

**Report to: Chichester City Council Planning & Conservation Committee (P&C)**

**From: City Councillor Sarah Sharp**

**Date: 18<sup>th</sup> August 2022**

**Subject: Reducing the Speed on A27 around Chichester**

**Recommendation:**

- a) That the P&C Committee of the City Council collates outstanding questions on the subject of speed on the bypass to send to WSCC. Such questions could form the basis of a FAQ document on the subject to present to other Parish Councils or other interested parties.
- b) The P&C Committee of the City Council states an “in principle” interest in supporting slower speeds on the bypass.
- c) That the City Council approves a request to National Highways to carry out a feasibility study into the speed of the A27 around Chichester.

## **Introduction**

The speed on the A27 has long been of concern to residents. The speed limit is currently set at 70mph but there are five junctions to negotiate around the City. Four of these junctions are very busy roundabouts and there is one crossing at Oving. This junction has been changed recently due to the Shopwyke Lakes development and this now has restricted access. There is also a new road that links to the A27 between the Portfield Roundabout and Tangmere roundabout on the south side of the road that offers access to and exit from the Shopwyke development and serves the community of Oving.

This document outlines some of the reasons why a speed limit reduction from 70mph to 50mph on this road would have benefits and could improve quality of life for residents while not adding huge time delays to motorists.

**The principal reasons to look at reducing the speed are linked to**

- 1) Noise reduction
- 2) Traffic Smoothing
- 3) Safety concerns
- 4) Increasing population living near the road
- 5) Reducing fuel consumption to reduce climate change
- 6) Driver calming
- 7) New exit from Shopwyke Lakes

## **Appendix**

- a) Smart technology
- b) Even smarter technologies
- c) Health
- d) Examples from other communities of slower speeds on A roads.

## 1) Noise

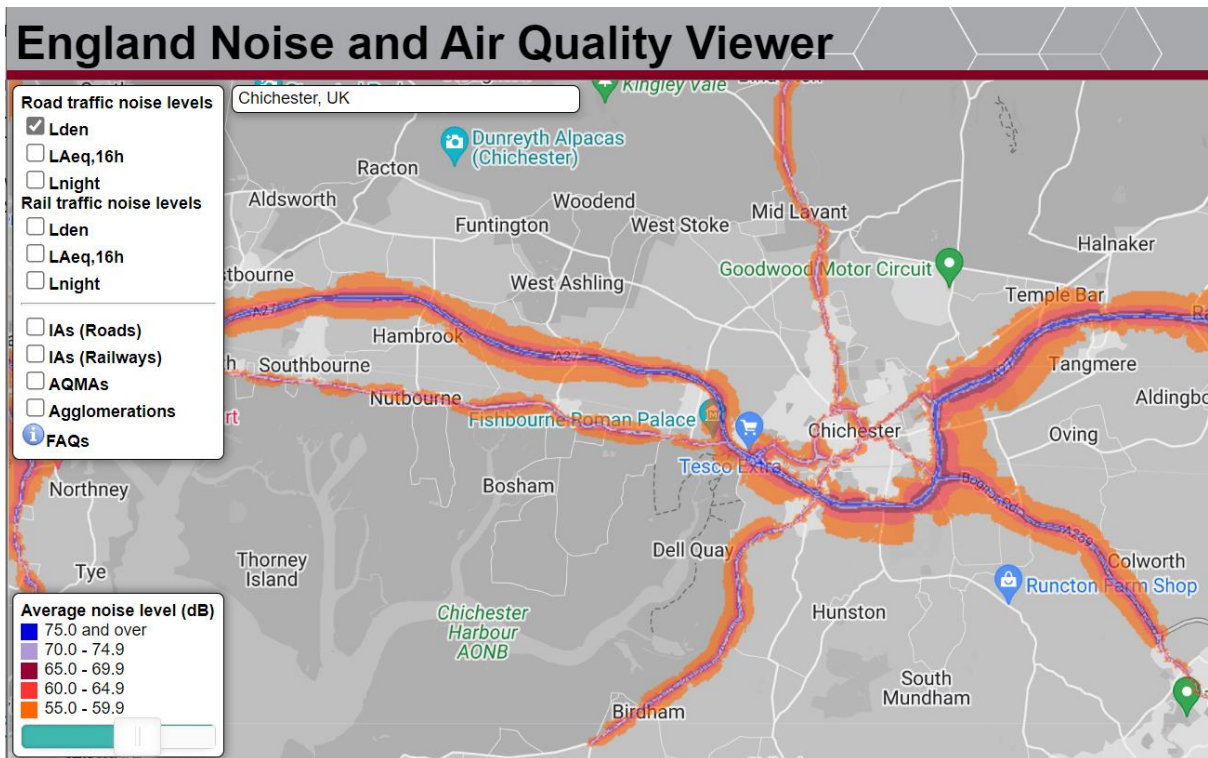
- 1) The A27 is a recognised **Noise Important Area**. The majority of the noise it generates is understood to come from three related but distinct causes: (1) absolute speed and (2) acceleration and deceleration (3) anti-social riding and driving.  
Part of the noise is tyre noise, and this won't go away even if there was a 100% switch to electric vehicles.
- 2) One problem on this particular stretch of the A27 is that, because of the large number of **roundabouts** that follow in quick succession, drivers repeatedly move from one roundabout to the next by approaching at speed, slowing down to take the roundabout, and then accelerating away again fast in order to get back up to speed. The noise caused by this kind of driving behaviour is particularly pronounced from vehicles late at night and in the early hours of the morning, and is also particularly pronounced from some less than well-tuned vehicles (notably motorbikes) at all times of day.
- 3) Allowing high speed limits between the roundabouts is unnecessarily adding to the noise along the entire stretch of road around Chichester and is also increasing the risk of accidents. Conversely, smoothing traffic flows by reducing the speed limit should promote driving in a **less stop-start** and hence quieter, safer and more fuel-efficient manner.

