How to Use the New CHARM Tools in CPS

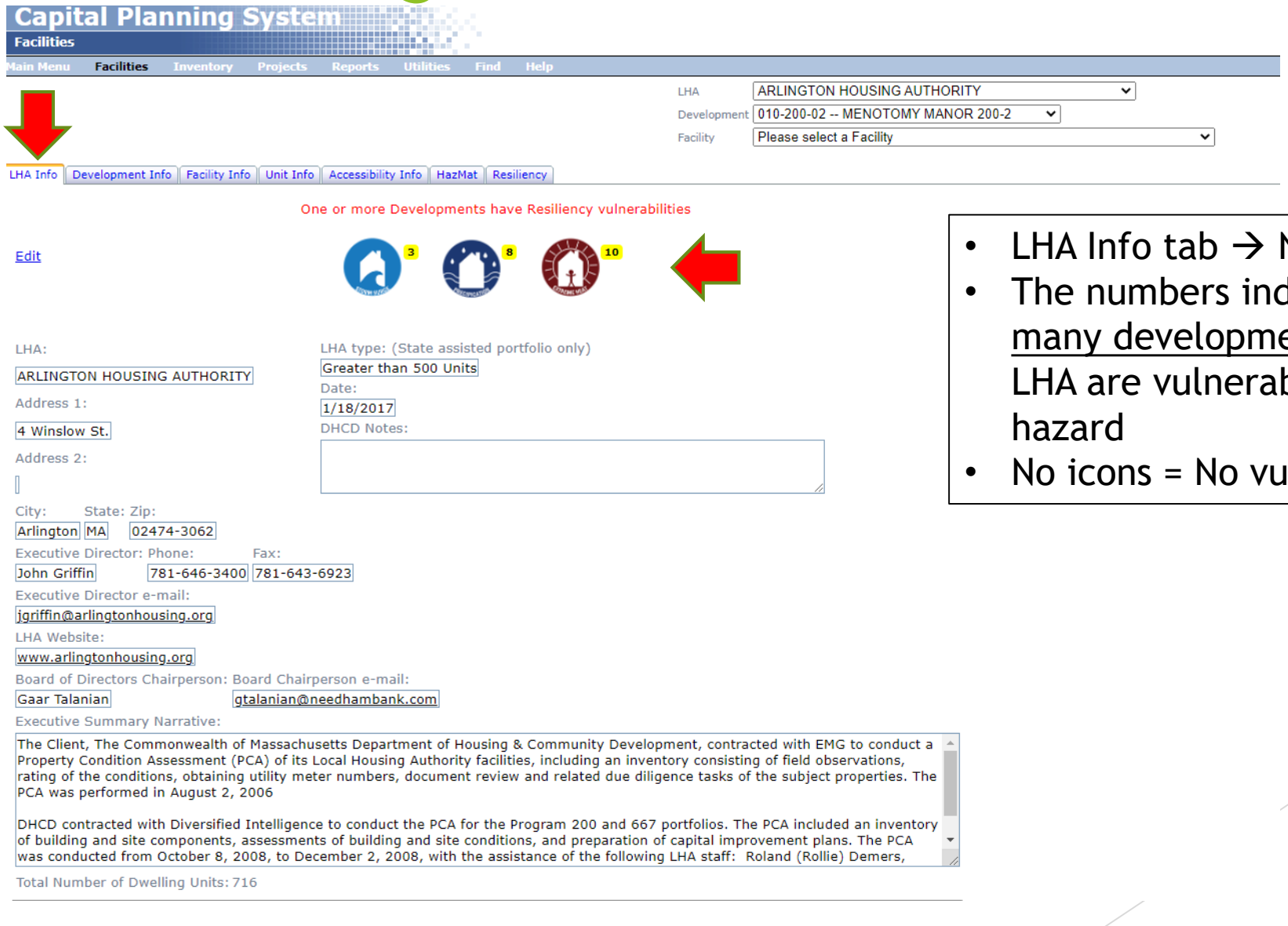
New Icons Appear Across CPS

Each icon indicates vulnerability to a specific hazard:

1) Precipitation-induced flooding (heavy rainfall flooding)
2) Sea level rise/storm surge (SLR/SS)
3) Extreme heat

