



Full Business Case for Achieving EU Nitrogen Dioxide Compliance in Southampton in the Shortest Possible Time

This Full Business Case is submitted in confidence and further to the Ministerial Direction issued to Southampton City Council dated 17th December 2018 and is subject to and has been considered by the Councils Cabinet on 22nd January 2019. This Full Business Case has been prepared in accordance with the HM Treasury Green Book methodology for submission to the Secretary of State by 31st January as required by the Ministerial Direction dated 17th December 2018.

Table of Contents

Full Business Case for Achieving EU Nitrogen Dioxide Compliance in Southampton in the Shortest Possible Time	1
1. Strategic case	6
1.1. Introduction.....	7
1.2. Public Health and Air Quality.....	11
1.3. Strategic Fit	14
1.4. Current Air Quality Measures Implemented or Planned.....	16
1.4.1. Cycling Early Measures.....	21
1.4.2. Clean Bus Technology Fund – Retrofitting City Buses	27
1.4.3. Low Emission Taxi Incentive Scheme.....	28
1.5. Local Model Do Minimum Baseline	29
1.6. Source Apportionment.....	34
1.7. Local Air Quality Management	37
1.8. Consultation and Engagement	38
1.9. Spending Objectives	39
1.10. Preferred Option	40
1.11. Key Constraints, Risks and Benefits	44
2. Economic case.....	46
2.1. Preferred Option	47
2.2. Options Sifting	49
2.3. Shortlist.....	51
2.4. Options Appraisal	53
2.4.1. Air Quality	53
2.4.2. Air Quality - Uncertainty and Sensitivity	60
2.4.3. Analytical Assurance	63
2.5. Cost Benefit Analysis	64
2.5.1. Cost Benefit Analysis – Uncertainty and Sensitivity.....	66
2.6. Distributional Analysis	67
2.7. Clean Air Fund.....	69

2.6.	Justification of Preferred Option	71
3.	Commercial Case.....	81
3.1.	Summary of Service requirements and Outputs	82
3.2.	Southampton City Council's Capability to Deliver	85
3.2.1.	Highways Services Partnership – Balfour Beatty Living Places	85
3.2.2.	SCC Procurement	85
3.3.	Licensing Condition Commercial Case	87
3.4.	Bus Lane Restrictions Commercial Case.....	88
3.5.	Low Emission Taxi Incentive Scheme Expansion Commercial Case	91
3.6.	EV Charging Infrastructure Commercial Case	94
3.7.	ULEV Taxi Trial Commercial Case.....	98
3.8.	Bus Traffic Regulation Condition Commercial Case	100
3.9.	Freight Measures Commercial Case.....	102
3.9.1.	Freight Consolidation Commercial Case.....	104
3.9.2.	Delivery Service Planning Commercial Case.....	113
3.9.3.	Fleet Accreditation Scheme Commercial Case.....	116
3.10.	Communications Commercial Case	121
3.11.	A3024 MyJourney Support Commercial Case	122
3.12.	Monitoring and Evaluation Commercial Case	127
4.	Financial Case.....	131
4.1.	Background	132
4.2.	Southampton City Council - Statement of Financial Position.....	132
4.3.	Background	133
4.4.	Costs	133
4.4.1.	Licensing Condition Financial Case	134
4.4.2.	Bus Lane Restriction Financial Case	134
4.4.3.	Low Emission Scheme	135
4.4.4.	EV Charge Points.....	136
4.4.5.	ULEV Taxi Trial	136
4.4.6.	Bus Traffic Regulation Condition.....	137

4.4.7. Freight Measures (Freight Consolidation, Delivery and Service Planning and Fleet Accreditation Scheme).....	137
4.4.8. A3024 MyJourney Support.....	141
4.4.9. Communications.....	142
4.4.10. Monitoring and Evaluation.....	143
4.5. Resource	143
4.6. Funding and Cost Assumptions	145
4.7. Assurance of Cost Estimate	145
4.8. Managing Costs and Risks.....	145
4.9. Other Funding Sources	145
4.10. Summary	145
5. Management Case	150
5.1. Legal Statement with respect to Inquiry	151
5.2. Approvals.....	151
5.3. Southampton City Council and New Forest District Council Joint Work.....	152
5.4. Timeline for Preferred Option Implementation	152
5.5. Project Management	152
5.6. Work Stream Management	153
5.6.1. Licensing Conditions	153
5.6.2. Bus Lane Restrictions	154
5.6.3. ULEV Taxi Trial	154
5.6.4. Low Emission Taxi Incentive Scheme.....	155
5.6.5. EV Charging Infrastructure.....	157
5.6.6. Traffic Regulation Condition for Public Service Vehicles	158
5.6.7. Freight Measures.....	160
5.6.8. MyJourney	163
5.6.9. Communications.....	163
5.7. Additional Resource Requirement	164
5.10. Governance Structure	167
5.11. Managing Risk.....	169

