

Issue of traffic congestion in city of aberdeen



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Traffic congestion remains a significant problem within Aberdeen and in the wider sphere, which results in massive delays, fuel wastage and pollution.

The transport issue, which will be confronted within this essay, is congestion, and subsequently pollution, which is a by-product of high volumes of traffic.

Congestion occurs when the amount of traffic exceeds the design capacity, so when the infrastructure is no longer sufficient for the volume of traffic.

The type of congestion that Aberdeen experiences is described as *recurrent congestion*, which occurs at the same time in a particular area typically first or last thing during the working day (Grant-Muller and Laird, 2006, p. 19).

Throughout this essay both Aberdeen city and the shire will be incorporated in order to assess the issues of congestion and pollution and to suggest measures that can be taken in order to address them. It is necessary to discuss strategies on both as they are directly interlinked and strategies to improve one, subsequently improves the other. It was reported in 2017 that the annual levels of Nitrogen Dioxide across Aberdeen continue to exceed the national air quality objective (Aberdeencity. gov. uk, 2018). This supports the assertion that there is a real need to address the issue. The city experiences high volumes of freight traffic due to its coastal location and the oil industry in the North Sea. Policies and strategies such as the Aberdeen Masterplan and the Nestrans Regional Transport Strategy will be drawn upon to determine how these issues are being dealt with. I will analyse some of the efforts being undertaken or proposed to reduce congestion and consider what impact these have on pollution, this will be backed up with wider research. The foundation of the essay will be based on what has been done already and what else can be done to further improve the situation.

It is evident that the issues of high congestion rates are related to the high rate of car ownership within the City and the Shire. Aberdeenshire has the highest rate of car ownership in Scotland with around 85% of households having access to at least one car (Guild, 2014, p. 4). Cars are particularly vital for people living in rural Aberdeenshire. Schemes to try and improve park and ride sites and access to rail links are being discussed to try and reduce car use within the region (Transport Geography Debate, 2019), therefore easing congestion and pollution within the city. Furthermore, the city itself has the highest number of cars per household out of all of the principle cities in Scotland, with only 31% of households not having access to a car (Guild, 2014, p. 4). The cities infrastructure is unable to accommodate such high volumes of traffic, not only from the city and commuters but also from freight traffic.

A way in which congestion within the North East is being tackled is through the creation of the Aberdeen Western Peripheral Road (referred to as AWPR hereafter). It fully opened in February 2019 and has provided substantial benefits across Aberdeen since. The AWPR is a 58.3km bypass from North to South Aberdeen, which aims to ease congestion and emissions within the city centre (Transport. gov. scot, 2006). By diverting traffic away from the city to the AWPR there will be a reduction in city centre congestion and therefore emissions due to less stand still congestion (Zhang and Battermanb, 2014). In addition, the road cuts journeys times in half as around 50% of traffic has moved away from the city area onto the AWPR (Transport Scotland, 2019), which has opened up road space in the city for active travel. Aberdeen is particularly suitable for active travel due to it

being relatively compact and significant efforts have been made to improve cycling and walking zones.

The AWPR has assisted in moving the volume of traffic, particularly freight vehicles, around the periphery of the city. Previously the volume of freight traffic through the city accounted for a large proportion of vehicles on Aberdeen's roads. Nestrans found that freight flows typically occur first thing in the morning around 9am, which is typically the time of peak congestion within the city (Nestrans. org. uk, 2011, p. 2). The development of the peripheral road has allowed the freight vehicles to bypass the centre greatly reducing congestion and pollution within the city. In conjunction with the development of the AWPR, the Nestrans plan has developed the rail network as an alternative to extracting freight from the cities roads. The plan has increased the accessibility for freight-sized containers to be transported by rail rather than road. New freight friendly rail links have opened at Craiginches, Raiths Farm and Waterloo Quay (Nestrans. org. uk, 2013). This has been instrumental in encouraging the use of rail as an alternative for transporting goods whilst reducing congestion and pollution on the city's roads.

Park and rides have been proposed as a realistic measure to reduce the number of journeys made and in so doing have a positive impact on congestion and pollution. The scheme works to encourage people to park outside the city boundary during busy commuting times and to take the bus. Aberdeen has park and rides in both the city (Bridge of Don, Craibstone and Kingswells) and the shire (Ellon), which offer upwards of 300 spaces per location (Nestrans. org. uk, 2018). However it has been reported that the <https://assignbuster.com/issue-of-traffic-congestion-in-city-of-aberdeen/>

Craibstone Park and ride which has a capacity of 996 vehicles, was only being utilised on average by 7 cars a day (McCann, 2019). Careful consideration is needed in order to maximize the benefit of park and rides such as Craibstone. Suggested measures to encourage their use include giving buses more priority on the cities roads to reduce their journey times. If buses are stuck in nose-to-tail traffic it makes them a very unattractive means of travelling, so in order to encourage their use, they need to be given more road priority (Nestrans. org. uk, 2019). In addition, a reduction in city centre parking spaces would encourage increased use of park and rides as it would make it harder to drive to the centre and park easily. This is a measure that should therefore reduce congestion and pollution within the city limits (Nestrans. org. uk, 2012). An example of a city, which has been hailed for its forward thinking transport system, is the Brazilian city of Curitiba. A survey conducted by the Corporación Andina de Fomento (2010) stated that buses and non-motorised trips embody 70% of total trips in the city. This has led to a 25% reduction in congestion highlighting how commuters are favouring public transport over using their car, which is having a positive impact on journey times (Carrier et al., 2014).

