

NORTH STAFFORDSHIRE LOCAL AIR QUALITY PLAN

UNAPPROVED OUTLINE BUSINESS CASE

APPENDIX 10 - Appraisal Summary Table - Benchmark CAZ
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Appraisal Summary Table		Date Produced:	15 May 2020	Contact:		
Name of Scheme:	North Staffordshire Local Air Quality Plan			Name	Nesta Barker	
Description of Scheme:	In October 2018, Stoke-on-Trent and Newcastle-under-Lyme authorities, who both have responsibility for environmental health, were issued a Ministerial Direction to produce a local air quality plan to address their respective nitrogen dioxide (NO ₂) problems. Given their proximity to one another, they were tasked with producing a joint plan. As the highway authority for the Newcastle-under-Lyme area, Staffordshire County Council has been assisting the authorities and together, the three authorities have developed a plan to tackle NO ₂ exceedances at the roadside – known as the North Staffordshire Local Air Quality Plan (NSLAQP).			Organisation	Newcastle-under-Lyme	
	This Plan will help to protect and promote the health of the local population by improving air quality and reducing the impact of air pollution on the environment. In so doing, the local authorities are complying with the primary aim of the UK Air Quality Plan and bringing NO ₂ air pollution within statutory limits in the shortest possible time. This Appraisal Summary Table presents the appraisal results for the NSLAQP Benchmark Charging Clean Air Zone.			Role	Senior Responsible Officer	
Impacts	Summary of Key Impacts	Assessment				
		Quantitative (£000's)	Qualitative	Monetary (£000's NPV)	Distributional 7-pt Scale / Vulnerable Group	
Economy	Business Users & Transport Providers	The Benchmark CAZ D will achieve the main aim of bringing NO ₂ air pollution within statutory limit by 2023. As a result, business users will benefit from the CAZ D through decreased travel times amounting to £9.8m PV and slight disbenefit through increased vehicle operating costs amounting to -£0.8m PV. The introduction of the CAZ D user charge will disbenefit users by -£80.7m PV, giving an overall net disbenefit of -£71.7m PV. The Benchmark CAZ D would significantly impact all businesses based within the charging area, the immediate surrounding area and North Staffordshire as a whole. Those that rely on vehicles to move goods and services would be most affected as an introduction of a charge would increase businesses' costs. In order to avoid paying the CAZ charge, businesses will need to upgrade their vehicles to a compliant standard or adopt another approach such as altering their supply routes or supplier, relocating their business or exiting the market altogether. Micro and small businesses are also likely to be at greater risk from the implementation of the Benchmark CAZ D as they are less likely to have the available capital to purchase a compliant vehicle, they do not have large fleets where non-compliant vehicles could be redistributed to operating in areas outside of the CAZ boundary and they are more likely to have locally-focused operations therefore facing the charge more frequently. This is of significant importance in North Staffordshire as 92% of all businesses based within the CAZ boundary are classified as micro or small businesses. Taxi drivers are noted to be some of the poorest in the community and so any additional cost to their operation would place further strain on their businesses and families. It is anticipated that there will only be a limited impact on bus operators as the CAZ charge has been purposely set at a level where the charge can be absorbed by the bus operators to avoid any further withdrawals of operators from the North Staffordshire area.	-£71,702	Moderate Adverse	-£71,702	Moderate adverse impact to businesses.
	Reliability Impact on Business Users	Journey time reliability has not been assessed as part of the project.	N/A	N/A	N/A	
	Regeneration	Regeneration has not been assessed as part of the project.	N/A	N/A	N/A	
	Wider Impacts	Wider economic impacts have not been assessed as part of the project.	N/A	N/A	N/A	
Environmental	Noise	For the Benchmark CAZ D, no road link is predicted to experience a change in traffic volumes greater than 50% or changes in speed greater than 10 kph. With the introduction of a CAZ, vehicle upgrades may lead to older (generally louder) vehicles being replaced with newer vehicles that are subject to tighter noise limits in accordance with Regulation (EU) No 540/2014. However, these changes are small. Therefore, there are not to be any perceivable changes in noise levels.	N/A	Neutral	N/A	No vulnerable groups are adversely affected.
	Air Quality	No exceedances of air quality for NO ₂ are predicted with the Benchmark CAZ D. The Benchmark CAZ D is expected to generate £18.9m air quality benefits due to its implementation. With the introduction of the CAZ D, non-compliant vehicles are likely to be discouraged from entering the charging zone. There is a resultant reduction in the impact of air pollution across all sensitive receptors, specifically for residential education. This is as a result of both Staffordshire University and Keele University being positively impacted. The analysis suggests that the Benchmark CAZ D will not have a disproportionate impact on any vulnerable group although it can be noted that benefits might be greater for more deprived areas and areas with higher numbers of children.	Assessment : NO ₂ Change: £8,543 PM _{2.5} : £10,325	Moderate Beneficial	£18,868	Moderate beneficial outcome for all vulnerable groups.
	Greenhouse Gases	Changes in GHG emissions have been derived from Transport User Benefit Appraisal software (TUBA) and were combined with carbon values from BEIS' Green Book Supplementary Guidance. The Benchmark CAZ D encourages vehicle upgrade due to the charge imposed and so it is expected that GHG emissions will drop and result in a significant monetised benefit.	Change in non-traded carbon over 10y (CO ₂ e) -88,546 Change in traded carbon over 10y (CO ₂ e) -1,439	N/A	£8,449	
	Landscape	Landscape has not been assessed as part of this project.	N/A	N/A	N/A	
	Townscape	Townscape has not been assessed as part of this project.	N/A	N/A	N/A	
	Historic Environment	Historic environment has not been assessed as part of this project.	N/A	N/A	N/A	
	Biodiversity	Biodiversity has not been assessed as part of this project.	N/A	N/A	N/A	
	Water Environment	Water environment has not been assessed as part of this project.	N/A	N/A	N/A	