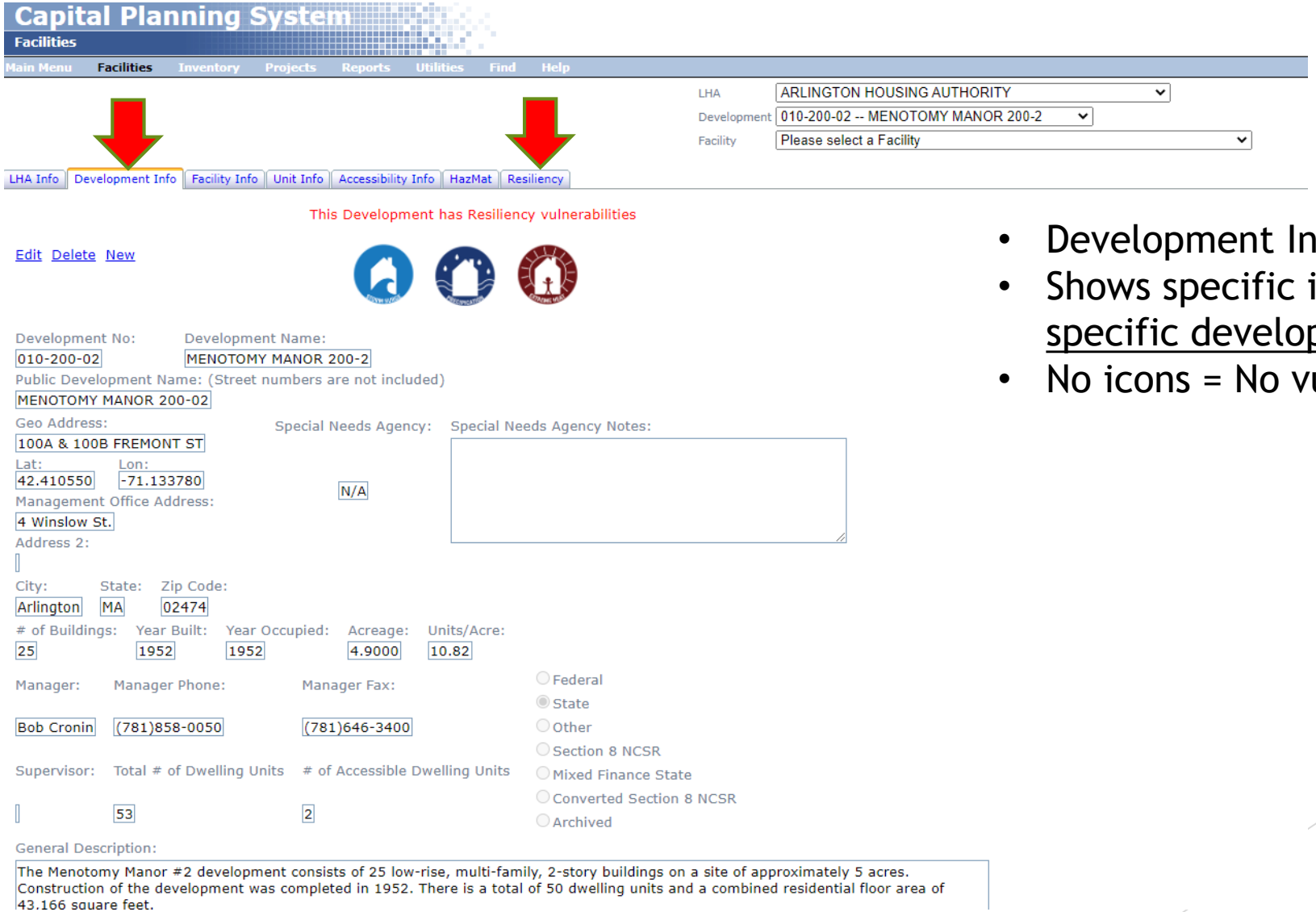
Emergency Preparedness icon suggests that a topic/component is relevant to emergency preparedness, not a specific hazard

