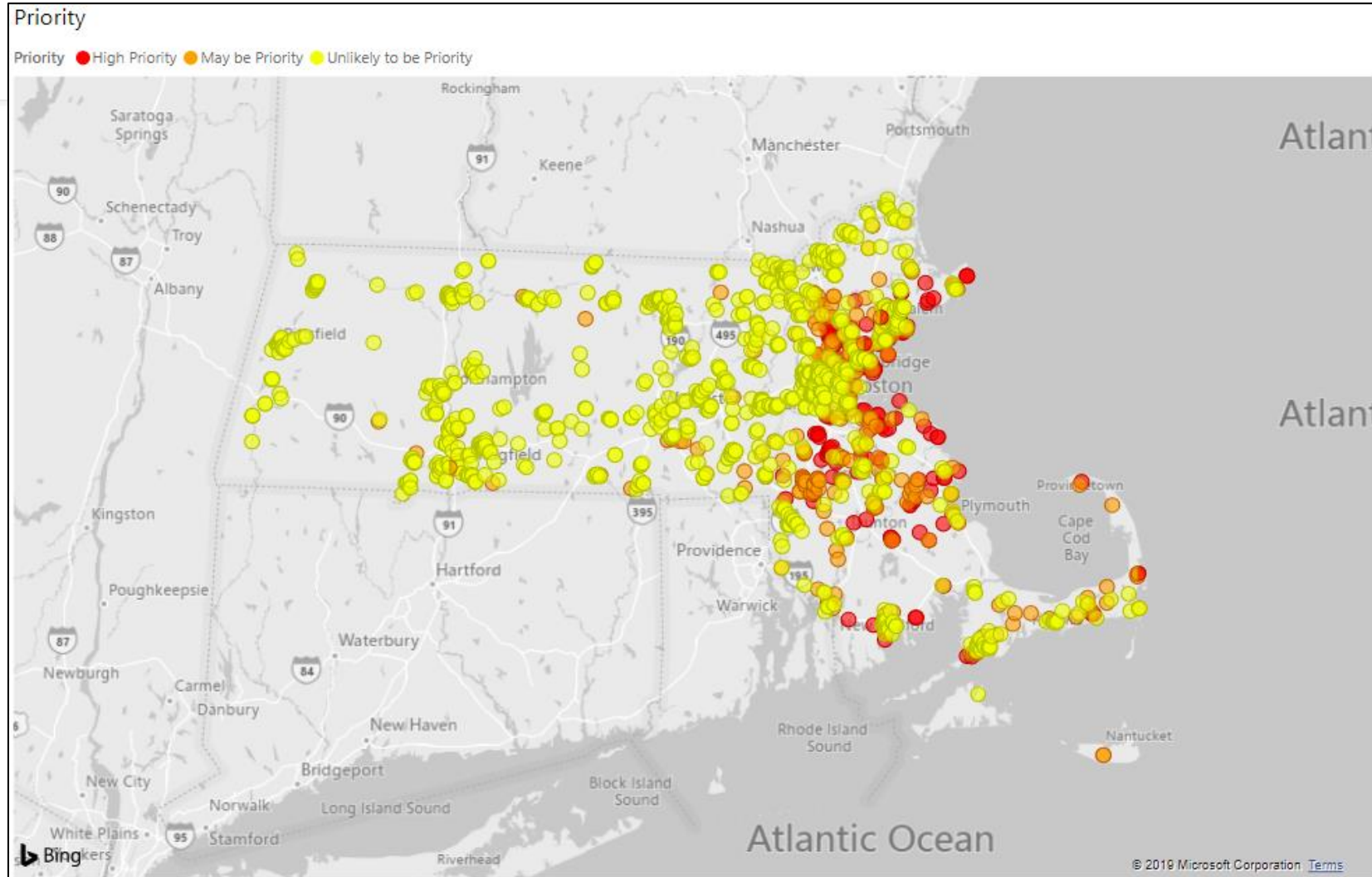


# CHARM

- Analysis focused on the buildings and the resident characteristics - *80,000 people in 1430 developments*
- Prepared GIS map of developments, layered against mapped climate hazards over time
- Surveyed LHAs re: recent experience with extreme weather, insurance claims, emergency plans in place
- Developed risk & vulnerability score for every development
- Prioritized the most vulnerable developments



