

Our Six Reasons to question the Tram project



Reason One – A Grave and Fundamental Flaw

These tables show, in column 5 for NO₂ and Column 6 for PM₁₀ pollutants, that in both cases the number of households facing WORSE air quality rises from 77,950 to 139,500, and from 70,200 to 134,500 when you compare the situation without the Tram in 2026 to the predicted situation AFTER having implemented the Tram in 2026 when comparing to the situation in 2001

STAG Appraisal



| Scenarios Compared | Number of Households with | | | | | |
|---------------------------|----------------------------|------------------|--------------------------|------------------|--------------------------|------------------|
| | Improvement in Air Quality | | No change in Air Quality | | Worsening in Air Quality | |
| | NO ₂ | PM ₁₀ | NO ₂ | PM ₁₀ | NO ₂ | PM ₁₀ |
| Do Min 2011 × Do Som 2011 | 177,250 | 174,000 | 26,200 | 3,400 | 77,950 | 70,200 |
| Do Min 2026 × Do Som 2026 | 119,100 | 112,050 | 22,750 | 1,000 | 139,550 | 134,500 |

Note: totals for NO₂ and PM₁₀ differ because of the application of different weighting factors.

During the ten year period from the Base 2001 to Do Minimum 2011 air quality is predicted to improve in most areas in the absence of the tram as a result of improvements in vehicle and fuel technology. The tram, will lead to a further increase in the number of households near roads predicted to experience lower NO₂ and PM₁₀ concentrations in 2011. More properties will be near roads with improved or unchanged air quality than are near roads with worse air quality.

By 2026 a few more households will be near roads with better or unchanged NO₂ concentrations than are near roads with worse, but more households near roads with worse PM₁₀ concentrations than better. This is thought to be due to added congestion in 2026.

An indication of the relative magnitude of the exposure to pollutant emissions can be gained from the air quality index which is a product of the weighted number of households and the change in roadside air quality for each road link aggregated over the whole study area. A negative value implies an

Table from the STAG 2003 project appraisal report done by one of the world's leading project management consultants, employed to do the main assessment report FOR tie and Edinburgh Council themselves.

Reason Two - Known, Serious and Compelling Threats

This table shows that comparing gains in life expectancy for individuals the improvement in terms of extended life, by **reducing** pollution is 3 to 5 times more effective than eliminating RTAs and around 3 times more effective than eliminating passive smoking. Which makes us feel It is therefore reasonable to suppose without any evidence to the contrary that increasing pollution will harm life expectancy

Why we all have a role to play!!

| | Reduction in PM _{2.5} | Elimination of road traffic accidents | Elimination of passive smoking |
|---|--------------------------------|---------------------------------------|--------------------------------|
| Expected gain in life expectancy | 7-8 months | 1-3 months | 2-3 months |
| Estimated equivalent gain in life years 2005 - 2110 | >39 million years | >8 million years | > 13 million years |

Ref: Institute of Occupational Medicine , Comparing estimated risks for air pollution with risks for other health effects, March 2006

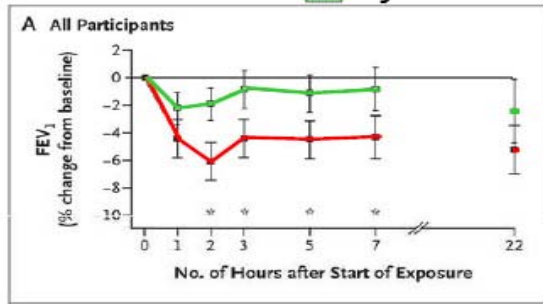
Air quality diagnosis sits comfortably within Environmental Health Departments.....*but*.....to improve the effectiveness of the LAQM process the ownership of air quality problems and solutions needs to be a priority for those departments that can bring about meaningful change i.e. those departments that can offer and more importantly implement solutions.

