



School IAQ Monitoring

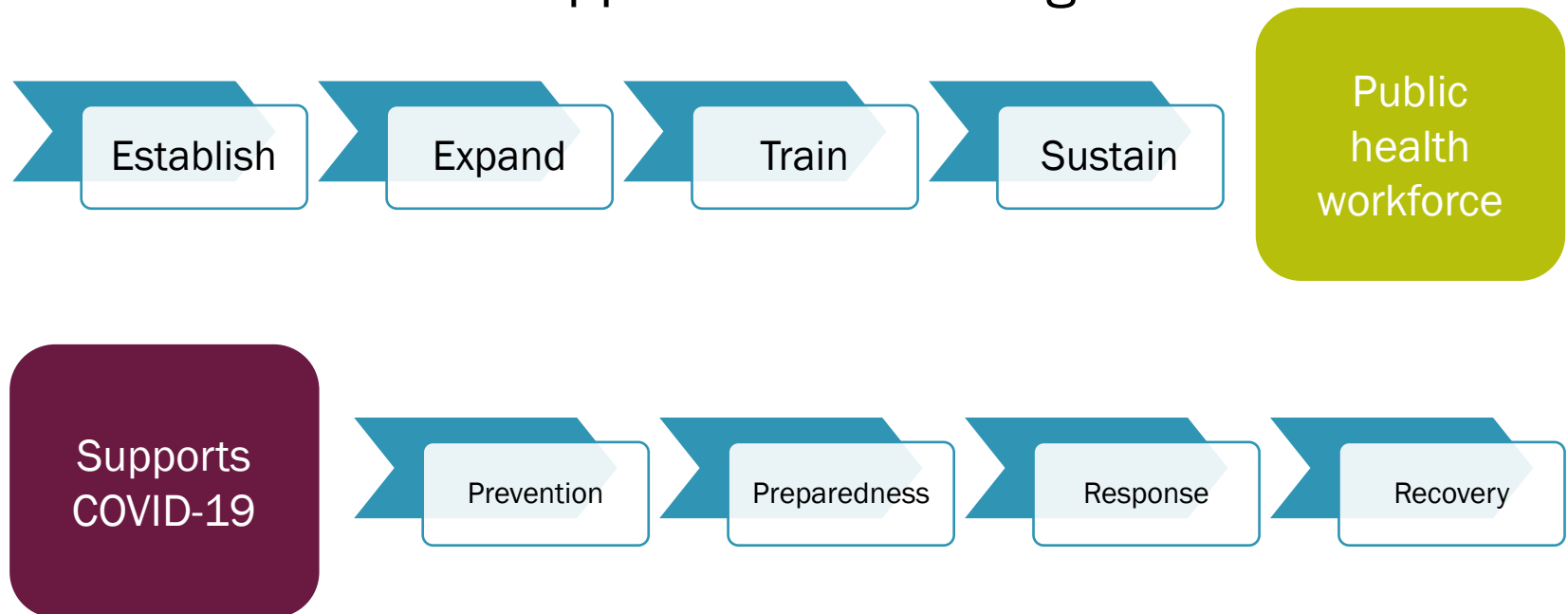
Vermont's Pilot Project

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October 7, 2023

The School IAQ Monitoring Pilot was possible thanks to federal funding supporting IAQ activities!

CDC Crisis Response: COVID-19 Public Health Workforce Supplemental Funding



We are building capacity to address public health priorities derived from COVID-19.

