



# Air Quality

## A Matter for Continuous Improvement

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Prepared for  
Prince George  
Mayor and  
Council

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# Purpose of Our Presentation Today

Brief Annual Update

Air Quality Jurisdiction

Low-cost sensors (Purple Air)



# PGAIR Update

- ❖ Continued Operations
- ❖ Education & Outreach
- ❖ Community Wood Smoke Reduction Program
- ❖ Research
- ❖ Strategic Plan Commitments -- AQMP

*Air Quality is Vital*



# Community Woodsmoke Reduction Program



Find us on 

## Community Wood Smoke Reduction Program

**\$850** Emissions Certified Wood Stove

**\$1250** Pellet Stove

**\$1750** Electric Heat Pump

**\$300** Wood Stove Bounty - No Exchange



[www.pgairquality.com](http://www.pgairquality.com)



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### Since 2008:

- 445+ wood stoves exchanged
- ~30 Tonnes in annual reduction of emissions



# Advancing Air Quality and Climate Co-Benefits in the Prince George Airshed

Research

BUILDINGS INDUSTRY TRANSPORTATION



Advocate for Industrial Emissions Reduction



Encourage Active Transportation Modes



Increase Dust Control Measures



Prioritize Sustainable Land-Use



Develop Options for Trip Reduction



Make Public Transit a Preferred Option



Support Energy Efficiency Improvements in Buildings



Accelerate the Uptake of Electric Vehicles



Increase Fuel-Efficient Practices



Evaluate Renewable Energy Alternatives for Buildings

[FinalReport\\_PG AIR\\_April4th.pdf \(pgairquality.com\)](https://pgairquality.com/FinalReport_PG AIR_April4th.pdf)



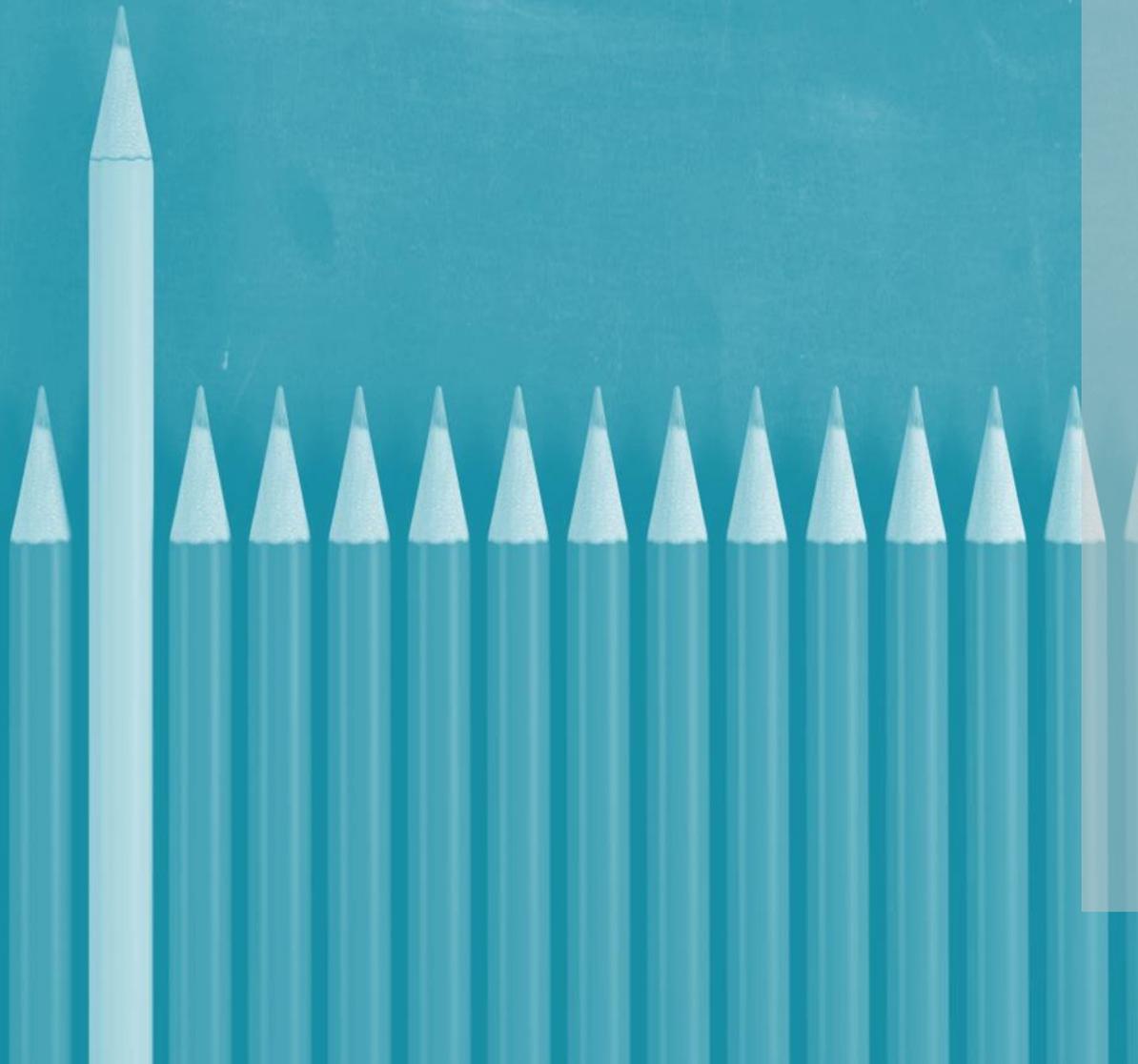
# AQMP Committee

What do we want to see in a new  
Air Quality Management Plan?