Reason Three – Clear & Present Danger

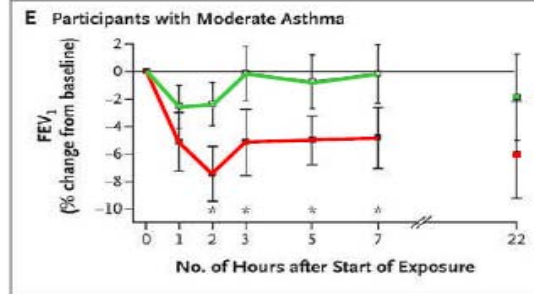
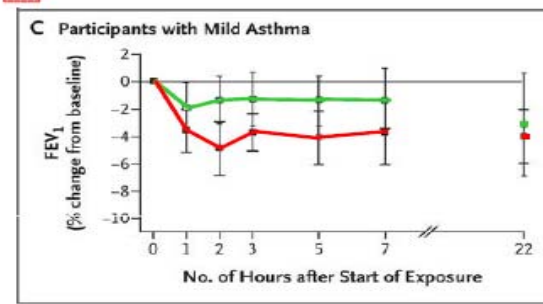
Part of a large scientific study that states clearly traffic related pollution is found to worsen asthma, especially, but not only, for existing asthmatics. It can turn mild asthma into a more serious condition and even create asthmatic conditions where previously none existed

Asthmatic Human - Real World Traffic Exposures

Hyde Park



Oxford Street



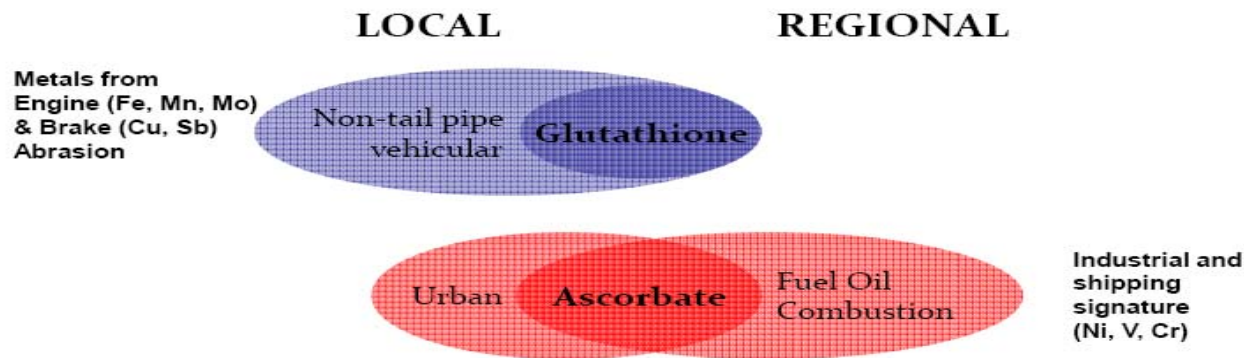
- Respiratory function decrease following diesel traffic exposure
 - More pronounced effect for moderate asthmatics
- Changes were consistent with $PM_{0.1}$, EC and NO_2 exposure
- Traffic related pollution found to worsen asthma - Airway acidification and neutrophil increase

From statistics collated by Kings College London

Reason Four – How the same number of vehicles can create more pollution

As shown here 'pollution' is not simply 'tail pipe' (exhaust) gases, but a mixture of these with abrasion from brake, clutch, and tyres. This is worse in congested, stop-start-stop driving which is precisely what is happening in the unsuitable, winding route through the streets in questions

Determinants of Oxidative Potential



- Vehicular emissions do not simply include tail-pipe emissions
 - Fugitive emissions from non-tail pipe sources also important, **abrasion from brake, clutch, tyre wear** = accounts for half the PM emissions at the roadside
- Non-tail pipe vehicle emissions are
 - established **redox catalysts** capable of generating reactive oxygen species once inhaled
 - largely **ignored at the regulatory level** where the focus is on reduction of tail-pipe emissions.

Reason Five- Measuring where traffic no longer is - while not measuring where it has gone

If something gives rise to a significant change in traffic volumes or peak traffic flows an AQ (Air Quality) assessment should be done. If the type of traffic changes, as it is in the street

nt has

Criteria for requiring an AQ assessment:
some changes and additions:



- Proposals that will give rise to a significant change in either **traffic volumes**, typically a change in annual average daily traffic (AADT) or peak traffic flows of greater than $\pm 5\%$ or $\pm 10\%$, depending on local circumstances (*a change of $\pm 5\%$ will be appropriate for traffic flows within an AQMA*), or in vehicle speed (typically of more than ± 10 kph), or both, usually on a road with more than 10,000 AADT (*5,000 if 'narrow and congested'*)