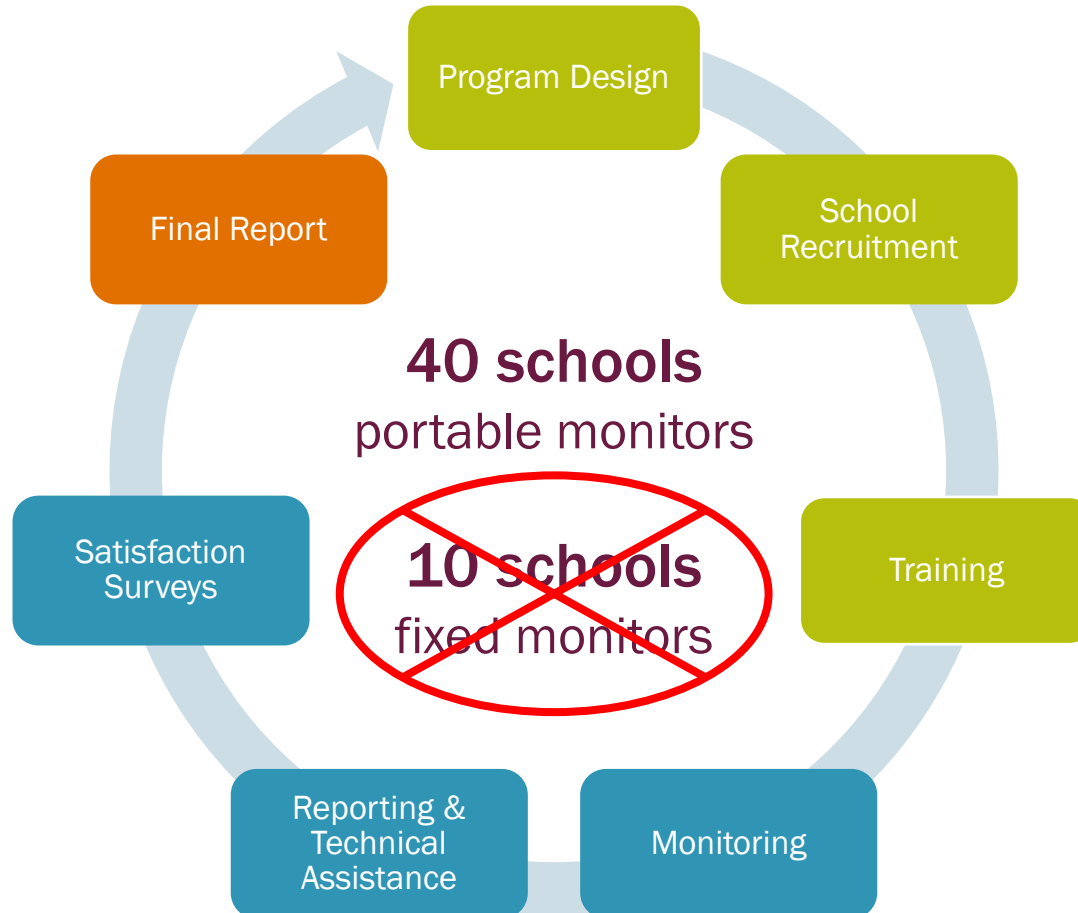
The pilot builds workforce capacity and supports schools by:

- collecting data on IAQ in schools
- analyzing the data to understand trends
- training school staff on how changes can impact IAQ both positively and negatively

Pilot goals include:

- Demonstrating what ventilation and work practice changes prevent IAQ issues that increase the risk of COVID-19
- Improving prevention of other airborne infectious disease
- Preventing other health outcomes like asthma
- Helping schools invest in activities and improvements that are more likely to succeed and have clear IAQ benefits.

The School IAQ Monitoring Pilot is well underway.



Several monitors were evaluated and the Kaiterra Sensedge Mini was selected for use.



IQ Air
Air Visual Pro



IQ Air
Air Visual Outdoor



TSI
Air Assure 2-gas



TSI
Bluesky



Kaiterra
Sensedge Mini

Data will help inform recommendations for future monitoring and improvements to IAQ.

