

CRAC/96FM Air Pollution Monitoring Walk in Cork City

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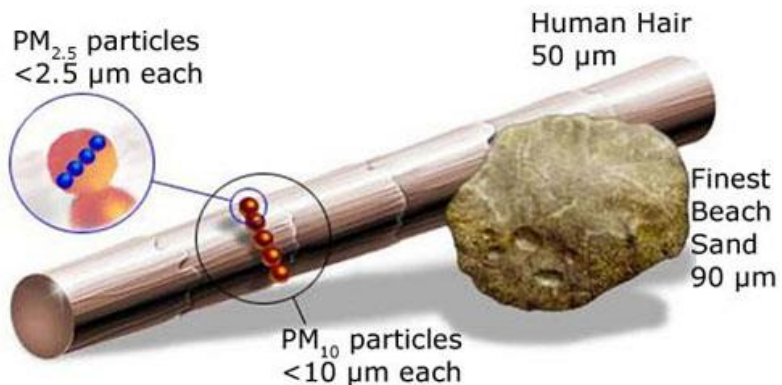
CRAC website: <https://www.ucc.ie/en/crac/>



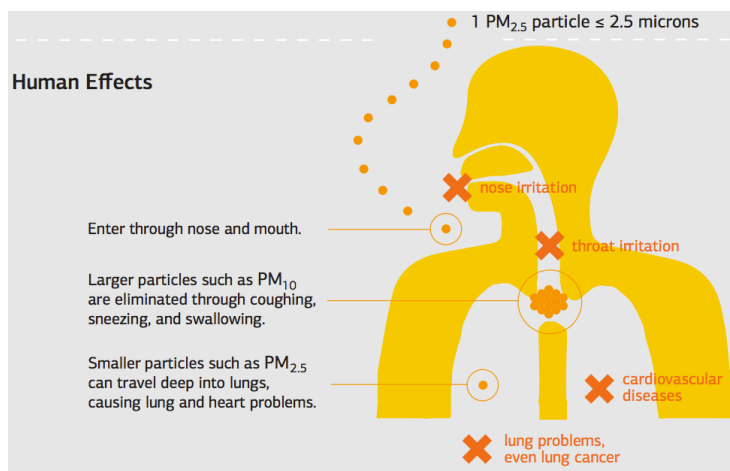
School of
Chemistry



What we monitored...and how



Used a DustTrak II to monitor PM_{2.5} to measure the number of micrograms (μg) per m³



Weight of ONE paper clip = One million μg

Why did we do the walk?

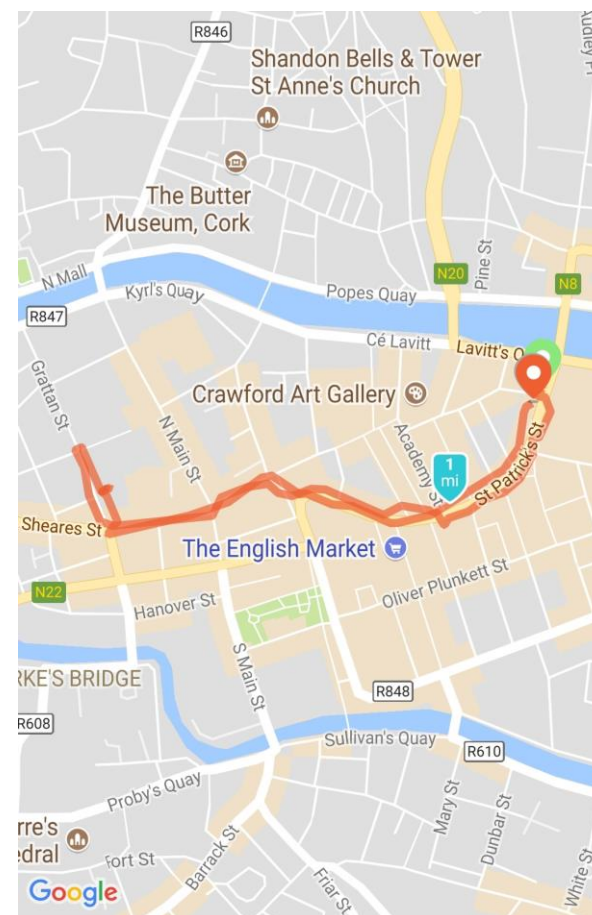
Cork City Council bans private cars from driving down St Patrick's Street in afternoons