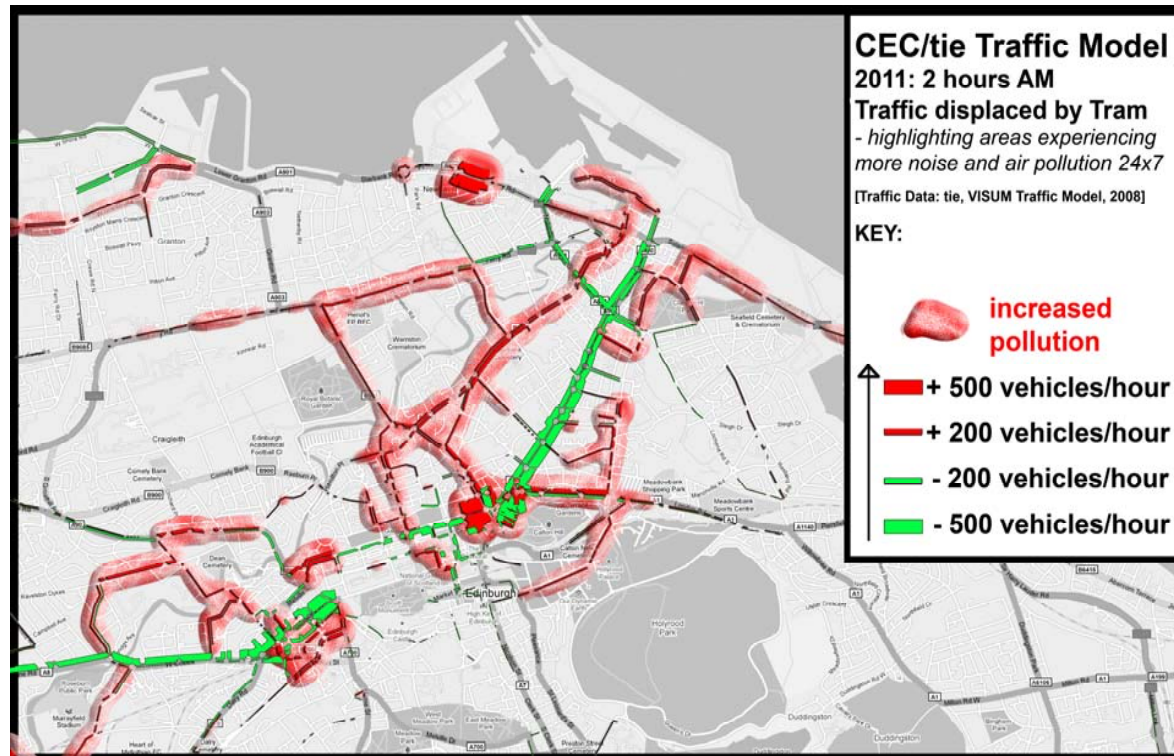
- Proposals that would significantly alter the **traffic composition** on local roads, *for instance, increase the number of HDVs by say 200 movements or more per day*

New aspects in *italics*

From AEA the international consultants to governments on Air Quality and it's importance

Reason Six- Main roads are emptied- residential streets fill up with pollutants

The graphic of the cloud effect shows streets with increased levels, although Great Stuart Street and connecting streets are experiencing this now, all these other streets will see the same things happening--- remember that 134,500 households worse off figure? You can begin to see below where it comes from by contrast the old main roads, around which all previous planning has revolved now show enormous decreases in vehicles ?



From statistics produced by City of Edinburgh Council themselves

The Concern

As the long, wide, straight main routes are emptied for the Tram, we see the winding, narrower, short routes become heavily congested.

The resulting exhaust AND abraded particulate pollution is far worse than on the old main routes....far higher levels, at higher concentrations, for longer.

People live all day and all night in these streets—they don't simply shop there for a few hours, so they are exposed far more massively than shoppers and tourists to these HIGHER levels of pollution.

Every piece of new scientific data goes to show these particulates are a MAJOR danger to health and even life.... They cause asthma and they shorten life.



These 'six reasons' are all based on scientific facts and data that respected studies have produced over many years.

- ✓ There are many more facts, as compelling as those above
- ✓ These facts are the facts that the Council's own STAG 2003 report prediction showing 134,500 homes with worse air quality by 2026, was created using data from either these studies quoted above, or similar ones. .
- ✓ If the Council push on with the tram without a proper and accepted Environment and Health Impact study they could be propelling the City towards a Public Health disaster in a few short years
- ✓ This document, and the evidence behind it ensures that the Councillors and Officers will not be able to say they did not know, what would happen, if they choose to continue down the present course and do nothing.
- ✓ There are always solutions - but to find them first requires the political will and organisational energy to first discover the facts and not suppress them any longer.