Facilities Page



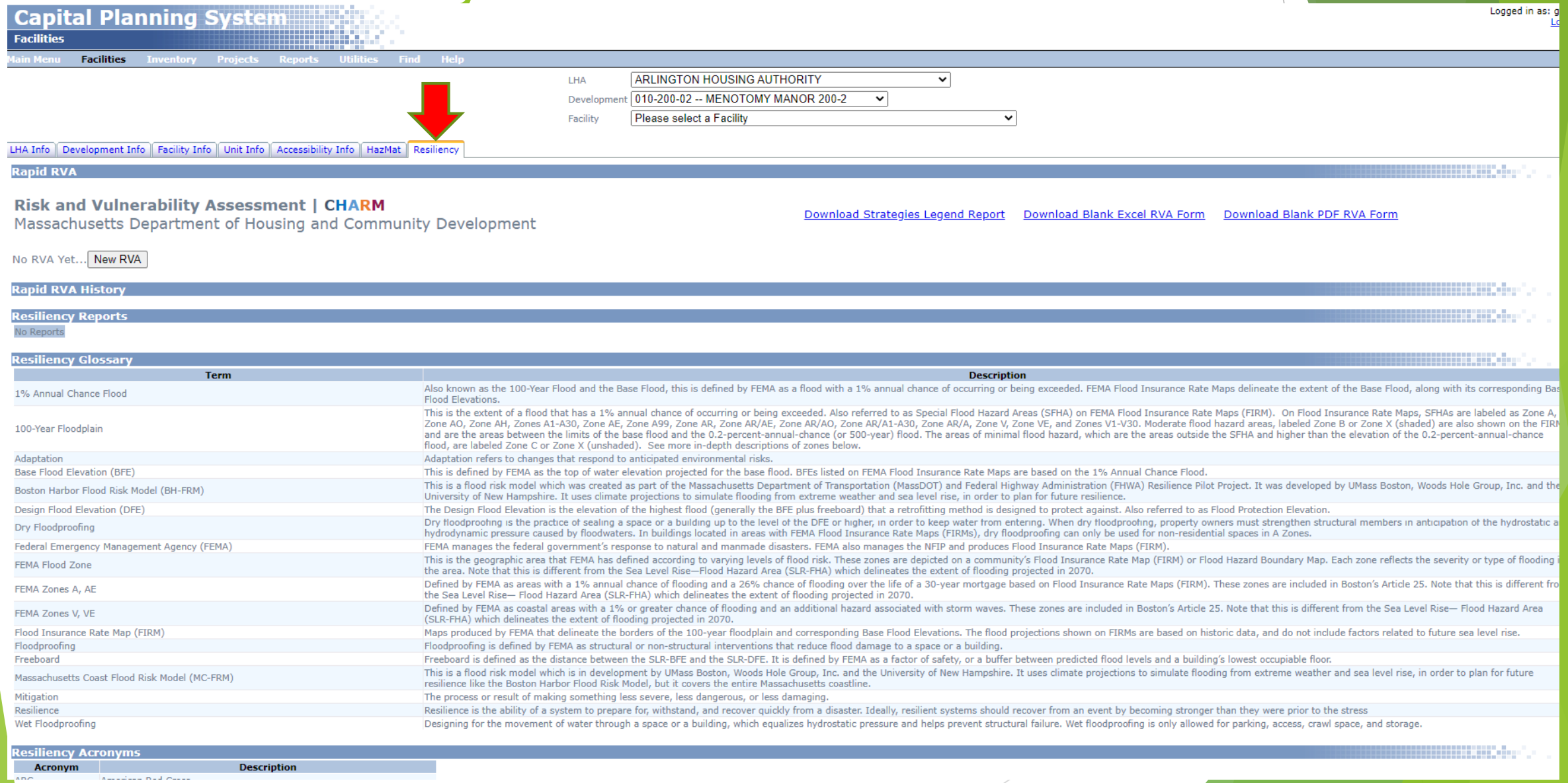
- LHA Info tab → New icons
- The numbers indicate <u>how many developments</u> at an LHA are vulnerable to each hazard