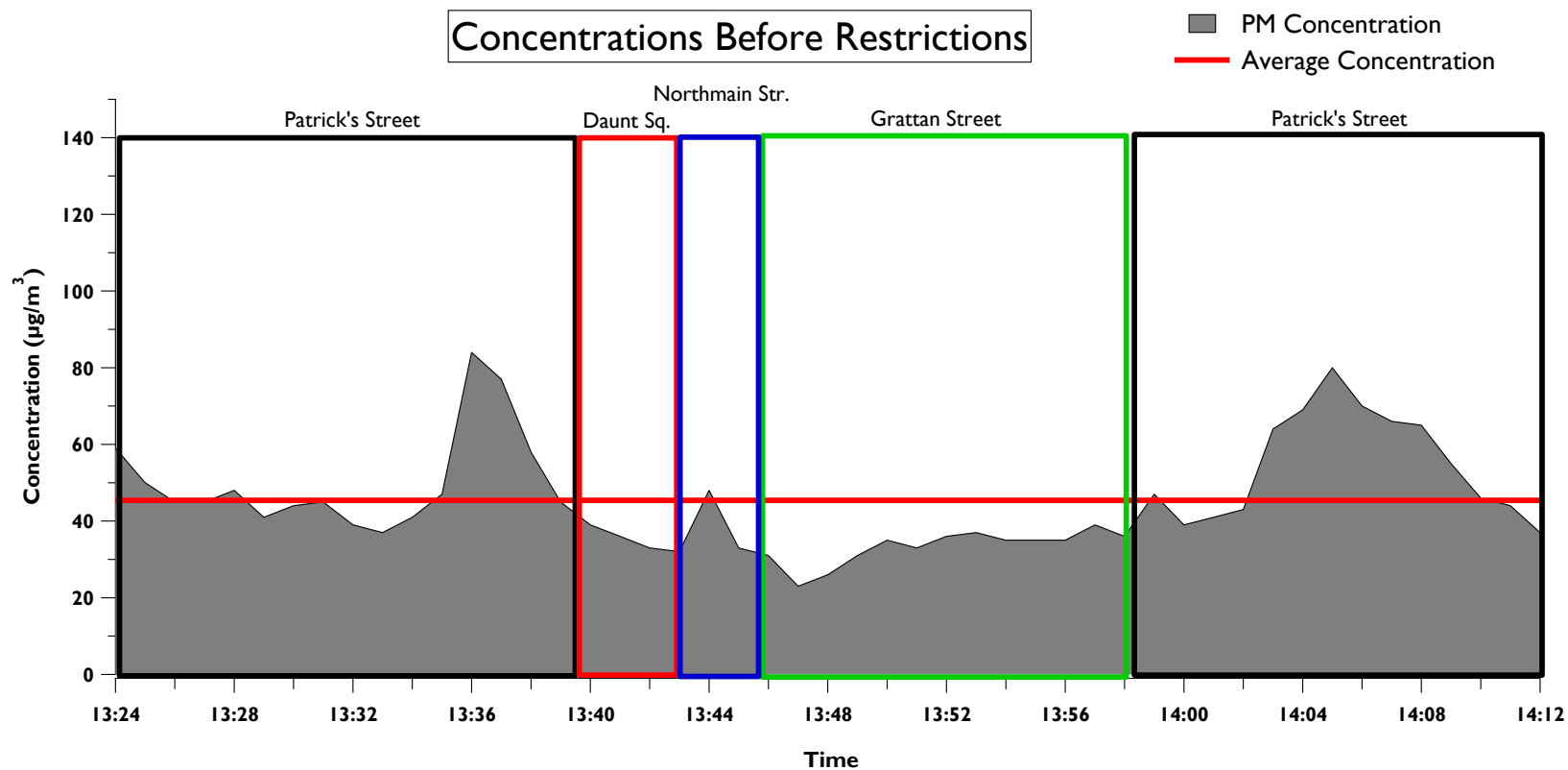
Cork City Council does no roadside monitoring in the City