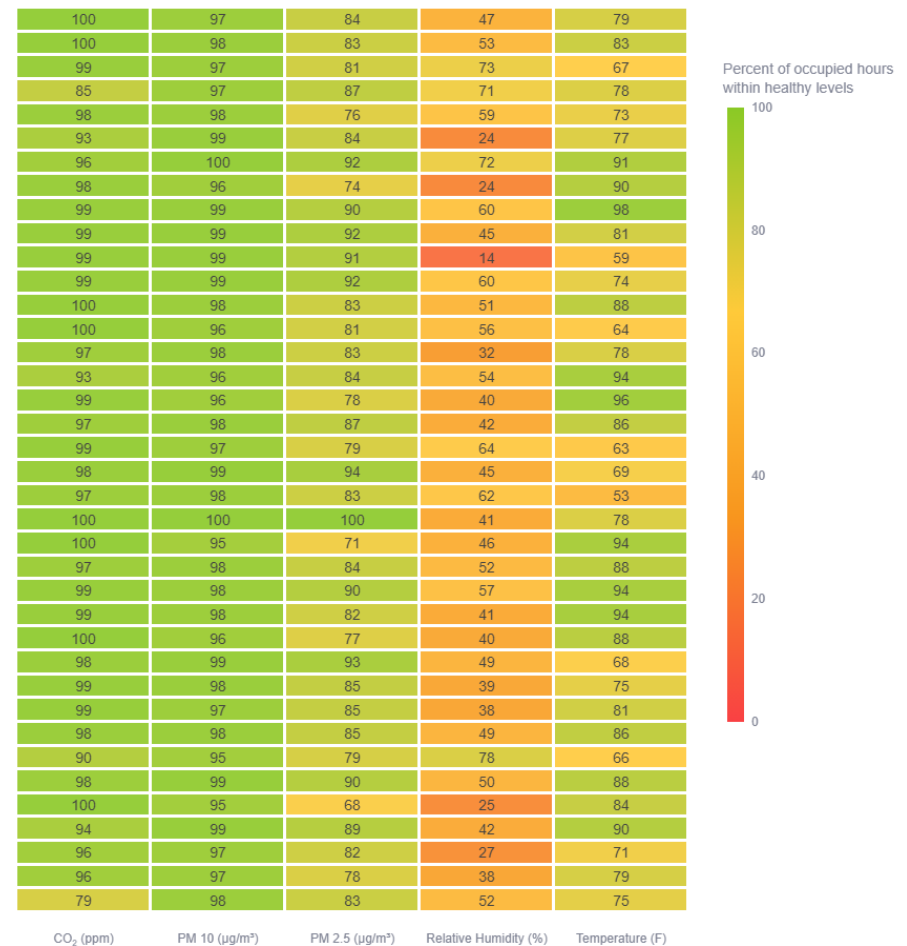
Questions to consider:

- Did IAQ improve with ventilation?
- Did IAQ improve when other changes were made?
- Did IAQ ever get worse after a change?
- What broad recommendations can be made?
- Do we need to collect more data?

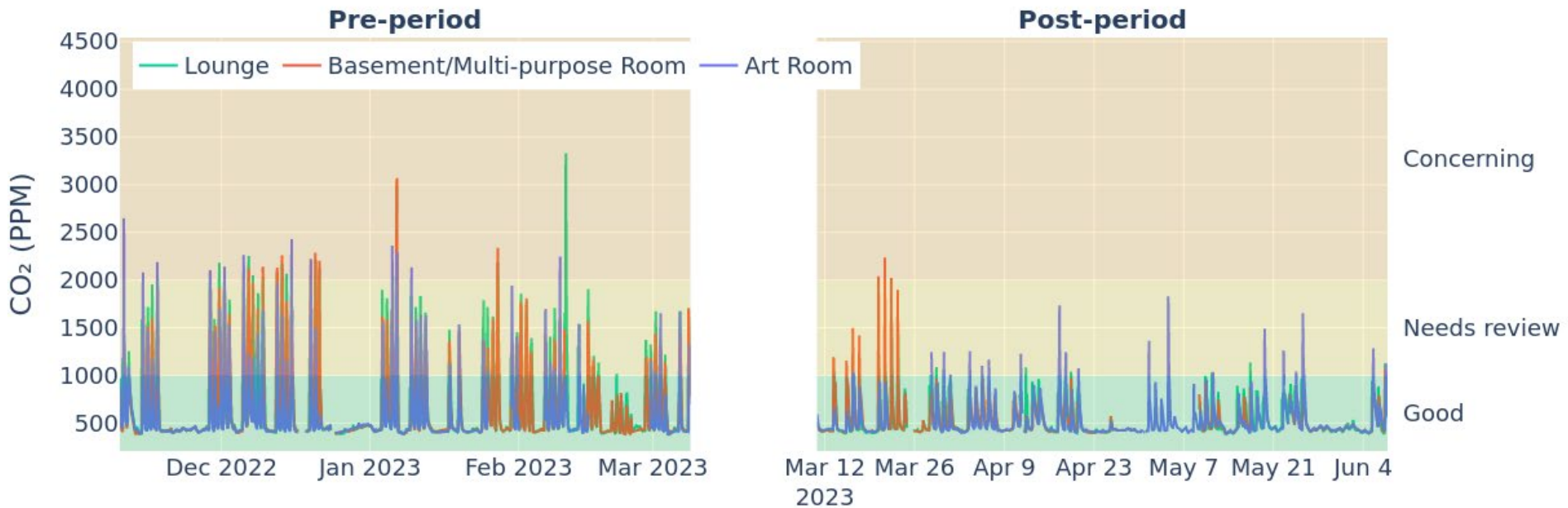
The percent of occupied hours within healthy levels are being measured.