# CHARM














Highest scores located in Eastern MA at sites subject to:

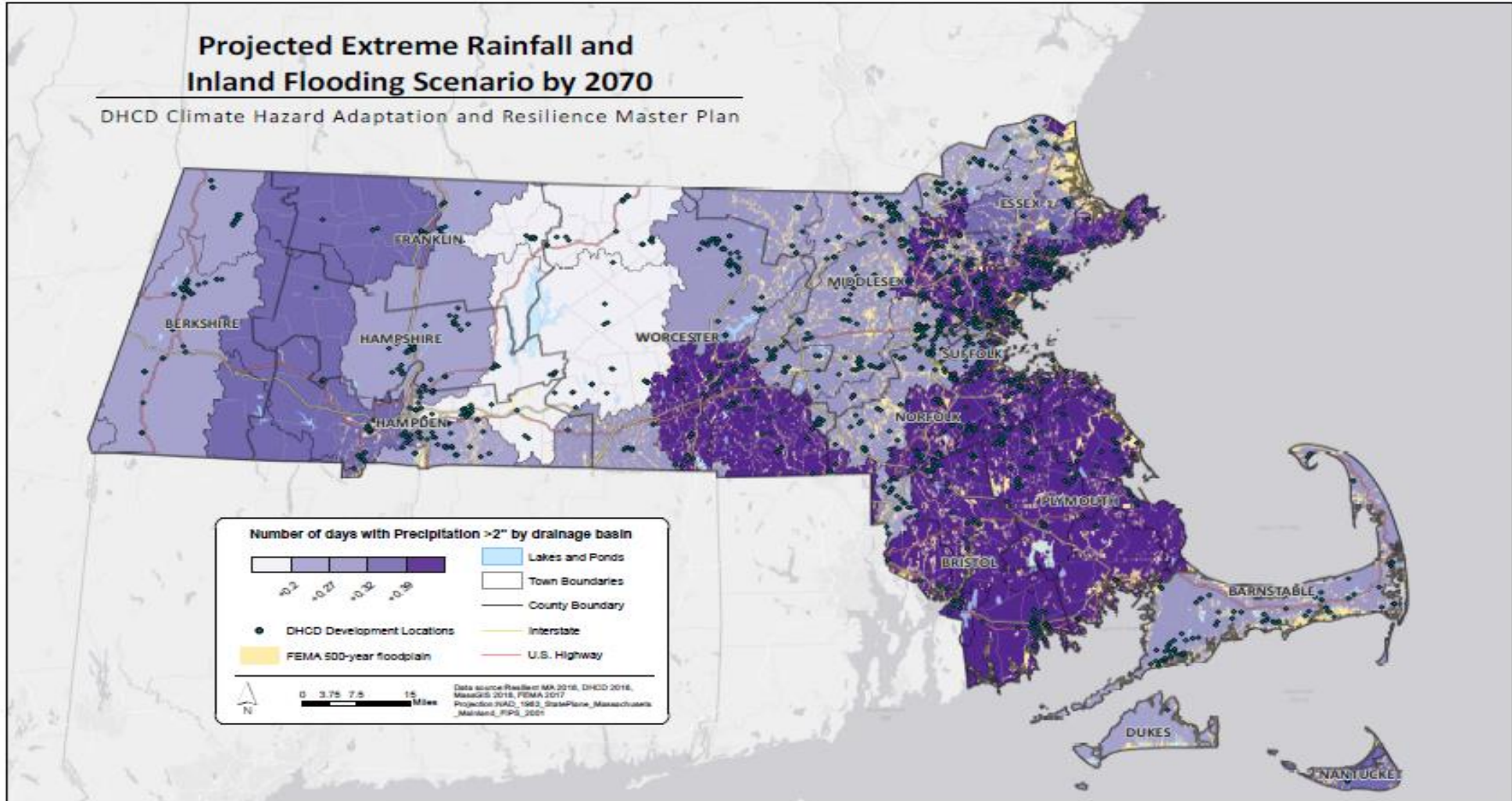
- Sea Level Rise/ Storm Surge
- Riverine Flooding