- No icons = No vulnerabilities

Facilities Page



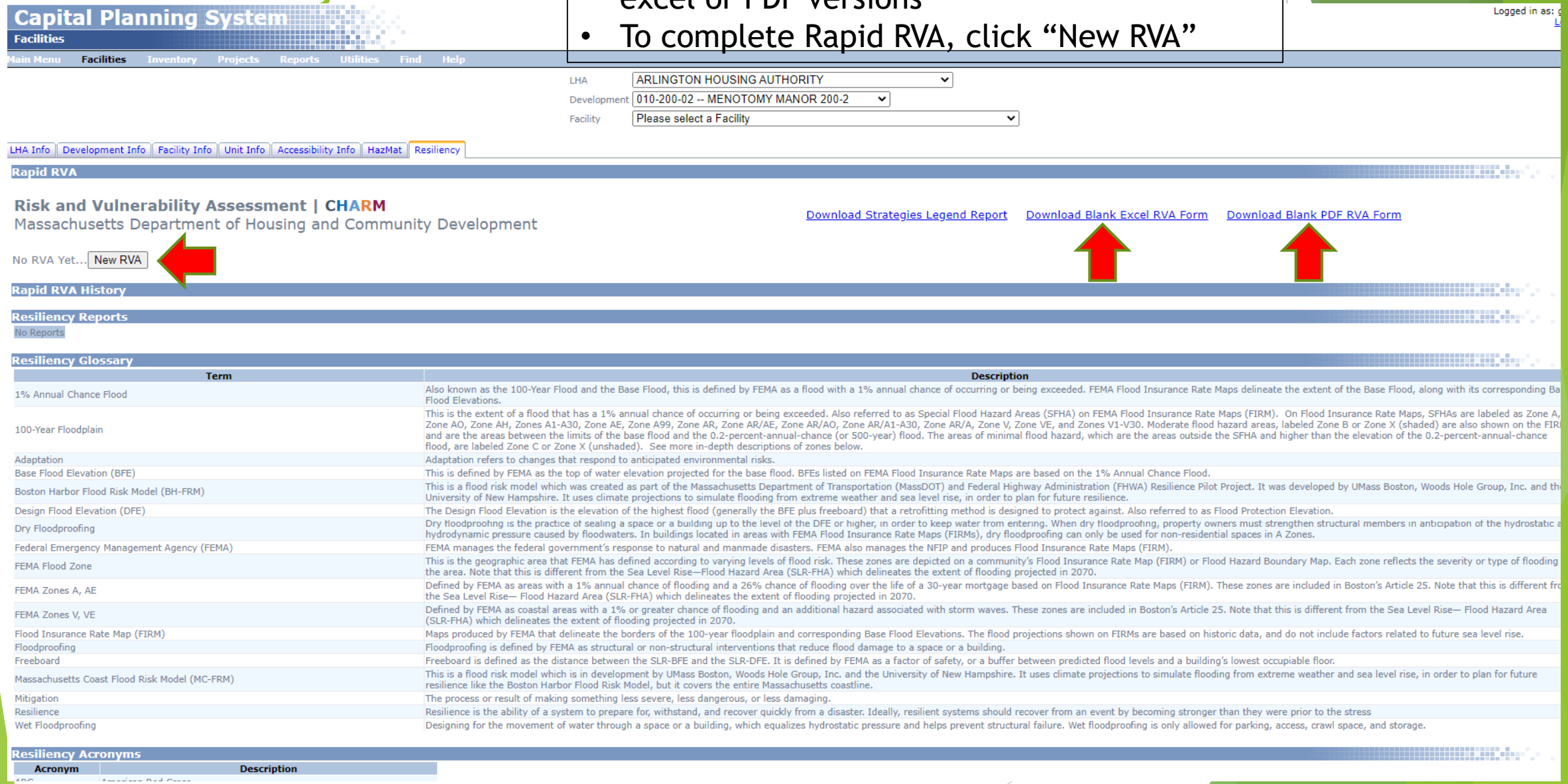
- Development Info tab
- Shows specific icons for a specific development
- No icons = No vulnerabilities