What levels are we using?

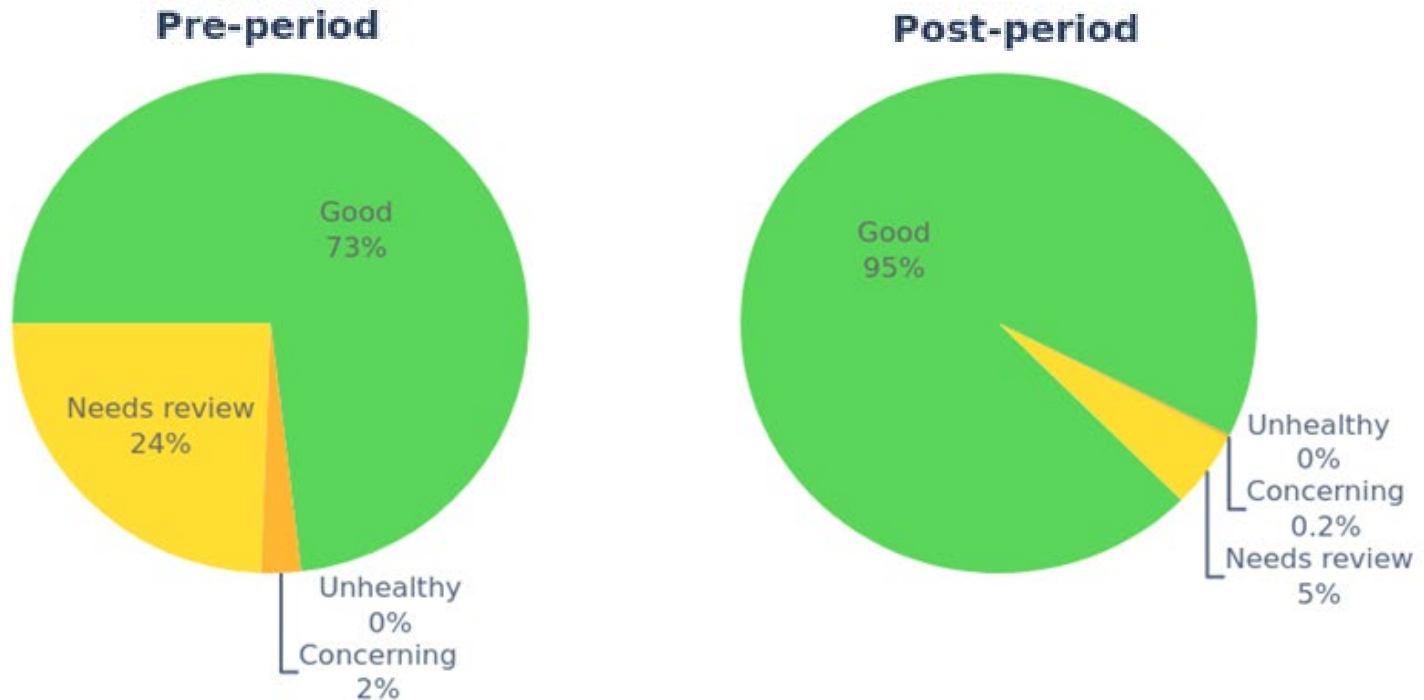
- CO₂: < 1000 ppm
- PM10: < 55 µg/m³
- PM2.5: < 15 µg/m³
- Relative Humidity: 40-60%
- Temperature: 68-78 °F



