



Report
to the
Community
2020



FORT AIR PARTNERSHIP

We Monitor the Air You Breathe

Message from the Chair



The arrival of COVID-19 in 2020 caused tremendous upheaval throughout the world. Major adjustments were required of everyone, on both a personal and professional level, to keep ourselves and others as safe as possible. Like all other organizations, Fort Air Partnership was challenged to respond quickly to a new 'normal'.

Following government guidelines, staff and contractors quickly adopted new procedures that protected health but would not interrupt air monitoring and reporting. Thanks to their efforts FAP was able to maintain accurate and consistent data flow to government, industry and the public without any discernible interruptions. Governance was also largely unaffected, as the Board and its committees all switched to virtual meetings. However, we did have to curtail some activities, such as an open house connected to our Annual General Meeting and other face-to-face stakeholder engagements.

Starting in 2021, FAP has had to reduce its budget by an average of 14% annually for the next three years. This is in response to the current economic situation which is impacting our funders' revenue streams. Budget reductions were achieved through a combination of delaying certain projects and slight adjustments to our operations. The adjustments made by the Board however will not fundamentally affect our ability to meet our core mandate as a credible air monitoring and reporting organization.

The spring of 2020 marked the completion of our five-year Air Monitoring Plan. Our Technical Working Group has begun the process of assessing how our current network may need to be expanded or revised over the next several years to accommodate new industrial development and population growth, the resulting changes to emissions that could affect ambient air quality, as well as other factors.

To say 2020 has been a trying year would be a major understatement but FAP has weathered it well. We managed to stay on course and complete key projects such as significantly improving our [live air quality data feed](#), moving our portable air monitoring station to Sturgeon County and fine-tuning our monitoring network.

As Board Chair, I've had the good fortune to work through the challenges with an incredible group of competent and committed people. If you want to discern why FAP is successful, I encourage you to see the last page of this annual report.

A handwritten signature in black ink that reads "Allan Wesley". The signature is fluid and cursive, with a long, sweeping underline.

Allan Wesley
Chair, Fort Air Partnership

2020 Highlights

AIR MONITORING NETWORK

Passive Monitors Reduced >

As part of the on-going refinement of [our air monitoring network](#), we reduced the number of our passive monitors from 47 to 16 in 2020. A key reason for the reduction is that our continuous air monitoring network has grown over the past several years to include 10 stations. They now provide adequate coverage of most of the region, including populated areas.

Before removal, an in-depth review was undertaken and the recommended changes were approved by our Technical Working Group that includes representation from Alberta Environment and Parks. Removed passives were considered redundant, either because they were too close to each other or because of their proximity to a continuous station. The remaining passive monitors continue to measure concentrations of sulphur dioxide and hydrogen sulphide where we currently do not have continuous monitoring. They also provide us with the information we need to continue to meet our monitoring objectives.

Portable Moved to Sturgeon County >

Our portable continuous air monitoring station was moved from Chipman to Sturgeon County in June, 2020. It began reporting data from Sturgeon County in early July.

The portable station is located in the northeast portion of Sturgeon County, approximately halfway between our Gibbons and Redwater permanent continuous air monitoring stations. In addition to weather information, the station collects and reports data on 10 substances and provides a daily and forecast Air Quality Health Index.

A key reason for the move to Sturgeon County was that residents in the area communicated an interest in having in-depth, credible air quality monitoring conducted for a period of time in the selected area.

Scotford Station Relocated >

Our Scotford air monitoring station was relocated on February 26, 2020 to a permanent location on land leased from the Hutterian Brethren Church of Scotford.

The new site is located two kilometres south of Highway 15 on the west side of Range Road 212, approximately 350 metres from where the station was located for the past six years. This relatively minor move was required to secure a permanent home for the station, which is now known as Scotford South. The station has the same monitoring objectives as the previous site.