Pre-restriction (13:20 – 14:15) Route

- Started at top of Patrick's Street
- Stopped at several points on route
- Moved to Grattan Street via Daunt Square
- Finished at top of Patrick's Street
- **Average value: 45.4 $\mu\text{g}/\text{m}^3$**



Pre-restriction (13:20 – 14:15) Values

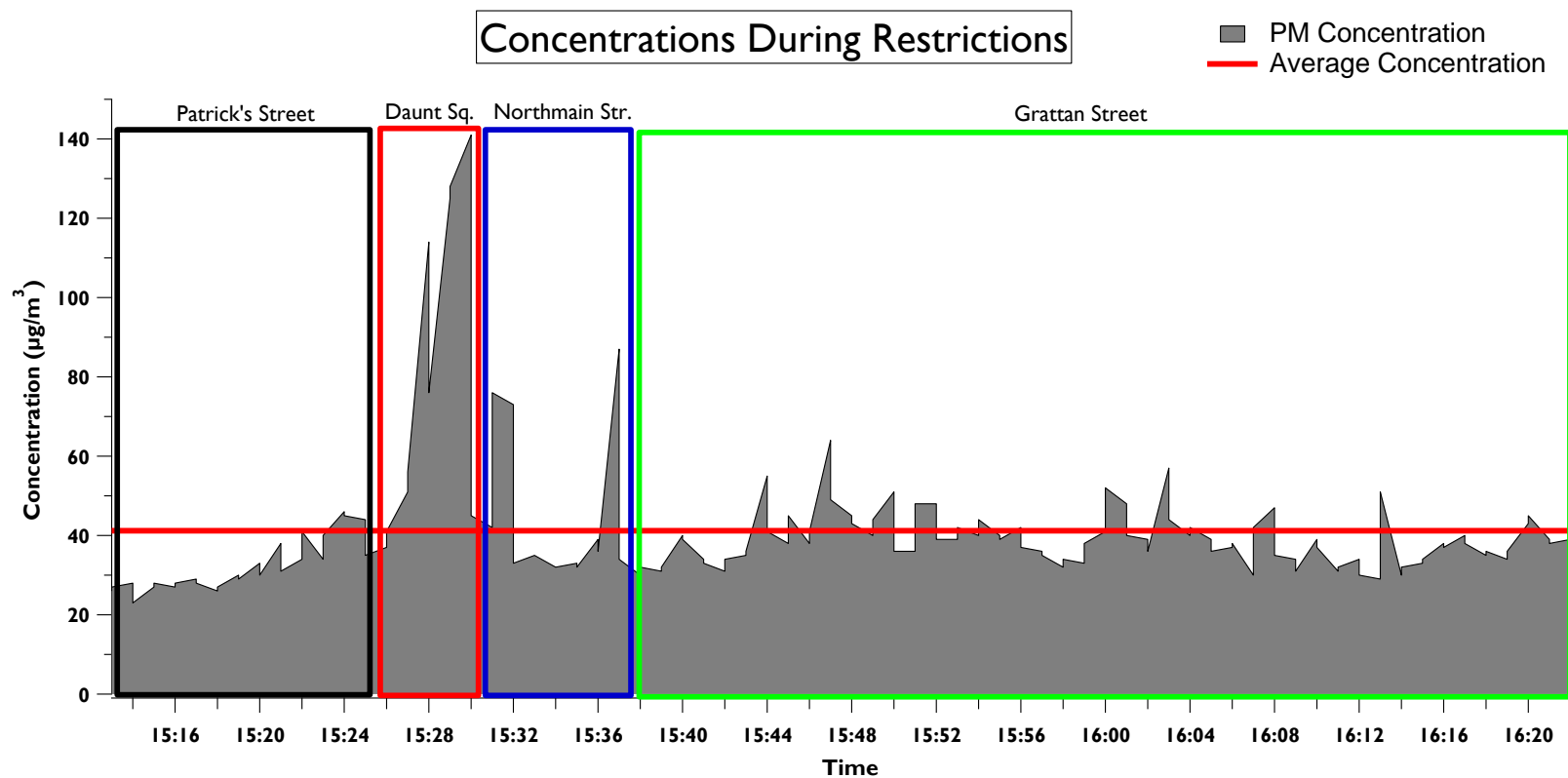


During restriction (15:15 – 16:20) Route

- Started at top of Patrick's Street
- Stopped at several points on route
- Moved to Grattan Street via Daunt Square
- Finished at Soho, Grand Parade
- **Average value: 41.2 $\mu\text{g}/\text{m}^3$**