5.12. Project Stakeholder Management	169
5.13. Monitoring and Evaluation	169
5.13.1. Benefits Realisation	178
Appendices	182
Appendix A: PCM v Do Minimum Baseline Results (NO ₂ µg/m ³)	183
Appendix B: Air Quality Options Results (NO ₂ µg/m ³)	186
Appendix C: CAZ B Assessment	188

1. Strategic case

1.1. Introduction

The European Union has commenced infraction proceedings against the UK Government and Devolved Administrations for their failure to meet the EU Ambient Air Quality Directive (EU AAQD) Limit Value for NO₂ (EU directive 2008/50/EC).

In 2015, the Supreme Court ordered the Government to consult on new air pollution plans that had to be submitted to the European Commission no later than 31 December 2015. Defra published plans¹ to improve air quality, specifically tackling NO₂, in December 2015. The Plan identified 5 cities outside London, including Southampton, where the EU AAQD limit value for NO₂ was not expected to be met by 2020. The Plan stated that each of the cities identified will be legally required, if appropriate, to introduce a formal Clean Air Zone (CAZ) for specified classes of vehicles and European Vehicle Emission Standards (Euro Standards) by 2020 or sooner.

A subsequent iteration of the Government's air quality plans² to tackle NO₂ were published in 2017 and required a further 23 authorities to devise plans for improve air quality, including New Forest District Council (NFDC), where the NO₂ exceedance is an extension of that identified in Southampton. Ministerial Directions were placed on each of these local authorities, including the first five authorities identified in the 2015 Plan. The direction requires named local authorities to submit to the Secretary of State a full business case in connection to the council's duties in respect of air quality under Part 4 of the Environment Act 1995 and as part of the UK Plan for tackling roadside nitrogen dioxide concentrations 2017.

The area identified from the Pollution Climate Mapping Model (PCM)³ (i.e. the governments national scale model for assessing roadside NO₂ concentrations) that exceeded the EU AAQD beyond 2020 was the A33, a road commonly referred to as the Western Approach (see figure 1).

The local modelling shows NO₂ compliance will be achieved at all locations in Southampton in 2020. The highest baseline concentration of NO₂ on the A3024 Northam Bridge is 38 µg/m³. There is approximately an average reduction of 2.5µg/m³ at each location in the city between 2019 and 2020.

In 2019, the highest concentration of NO₂ is 40 µg/m³ at census ID 46963 which is the A3024, Northam Bridge. This is compliant according to the EU Directive where values are reported to the nearest integer, however we must be mindful of the fact that this is at the limit value (i.e. the maximum level that could be deemed compliant), and is not directly modelled (it is an interpolated value between 2015 and 2020, increasing uncertainty in this value). Therefore measures are being proposed that can achieve reductions in NO_x emissions, and can be delivered in 2019, to increase the likelihood of compliance for both 2019 and 2020.

The non-charging NO₂ concentration values indicate there is minor air quality benefit of introducing the measures, however while NO₂ concentrations at EU relevant

¹ <https://www.gov.uk/government/publications/air-quality-in-the-uk-plan-to-reduce-nitrogen-dioxide-emissions>

² <https://www.gov.uk/government/publications/air-quality-plan-for-nitrogen-dioxide-no2-in-uk-2017>

³ <https://uk-air.defra.gov.uk/research/air-quality-modelling?view=modelling>

locations may not be significantly affected, there are direct emissions reductions as a result of the measures which will convey improvements in air quality once implemented in 2019, and provide additional confidence in achieving compliance whilst reducing exposure, which provides additional health benefits compared to the do minimum option for 2019 and 2020. These measures also increase certainty that assumptions made in the modelling are met. Air quality benefits of non-charging Clean Air Zone will also continue beyond 2020 with additional emission reductions providing assurances that compliance is maintained in years beyond 2020.

Feasibility assessment shows the citywide class B clean air zone can't be implemented before the end of 2019/start of 2020 and will therefore not have a discernible impact on air quality in 2019. Compliance is likely in 2020 and so will not be achieved sooner and therefore is not considered as a shortlist option. More details on the CAZ B assessment are included in appendix C of this document.

