FREQUENTLY ASKED QUESTIONS

About the CARELESS POLLUTION campaign

What is the campaign?
CAReless Pollution is a new campaign in Colchester that is urging drivers to adopt better driving habits and switch off their engines while they wait at traffic lights, level crossings or outside schools, to improve their own health and help reduce air pollution in the town.

Why is the campaign called CAReless Pollution?
Research among local people found that most people who leave their car engine running while sitting at the traffic lights or queuing in traffic, do it without really thinking or paying attention to its potential harm. We wanted to emphasise that while it is an unconscious, or careless, action it produces consequences in the form of increased pollution and risk to health.

Why is the campaign needed?
In Colchester there are three Air Quality Management Areas (AQMAs) where pollution levels exceed national guidelines. The AQMAs cover the town centre and the residential areas of Brook Street, Magdalen Street and the lower end of Mersea Road.

Air pollution is an ongoing issue in Colchester and can cause both short term and long term affects on health as well as impacting the environment and the economy. Air pollution reduces life expectancy and is linked to 1 in 20 deaths in Colchester. The main source of Colchester's air pollution is exhaust fumes, namely Nitrogen Dioxide. Air pollution can be 30% higher outside schools because of idling cars. Running your car whilst stationary and parked is also illegal.
(Source: Public Health England, 2014)

Who is the campaign targeted at?
The **CAReless Pollution** campaign is aimed at people who regularly drive through Colchester town centre. This includes people who live in the area and drive, those who drive in and through the town to get to work, those who drive around town as part of their job and parents who keep their engines running while waiting outside the school gates.

What is the aim of the campaign?
We are urging drivers in Colchester to change their driving behaviour and switch off their engines when they are parked or stationary, particularly outside schools and within Colchester town centre.

Why is the campaign focused on health messages and not the environment?
Research among local people showed that people care most about 'protecting the health and wellbeing of myself and those I care about' as opposed to actions to protect the environment. The campaign therefore focuses on improving understanding that drivers contribute to air pollution, and that breathing bad air can cause the development of heart disease, stroke, respiratory disease and lung cancer, all of which lead to reduced life expectancy. In Colchester 1 in 20 deaths is linked to air pollution and the main source of air pollution in the town is exhaust fumes. Switching off your car engine is a small, simple action that brings an important health benefit to all car drivers and everyone inside the car. By reducing air pollution there will also be important environmental benefits.

Why has the figure you quoted for the level of pollution inside a car changed from 12 times higher to seven times higher?
There are different sources of evidence that confirm that air quality inside a car is worse than the air quality outside a car. Yet, there are a wide range of variables that can impact how much worse it is:

temperature/ weather conditions, type and age of vehicle, condition of engine, distance from car in front while idling and many more. It is therefore extremely complicated to provide a single consistent figure.

For the purpose of this campaign, we reviewed scientific research papers to determine as accurate a figure as possible which could be substantiated and referenced. As a result of this process, we decided to use the figure 'seven times higher' based on the findings of research done by the University of Surrey in 2016 and published in the Royal Society of Chemistry's Environmental Science Journal. Figures of up to 10 and 15 times higher have been quoted in news articles and government papers.

Who is running the campaign?
The campaign is being run by Colchester Borough Council. It is being supported by a range of local businesses, organisations, charities and residents across the town.

How is the campaign funded?
The campaign is funded by a grant from the Department of Environment Food and Rural Affairs (DEFRA) as part of a two year behaviour change project to tackle pollution in the borough.

How long will the campaign run?
The campaign will launch on Thursday 8 October 2020, National Clean Air Day. It will run until May 2021.

How can I get involved or find out more?
For information about how to become involved in the campaign or to download materials for use in your workplace, visit www.colchester.gov.uk/cleanair.

Air pollution in cars

Is air pollution inside a car higher than outside the car when the engine is idling? Researchers found the level of pollution was **seven times higher inside cars** that were stuck in traffic if the windows were open, compared to the exposure of pedestrians standing at major intersections outside.
(Source: Concentration dynamics of coarse and fine particulate matter at and around signalised traffic intersections, Kumar P. & Goel A., 2016)

Why is air pollution higher inside a car than outside?
Pollution inside a car is caused by sitting in a plume of exhaust and a significant proportion of your car's exhaust fumes will affect the people in the car behind you. In fact, much of the air pollution you breath in inside your car comes from the vehicle in front of you and the other ambient pollution (industrial, domestic heating, tyre emissions, etc). They can accumulate at high levels in the car during engine idling.
(Source: Emissions Analytics, 2020)

What factors determine how much air pollution is inside your car when the engine is idling?
There are many factors which determine the level of air pollution in your car, including the exact model of car, its exhaust system, engine condition and car ventilation. . A car's age is also a factor, and the concentrations were greater for an idle engine than during driving.
(Source: Kim, K.H.; Szulejko, J.E.; Jo, H.J.; Lee, M.H.; Kim, Y.H.; Kwon, E.; Ma, C.J.; Kumar, P. Measurements of major VOCs released into the closed cabin environment of different automobiles under various engine and ventilation scenarios. Environ. Pollut. 2016)
(Source: Indoor Air Pollution in Cars, International Journal of Environmental Research and Public Health, 2019)

How does turning off my engine when stationary help pollution inside my car?
By turning off your engine whilst stationary, you are reducing the amount of air pollution that the person behind you breathes in, just as the person in front of you is therefore helping you.
(Source: Emissions Analytics, 2020)