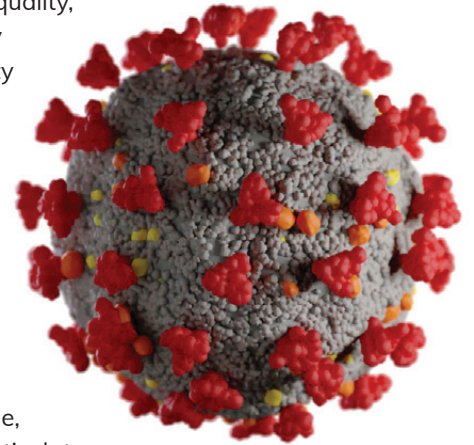
COVID-19 Impacts

COVID-19's unexpected impact on the lives of everyone around the world beginning in the first quarter of 2020 thankfully did not affect our ability to effectively meet our air quality monitoring and reporting responsibilities. We followed and incorporated Government of Alberta COVID-19 requirements as they evolved and, like other Airsheds across the province, employed Business Continuity Plans to ensure air quality data remained available to the public and to our other stakeholders. We implemented appropriate measures to protect the health of our staff and contractors, and were able to maintain a high level of data quality throughout 2020.

To determine if the COVID-19 pandemic restrictions had any impact on local air quality, we conducted a cursory assessment of air quality data at our Fort Saskatchewan station.

For the months of March, April and May of 2020, we looked at daily averages of four substances referred to as criteria air contaminants. This included nitrogen dioxide, sulphur dioxide, fine particulate matter and ozone. We compared daily averages (averaged out over the month) from March to May 2020 to historical data from March to May 2013-2019.

Among the four substances we included in the assessment, only nitrogen dioxide daily averages were substantially lower than historical averages. March levels were 27% below the historical average, April numbers dropped 29%, and May saw levels 47% below average. The significant difference is likely due to a decrease in traffic after COVID-19 restrictions came into effect.



PERFORMANCE

Standards Met ^

The average monthly uptime in 2020 of all continuous air monitoring equipment in the network was 98.7%. While the Alberta Government requires that monitoring equipment be fully operational a minimum of 90% of the time each month, our internal uptime target is 98.5%.

An [audit of our network](#), conducted by Alberta Environment and Parks and completed in February, 2020, gave FAP high marks for performance.

Of the 148 critical inspection items (including 45 ambient air quality analyzers) that were audited, there were only two failures and one need for improvement. The audit also included a review of 46 non-critical items. Of these, only two opportunities for improvement were recommended.

Once notified of the audit findings, we immediately took steps to rectify deficiencies. Critical items were resolved the same day and non-critical items by the following day.



Chipman PORTABLE MONITORING STATION Project

EDUCATION AND AWARENESS

Live Data Feed Improved ▾

In October, 2020, we launched a new [Live Air Quality Data](#) site that is much faster and easier to use than the original. The public site features an interactive map with pop-up legends showing the substances that each of our 10 continuous air monitoring stations and 16 passive sites monitor. Hourly measurements from the continuous stations are available in near real time. The site also shows monthly results from our 16 passive monitors. The site enables measurement comparisons to one-hour provincial objectives for substances where an objective exists.

×

Redwater

Click on a block to see recent data.

0.0°C	0 Kph
Particulate Matter 2.5	Ammonia
Hydrogen Sulphide	Ozone
Sulphur Dioxide	Nitric Oxide
Nitrogen Dioxide	Oxides of Nitrogen

Chipman Air Quality Assessed ^

We published a report in October, 2020 that shows air quality is of low risk to health 98.6% of the time for Chipman and area residents. Our portable station operated in the Village of Chipman from June 1, 2019 to May 31, 2020.

The 98.6% Chipman low risk to health Air Quality Health Index (AQHI) rating was a slightly better percentage than the four FAP community stations used for comparison in the [report](#). Less than two per cent of the time the AQHI at Chipman was in the moderate risk category. There were no high or very high-risk hours recorded.

Chipman had the lowest monthly fine particulate matter averages in our Airshed for the majority of the project term. Nitrogen dioxide levels at Chipman were generally lower than levels recorded at other communities within FAP during the wintertime but were otherwise very similar to other stations. For ozone, sulphur dioxide and hydrogen sulphide, Chipman did not differ substantially from levels recorded at other Airshed communities.