Please see this link from DEFRA that maps the noise impacts from the A27

<https://environment.data.gov.uk/DefraDataDownload/?mapService=DEFRA/RoadNoiseLAeq16hRound2&Mode=spatial>

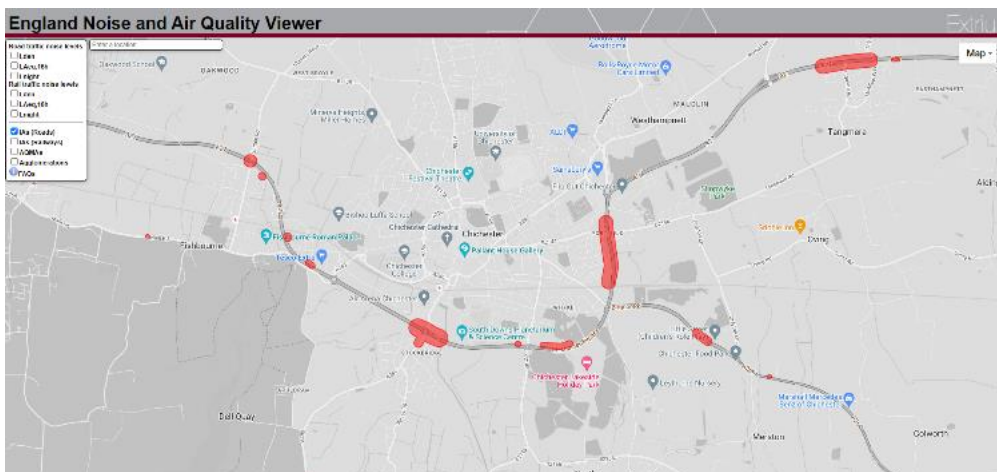
The impact of noise from A27 can further be viewed here:

[Extrium > England Noise and Air Quality Viewer](#)



Please follow this link to find out more about “Noise Important Areas” [Noise from transport - West Sussex County Council](#)

A map can be viewed here:



## 2) Traffic Smoothing

- 1) Setting a slower speed limit between junctions smooths traffic flows. In addition, perhaps counter-intuitively, such limits needn't add substantially to the end-to-end travel time precisely because the traffic flows more smoothly. (Some case studies have shown that reducing the limit in a “smart” way has actually resulted in faster end-to-end travel times. See Appendix below.)