Does an idling car produce higher concentrations of air pollution than a car in motion?
Yes, VOCs (Volatile Organic Compounds) for idle engines are higher than levels during driving. VOCs and vehicle exhaust gases such as benzene, toluene and xylene are emitted during fuel combustion in car engines and come out of the car's exhaust. They can accumulate at high levels in the car during engine idling, by natural circulation of air or suction through the ventilation system. Concentrations of 10 major VOCs in static vehicles were significantly higher than in vehicles that are moving.
(Source: In Cabin Air Quality during Driving and Engine Idling, International Journal of Environmental Research and Public Health, March 2018, Hong Kong)

Air pollution in Colchester

How are the Council helping to reduce air pollution generated by Council vehicles?
As part of Colchester Borough Council's commitment to reducing the impact of its own vehicles on the local environment and air quality a 'No Motor Vehicle Idling Policy' has been introduced. This states that staff driving Council fleet vehicles or using their own vehicles for business travel should switch off their engines when stationary on Council sites and while out conducting Council business.

How will turning off my engine when stationary help reduce air pollution in Colchester?
The main source of Colchester's air pollution is exhaust fumes, namely Nitrogen Dioxide. Road traffic is estimated to contribute to 80% of nitrogen oxide and nitrogen dioxide at the roadside from exhaust fumes. Small, easy changes to driving habits, such as switching off the engine while stationary, can cut pollution by up to 30%.
(Source: DEFRA; Department for Transport, 2017, Air Quality Plan Technical Report)

What effect does air pollution have on our health?
Air pollution reduces life expectancy and is linked to 1 in 20 deaths in Colchester. It is recognised as a contributing factor in the development of lung conditions, heart disease and cancer. There is also evidence highlighting possible links between air pollution and diabetes, dementia and underweight births.
(Source: Public Health England, 2014, Estimating Local Mortality Burdens Associated with Particulate Air Pollution)
(Source: Royal College of Physicians, 2016, Every Breath We Take Lifelong Impact of Air Pollution)

Is air pollution from diesel cars and petrol cars the same?
There is a variation between petrol cars and diesel cars. For all petrol vehicles, it is better to switch off your engine when stationary in most cases. Diesel vehicles from about the last ten years will normally 'clean' particles from the air as they idle, due to the filter in the exhaust. Most diesel vehicles from the two years (with the AdBlue system) can be kept on if the idling period is only short.
(Source: Emissions Analytics)

Why is air pollution worse at traffic hotspots, for example traffic lights and junctions?
Traffic lights are high pollution hotspots due to the frequent changes in driving conditions. Drivers slow down and stop at traffic lights and then rev-up to move quickly when the lights turn green. Peak particulate matter (PPM), which is the harmful dust created from break and tyre wear,is up to **29 times higher at traffic lights** thanduring free-flowing traffic conditions. While drivers spend just 2% of their journey time passing through traffic junctions managed by lights, this time period contributes to around 25% of drivers' total exposure to PPM.
(Source: Characterisation of nanoparticle emissions and exposure at traffic intersections through fast–response mobile and sequential measurements, Goel A. & Kumar P., University of Surrey, 2015)

There is already a traffic problem in Colchester with too many cars on the road and frequent jams. Shouldn't we be encouraging people to ditch their cars rather than turning off their engines?
Running alongside the CAReless Pollution campaign are other projects encouraging people to adopt better driving habits and walk or cycle for short journeys including 3PR and the Colchester eCargo Bike Library. The most common journeys are under 10 minutes and include those made for shopping, visiting friends or going to work. If it is not possible to walk or cycle a journey, then switching off your engine while waiting can reduce pollution by up to 30%. Everyone can do their bit to help however small it may seem.

The roads in Colchester are already over congested but houses are still being built, more people equal more cars on the road so why doesn't the Council stop?
House-building targets are set by central government, which local authorities, through their democratically agreed adopted local plans, are expected to deliver. Whilst we are expected to deliver new housing we are looking at planning policy to ensure new developments incorporate low-emission technology, including electric charging points for vehicles, and making provision for essential journeys to work, healthcare and leisure activity by walking, cycling and sustainable transport.

<u>Switching an engine on and off</u>

Why do drivers override their car's auto stop start facility?
Our research shows that 20% of respondents override their car's automatic switch off technology because they want to keep up the traffic and move off quicker. They could also be unaware that the stop start function reduces fuel consumption and decreases idle time thus decreasing vehicle emissions.
(Source: Clean Air Survey, Colchester Borough Council, October 2019 – January 2020)

What are the common reasons that people give for leaving their engine idling?
Our local research found that people say they leave their car engine running while stationary because they are:

- Defrosting their car windows
- Warming up the car engine
- Sitting in traffic
- Waiting at traffic lights
- Going through a drive-thru fast food restaurant

However, turning off the engine but keeping the ignition on with the fan blowing will provide warm air for up to 30 minutes. Leaving the car engine on while stationary is illegal and it also uses more petrol, costing drivers more money.
(Source: Clean Air Survey, Colchester Borough Council, October 2019 – January 2020)

Will I use more fuel by turning my engine off and on again?
Keeping your car engine on when stationary for more than 10 seconds uses more fuel and emits more carbon dioxide than engine restarting. Stationary fuel usage varies from 0.2 to 0.5 gallons per hour. It therefore makes sense to turn the engine off to minimise unnecessary fuel use and carbon dioxide emissions.
(Source: Comparing fuel use and emissions for short passenger car stops, L.Gaines, E Rask and G Keller, Argonne National Laboratory, US Department of Energy)

Does turning an engine on and off cause damage?
Leaving the engine idling dirties your engine with incomplete combustion increasing wear and tear. Modern cars have much better ignitions and can be switched on and off without unnecessary wear on the engine.