School Program Goes Virtual ▾

Since the spring of 2019, we have partnered with the non-profit group [Inside Education](#) to develop and deliver an interactive classroom program to all Grade 5 students in our Airshed. The presentation and accompanying materials provided by FAP educates students on local air quality, FAP's role in air quality monitoring, how substances are measured, what the data we collect means, what influences air quality and the actions people can take to reduce their impact on local air quality.



We held a pre-COVID professional development session in January, 2020 with teachers but COVID-19 restrictions that began in March prevented school classroom access for anyone other than school staff. To adapt, we worked with Inside Education to produce a virtual learning platform presentation and provided that as an option to schools throughout the region.

Campaigns Raise Awareness ▾

- In February, 2020 we worked with other Airsheds across Alberta to launch a campaign discouraging needless idling of vehicles. Research shows that reducing the idling time of a vehicle to 60 seconds or less reduces negative impacts on air quality and the environment, and saves fuel and money. In addition to public awareness, FAP gathered pledges from those who committed to turning off a vehicle if parked for longer than 60 seconds once the interior of the vehicle is warm.



- Although delayed by one month due to COVID-19 impacts, we repeated our *Fresh Air Experience* social media campaign in June, 2020. The campaign helped us share air quality information to more than 63,000 people. In addition to this our Facebook followers increased to more than 12,000 during the month long event.



- We participated with governments and organizations around the world in promoting Clean Air Day on June 3, 2020. Through our communication channels, we encouraged Airshed residents to be [Clean Air Champions](#) and contribute to cleaner air by taking actions that help maintain and improve local air quality. We were also part of an Alberta Airsheds Council endeavour to bring clean air information and awareness to children via age appropriate materials and the *Healthy Communities Need Clean Air* contest.

Provincial Collaboration Continues

FAP continues to collaborate with other Airsheds provincially as part of the Alberta Airsheds Council (AAC) to implement successful air monitoring, reporting and education within Alberta. Multi-stakeholder oversight of monitoring, data and analysis through Alberta's Airshed organizations is critical to ensuring a credible, science-based approach to understanding air quality in Alberta. Stakeholders include all levels of government, industry, non-governmental organizations and the public. We are closely involved in AAC policy and program development, with membership on AAC's Executive, Technical and Communications committees.

2020 Monitoring Results

AIR QUALITY HEALTH INDEX RATINGS

Seven of FAP's 10 continuous air monitoring stations collect data used to calculate an hourly and forecast Air Quality Health Index (AQHI) in and around Alberta's Industrial Heartland.

Overall, the AQHI risk to health rating in the region was significantly lower in 2020 when compared to 2019. In 2020, there were 16 hours of high risk and no very high risk AQHI ratings. In 2019, there were 148 and 29 hours respectively. The 2019 AQHI ratings were largely influenced by poor air quality conditions in late May and early June caused by wildfire smoke.

By comparison, wildfire smoke in the FAP Airshed was minimal in 2020.

Overall, the region experienced low risk AQHI ratings an average of 96% of the time in 2020, a two percent improvement over 2019 and eight percent improvement compared to 2018. Among FAP's permanent stations, Elk Island was in the low risk category most often at 98.4% and Gibbons the least often but still at 92.2% of the time.

FAP (2020)		AQHI Risk Level (% of time)			
Station Name	Hours Monitored	Low	Moderate	High	Very High
Bruderheim	8,459	94.60%	5.38%	0.02%	–
Elk Island	8,374	98.39%	1.61%	–	–
Fort Saskatchewan	8,101	94.32%	5.58%	0.10%	–
Gibbons	8,407	92.24%	7.71%	0.05%	–
Lamont County	8,428	98.28%	1.72%	–	–
Redwater	8,217	97.70%	2.30%	–	–
Chipman*	3,543	97.21%	2.79%	–	–
Sturgeon County*	3,500	98.91%	1.03%	0.06%	–
Totals	57,029	96.19%	3.78%	0.03%	–

FAP (2020)		AQHI Risk Level (# of Hours)			
Station Name	Hours Monitored	Low	Moderate	High	Very High
Bruderheim	8,459	8,002	455	2	–
Elk Island	8,374	8,239	135	–	–
Fort Saskatchewan	8,101	7,641	452	8	–
Gibbons	8,407	7,755	648	4	–
Lamont County	8,428	8,283	145	–	–
Redwater	8,217	8,028	189	–	–
Chipman*	3,543	3,444	99	–	–
Sturgeon County*	3,500	3,462	36	2	–
Total Hours	57,029	54,854	2,159	16	–

* The portable station reported the AQHI at Chipman from January 1 to May 31 and at the Sturgeon County site from August 1 to December 31, 2020.