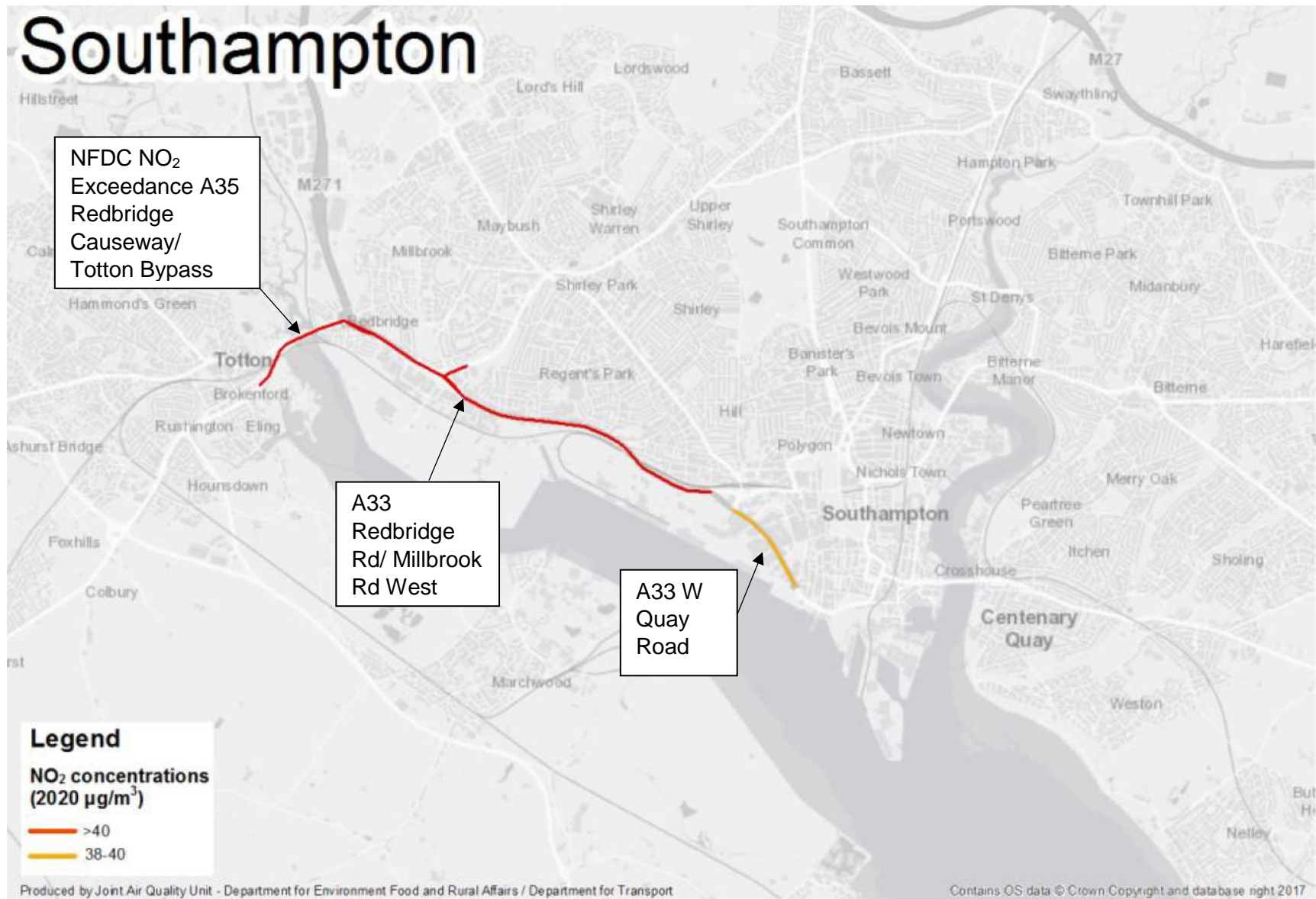


Figure 1 UK NO₂ Plan PCM exceedances (2017)

Full Business Case

Table 1 Preferred Option - Non-Charging CAZ

Measure	Description
Bus Traffic Regulation Condition	Implemented to support the bus retrofit programme providing a mechanism to ensure full uptake of the scheme by 2020. This will also ensure that the modern standard of the fleet is maintained beyond 2020 and prevent non-Euro VI or retrofit vehicles are able to operate on a license in the city.
Delivery service plans, freight consolidation and fleet accreditation scheme	The hospital has been included in the modelling. Provision of delivery service plans beyond that included in the modelled will facilitate the freight consolidation centre uptake.
Taxi Licensing Condition Change	Change of licensing conditions to require <u>newly licensed</u> vehicles to meet Euro 6 diesel/4 petrol by 2020 and <u>all SCC licensed vehicles</u> to meet Euro 6 diesel/4 petrol by 2023.
Expanded Low Emission Taxi Incentive	Financial incentive for taxi and private hire vehicles to replace older more polluting vehicles and upgrade to low emission alternatives. An expansion of the existing low emission scheme.
Non-SCC Taxi Bus Lane Restriction	Restrict access to bus lanes for non-SCC licensed taxis to incentivise vehicles remaining licensed in Southampton.
ULEV Taxi Trial	Encourage the uptake of ULEVs and will facilitate uptake of the low emission incentive scheme and EVs, by demonstrating the feasibility of EVs as taxis.
2 EV Rapid Charge Points	Install 2 rapid EV charge points dedicated for taxi use.
A3024 MyJourney Additional Support	Behaviour Change to encourage use of sustainable/active travel and discourage private vehicle use.