- 2) A key reason for such counter-intuitive results is that, under the current conditions, what is gained in acceleration is mostly lost again in deceleration. Hence, the average speed is not greatly different to the average speed when progressing at a steady pace, but with the added bonus that steady speeds can also be used in a smart way to generate more usable gaps between cars for cross traffic to make use of.
- 3) This kind of traffic-smoothing approach is already in operation on trunk roads around UK cities where – with geography not dissimilar to Chichester – faster limits are set in the countryside on either side of the city, and lower ones for a short stretch skirting the city (or sometimes running through it, which is how Chichester looks set to become now that fields outside the city have turned into housing estates (e.g. at Shopwhyke Lakes, Oving) and, unless government policy changes, more of the same is likely to happen in ribbon development on other fields alongside the A27).

#### 4) **Safety**

- 1) As indicated, the traffic-smoothing approach is also believed to result in fewer traffic incidents. Here is a link to the **collision data** from around the bypass:

[Collisions - Chichester Bypass - Google My Maps](#)

**Each innocuous looking marker on the map actually represents a personal tragedy that has affected an individual and their family. Many will also have caused a burden on the emergency services and the NHS.**

- 2) Also, each incident potentially leads to **congestion and partial or complete road closures**. This in turn means that, in practice, the road with the faster speed limit could actually be operating more slowly than the road with the slower speed limit for substantial lengths of time.
- 3) Another perception is that, during the congested periods of the day, each of the roundabouts is difficult or even **dangerous** to negotiate. Reducing speed - and the sense of the road being a racetrack - will help to make drivers feel more confident that there is enough time to negotiate the junction.
- 4) Looking at the map, most of the incidents on the stretch of road skirting Chichester are concentrated around the **junctions**, but there are also incidents in between junctions. Slowing down this whole section of the road will help to give drivers **more time** to react and take action to avoid a pending collision.
- 5) There is a lot of academic research that links **the reduction in speed with an increase in safety** and fewer collisions occurring. This is a compelling argument that I believe merits proper consideration by the City Council:

[The impact of lowered speed limits in urban and metropolitan areas - Accident Research Centre \(monash.edu\)](#)

#### 5) **Increasing population living near the bypass – Current remedial measures need other complementary measures**

- 1) We are vastly increasing the **number of people** living near the bypass. New communities have moved in at the old Bartholomews site (on Arundel Park), at Shopwhyke Lakes and Oving (south

side of Oving Road), as well as at Tangmere, and, as already indicated, developers regularly seem to propose more of the same in other places along the bypass.

- 2) While these communities will benefit from the bunds and tree planting that are also going in to mitigate the noise, it's inevitable that **stress and ill health** linked to noise pollution (and engine pollution) will remain an issue in these new developments. We must plan ahead, to do as much as we can to give the new residents the best possible quality of life by putting in complementary measures too.
- 3) Smoothing the traffic will do away with easily avoidable elements of the **noise disturbance** and easily avoidable elements of the **engine pollution** – which is to say the elements caused by unnecessary acceleration and deceleration.
- 4) Meanwhile, residents whose houses were built **before the bypass** are also suffering from increasing noise, and they do not have bunds or fences to dampen the noise down.

## 6) Reducing fuel consumption

- 1) Driving at slower speeds (at or near the engine's optimal design speed) and driving more smoothly instead of stop start, reduces **fuel consumption** and pollution.
- 2) The present Ukrainian crisis has concentrated minds on what we should probably anyway have been paying more attention to earlier. With pressure on gas and oil supplies and prices worldwide at a high, smoothing traffic flows also makes **fuel-security and economic sense** too.
- 3) In that the process of smoothing flows reduces fuel consumption, it also reduces the impact on the environment and helps meet the nation's targets to limit **climate change** risks.

