HOME FORWARD TEMPERATURE ASSESSMENT PROJECT

PROJECT SUMMARY

HOME FORWARD TEMPERATURE ASSESSMENT PROJECT

PROJECT MANAGEMENT TEAM

- Home Forward is a public corporation that contracts with the federal government to administer housing programs.

- CAPA Strategies (Climate, Adaptation, Planning, Analytics) Strategies provides data analytics and decision support tools to communities around the world.

HOME FORWARD TEMPERATURE ASSESSMENT PROJECT

PROJECT MANAGEMENT TEAM (cont.)

- **PBEM Collaborated with Home Forward and CAPA Strategies to develop the project (contract holder)**

- **Multnomah County (Environmental Health Services – *Healthy Homes and Community Program*) has supported the project and funded the 2nd phase of the project.**

HOME FORWARD TEMPERATURE ASSESSMENT PROJECT

PROJECT BACKGROUND (cont.)

Project Conception

- **In early 2022, PBEM proposed a project to track summer temperatures inside of public/affordable housing units, in partnership with Home Forward, the local Housing Authority.**

- **Multnomah County Health Department (MCHD) joined the project as a consulting partner.**

- **PBEM contracted with the climate adaptation consultancy, CAPA Strategies**

Home Forward Temperature Assessment – Initial Report

HOME FORWARD TEMPERATURE ASSESSMENT PROJECT

PROJECT SCOPE

Project Goals

1. to determine when, in real-time, it is getting too hot or unsafe inside a building so building managers can initiate protective actions for residents.
2. to collect information about indoor temperatures in different building types, to inform future planning and design.

Dahlke Manor

Schrunk Riverview Plaza

❖ **Properties being studied**:

- Dahlke Manor
- Schrunk Riverview Plaza
- Peaceful Villa

Madrona Place

HOME FORWARD TEMPERATURE ASSESSMENT PROJECT SUMMARY RESULTS

- Sensors were placed in three Home Forward properties: Dahlke Manor (DM), Schrunk Riverview Tower (SRT), and Madrona Place (MP).

- The sensors recorded data for 85 days, from June 24th through September 16th, 2023.

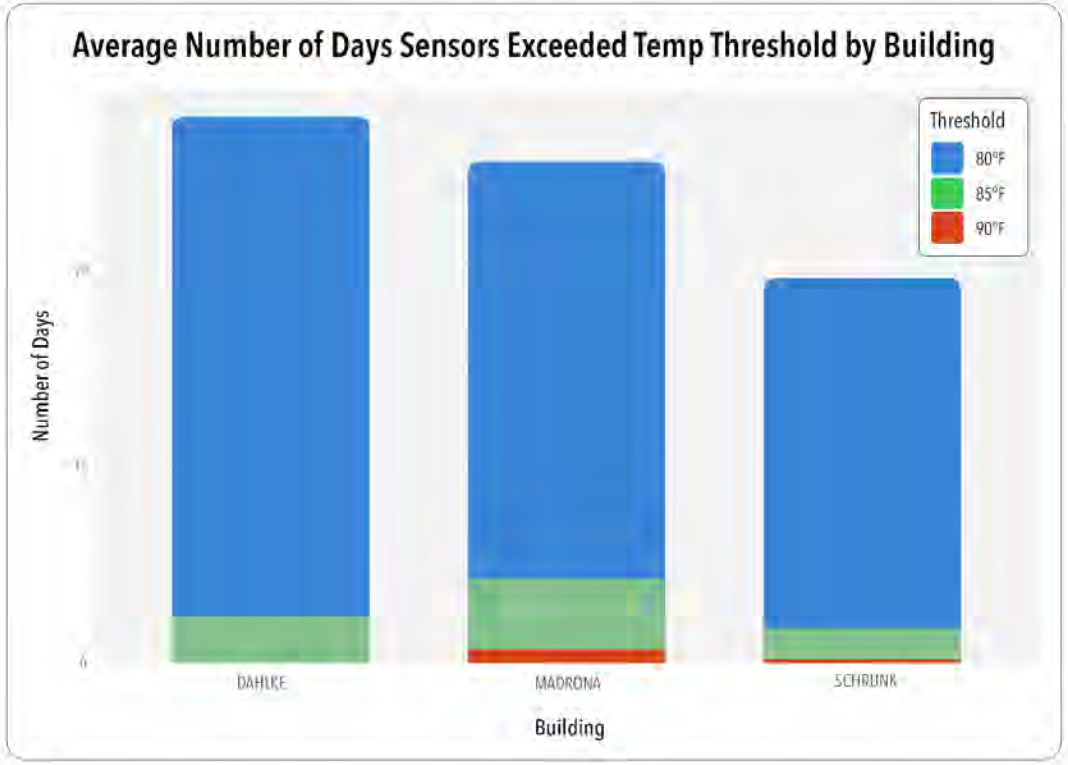
Property Name	Location in Portland	Building Type	Building Material	Number of Units	Type of Units	Number of Stories
Dahlke Manor	Northeast	High-rise	Concrete	115	1-Bedroom	9
Schrunk Riverview Tower	North	High-rise	Concrete	118	1-Bedroom	11
Madrona Place	Far East	Freestanding multi-unit structures (6)	Wood	45	1-Bed, 2-Bed, 3-Bed	2

