

## Case Study

# Whiteshell School District Uses ioAirFlow Platform to Identify Covid-19 Risk and Ventilation Performance in Schools

ioAirFlow's platform identifies whether buildings are meeting industry-recognized minimum ventilation levels, while ensuring HVAC systems are operating efficiently and effectively.

Health Canada has identified increased ventilation as the most effective tool to decrease COVID-19 transmission risk in schools.

## Buildings Tested

Pinawa Secondary School  
Nov 22 to Nov 29, 2021

F.W. Gilbert Elementary School  
Nov 29 to Dec 06, 2021

## Problem: Safe Ventilation vs. HVAC Efficiency

- *Unknown whether ventilation levels safe for students and teachers*
- *Ventilation system constantly running at maximum capacity causing system failures and increasing energy costs*

A return to in-person learning amid a pandemic brings with it a unique set of challenges for school divisions.

Prior to ioAirFlow, the Whiteshell School District struggled to understand whether their schools' ventilation systems were keeping students and teachers safe from an increased risk of COVID-19 transmission. Older mechanical equipment meant there weren't built-in sensors to accurately monitor ventilation levels.

Prior to ioAirFlow, the Whiteshell School District struggled to understand whether their schools' ventilation systems were keeping students and teachers safe from an increased risk of COVID-19 transmission.

Consequently, the systems were tuned to maximum capacity in an attempt to minimize risk.

As a result of running at this increased capacity during cold winter months, the system was being overworked, and one air handling unit broke down.

### Solution: Accurate Data and Automated Reporting

- ioAirFlow identified current ventilation levels across both buildings
- Detailed analysis and summary reports highlighted areas of improvement

To understand current ventilation levels, non-permanent sensors were placed for one week in each building. These sensors collected accurate, time-based measurement of ventilation and CO<sub>2</sub> levels. ioAirFlow software then generated for each school:



A **detailed analysis** of ventilation performance for overall buildings and specific rooms

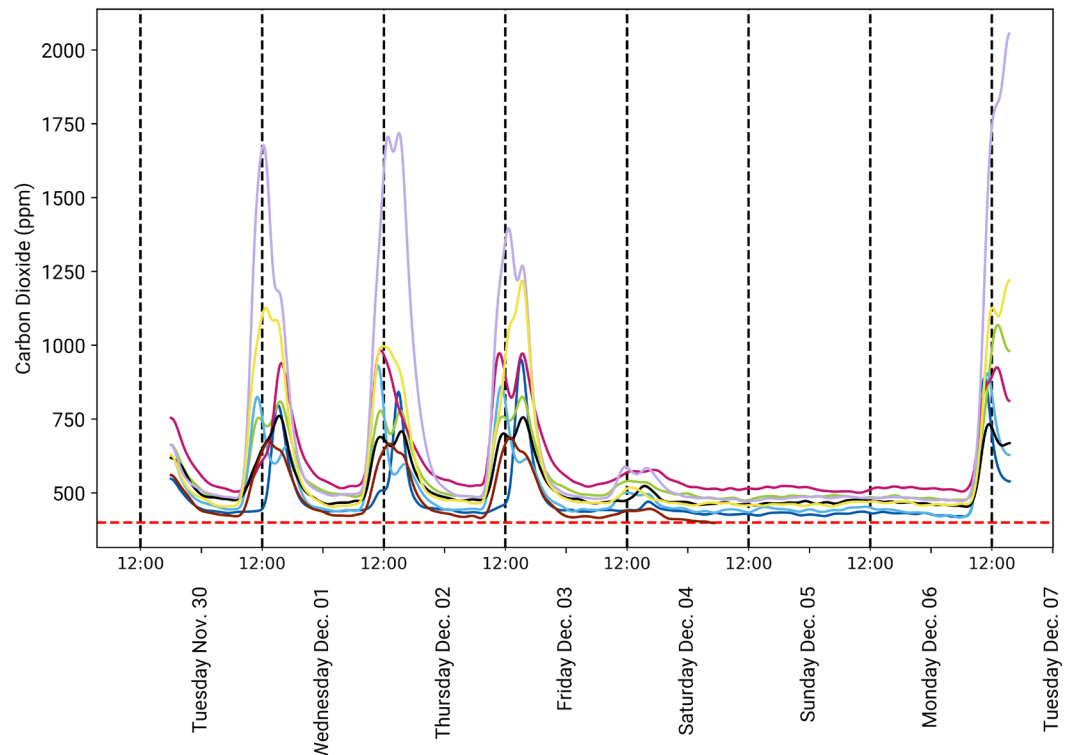
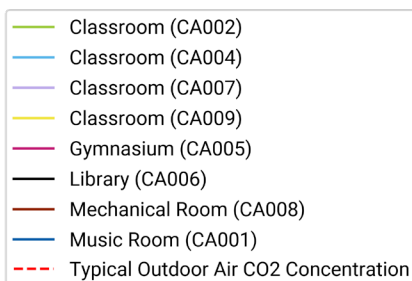


