

**Michael Christopher – s224830467**

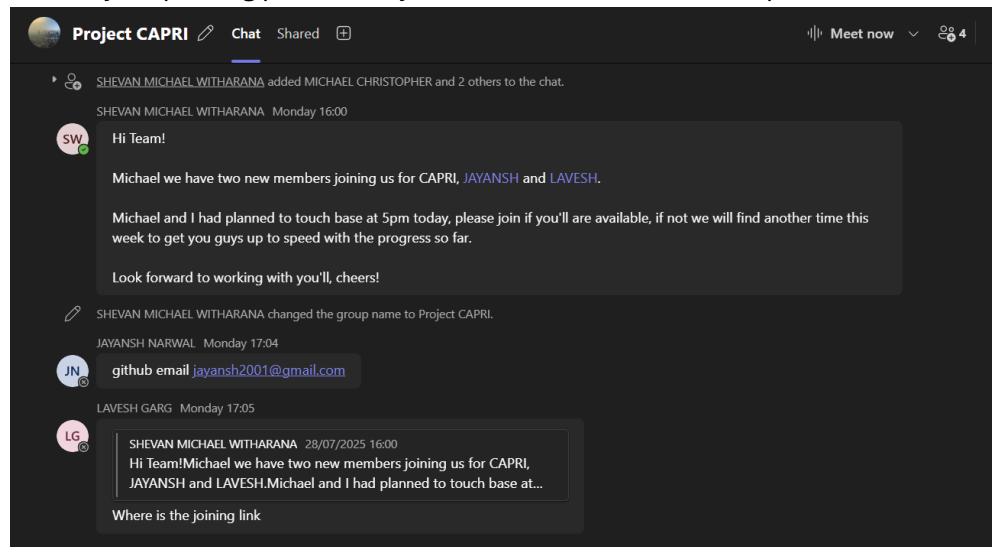
## **CAPRI - Correlation of Air Pollution and Respiratory Illness**

*What have been done?*

### **1. Onboarded Two New Team Members:**

We briefed the new members on the project scope, Agile workflow, and our research direction.

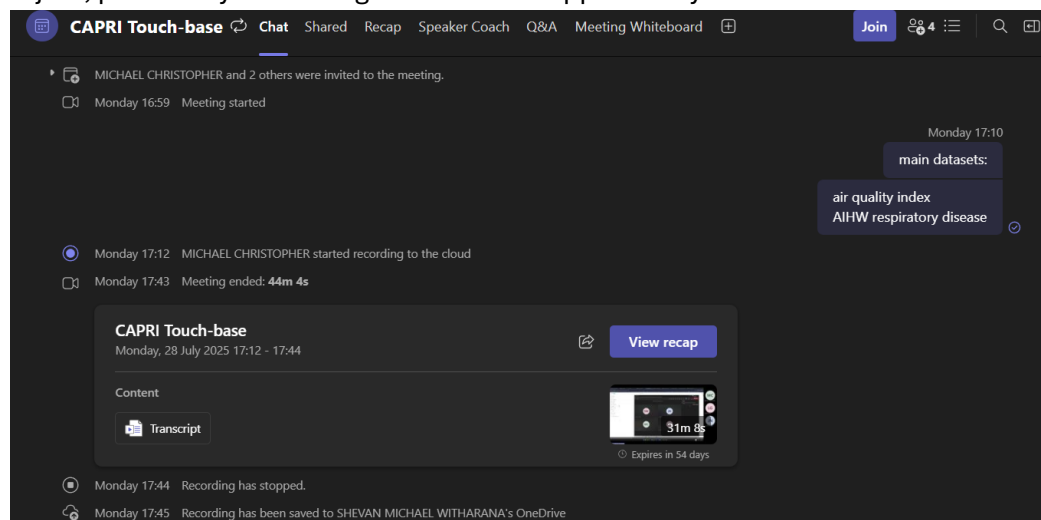
So what? This ensures alignment within the team and distributes responsibilities more effectively, improving productivity and collaboration from this point forward.



### **2. Held a Brainstorming Session with Full Team:**

Conducted a second brainstorming session, incorporating fresh perspectives from the new members. One proposed integrating an API to collect real-time AQI, and another initiated prototyping a browser-based interface using HTML/CSS.

So what? These contributions enhance the technical feasibility and interactivity of our project, potentially increasing its real-world applicability.