Hours with a High or Very High Risk AQHI Rating

This table shows the number of hours with a high or very high risk AQHI rating during 2020, when they occurred and the likely cause, when identifiable.

<div style="display: flex; align-items: center; gap: 10px;"> <div style="border: 1px solid black; width: 20px; height: 10px; background-color: #ADD8E6; display: inline-block;"></div> High Risk <div style="border: 1px solid black; width: 20px; height: 10px; background-color: #FFA07A; display: inline-block;"></div> Very High Risk </div>																
FAP Continuous Air Quality Monitoring Station																
Event Dates	Bruderheim		Elk Island		Ft. Sask.		Gibbons		Lamont County		Redwater		Portable*		Total Hours	Attributed Cause
January 25	2	-	-	-	3	-	-	-	-	-	-	-	-	-	5	Wintertime inversion
January 26	-	-	-	-	2	-	-	-	-	-	-	-	-	2		
January 27	-	-	-	-	-	-	1	-	-	-	-	-	-	1		
January 29	-	-	-	-	3	-	-	-	-	-	-	-	-	3		
April 24	-	-	-	-	-	-	1	-	-	-	-	-	-	1	Unknown local source	
June 5	-	-	-	-	-	-	1	-	-	-	-	-	-	1	Structure fire near station	
September 27	-	-	-	-	-	-	1	-	-	-	-	-	-	1	Local residential yard waste burning	
December 27	-	-	-	-	-	-	-	-	-	-	-	-	2	2	Regional conditions	
Total Hours	2	-	-	-	8	-	4	-	-	-	-	-	2	-	16	

* The portable reported the AQHI at Chipman from January 1 to May 31 and at the Sturgeon County site from August 1 to December 31, 2020.

Summary of Exceedances

During 2020, there were 33 occurrences across FAP's ten monitoring stations where air quality measurements exceeded [Alberta's Ambient Air Quality Objectives](#). This was down 83% from 2019 (there were 191 occurrences in 2019, mainly from wildfire smoke). The 2020 exceedances were for measurements of either fine particulate matter (76%) or hydrogen sulphide (24%). There were various causes for the exceedances in 2020, but 42% (14) were due to wintertime inversions in January 2020.

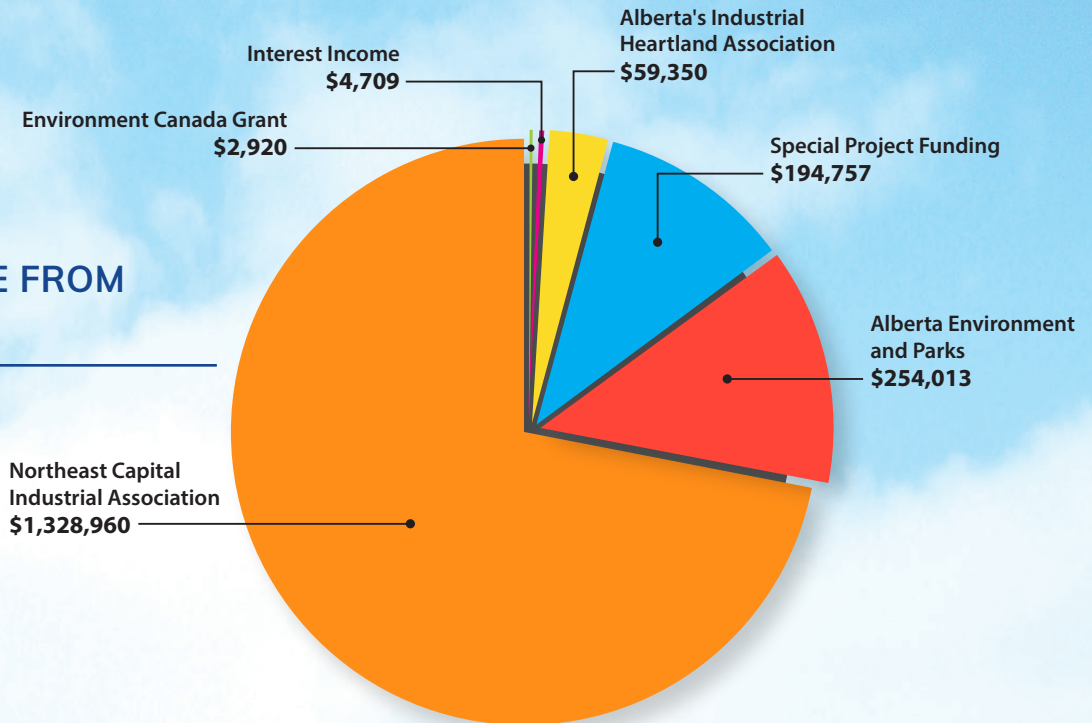
Air quality measurements are continuously compared to the AAAQOs. Any exceedance of an AAAQO is reported to the Alberta Government and the cause of the exceedance investigated.