High-level, **quantitative scores** for virus transmission prevention, CO<sub>2</sub> levels, and ventilation performance based on industry research and standards



A **summary report** highlighting problem areas and recommendations to improve ventilation, reduce the risk of COVID-19 transmission, and enable sustainable and cost-effective operation of HVAC systems.

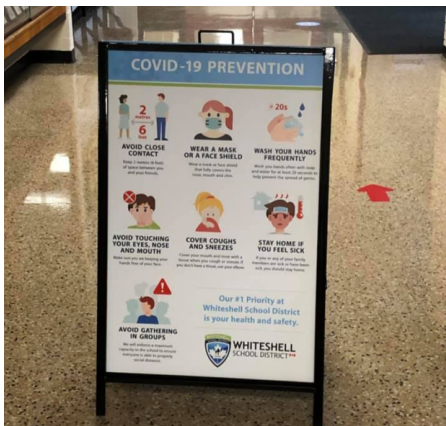
## Carbon Dioxide Concentration over Time for F.W. Gilbert Elementary School



Examining levels of CO<sub>2</sub> in indoor air can provide information of the building's occupant densities and the effectiveness of the ventilation. High CO<sub>2</sub> levels may indicate a problem with overcrowding or inadequate outdoor air ventilation rates.

“We wanted to test our district’s schools to ensure that our space was safe for students and teachers. ioAirFlow’s data analysis allowed us to understand how the buildings’ ventilation systems were operating, and what we could do to improve the indoor air quality of the spaces.”

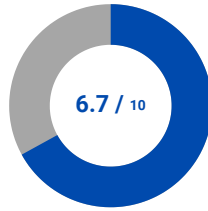
**Tim Stefanishyn**  
 Superintendent, Whiteshell School District, MB



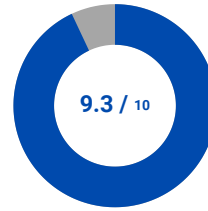
## The Results

### Pinawa Secondary School

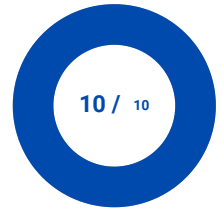
**Virus Transmission Prevention Score**



**Acceptable CO<sub>2</sub> Level Score**

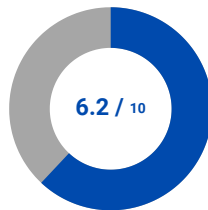


**Ventilation System Performance Score**

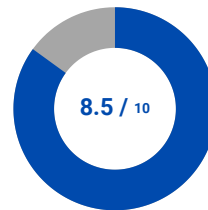


### F.W. Gilbert Elementary School

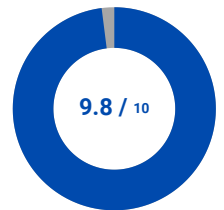
**Virus Transmission Prevention Score**



**Acceptable CO<sub>2</sub> Level Score**



**Ventilation System Performance Score**



## Findings



In the secondary school, ioAirFlow’s analysis identified that the ventilation rate exceeded minimum requirements to prevent airborne COVID-19 transmission, without the system needing to operate at full capacity.



In the primary school, ioAirFlow identified several classrooms where CO<sub>2</sub> levels exceeded minimum acceptable thresholds, which meant a targeted increase in ventilation rates or reduced occupancy was needed.



Both schools were able to immediately make simple, effective changes that protected the health of their staff and students.

**Contact us today to schedule your free demo**

**Schedule a conversation**