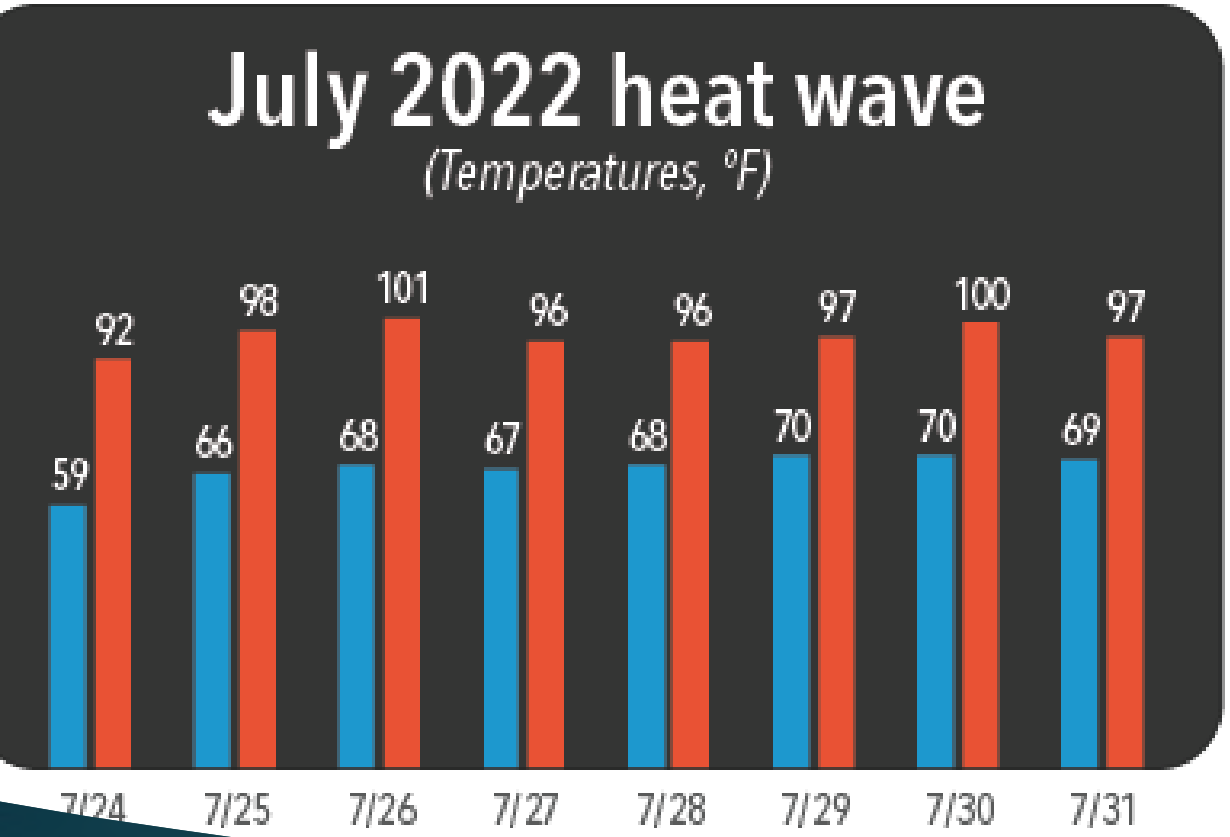
HOME FORWARD TEMPERATURE ASSESSMENT PROJECT SUMMARY RESULTS (cont.)