### **3. Continued Dataset Research and Curation**

Maintained momentum in identifying viable datasets, placing geospatial analysis temporarily on hold to focus on foundational data gathering and preprocessing.

So what? Clean and relevant data are prerequisites for valid analysis. Prioritising this ensures that downstream modelling will be meaningful and ethical.

#### 4. Curated a Resource and Inspiration Repository

Finalised a list of key data sources and project inspirations, including:

- IQAir Website for Inspiration - [https://www.iqair.com/au/australia?srsId=AfmBOorWtsas\\_MkP8jOKCi0y2rmyHVPll9jYE6W5q6TQXdAD\\_O\\_Zd81Y](https://www.iqair.com/au/australia?srsId=AfmBOorWtsas_MkP8jOKCi0y2rmyHVPll9jYE6W5q6TQXdAD_O_Zd81Y)
- Kaggle Air Quality Prediction Inspiration - <https://www.kaggle.com/code/hamedetezadi/air-quality-prediction>
- AU Gov Data - [https://www.data.gov.au/data/dataset?q=Air+quality&organization=state-of-the-environment&ext\\_bbox=&ext\\_bbox\\_lga=](https://www.data.gov.au/data/dataset?q=Air+quality&organization=state-of-the-environment&ext_bbox=&ext_bbox_lga=)
- \*\* EPA Air Watch Hourly AQI Dataset - <https://discover.data.vic.gov.au/dataset/epa-air-watch-all-sites-air-quality-hourly-averages-yearly>
- \*\* Australia Air Quality, State of the Environment Book - <https://soe.dcceew.gov.au/sites/default/files/2022-07/soe2021-air-quality.pdf>
- AU Bureau of Statistics - <https://www.abs.gov.au/statistics/measuring-what-matters/measuring-what-matters-themes-and-indicators/sustainable/air-quality#data-downloads>

#### \*\* - Crucial Resources

So what? These resources shape the scope and methodology of our analysis. They serve both as technical references and baselines for comparative modelling.

Dataset Information Panel (DIP)	
<b>Part A - Data Identity</b>	
Dataset Unique ID filename:	2024-01-01_to_2025-01-01_Air_Data_Validated_2025-06-13
<b>Part B - Data Ownership</b>	
Organisation	Environment Protection Authority (EPA) Victoria
EPA Data Owner (Manager)	Manager, Air, Odour & Noise Unit
EPA Data Contact (Team Lead)	Team Leader, Air, Noise & Odour Team
EPA Subject Matter Expert (non-mgmt)	Principal Expert (Air)
<b>Part C - Data Source</b>	
Organisation and Team	Environment Protection Authority (EPA) Victoria and Air, Odour & Noise Unit
Data Supply Owner (Manager / Lead)	Manager, Air, Odour & Noise Unit
Data Supply Contact (Operator)	Operations Officer - Air, Air, Odour & Noise Unit
Original source of data	Air Quality Monitoring (Envista/EDISON)
<b>Part D - Data Integrity Indicators</b>	
Quality Assurance	Validated data
Data Completeness	Varies by parameter: gaps exist due to equipment technical issues and maintenance

Excel file from [EPA Air Watch All Sites Air Quality Hourly Averages - Yearly - Dataset - Victorian Government Data Directory](#)