Air pollution is a consequence of the high levels of nose-to-tail traffic that Aberdeen experiences. Free flowing traffic generates less pollution, which is why the AWPR will be beneficial in reducing current levels (AWPR | Go North East, n. d.). The AWPR will improve the air quality in the city centre due to less congestion, which will cause emissions to drop between 8 and 10% as follows; carbon monoxide (8%), Hydrocarbons (9%), Nitrogen oxide (10%) and Carbon Dioxide (9%). This reinforces how it's a causal relationship

between congestion and pollution (Committees. aberdeenshire. gov, 2014).

Another initiative, which has been introduced by the city council, is swapping to hydrogen buses. They run on zero emissions fuel and aim to reduce the emissions of the bus fleet overall by 42% by 2020 with Aberdeen having the largest fleet in Europe (Willmann, 2018). Aberdeen's innovative approach to air pollution and with the AWPR diverting traffic away from the centre, this will free up road space for more sustainable transport.

Looking to future plans, low emission zones, which restrict the most polluting vehicles, are being considered as an option to reduce emissions long term (Aberdeencity. gov. uk, n. d). Freight and buses cause 80% of the air quality issues within the city which is why it has been proposed that low emission zones are considered specifically for buses and freight vehicles to be diverted away from the centre or to operate in a more environmentally manor.

The development of the APWR has allowed opportunities for more active travel to take place in the city. Cycling schemes being introduced by the Aberdeen active travel plan who have enforced 20mph restrictions, cycle lanes and advanced stopping lines (Aberdeencity. gov. uk, 2017, p. 2-3). During 2015/16 £2 million was invested in new signage, cycle parking and safety campaigns in the city to aid active travel (Aberdeencity. gov. uk, 2017, p. 1). As the active travel plan details the city is utilising the freed road space caused by the AWPR to promote cycling (Aberdeencity. gov. uk, 2017). An increase in the number of people choosing to cycle also helps reduce the volumes of cars on the road, further reducing congestion levels. An example of where active travel is being prioritized is in Oslo, where they are aiming to

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be car free. To achieve this they have started to prioritise people over cars, turn parking spaces into bike lanes and create pedestrian only zones. Active travel is more attractive as there is less air pollution, which allows walkers and cyclists to explore freely (Wolfe, 2018). In Aberdeen, campaigns such as Bikeability Scotland and get 'back in the saddle' have been rolled out in order to help both children and adults gain confidence cycling. Two of the biggest barriers to active travel is safety and air pollution. The newly part-pedestrianised Broad Street could be a step forward towards increased use of active travel and changing transport habits. This measure could be built on further by using the Broad street model to pedestrianise Union Street. By removing the slow moving traffic on Union Street this could have a very positive impact on both congestion and pollution in the future (Aberdeencity.gov.uk, 2017).

Transport priorities need to change, which is why initiatives such as car sharing schemes have been introduced as a means of reducing congestion and emissions further within the city. The city council has set up a car share scheme where individuals are able to enter journey details and find a match of someone doing the same journey. This reduces the amount of pressure on the road infrastructure and the amount of pollution from an unnecessary amount of cars when often they only have one person in them.

(Aberdeenshire.gov.uk, 2019). Car sharing schemes, which are particularly effective in the shire, generates more space on roads, which makes active travel a lot more desirable. A scheme which London has adopted is not only having a car-sharing scheme, but to introduce electric cars into the scheme. Zipcar UK added 325 zero emissions electric cars to their fleet in an effort to

cut down on an all time high levels of congestion and pollution in the city.

This is been a great success as 20, 000 trips have been made in the EV cars encouraging a more sustainable way to travel (Zipcar. co. uk, 2018).

The more people who engage in active travel the less congested and polluted the streets will be. A new measure, which has been implemented, is cycle and pedestrian segregation zones such as on Diamond Bridge (Aberdeencity. gov. uk, 2017). The project has been hailed a success, as it has not only been busy with cars but also for people taking part in active travel (McKay, 2017). This highlights that if more areas were to provide designated areas for active travel, in the long run it would contribute greatly to reducing congestion and pollution within the city.

Traffic congestion and pollution continue to be, and are likely to always be, issues that impact Aberdeen. This essay has found through analysing various measures being taken or considered that there are a number of ways to tackle the linked challenges of congestion and pollution. It is clear that initiatives to tackle either congestion or pollution issues has a positive impact on the other. It is important to recognise the contribution that freight traffic and traffic around the shire have had in greatly adding to the congestion in Aberdeen city. The AWPR has been instrumental in tackling the issues in question and has opened up space for new schemes such as the active travel plan, hydrogen buses and park and rides. This has in turn also caused emissions to drop throughout the city. It is important to acknowledge, as has been noted throughout this essay, that future plans such as low emission zones and rolling out the Broad Street model onto Union Street would reduce both congestion and emission. Overall it is

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evident that the issue of congestion and pollution is beginning to be addressed in Aberdeen although there are still gaps that can be filled in order to further address the problem.

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