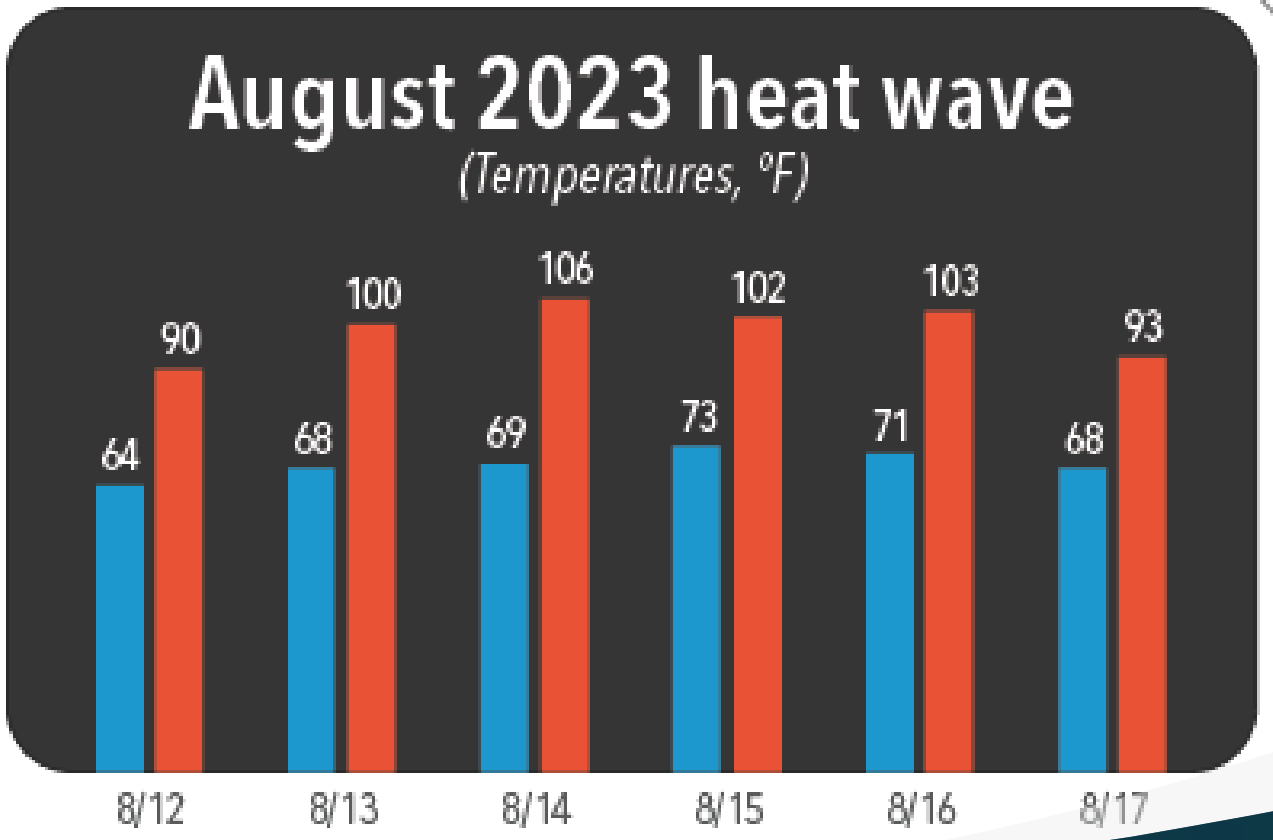
- **Although outdoor maximum temperatures peaked around 4 P.M., indoor temperatures peaked around 7 P.M. at MP, and 6 P.M. at SRT and DM. While temperatures at all three properties began to decline slightly after 8 P.M., they remained high and did not drop off significantly until after midnight (12 A.M.)**

