

## INDOOR AIR QUALITY AND WILDFIRE SMOKE

### *Managing IAQ Performance Amid Environmental Extremes*

With the increasing threat of wildfire smoke and its impact on outdoor air (OA), WellStat helps customers mitigate how these environmental conditions affect indoor air quality (IAQ). One customer with six buildings observed that indoor particulate matter (PM10) levels consistently exceeded safe thresholds. They turned to WellStat for a solution to minimize the negative impact of poor OA on IAQ.

### Key Takeaways

- Air quality management doesn't require capital upgrades — just smarter system operation
- Understanding damper operation and airflow dynamics is critical in protecting IAQ during environmental stress
- Empowering building teams with the right data and strategies leads to measurable improvement in air quality

### Project Goals

- Understand PM10 buildup in indoor spaces relative to outdoor conditions
- Assess building pressurization and HVAC system behaviors
- Identify low-cost operational strategies to mitigate IAQ degradation during wildfire smoke events
- Support facilities teams with practical guidance and on-the-job insight

### Solutions Implemented

- Conducted a site-level IAQ analysis using WellStat's real-time dashboard to benchmark PM10 levels
- Maintained or increased return-to-OA ratios in zones where indoor PM was cleaner than outdoor air
- Adjusted Air Handling Units (AHUs) operations to run overnight recirculation with dampers sealed, reducing PM infiltration
- Verified and corrected sensor placement to ensure accurate comparison of indoor and outdoor air quality
- Trained building engineers to identify and respond to IAQ anomalies during wildfire smoke events

### Results

- Reduced indoor PM levels significantly across all six buildings during high-risk wildfire days
- Improved IAQ visibility and response time through real-time monitoring and alerts
- Minimized infiltration of wildfire smoke by optimizing system pressurization
- Delivered these improvements without new equipment, avoiding capital expenses
- Enhanced occupant health, comfort, and operational readiness for future smoke events

“

*It's remarkable how outdoor air affects indoor air quality.”*

— WELLSTAT CUSTOMER