

CleanAirTO

Breathe Smart, Live Clean:
Your Air Quality Ally



Holistically Understanding Air Pollution

Air connects communities to their environment through the hydrosphere, lithosphere, and atmosphere.

Healing our relationship with our environment will alter the way we understand health, by linking our wellbeing with the healing of the natural environment.



“

1300 premature deaths
and 3550 hospital visits
per year.

City of Toronto

”

How Does the Application make Recommendations?

- Public weather data is conveniently pulled from Google API; however, observation points are too spaced apart geographically.
- The Temperature and Air Quality Health Index values are stored relative to their geographical observation point.
- Our recommendation function is a product of the closest AQHI and temperature measurements, as well as the relevant risk level of users.

$$R_A(I_{AQH}, T, R_L)$$

Let's Improve the Data Together!

- The AQHI is a function of 3 simple measurements
 - Ozone Concentration
 - PM2.5 Concentration
 - PM10 Concentration
- Let's build a measuring device to fill the geographical gaps in the data and offer users rich and homogeneous information about the pollution in their local environment.
- Luckily, using a wifi-enabled microcontroller, a few inexpensive sensors, and less than 50 lines of code, we can equip our community with real-time information on air pollution!
 - The retail price of the necessary equipment is less than 50 CAD/device

Air Pollution as a Community Problem

Historical

Extractive practices lead to a disconnect between people and space

Social

9/10 people globally breathe air with high concentrations of pollutants, primarily affecting under 5-year-olds and over 65-year-olds

Health

Air pollution leads to Acute Respiratory Infections (ARI) and other chronic or short-term impacts

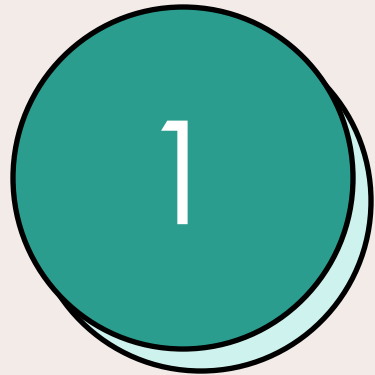
Spatial

Neighborhoods near major intersections are most affected

Structural

Chronic underfunding and servicing of public transit leads to more traffic

Our Process



Understand
urban air
pollution as
anthropogenic



Recognize gap
in data for air
pollution in
West Toronto



Developed an
app to link
users with info
on air pollution



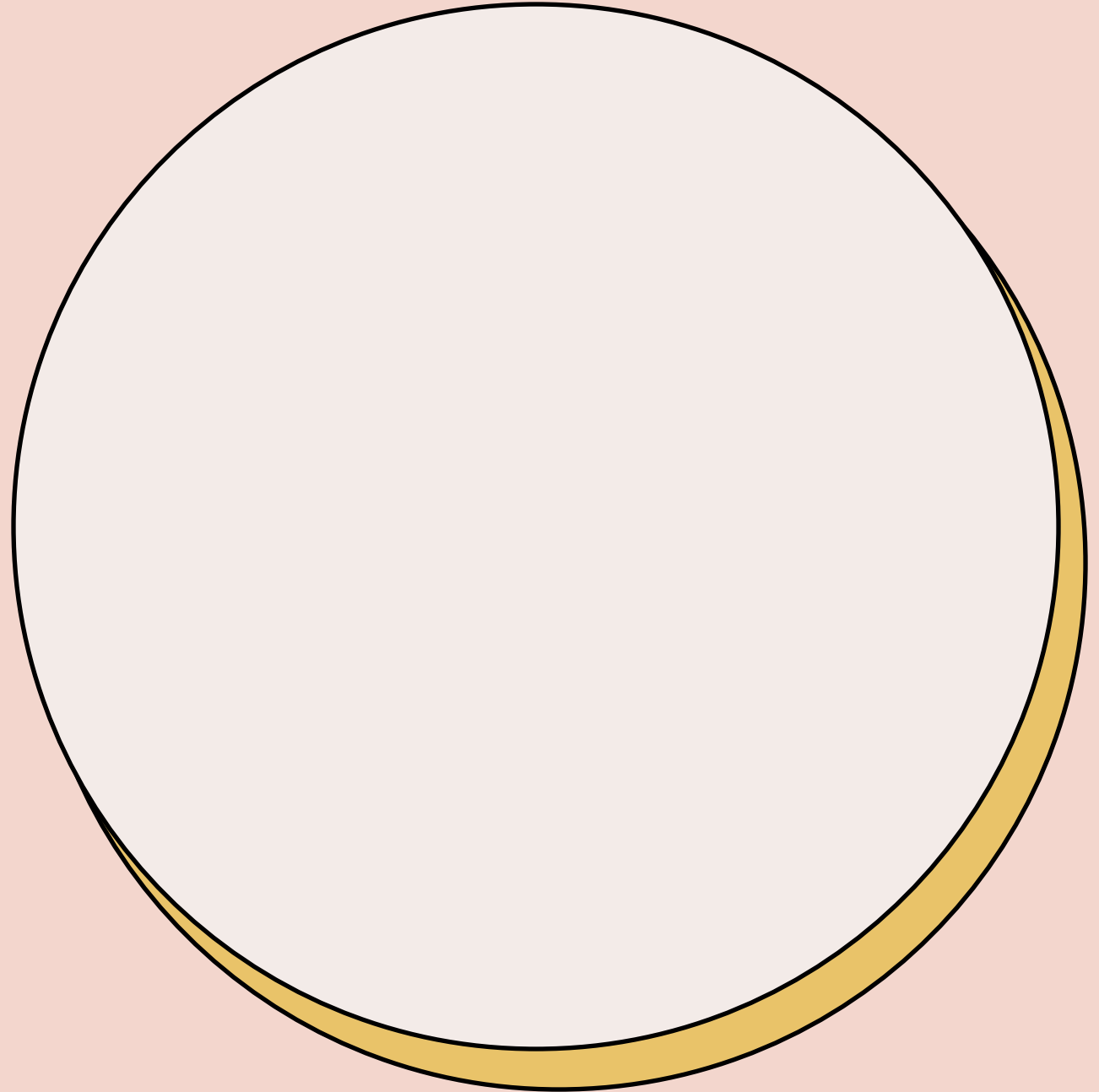
Created a map
to show the
relationship
between
space and
pollution



Potential to use
the app as a tool
of community
engagement to
inform future
community
climate projects

CleanAir TO

Breathe Smart, Live Clean:
Your Air Quality Ally

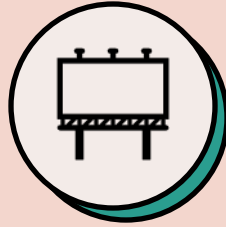


Future Uses

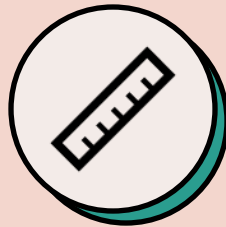


Data Collection

Contribute to the data gap in West Toronto

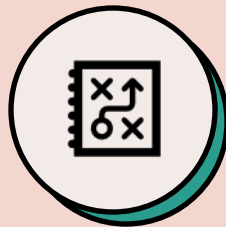


Deeper Integration with Health Care Systems



Tool for Community Engagement

Place more sensors, connect with the community on future projects for air quality improvement



Part of the Larger Conversation of Climate Change and Local Responses



Opportunity to Expand the App to Include Other Health and Climate Data

Thank you

Mirjam Nilsson

mirjam@contoso.com

www.contoso.com