- **High-rise residents reported heat coming off of interior walls in the evening, affirming the finding that indoor temperatures stay higher, later than outdoor ones.**

- **Units with AC were not significantly cooler, on average, than those without AC**







Daily minimum and maximum outdoor temperatures during two heat waves: August 12th through 17th, 2023, and July 24th through 31st, 2022.

Findings Year 1 vs year 2

- One of the most notable and surprising findings from the year 1 study was that units with an AC did not register as significantly cooler than those without an AC. Temperature data, as well as input from residents at HWE and NWT, revealed that even those with an AC struggled to keep indoor temperatures down.

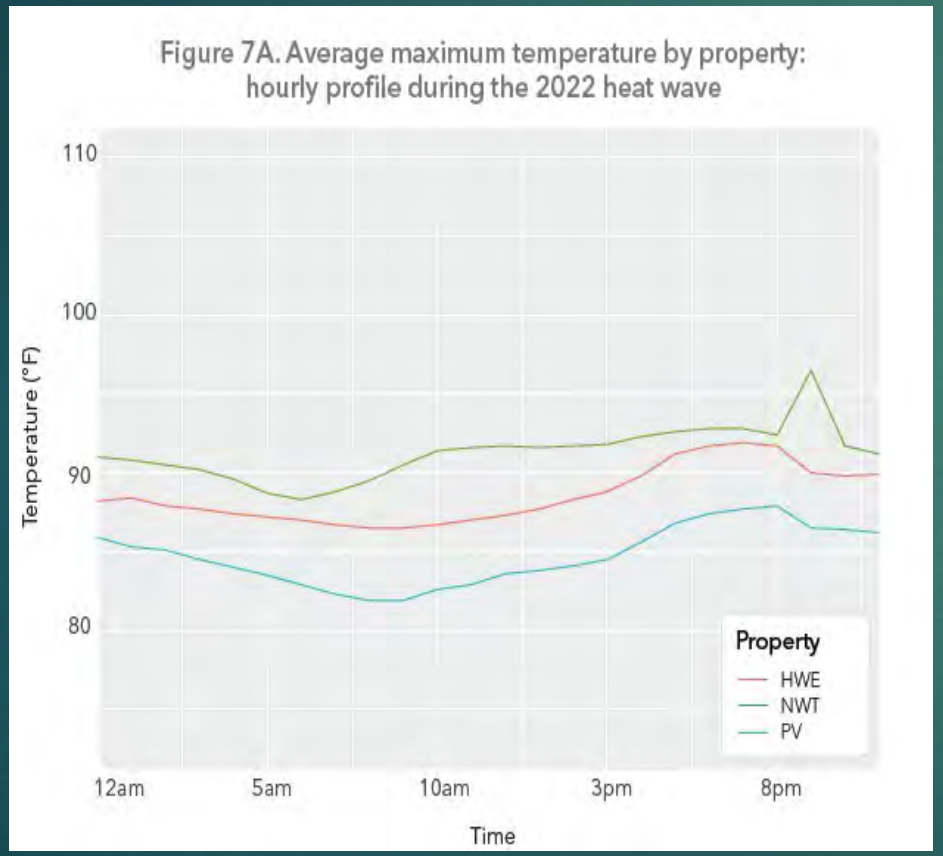
Findings year 1 vs. year 2

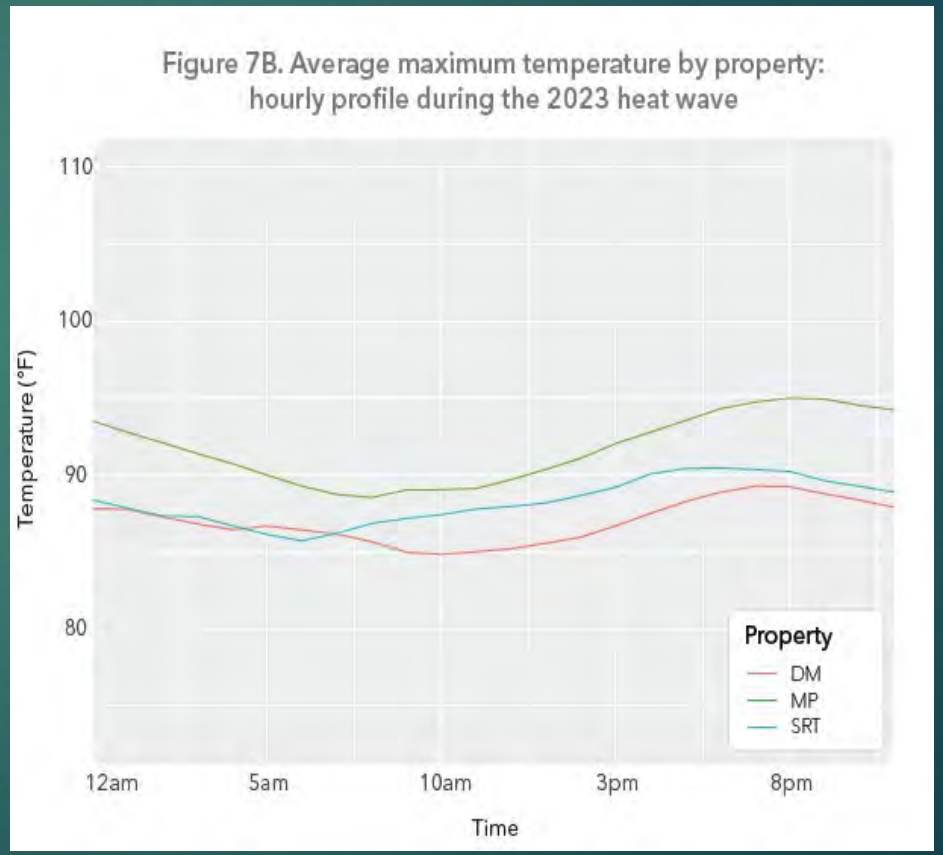
- Residents without AC shared that they went to great lengths to make up the difference, using window shades or homemade insulation, keeping light and electronics off all day, and limiting activity inside the home.
- In 2023, when studying two high-rise buildings structurally similar to HWE and NWT, ACs appeared to be more effective at cooling individual units. As noted, there were so few units without AC in the year 2 study that it was difficult to compare those with and without AC directly.
- By comparing 2022 and 2023 data shows indoor temperatures reached unsafe levels over 85 and 90°F with greater frequency in 2022. Properties studied in years 1 and 2 were not identical (for example, HWE and NWT are taller high-rises than DM and SRT.

Other notable findings

- Residents in years 1&2 proved that both A/C and heat pumps are effective in keeping apartments cool even in concrete and high-rise buildings.
- A/C works best when combined with quality insulation, use of curtains, and limiting most heat-intensive activities like cooking
- Building materials/green spaces/ tree canopy/blacktops influenced temperatures around these buildings.

Average Max. Temperature by property 2022-2023





Average temperature by property: hourly profile