A results-based approach that:

- Is not overly prescriptive (i.e. Phase 1)
- Is not too "laissez-faire" (i.e. Phase 3)
- Provides realistic opportunities
- Sets realistic targets
- Supports research and action

Special Request



# Air Quality Jurisdiction



Federal	Provincial	Municipal/Regional
<b>Pollution Control</b>		
<p>Canadian Environmental Protection Act (CEPA)</p> <ul style="list-style-type: none"> <li>• Regulations and base-level requirements for select industrial sectors, equipment types, fuel</li> <li>• Air Toxics – identify and regulate</li> </ul>	<p>Environmental Management Act (EMA)</p> <ul style="list-style-type: none"> <li>• Permits/ Approvals site specific requirements, higher risk</li> <li>• Regulations/Code of Practice standard set of requirements, medium risk</li> </ul>	<p>Community Charter and Local Government Act</p> <ul style="list-style-type: none"> <li>• Bylaws land use zoning, backyard burning, residential wood burning, vehicle idling, and dust control</li> <li>• Plans and Strategies land use, transportation, regional growth, and sustainability plans</li> </ul>
<b>Environmental Assessments (large projects)</b>		
Impact Assessment Act (IAA)	BC Environmental Assessment Act (EAA)	

# Outdoor Air Quality - Legislation

Activity	Federal	Provincial	Municipal/Regional
<b>Ambient Standards and Objectives</b>	Sets Canadian Ambient Air Quality Standards (CAAQS)	Sets Provincial Air Quality Objectives	
<b>Ambient Monitoring</b>	National Air Pollution Surveillance Program	Provincial Ambient Air Quality Network	
<b>Public Notification</b>	AQHI and Alerts	Issues advisories and bulletins	
<b>Local Stewardship (e.g. PGAIR)</b>		Key partner agency: technical advice, programs, funding	Key partner agency
<b>Annual Reporting</b>		Provincial Air Zone Reporting	

# Outdoor Air Quality – Management



# Purple Air Monitors



## Low-Cost Sensors

Over-the-counter air quality sensors

Wide variety of sensors available

Very different from regulatory monitors

**Purple Air** is a brand: estimates concentrations of tiny particles in the air (e.g., smoke)



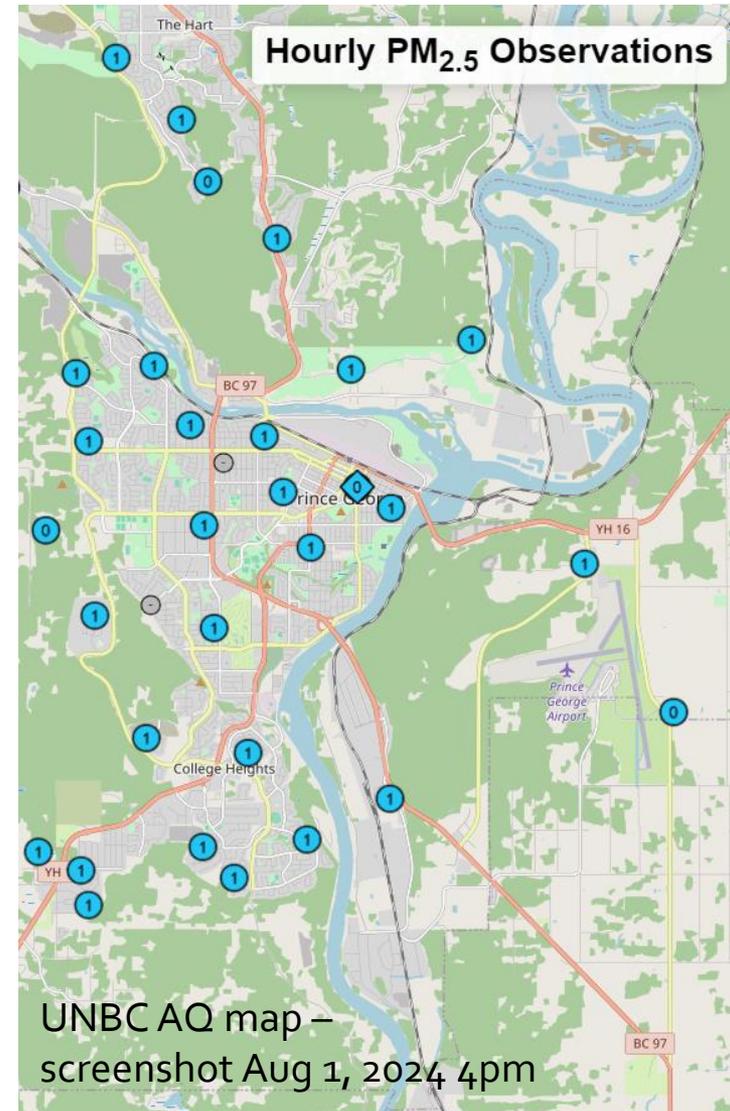


## ☐ Benefits

- Supports community engagement and learning
- Can supplement regulatory air quality measurements
  - higher spatial resolution possible due to low cost
- Research

## ☐ Limitations

- Inconsistent out of the box: differ from regulatory monitors; can differ between like sensors
- Measurements influenced by weather, particle characteristics, and extreme concentrations
- Limited lifespan: less reliable over time; may be difficult to discern end-of-life
- Data crowdsourcing – many unknowns



## Low-cost sensors: key messages

- Rapidly expanding field
- Many useful applications
- Understand limitations and case-specific applicability
  - Think general trends/observations versus highly accurate
- Pre-planning is key
  - Monitoring objectives – what purpose will the data serve?
  - Meaningful data is much more than numbers
  - Poor quality data can be more misleading than its absence

Questions?