One Hour AAAQO Exceedances – 2020			
Parameter	Exceedances	Date	Attributed Cause
Fine Particulate Matter (PM _{2.5})	1	January 27	Winter inversion
	1	April 24	Unknown local source
	1	June 5	Structure fire near the air monitoring station
Hydrogen Sulphide (H ₂ S)	1	July 24	Natural due to wetlands
	1	July 31	
	1	August 5	Local Industry
	1	August 23	Natural due to wetlands
	1	September 19	Town wastewater lagoons
Fine Particulate Matter (PM _{2.5})	1	September 27	Local residential yard waste burning
	2	December 27	Regional conditions
Total Hours	13		

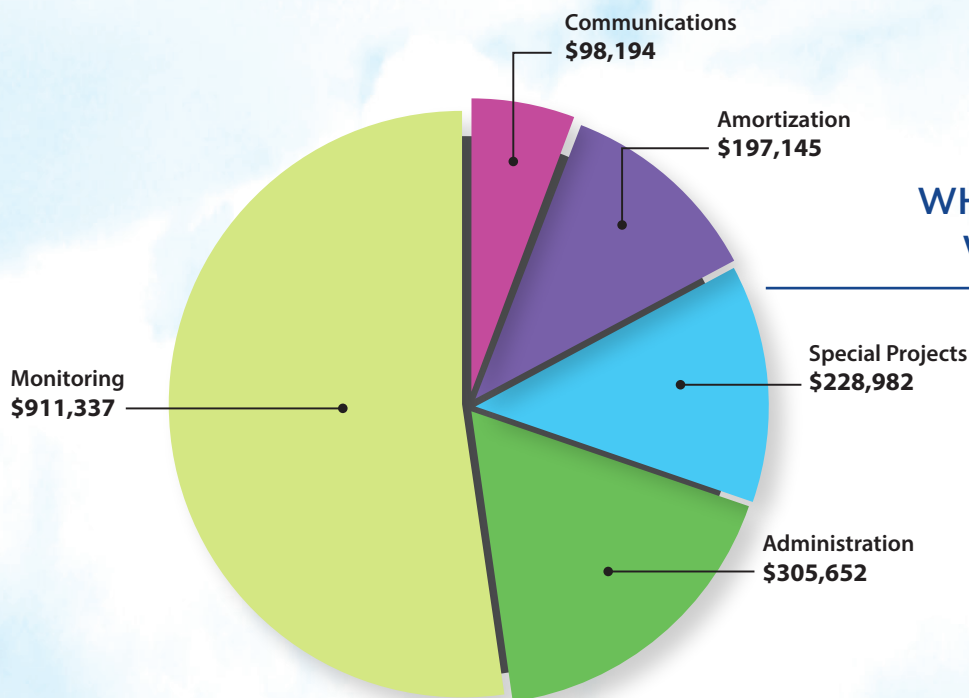
24 Hour AAAQO Exceedances – 2020			
Parameter	Exceedances	Date	Attributed Cause
Fine Particulate Matter (PM _{2.5})	7	January 25	Winter inversion
	2	January 26	
	1	January 27	
	2	January 28	
	1	January 29	
Hydrogen Sulphide (H ₂ S)	1	July 31	Natural due to wetlands
Fine Particulate Matter (PM _{2.5})	6	September 19	Smoke from U.S. wildfires
Total Hours	20		