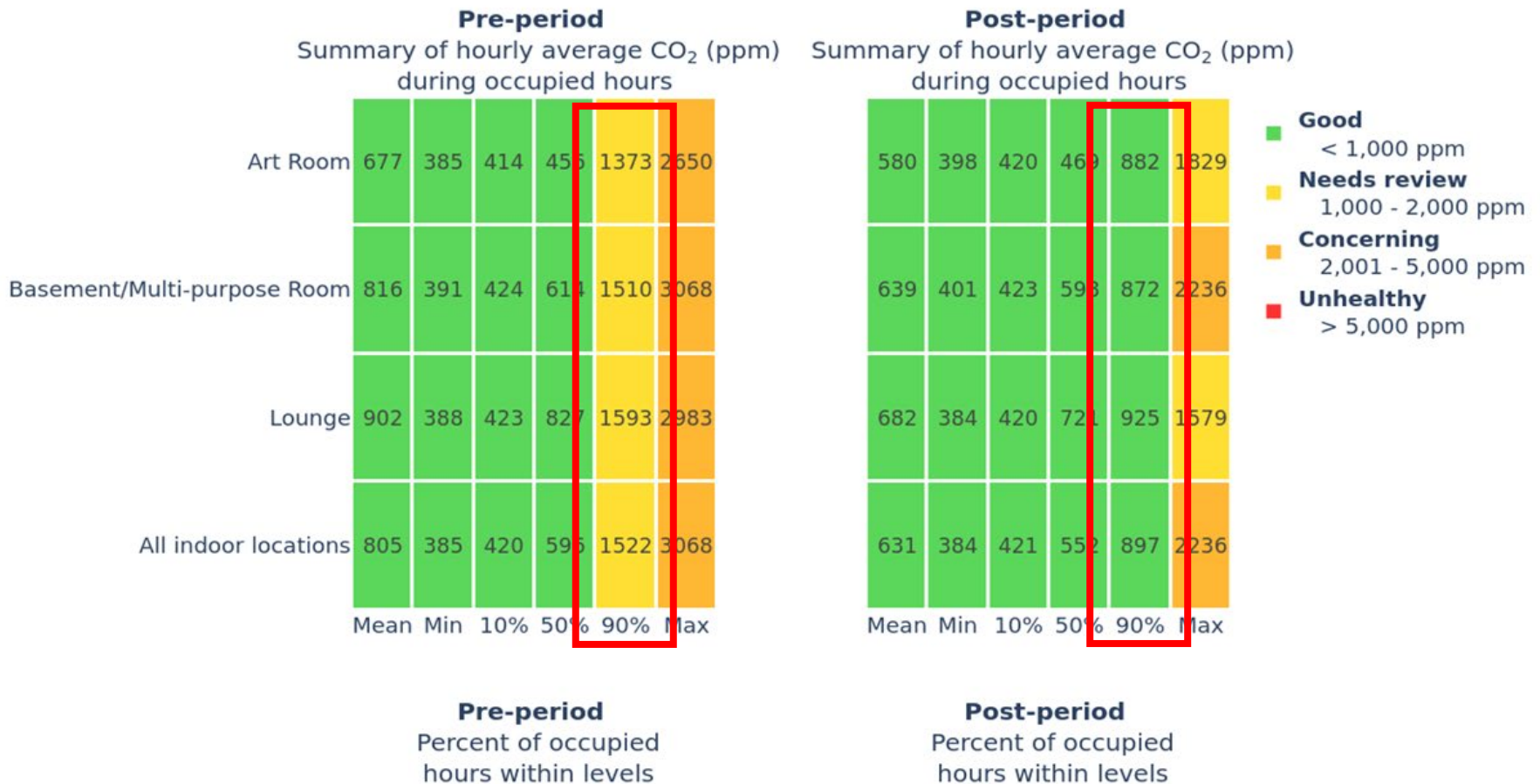
Here's what we can share so far.... HVAC upgrades can impact CO₂ levels.