New Resiliency Tab

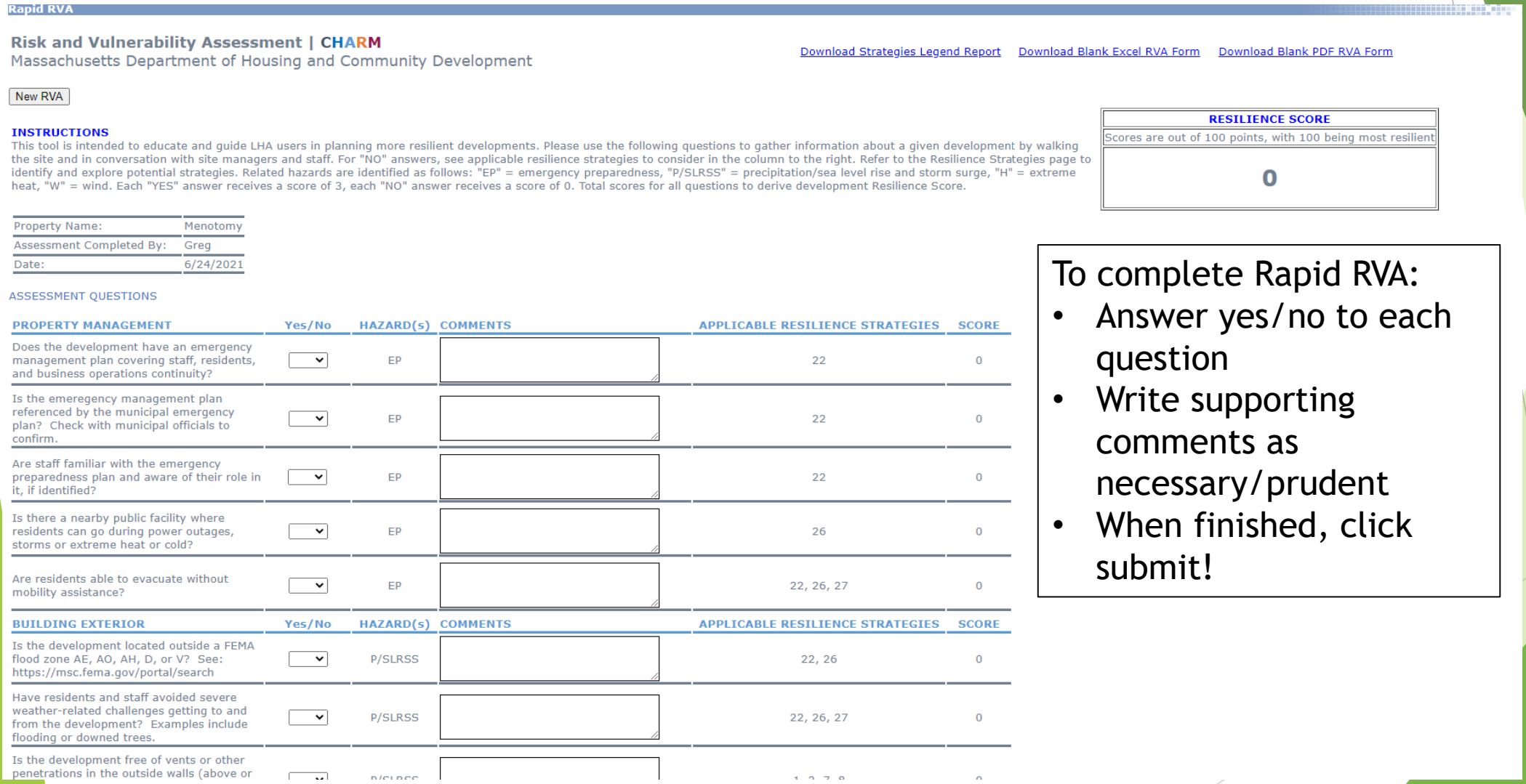


Resiliency Tab

- LHAs to complete one Rapid RVA, per development, annually
- To review Rapid RVA information, download excel or PDF versions
- To complete Rapid RVA, click “New RVA”



Rapid RVA



Rapid RVA

Risk and Vulnerability Assessment | CHARM
Massachusetts Department of Housing and Community Development

Download Strategies Legend Report | Download Blank Excel RVA Form | Download Blank PDF RVA Form

New RVA

INSTRUCTIONS
This tool is intended to educate and guide LHA users in planning more resilient developments. Please use the following questions to gather information about a given development by walking the site and in conversation with site managers and staff. For "NO" answers, see applicable resilience strategies to consider in the column to the right. Refer to the Resilience Strategies page to identify and explore potential strategies. Related hazards are identified as follows: "EP" = emergency preparedness, "P/SLRSS" = precipitation/sea level rise and storm surge, "H" = extreme heat, "W" = wind. Each "YES" answer receives a score of 3, each "NO" answer receives a score of 0. Total scores for all questions to derive development Resilience Score.

RESILIENCE SCORE
Scores are out of 100 points, with 100 being most resilient
0

Property Name:	Menotomy
Assessment Completed By:	Greg
Date:	6/24/2021

ASSESSMENT QUESTIONS

PROPERTY MANAGEMENT	Yes/No	HAZARD(s)	COMMENTS	APPLICABLE RESILIENCE STRATEGIES	SCORE
Does the development have an emergency management plan covering staff, residents, and business operations continuity?		EP		22	0
Is the emeregency management plan referenced by the municipal emergency plan? Check with municipal officials to confirm.		EP		22	0
Are staff familiar with the emergency preparedness plan and aware of their role in it, if identified?		EP		22	0
Is there a nearby public facility where residents can go during power outages, storms or extreme heat or cold?		EP		26	0
Are residents able to evacuate without mobility assistance?		EP		22, 26, 27	0
BUILDING EXTERIOR	**Yes/No**	**HAZARD(s)**	**COMMENTS**	**APPLICABLE RESILIENCE STRATEGIES**	**SCORE**
Is the development located outside a FEMA flood zone AE, AO, AH, D, or V? See: https://msc.fema.gov/portal/search		P/SLRSS		22, 26	0
Have residents and staff avoided severe weather-related challenges getting to and from the development? Examples include flooding or downed trees.		P/SLRSS		22, 26, 27	0
Is the development free of vents or other penetrations in the outside walls (above or		P/SLRSS		1, 2, 7, 8	0

To complete Rapid RVA:

- Answer yes/no to each question
- Write supporting comments as necessary/prudent
- When finished, click submit!

Rapid RVA

Risk and Vulnerability Assessment | CHARM
Massachusetts Department of Housing and Community Development

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New RVA

INSTRUCTIONS
This tool is intended to educate and guide LHA users in planning more resilient developments. Please use the following questions to gather information about a given development by walking the site and in conversation with site managers and staff. For "NO" answers, see applicable resilience strategies to consider in the column to the right. Refer to the Resilience Strategies page to identify and explore potential strategies. Related hazards are identified as follows: "EP" = emergency preparedness, "P/SLRSS" = precipitation/sea level rise and storm surge, "H" = extreme heat, "W" = wind. Each "YES" answer receives a score of 3, each "NO" answer receives a score of 0. Total scores for all questions to derive development Resilience Score.