1.2. Public Health and Air Quality

Air pollution is a national public health priority. Of all environmental factors, it has the largest impact on health in the UK. It can be attributed to over 40,000 deaths nationally and has health effects across the life course; from the underdevelopment of the unborn baby through to dementia in the later years of life. The strongest evidence of health impact is worsening symptoms of respiratory diseases and cardio-vascular disease. Furthermore, the health impact is greatest for those at higher risk; people living in areas of highest deprivation are more likely to suffer these health problems than people living in more affluent areas.

Currently, nitrogen dioxide and particulates are the pollutants causing the largest health impacts in the UK. These pollutants are mostly associated with road transport. The public health outcome framework indicator for air pollution is mortality attributable to particulate matter. For Southampton, this equates to over 100 deaths per year caused by long term exposure to particulate air pollution.

It is particularly important that we reduce air pollution in Southampton as quickly as possible because:

- A large proportion of our City's residents are children and young people (60,000 children and young people, 3000 births per year). Babies and children are most vulnerable, for longer, to the health impact of pollution⁴
- Southampton has a higher than average rate of preventable respiratory and cardiovascular early deaths, high rate of chronic obstructive pulmonary disease and comparable asthma prevalence to the England average⁵
- Deprivation is increasing, and Southampton has some of the most deprived areas in England
- The area of NO₂ exceedance is alongside one of the most deprived areas of Southampton with a high density of resident children in the City

The figure below shows asthma prevalence (red highest, blue lowest) and air quality management areas (yellow lines) in Southampton. The area of NO₂ exceedance is the yellow line on the left of the map, alongside the area of highest asthma prevalence in the City.

⁴Royal College of Physicians Policy report. Every breath we take: the lifelong impact of air pollution. 2016: <https://www.rcplondon.ac.uk/projects/outputs/every-breath-we-take-lifelong-impact-air-pollution>

⁵ Public Health Outcome Framework: <https://fingertips.phe.org.uk/profile/public-health-outcomes-framework>