Column1	Column2	Column3	Column4	Column5	Column6	Column7	Column8	Column9	Column10	Column11	Column12	Column13
Name	GPS	DateTime	NO2	O3_1hr	O3_4hr	O3_8hr	CO	PM10_1hr	PM2.5_1hr	PM10	PM2.5	AQI
Florey	(-35.220606, 149.0435)	08/04/2025 08:00:00 AM						17.1	6.7			
Civic	(-35.285399, 149.131536)	26/02/2025 06:00:00 PM		0.031	0.028	0.024		29	3.4			
Civic	(-35.285399, 149.131536)	01/11/2024 04:00:00 AM		0.02	0.021			7.7		47.3		
Florey	(-35.220606, 149.0435)	27/10/2024 04:00:00 PM			0.034	0.034	0.02	8	-1.6			0
Civic	(-35.285399, 149.131536)	18/05/2024 12:00:00 PM		0.028	0.027			20.1	5.4			
Civic	(-35.285399, 149.131536)	13/05/2024 03:00:00 PM		0.013	0.013			71.2	18.8			
Civic	(-35.285399, 149.131536)	04/05/2024 04:00:00 PM			0.021			4.2	3.2			
Civic	(-35.285399, 149.131536)	20/04/2024 04:00:00 PM			0.021			9	2.7			
Civic	(-35.285399, 149.131536)	11/04/2024 02:00:00 AM		0	0.001			23.2	24.3			
Civic	(-35.285399, 149.131536)	07/04/2024 04:00:00 PM			0.019				0.4			
Civic	(-35.285399, 149.131536)	02/04/2024 04:00:00 PM			0.022			40.1	4.2			
Civic	(-35.285399, 149.131536)	29/03/2024 04:00:00 PM			0.04			45.8	31.1			
Civic	(-35.285399, 149.131536)	28/03/2024 02:00:00 PM		0.038	0.033			23	8.7			
Civic	(-35.285399, 149.131536)	25/03/2024 04:00:00 PM			0.02			42.5	4.1			
Civic	(-35.285399, 149.131536)	28/02/2024 11:00:00 AM		0.023	0.017			13.5	7.7			
Civic	(-35.285399, 149.131536)	27/02/2024 04:00:00 PM			0.022			9.2	5.6			
Florey	(-35.220606, 149.0435)	26/02/2024 04:00:00 PM			0.04	0.028	0.05	16		11.9		1
Civic	(-35.285399, 149.131536)	24/02/2024 04:00:00 PM			0.025			13.6	4.7			
Civic	(-35.285399, 149.131536)	20/02/2024 06:00:00 PM		0.021	0.021			4	5.2			
Civic	(-35.285399, 149.131536)	20/02/2024 09:00:00 AM		0.014	0.012			7.3	-3.4			
Civic	(-35.285399, 149.131536)	18/02/2024 01:00:00 PM		0.032	0.026			19.8	2.3			
Florey	(-35.220606, 149.0435)	26/01/2024 04:00:00 PM			0.032	0.029	0.01	-4.3		9.8		0
Florey	(-35.220606, 149.0435)	06/12/2023 02:00:00 AM										
Civic	(-35.285399, 149.131536)	19/10/2023 04:00:00 PM		0.034	0.027				-1.5	7.5		
Monash	(-35.418302, 149.094018)	27/07/2023 08:00:00 PM									23.5	

CSV file from [Air Quality Monitoring Data | Open Data Portal](#) for ACT state

Excel file from [Data download facility | Air Quality NSW](#)

File from [Download air data | Environment, land and water | Queensland](#)

[Government](#)

And other data from other states.

Contents	Table 1.1	Table 1.2	Table 2.1	Table 3.1	Table 4.1	Table 5.1	Table 5.2	Table 6.1
<b>Asthma content by data source</b>								
<b>Pharmaceutical Benefits Scheme</b>								
Table 1.1: Proportion of people (aged 40 and under) dispensed at least one inhaled short-acting beta2 agonist (SABA) reliever, who were dispensed SABA relievers 3 or more times within 12 months, by sex and age, 2017–18 to 2020–21								
Table 1.2: Proportion of people (aged 50 and under) dispensed at least one preventer medicine, who were dispensed preventer medicines 3 or more times, within 12 months, by sex and age, 2017–18 to 2020–21								
<b>Medicare Benefits Schedule</b>								
Table 2.1: Proportion of people who claimed the completion of the asthma cycle of care service, by sex and age, 2017–18 to 2020–21								
<b>ABS National Health Survey</b>								
Table 3.1: Proportion of people with asthma who have a written asthma action plan, by sex and age, 2017–18 and 2020–21								
Table 4.1: Quality of life indicators (age standardised) for people with and without asthma, 2017–18 and 2020–21								
<b>ABS National Aboriginal and Torres Strait Islander Health Survey</b>								
Table 5.1: Prevalence of asthma, by Indigenous status and age, 2012–13 and 2018–19								
Table 5.2: Proportion of Indigenous Australians who have a written asthma action plan, by remoteness area, 2018–19								
<b>Hospitalisations by Primary Health Network areas</b>								
Table 6.1: Hospitalisations due to asthma per 100,000 population, by Primary Health Network (PHN) areas, 2016–17 and 2020–21								
<b>National Non-Admitted Patient Emergency Department Care</b>								
Table 7.1: Emergency department presentations due to asthma, by month, 2019 to 2022								
Table 7.2: Emergency department presentations due to asthma, by sex, age, remoteness area and socioeconomic group, 2018–19 to 2020–21								