Extreme heat impacts will affect portfolio statewide

# CHARM

Building Strategies				
Resilient Structure and Enclosure The most effective wall assemblies are well insulated, air and water tight to keep flooding out and maintain comfortable indoor temperature.	Climate Hazard			Guideline Section
	 PRECIPITATION	 STORM SURGE	 EXTREME HEAT	
Repairing or improving the thermal performance of <b>masonry</b> at all properties should always be done with attention to managing moisture and permeability as well as thermal performance.				04 20 00 Unit Masonry
Use <b>wood</b> building materials which are considered flood damage resistant, meaning they can withstand direct contact with water for at least 72 hours without being significantly damaged.				06 10 00 Rough Carpentry 06 20 00 Finish Carpentry
For some residential buildings, the Massachusetts Energy Code requires a <b>continuous air barrier</b> assembly for new construction buildings or additions at opaque exterior walls or soffits, including joints and junctions to abutting constructions to control air movement through the wall. The air barrier also serves as a liquid-water drainage plane when flashed to discharge water to the exterior.				07 10 00 Waterproofing and Dampproofing
The most <b>effective wall assemblies</b> have a primary <b>water barrier</b> (the exterior cladding: brick, clapboards, shingles, etc.) and a secondary, vapor-open, bulk water barrier (house wrap with all joints taped, peel-and-stick membrane, liquid-applied air and water barrier, or other product).				07 20 00 Building Insulation & Moisture Protection
Making improvements to <b>roof drainage</b> will help buildings address water penetration and structural failures. Improving roof insulation at the eaves of sloped roofs will reduce the freeze-thaw cycling of ice and snow on the roof that leads to ice dams.				07 30 00 Asphalt Roof Shingles

# CHARM



# Adapting Community/Office Space

## DESIGN RECOMMENDATIONS

Project Name	Terms
Covid-19 Office Adaptation	\$10k per LHA max

### PARTITIONING SPACE & MINIMIZE DROPLET PROLIFERATION

- Erect Plexiglas partitions Add transitions, animations, and motion.
- Raise the height of existing work stations
- Provide hand sanitization stations
- Put up a clear shower curtain partition?

### IMPROVE INDOOR AIR QUALITY

- Open windows for air circulation
- Evaluate existing air systems to increase outside air mechanically
- Increase air flow in restrooms by leaving bathroom fans active
- HVAC filters to filter for smaller particles
- Disinfect toilets which have been out of use; Legionella

### PROVIDE SOCIAL DISTANCING SPACE

- Exterior, secure lock-box for dropping rent checks
- Create an online sign-up for office visits.
- Provide an exterior buzzer and camera to manage the number of people entering the office.
- Require face coverings for all staff and residents using office.
- Provide markings on the ground
- Provide markings on the ground in the elevator lobbies and office lobby

### PREPARE FOR THE COOLING SEASON

- Provide shaded or rain-cover areas at the exterior of the building for waiting.
- Provide shaded/covered areas for socially distant breaks from interior spaces.
- If the majority of your residents have air conditioners, particularly window units, have some additional window AC units in storage which can be used in extreme heat
- Determine with your local community if they are providing large, socially distanced, cooling centers, such as school gyms.

# DHCD Roadmap for Sustainability





## End Game

---



Simone Early



[Simone.early@mass.gov](mailto:Simone.early@mass.gov)