RESILIENCE SCORE
Scores are out of 100 points, with 100 being most resilient
52

Property Name:	Menotomy
Assessment Completed By:	Greg
Date:	6/24/2021

ASSESSMENT QUESTIONS

PROPERTY MANAGEMENT	Yes/No	HAZARD(s)	COMMENTS	APPLICABLE RESILIENCE STRATEGIES	SCORE
Does the development have an emergency management plan covering staff, residents, and business operations continuity?	No	EP		22	0
Is the emeregency management plan referenced by the municipal emergency plan? Check with municipal officials to confirm.	No	EP		22	0
Are staff familiar with the emergency preparedness plan and aware of their role in it, if identified?	No	EP		22	0
Is there a nearby public facility where residents can go during power outages, storms or extreme heat or cold?	Yes	EP		26	3
Are residents able to evacuate without mobility assistance?	Yes	EP		22, 26, 27	3
BUILDING EXTERIOR	**Yes/No**	**HAZARD(s)**	**COMMENTS**	**APPLICABLE RESILIENCE STRATEGIES**	**SCORE**
Is the development located outside a FEMA flood zone AE, AO, AH, D, or V? See: https://msc.fema.gov/portal/search	Yes	P/SLRSS		22, 26	3
Have residents and staff avoided severe weather-related challenges getting to and from the development? Examples include flooding or downed trees.	Yes	P/SLRSS		22, 26, 27	3
Is the development free of vents or other penetrations in the outside walls (above or below grade) that could let water into the building(s)?	No	P/SLRSS		1, 2, 7, 8	0

To read each Resiliency Strategy, download the Report above

After Finishing the Rapid RVA, the History Automatically Updates

Rapid RVA History

	Property Name	Completed By	Completed Date	Score	Comment	
Delete	Menotomy	Greg	6/24/2021	52		Edit Select

Resiliency Reports

File	Description	

Choose File No file chosen [ ] Add

You can review and/or edit previous RVAs by clicking Select or Edit

Resiliency Glossary

Term	Description
1% Annual Chance Flood	Also known as the 100-Year Flood and the Base Flood, this is defined by FEMA as a flood with a 1% annual chance of occurring or being exceeded. FEMA Flood Insurance Rate Maps delineate the extent of the Base Flood, along with its corresponding Base Flood Elevations.
100-Year Floodplain	This is the extent of a flood that has a 1% annual chance of occurring or being exceeded. Also referred to as Special Flood Hazard Areas (SFHA) on FEMA Flood Insurance Rate Maps (FIRM). On Flood Insurance Rate Maps, SFHAs are labeled as Zone A, Zone AO, Zone AH, Zones A1-A30, Zone AE, Zone A99, Zone AR, Zone AR/AE, Zone AR/AO, Zone AR/A1-A30, Zone AR/A, Zone V, Zone VE, and Zones V1-V30. Moderate flood hazard areas, labeled Zone B or Zone X (shaded) are also shown on the FIRM, and are the areas between the limits of the base flood and the 0.2-percent-annual-chance (or 500-year) flood. The areas of minimal flood hazard, which are the areas outside the SFHA and higher than the elevation of the 0.2-percent-annual-chance flood, are labeled Zone C or Zone X (unshaded). See more in-depth descriptions of zones below.
Adaptation	Adaptation refers to changes that respond to anticipated environmental risks.
Base Flood Elevation (BFE)	This is defined by FEMA as the top of water elevation projected for the base flood. BFEs listed on FEMA Flood Insurance Rate Maps are based on the 1% Annual Chance Flood.
Boston Harbor Flood Risk Model (BH-FRM)	This is a flood risk model which was created as part of the Massachusetts Department of Transportation (MassDOT) and Federal Highway Administration (FHWA) Resilience Pilot Project. It was developed by UMass Boston, Woods Hole Group, Inc. and the University of New Hampshire. It uses climate projections to simulate flooding from extreme weather and sea level rise, in order to plan for future resilience.
Design Flood Elevation (DFE)	The Design Flood Elevation is the elevation of the highest flood (generally the BFE plus freeboard) that a retrofitting method is designed to protect against. Also referred to as Flood Protection Elevation.
Dry Floodproofing	Dry floodproofing is the practice of sealing a space or a building up to the level of the DFE or higher, in order to keep water from entering. When dry floodproofing, property owners must strengthen structural members in anticipation of the hydrostatic and hydrodynamic pressure caused by floodwaters. In buildings located in areas with FEMA Flood Insurance Rate Maps (FIRMs), dry floodproofing can only be used for non-residential spaces in A Zones.
Federal Emergency Management Agency (FEMA)	FEMA manages the federal government's response to natural and manmade disasters. FEMA also manages the NFIP and produces Flood Insurance Rate Maps (FIRM).
FEMA Flood Zone	This is the geographic area that FEMA has defined according to varying levels of flood risk. These zones are depicted on a community's Flood Insurance Rate Map (FIRM) or Flood Hazard Boundary Map. Each zone reflects the severity or type of flooding in the area. Note that this is different from the Sea Level Rise—Flood Hazard Area (SLR-FHA) which delineates the extent of flooding projected in 2070.
FEMA Zones A, AE	Defined by FEMA as areas with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage based on Flood Insurance Rate Maps (FIRM). These zones are included in Boston's Article 25. Note that this is different from the Sea Level Rise— Flood Hazard Area (SLR-FHA) which delineates the extent of flooding projected in 2070.
FEMA Zones V, VE	Defined by FEMA as coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. These zones are included in Boston's Article 25. Note that this is different from the Sea Level Rise— Flood Hazard Area (SLR-FHA) which delineates the extent of flooding projected in 2070.
Flood Insurance Rate Map (FIRM)	Maps produced by FEMA that delineate the borders of the 100-year floodplain and corresponding Base Flood Elevations. The flood projections shown on FIRMs are based on historic data, and do not include factors related to future sea level rise.
Floodproofing	Floodproofing is defined by FEMA as structural or non-structural interventions that reduce flood damage to a space or a building.
Freeboard	Freeboard is defined as the distance between the SLR-BFE and the SLR-DFE. It is defined by FEMA as a factor of safety, or a buffer between predicted flood levels and a building's lowest occupiable floor.
Massachusetts Coast Flood Risk Model (MC-FRM)	This is a flood risk model which is in development by UMass Boston, Woods Hole Group, Inc. and the University of New Hampshire. It uses climate projections to simulate flooding from extreme weather and sea level rise, in order to plan for future resilience like the Boston Harbor Flood Risk Model, but it covers the entire Massachusetts coastline.
Mitigation	The process or result of making something less severe, less dangerous, or less damaging.
Resilience	Resilience is the ability of a system to prepare for, withstand, and recover quickly from a disaster. Ideally, resilient systems should recover from an event by becoming stronger than they were prior to the stress
Wet Floodproofing	Designing for the movement of water through a space or a building, which equalizes hydrostatic pressure and helps prevent structural failure. Wet floodproofing is only allowed for parking, access, crawl space, and storage.