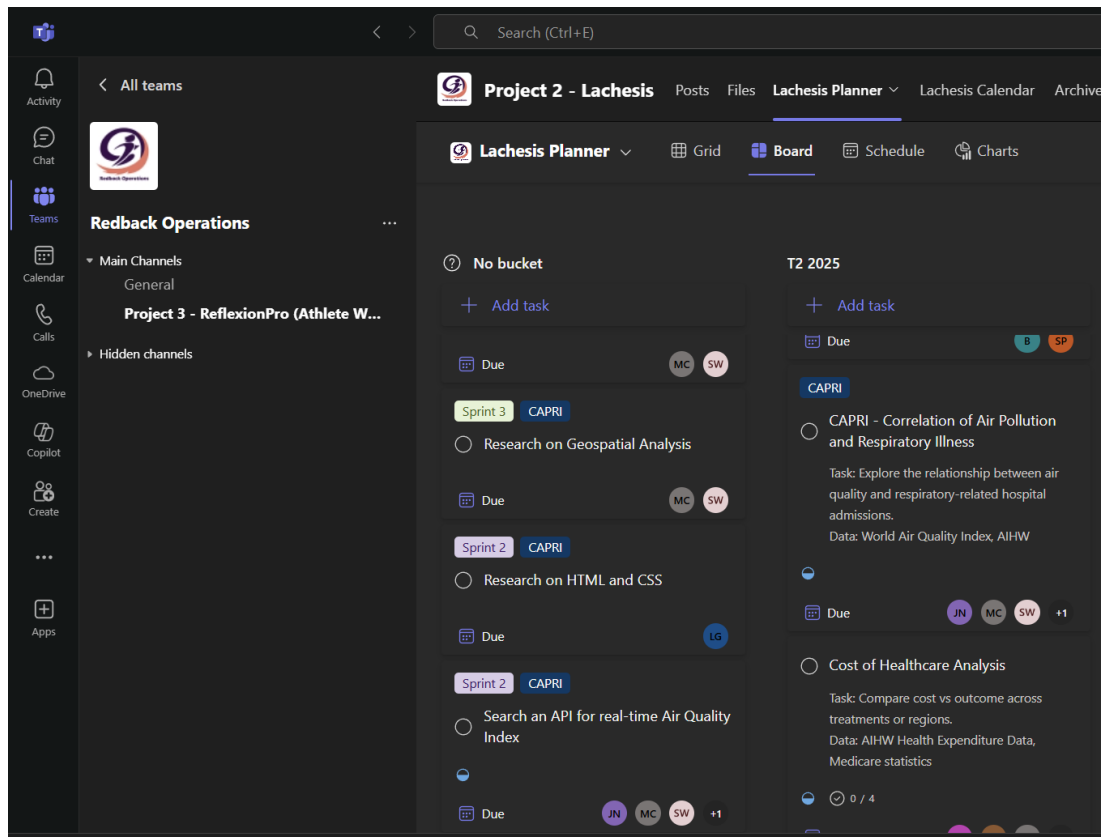
Excel file from [Chronic respiratory conditions Data - Australian Institute of](#)

[Health and Welfare](#)

## 5. Update Agile Project Planner:

Revised the shared team planner to reflect new team roles, current priorities, and iterative milestones.

So what? This ensures transparency, accountability, and efficient sprint execution as our project's scales.



Next actions?

### 1. Begin Dataset Cleaning and Integration

Initiate preprocessing pipelines to clean and merge AQI and health data (starting with EPA and AIHW datasets).

Why? High-quality inputs are critical for statistical analysis and model validity.

This is a necessary precursor to any predictive or correlational insights.

### 2. Explore and Evaluate AQI APIs

List potential real-time AQI APIs and assess their integration viability in a prototype environment.

Why? This will support dynamic and user-facing features, enhancing the project's interactivity and value.

### 3. Draft Initial Visualisation Concepts

Develop early mock-ups or low-fidelity prototypes for data visualisations (e.g., temporal charts, pollution trends).

Why? Early visual feedback can reveal gaps in data or storytelling, allowing for adjustments before full implementation.

### 4. Revisit Geospatial Analysis Roadmap

After foundational data work, revisit tools (e.g., Folium, GeoPandas) for mapping and regional comparisons.

Why? Spatial insights are central to linking air quality and health outcomes geographically, which is the project's core aim.