Impact of School Run on Air Quality

Why we did do this project?

Rosscarbery is a rural seaside village surrounded by agricultural land. The National School and Secondary School are beside each other. This means that there is a lot of traffic at starting and finishing times. We were concerned that our air is being polluted. More concerning is that the schools are beside the lagoon which is home to many native and migratory birds. The EPA report 'Air Quality in Ireland 2023' states that '1600 people die prematurely in Ireland due to poor air quality'. This is despite us having one of the best air quality ratings in Europe and following EU standards. However, Ireland is not on track to meet the health-based WHO air quality guideline limits in 2026. The report states that achieving future targets will be particularly challenging. .

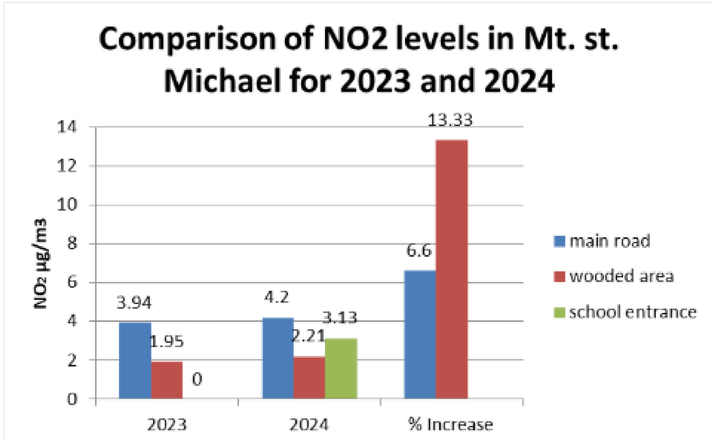
Hypothesis

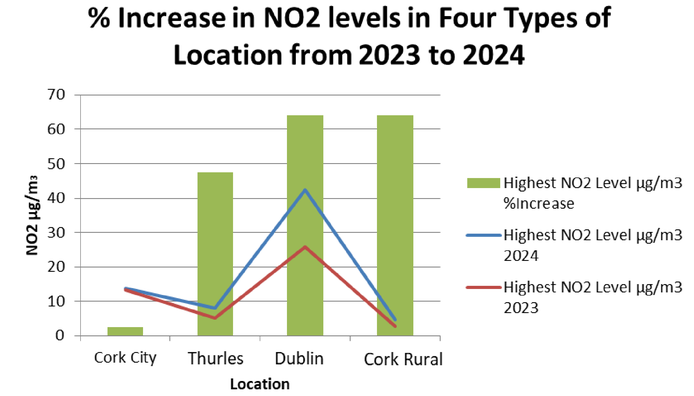
Nitrogen Dioxide levels will have increased since the same time last year due to an increased school population.

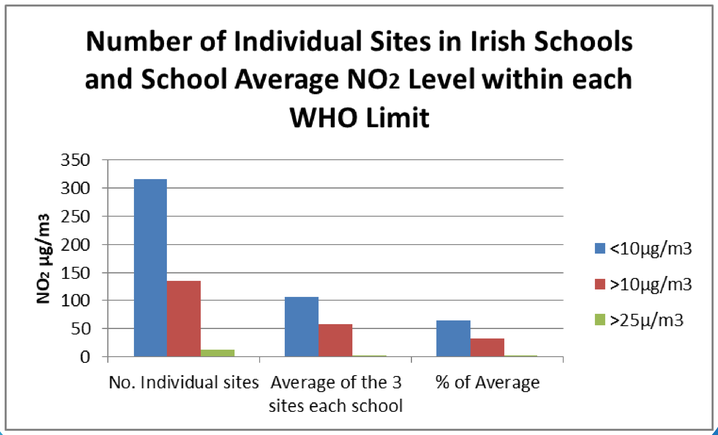
Our objectives

1. To measure Nitrogen Dioxide Levels over a 4-week period from 25th September to 24th of October. Schools all over Ireland took measurements at the same time.
2. To compare these with the same time last year.
3. To survey number and type of vehicles passing or parking by both schools at morning drop off and afternoon pickup times and to measure idling bus times.
4. To survey student population to gather data on how students travelled to school and their opinions on alternative travel and drop off points.
5. To run an educational campaign with buy in from students and parents on how to minimize exhaust fumes in school vicinity.
6. To plant 100 trees in our local Community Garden.

Results







What we did

We placed tubes in three locations around the school, the main road, the quieter road by the national school and the woodland recreation area. We left these in place for 4 weeks then sent them to the Laboratory in Dublin for analysis. We used Statistical Analysis to compare with 2023 data and with other Irish school's data. We designed survey forms to enumerate - The numbers of cars passing or parking by our school and note if they are petrol, diesel or electric. -idling time for the school buses.

- how students travelled to school and where they were dropped of. We sent emails to a safety officer asking about a new traffic plan, conducted a new traffic plan over a two-day course and asked students views on the new plan with another survey.

Conclusions

The school run has a major impact on Air Quality.
Our 2024 level of NO2 increased in all 3 areas compared with 2023.
Approx a third of Irish schools had unsafe levels of NO2
We ran a successul trial of a drop off point 400m away from schools.