Resiliency Acronyms

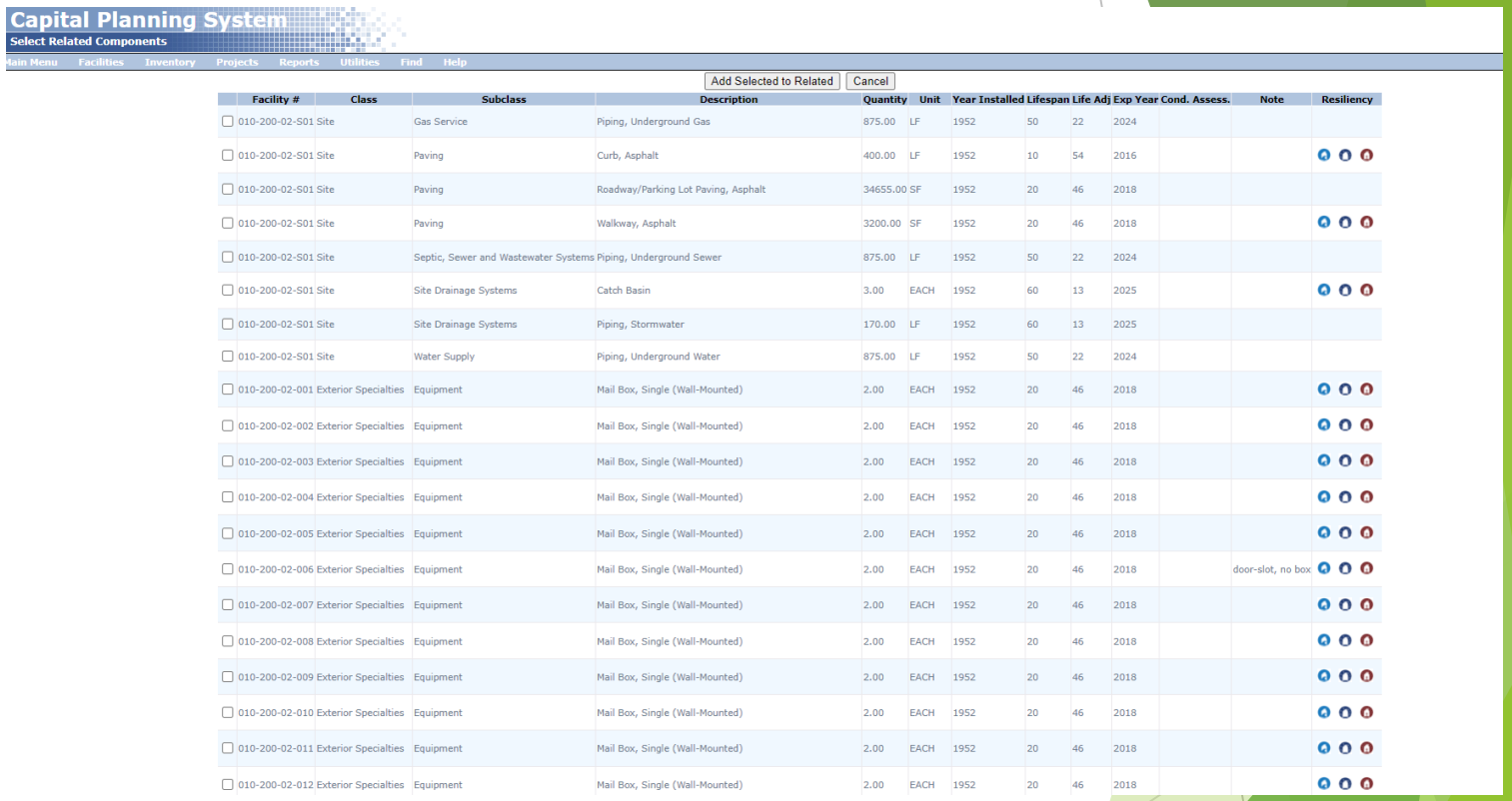
Acronym	Description
ARC	American Red Cross
BFE	Base Flood Elevation
BH-FRM	Boston Harbor Flood Risk Model
CDBG	Community Development Block Grant
CDO	Community Development Organization
CMHS	Center for Mental Health Services
DFE	Design Flood Elevation
DHCD	MA Department of Housing & Community Development