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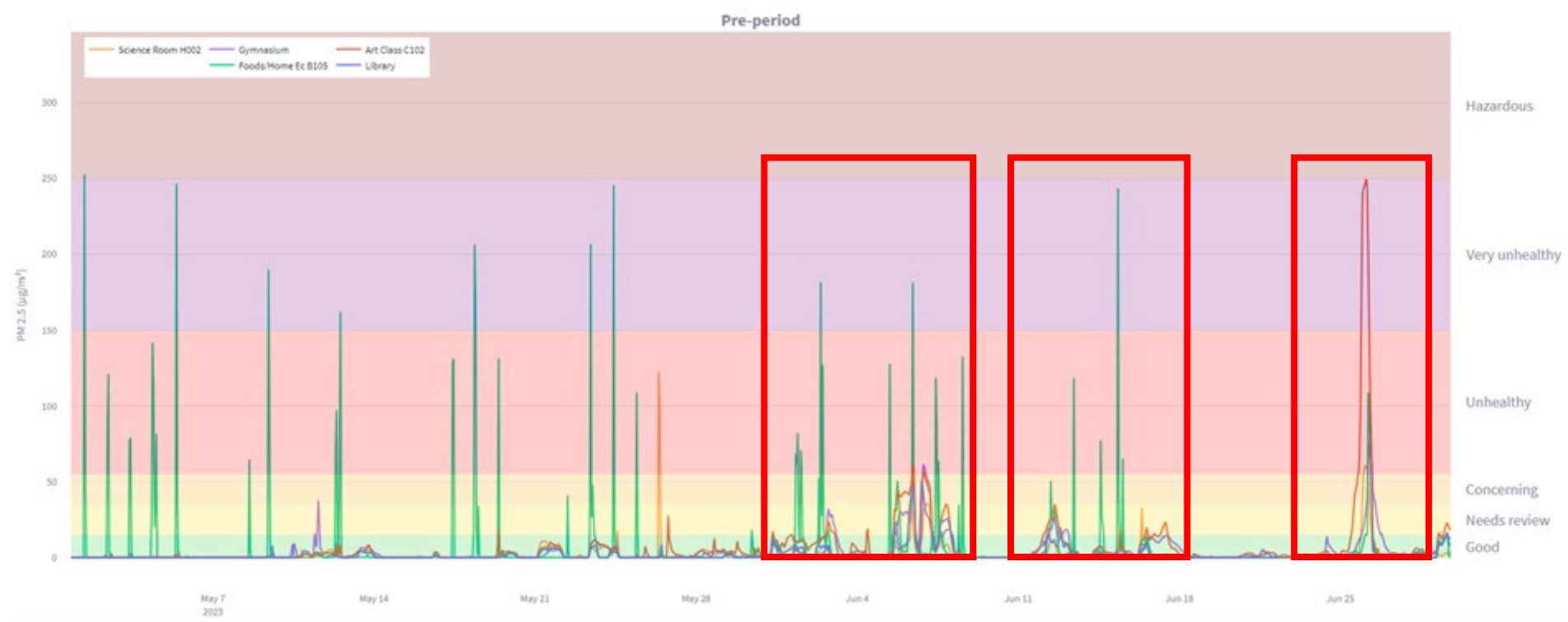
Here's what we can share so far....

HVAC upgrades can impact CO₂ levels.

Some additional notes:

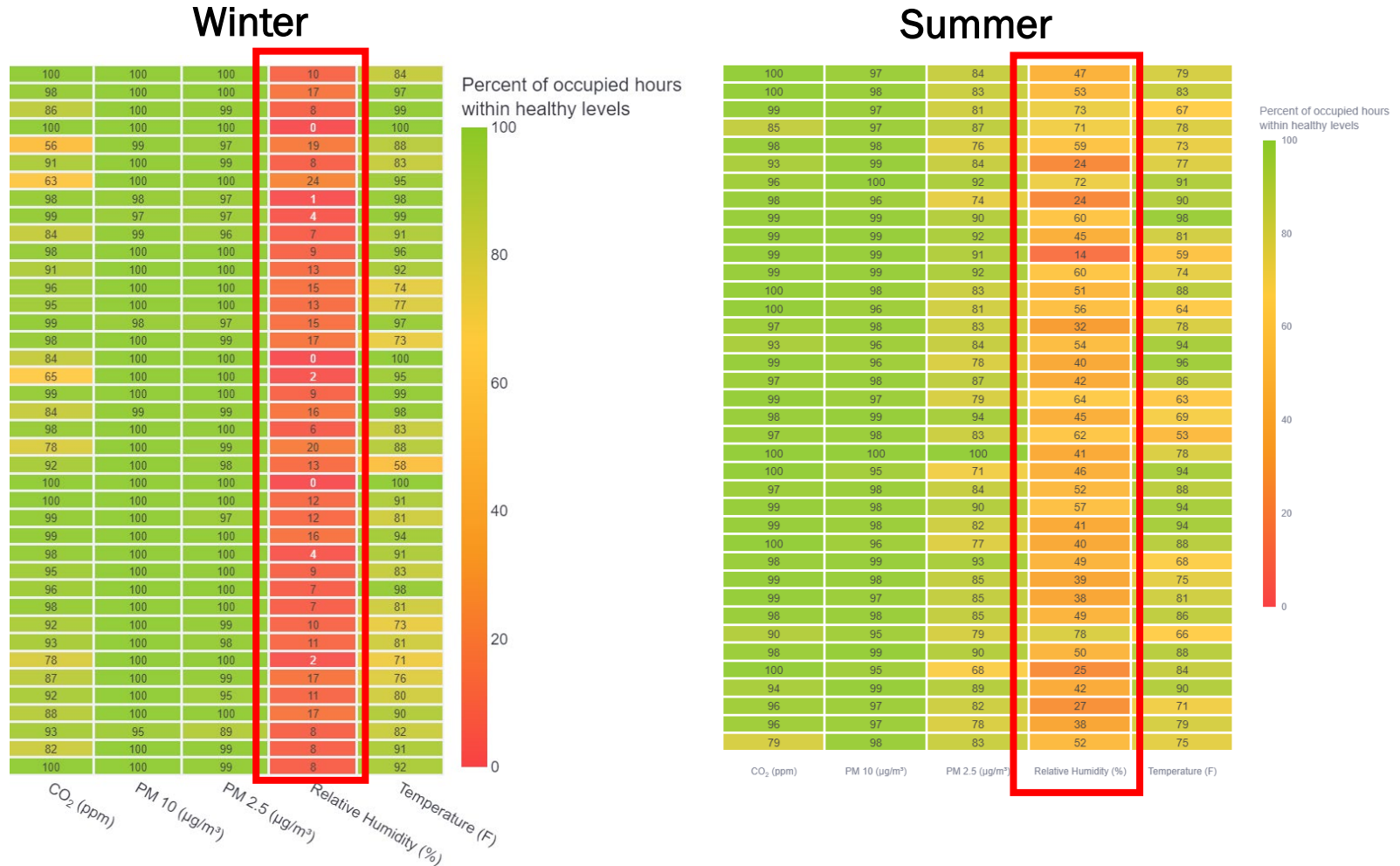
- Daily CO₂ peaks have decreased– all three rooms used to peak at 1,500-2,000 ppm during higher occupancy, and now peak around 1,000 ppm.
- When CO₂ levels increase, the ERV system is responding appropriately.
- Having data can help schools make informed decisions, like changing the settings in the control system.

Here's what we can share so far.... Wildfire smoke impacts IAQ, even in Vermont.



Here's what we can share so far....

RH is hard to manage with existing infrastructure.



What's next?

Next steps:

- Finish up the monitoring period and final reporting
- Review IAQ trends
- Evaluate work practices and HVAC improvements for effectiveness

Questions to consider:

- Does the space ever meet baseline recommendations for IAQ?
- Does the space return to baseline recommendations daily when unoccupied?
- When do the peaks occur – daily, weekly, other interval?
- What activities were logged during peak periods?
- How is the space currently used and what activities were logged?
- Was enough data collected?
- What do school staff do with the measurements?



Thank you!

Let's stay in touch.

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