Social	Commuting and Other Users	The Benchmark CAZ D will achieve the main aim of bringing NO ₂ air pollution within statutory limits by 2023. As a result, commuting and other users will benefit from the CAZ D through decreased travel times and vehicle operating costs amounting to £23.2m PV and £25.2m PV, respectively. The introduction of the CAZ D user charge will disbenefit users by -£126.0m PV, giving an overall net disbenefit of -£77.6m PV. The population predicted to disbenefit the most from the implementation of the Benchmark CAZ D lives within the CAZ boundary or its vicinity. This population is relatively poor and so these impacts will be exacerbated. The analysis suggests that a moderate adverse impact will be felt across all quintiles and so no specific distributional effect. However, the most deprived households will experience the greatest reduction in user benefits.	-£77,581	Large Adverse	-£77,581	Large adverse impact on all vulnerable groups.
	Reliability Impact on Commuting and Other Users	Journey time reliability has not been assessed as part of this project.	N/A	N/A	N/A	
	Welfare and Upgrade Impacts	The expected trip cancellation associated with the Benchmark CAZ D will adversely affect individuals' utility function since transport users may not be able to go to their preferred destination. The consumer welfare loss is estimated to be approximately -£27.0m PV in the Benchmark CAZ D scenario. This demonstrates that there is a significant loss in welfare to the user. As a result of the Benchmark CAZ D some vehicle owners will respond to the CAZ charge by either scrapping and buying a new compliant vehicle, or by selling their non-compliant vehicle and replacing it with a second-hand compliant vehicle. The vehicle upgrade impact is estimated to be approximately -£26.4m.	-£53,446	N/A	-£53,446	
	Physical Activity	The impacts of active travel and so physical activity as a result of the Benchmark CAZ D are likely to be limited as the option does not directly incentivise modal shift towards active travel.	N/A	Neutral	N/A	
	Journey Quality	The impacts on journey quality as a result of the Benchmark CAZ D are likely to be limited as the option does not directly improve journey quality.	N/A	Neutral	N/A	
	Accidents	The Benchmark CAZ D is substantially more aggressive, and as a result 9.3% of all road links in the modelled domain are predicted to experience significant reductions in traffic flows under this option. As the CAZ boundary encompasses an area with a high proportion of low-income households and a high proportion of residents with a registered disability, these groups will benefit disproportionately from the scheme. The over 65 group will not benefit as much as other groups, whilst no distributional effects were seen for the under 16 group.	N/A	Moderate Beneficial	N/A	Moderate beneficial impact on low-income households and the disabled. The elderly and under 16 are expected to be impacted to a lesser degree.
	Security	The Benchmark CAZ D does not include any measures that will directly affect security when using public transport.	N/A	Neutral	N/A	No vulnerable groups are adversely affected.
	Access to Services	The Benchmark CAZ D might reduce accessibility for all vulnerable groups travelling into or around the CAZ boundary as the charge may impose affordability restrictions to the traveller. The CAZ charge is likely to impact private vehicle users more. This may include people with limited mobility, children or the elderly, who might prefer the comfort of a private vehicle but with accessibility restrictions may be forced to use alternative modes of transport or to change their route or destination. The charge applied to buses has deliberately been set at a nominal price so not as to discourage bus operators from servicing the CAZ area. This should therefore have a minimal impact on vulnerable groups relying on bus services.	N/A	Slight Adverse	N/A	Slight adverse impact to all vulnerable groups.
	Affordability	The disbenefits to users as a result of the Benchmark CAZ D, suggests it would have a greater disproportionate adverse effect on more deprived households. It was found that poorer households make significantly more trips into the CAZ boundary and are more likely to own non-compliant cars. This therefore suggests that a higher proportion of costs will fall greatest on areas with greater levels of deprivation, greater numbers of elderly residents and those with disabilities. It is again important to note that the same cost placed on the most deprived quintile will represent a greater proportion of their disposable income and would therefore have an even greater impact.	N/A	Large Adverse	N/A	Large adverse impact to all vulnerable groups.
	Severance	The Benchmark CAZ D leads to moderate changes in traffic flows across a wide area in the model domain, particularly around the City Centre. In particular, the reduction in AADT flows around portions of Potteries Way, which partly encircles the City Centre, will improve accessibility to the wide range of amenities located there and affects all groups. Smaller improvements in severance are also noticed along a number of routes around the model domain. However, displacement of traffic around the CAZ boundary leads to some areas of adverse impact. Of particular relevance are impacts on North Road, which will impact access to North Road Academy and Honey Bears Day Nursery, which are relevant to vulnerable parents with pushchairs and children.	N/A	Slight Beneficial	N/A	Slight beneficial outcome for the majority of vulnerable groups, with children experiencing a slight adverse impact.
Option and Non-Use Values	Option and non-use values has not been assessed as part of this project.	N/A	N/A	N/A		
Public Account	Cost to Broad Transport Budget	The Benchmark CAZ will require an investment in the transport network of £198.6m. Revenues are treated as part of wider public finances for appraisal purposes. When the potential revenues from the introduction of the CAZ D charge of £203.2m PV are offset against costs, the overall PV of net costs is -£4.6m.	Implementation costs of £198,561 offset by public sector revenue of £203,191	N/A	£198,561 costs, offset by £203,191 revenue	
	Indirect Tax Revenues	As a result of significant changes to vehicle routing and the subsequent impact on travel times and fuel consumption, there will be an indirect taxation cost to the government of £23.4m PV.	-£23,399	N/A	-£23,399	