Inventory Page

- New column identifies which components are susceptible to which climate hazards
- When creating new CPS projects, please remember to add components to the project
  - Components in the New Project Wizard will have vulnerability icons too!

New Projects

- When you add components to the project, flags will appear!



Facility #	Class	Subclass	Description	Quantity	Unit	Year Installed	Lifespan	Life Adj	Exp Year	Cond. Assess.	Note	Resiliency
010-200-02-S01	Site	Gas Service	Piping, Underground Gas	875.00	LF	1952	50	22	2024			
010-200-02-S01	Site	Paving	Curb, Asphalt	400.00	LF	1952	10	54	2016			
010-200-02-S01	Site	Paving	Roadway/Parking Lot Paving, Asphalt	34655.00	SF	1952	20	46	2018			
010-200-02-S01	Site	Paving	Walkway, Asphalt	3200.00	SF	1952	20	46	2018			
010-200-02-S01	Site	Septic, Sewer and Wastewater Systems	Piping, Underground Sewer	875.00	LF	1952	50	22	2024			
010-200-02-S01	Site	Site Drainage Systems	Catch Basin	3.00	EACH	1952	60	13	2025			
010-200-02-S01	Site	Site Drainage Systems	Piping, Stormwater	170.00	LF	1952	60	13	2025			
010-200-02-S01	Site	Water Supply	Piping, Underground Water	875.00	LF	1952	50	22	2024			
010-200-02-001	Exterior Specialties	Equipment	Mail Box, Single (Wall-Mounted)	2.00	EACH	1952	20	46	2018			
010-200-02-002	Exterior Specialties	Equipment	Mail Box, Single (Wall-Mounted)	2.00	EACH	1952	20	46	2018			
010-200-02-003	Exterior Specialties	Equipment	Mail Box, Single (Wall-Mounted)	2.00	EACH	1952	20	46	2018			
010-200-02-004	Exterior Specialties	Equipment	Mail Box, Single (Wall-Mounted)	2.00	EACH	1952	20	46	2018			
010-200-02-005	Exterior Specialties	Equipment	Mail Box, Single (Wall-Mounted)	2.00	EACH	1952	20	46	2018			
010-200-02-006	Exterior Specialties	Equipment	Mail Box, Single (Wall-Mounted)	2.00	EACH	1952	20	46	2018		door-slot, no box	
010-200-02-007	Exterior Specialties	Equipment	Mail Box, Single (Wall-Mounted)	2.00	EACH	1952	20	46	2018			
010-200-02-008	Exterior Specialties	Equipment	Mail Box, Single (Wall-Mounted)	2.00	EACH	1952	20	46	2018			
010-200-02-009	Exterior Specialties	Equipment	Mail Box, Single (Wall-Mounted)	2.00	EACH	1952	20	46	2018			
010-200-02-010	Exterior Specialties	Equipment	Mail Box, Single (Wall-Mounted)	2.00	EACH	1952	20	46	2018			
010-200-02-011	Exterior Specialties	Equipment	Mail Box, Single (Wall-Mounted)	2.00	EACH	1952	20	46	2018			
010-200-02-012	Exterior Specialties	Equipment	Mail Box, Single (Wall-Mounted)	2.00	EACH	1952	20	46	2018			

Any Questions?

- Ask Greg Abbe, Sustainability Program Developer
  - Gregory.abbe@mass.gov