2020 Financial Summary

WHERE THE MONEY CAME FROM \$1,844,709



WHERE THE MONEY WENT \$1,742,030



STATEMENT OF FINANCIAL POSITION

Current

Cash	\$362,941
GIC (wind-up reserve)	255,000
GIC (special projects)	87,308
GST Recoverable	19,317
Accounts Receivable	18,170
Prepaid Expenses	5,892

Equipment

Air Monitoring Equipment and Computer Equipment	867,000
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Total Assets **\$1,615,628**

Liabilities

Accounts Payable and Accrued Liabilities	\$128,251
Deferred Contributions	174,179
Long Term Deferred Contributions Related to Equipment	77,265

Total Liabilities **\$379,695**

Net Assets **\$1,235,933**

People of FAP

(as at December 31, 2020)

Board of Directors

Allan Wesley, M.A., B.Com., B.Sc.
(Chair) Public Member

Keith Purves
(Vice-chair) Public Member

Carrie Trenholm, LPN
(Treasurer) Public Member

Paula Horn, Dip.Chem.Tech.
(Secretary - as of May/20)
Public Member

George Campbell
Public Member (to October/20)

Laurie Danielson, Ph.D., P.Chem.
NCIA

Darcy Garchinski, MHA
Alberta Health Services

Tracey Hill
AIHA

Stephanie Kozey, B.Sc.
NCIA

Ed McConaghy, B.Sc., C.Eng.
Public Member

Beth Nanni, B.Sc., M.Sc.
Alberta Environment and Parks
(as of May/20)

Greg Poholka, P.Eng.
NCIA

Daniel Skousbol
Public Member
(as of October/20)

Paul Smith
AIHA

Megan Wesley, P.Eng.
Public Member

Kelly Williams, B.Sc.
Alberta Environment and Parks
(to May/20)

Kathleen Zellweger
Public Member
(as of March/20)

Staff

Nadine Blaney, B.Sc.
Executive Director

Harry Benders
Network Manager

Godfrey Huybregts, ABC
Communications Director

Alison Thiessen
Business Administrator

Technical Working Group

FAP's Technical Working Group provides overall direction in the implementation and operation of FAP's regional air monitoring network. The committee is supported by representation from industry, government and the public, which allows for equal, in-kind technical support. FAP Board members on the Technical Working Group include Allan Wesley, Keith Purves and Stephanie Kozey.

Harry Benders (Chair)
FAP Network Manager

Patrick Andersen, B.Sc.
Andersen Science Consulting

Farron Bibby
Alberta Environment and Parks
(as of December/20)

Nadine Blaney, B.Sc.
FAP Executive Director

Saminda Chandraratne, B.Sc., PGD,
EP. NCIA (to December/20)

Jeff Cooper, C.Tech.
WSP

Scott Hillier
NCIA

Doug Hurl, CD, CRSP
NCIA

Gerry Mason, CRSP
NCIA

Maxwell Mazur, M.Sc.
Alberta Environment and Parks

Chris Nayet, Dip. CET
Environment and Climate Change
Canada

Maurice Ouellet
NCIA

Marianne Quimper, B.Sc., EP
NCIA

Stephen Raye, BET (Environmental)
NCIA

Karlee Searle
NCIA (as of November/20)

Alicia Schweitzer, B.Sc., G.I.T.
NCIA

Shane Taylor, Dip. Envir. Tech.
Alberta Environment and Parks
(to December/20)

Quinton Thiessen, B.Sc.
NCIA (to November/20)

Jocelyn Thrasher-Haug,
M.Sc., P.Ag., P.Biol.
Strathcona County

Darcy Walberg
NCIA

Gerry Zulyniak, P.Eng.
NCIA

Note:

AIHA = Alberta Industrial
Heartland Association.

NCIA = Northeast Capital
Industrial Association.



FORT AIR PARTNERSHIP

We Monitor the Air You Breathe

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