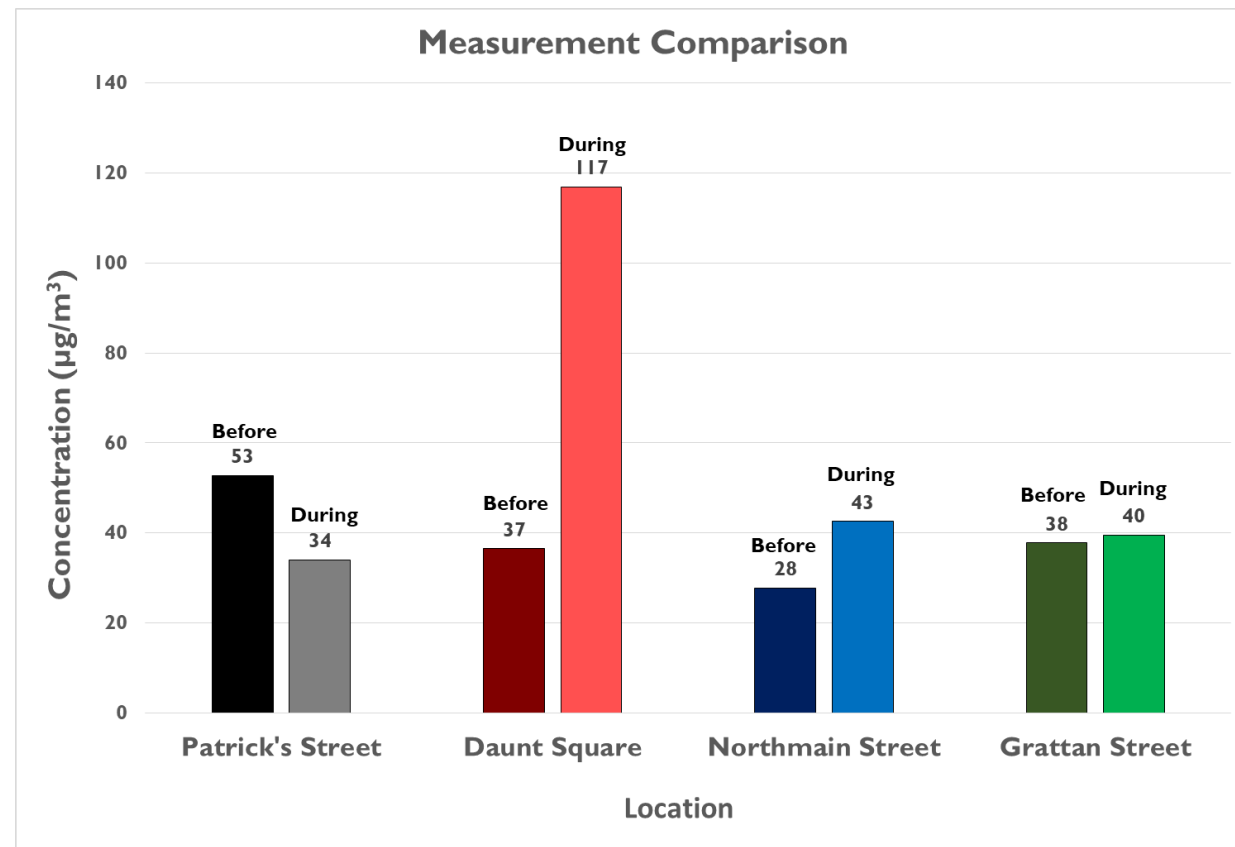


During restriction (15:15 – 16:20) Values

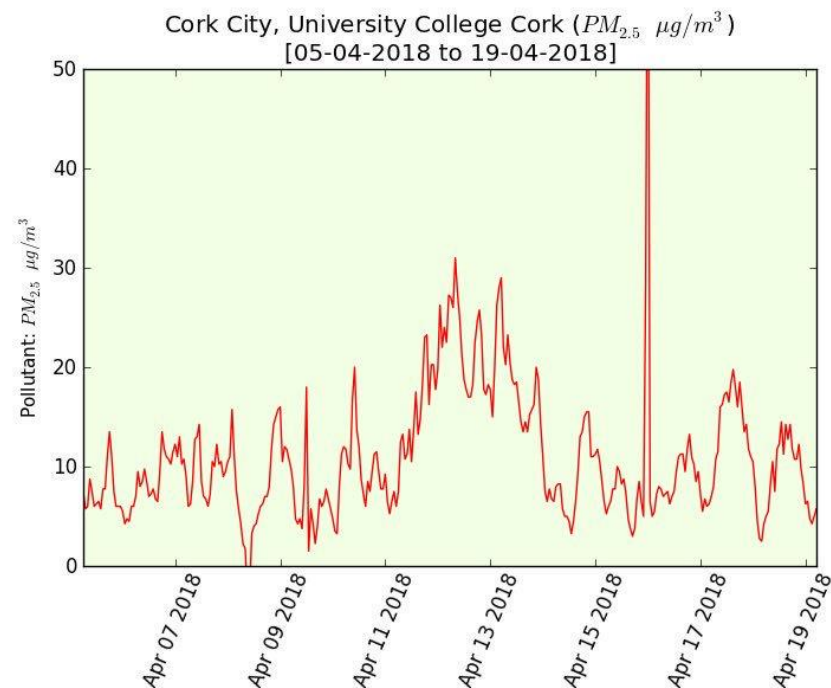


Comparison of Average Values

- Values at **St Patrick's Street** reduced during restrictions
- **Daunt Square** elevated levels during restrictions (reaching London values)
- **North Main Street** elevated during restrictions
- Grattan Street values similar for both walks



Off-road Cork Comparison



The new off-road CRACLab facility on Distillery Fields measured $8.5 \mu g/m^3$ at the time of our roadside walks

Conclusions....with a Health Warning

PM_{2.5} air pollution follows the traffic....overall average is misleading

Healthier to shop in St Patrick's Street during traffic restrictions

But Gaunt Square (where people often sit) shows very elevated levels of PM_{2.5} during traffic restriction

Health Warning

One afternoon of air monitoring under one set of weather conditions is not enough to draw firm conclusions

Cork City Council should continuously monitor Cork's air, not just for particulates but nitrogen dioxide and ozone too.

Remember EACH 10 $\mu\text{g}/\text{m}^3$ of PM_{2.5} reduces the ability of infants to fight infection by 15-25%.....even with short term exposures.