### Background documents:

<https://www.confused.com/car-insurance/guides/speed-limit-cuts-to-reduce-emissions>

<https://gov.wales/50mph-speed-limits-reduce-pollution>

<https://cairnstechnology.com/speed-limit-air-quality/>

## 7) Driver Calming

A less stop-start traffic flow may also feed into a more relaxing journey, and fewer incidents of the kind sometimes referred to as "**road rage**".

## 8) Exit from Shopwyke Lakes onto A27

- 1) The new exit from the Shopwyke Lakes development is proving to be a problem. This exit serves not only the new residents but also the residents of Oving Parish as their main access to Chichester. It is proving to be a tricky junction to manoeuvre through, particularly for vehicles that need to cross lanes in a very short distance when they have to get into the right-hand lane to access not only Chichester city centre itself but also the out-of-town shopping area, via the Portfield roundabout junction.

- 2) Local Councillors have been made aware of the concerns of residents using this exit. Reducing the speed here would reduce the safety risks involved when currently drivers joining the A27 at the feeder road are often forced by other traffic to make their manoeuvre at high speed.

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## APPENDIX

Sources illustrating/substantiating comments in the text:

### a) Smart Technology

- 1) In some cities, traffic lights are set to create a “green wave” which leads to more efficient use of road space. Not only does the traffic in the green wave move more smoothly, with all the benefits listed above, but also the traffic lights create ‘platoons’ (i.e. more bunched up groups of cars) and hence can be set to create larger gaps between the platoons – gaps which can then be exploited more efficiently by cross-traffic flowing in another direction.
- 2) For a succinct (6 minute) introduction video of a green wave working in Holland (from a “a car guy who loves to travel”), see: T: <https://www.youtube.com/watch?v=N5miCcguFo>

### b) Even Smarter Technology – Journey Times and Pollution

- 1) The Canadian company Econolite has a business selling Intelligent Transportation Systems (ITS). These are one step more advanced than the green wave concept. Even allowing for a bit of self promotion, the company’s claimed results clearly show what is possible – without resorting to expensive physical re-working of road junctions.
- 2) A document on the company’s website titled “*Positive Environmental Impacts of Traffic Smoothing*” states (among other things):
  - “Nine traffic signals in Pittsburgh were outfitted with adaptive signal control technology that adapted to actual traffic conditions. The results were remarkable: a 40% reduction in vehicle wait time and a 26% reduction in travel time. The project found that the technology reduced vehicle emissions by about 21%.”
  - “Under the direction of the Miami-Dade County Department of Transportation and Public Works (DTPW), Econolite completed the deployment of a small-scale adaptive signal control system on a very congested segment .... The initial traffic smoothing ... demonstrated a 10% average reduction in travel time. “The County considered this mobility improvement significant enough to expand the ... system ... and upgrade 300 additional intersections along 10 additional congestion management corridors.”

### c) Health

- 1) In 2012, the National Institute for Clinical Excellence (NICE) was already calling for smoother driving style for **health reasons**, to reduce harmful air pollution linked, NICE claimed, to 25,000 deaths a year. (More at: <https://www.nice.org.uk/news/article/drive-smoothly-to-reduce-harmful-effects-of-air-pollution-says-nice>).
- 2) The above web-linked article concentrates on heavy vehicles (lorries and buses) where the benefits are greatest (the heavier the weight of the vehicle, the more the amount of inertia which is essentially thrown away during braking, and the more the amount of energy

consumed overcoming inertia getting back up to speed). However, lorries and buses do use the A27 and the principle is just the same for cars (and the average car has put on weight over recent years).

**d) Examples from the UK**

The following are examples of communities where the major road has a lower limit on the stretch running through the city than in the countryside on either side:

Guildford 50mph

Salisbury has 40mph on the A36 dual carriageway which is reduced to 30mph at the roundabouts

Bristol has dual carriageways through the city which are set at 40mph.