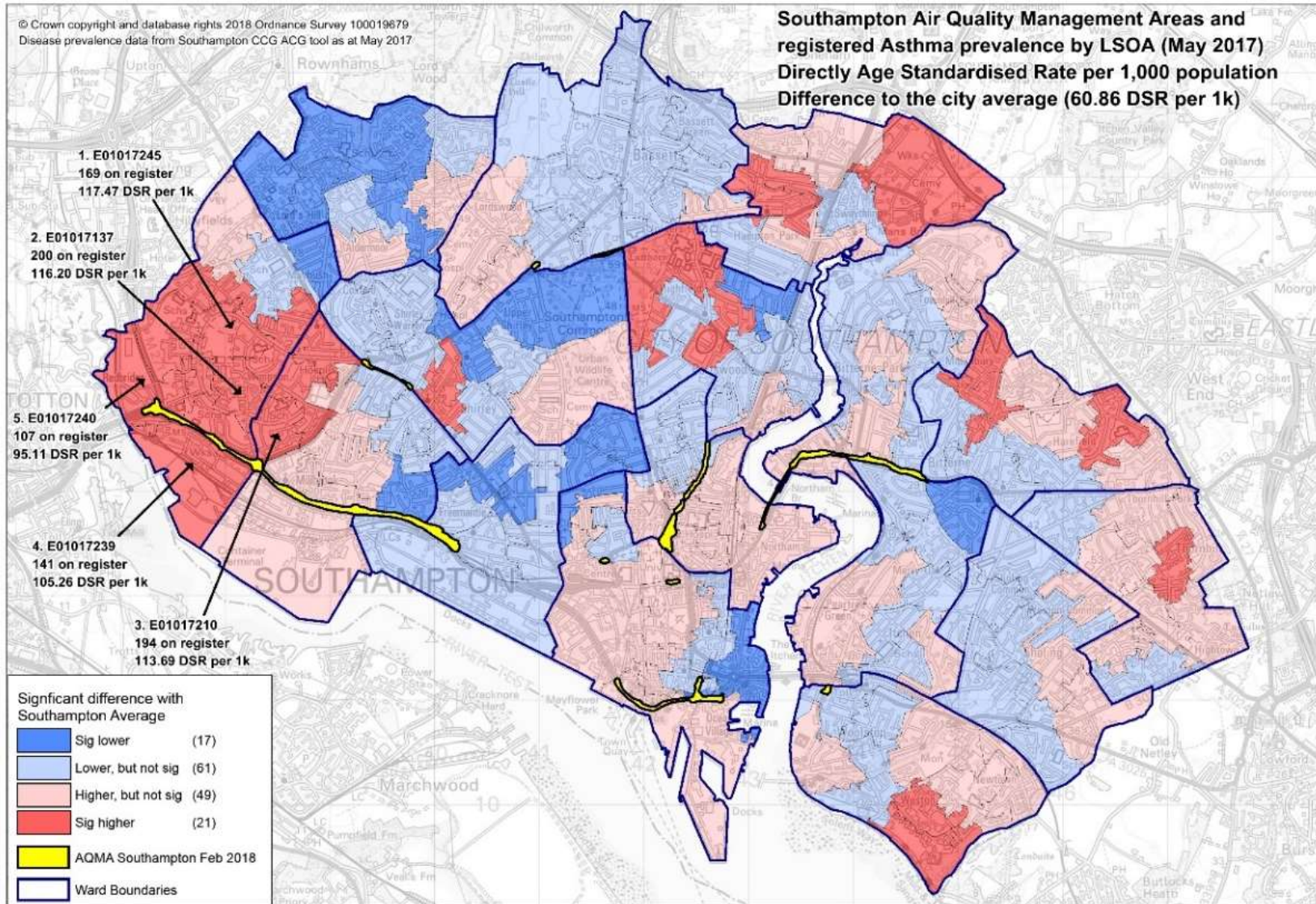


Figure 2 Southampton AQMAs and registered Asthma prevalence by Lower Super Output Areas (LSOA's) (May 2017)

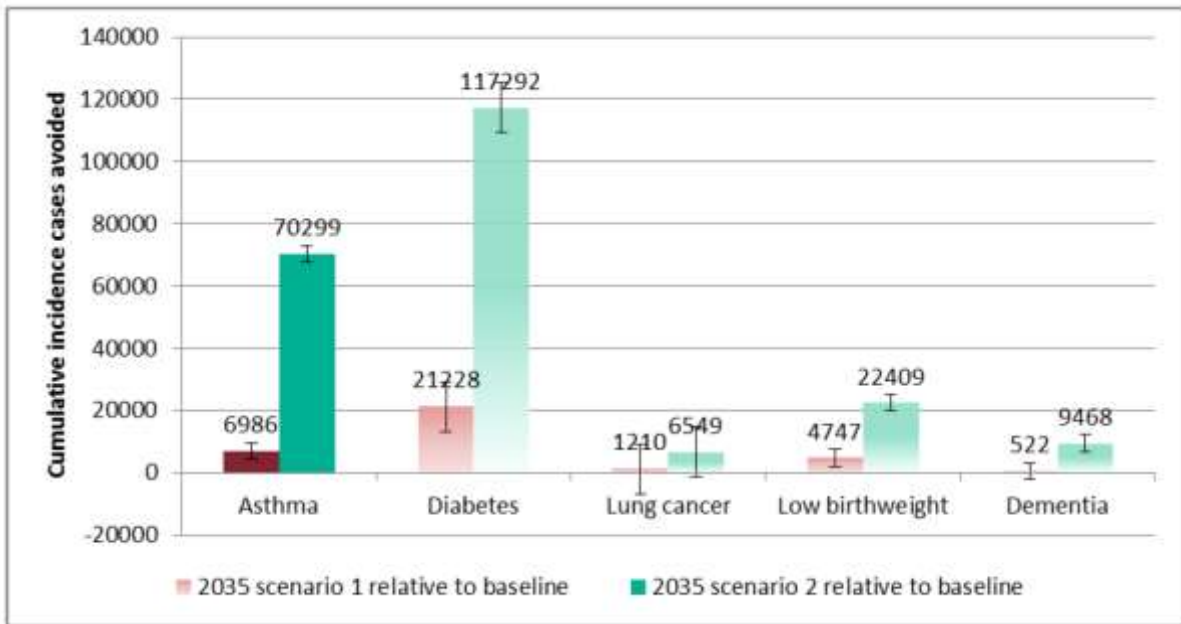


Figure 3 Health impact of 1µg/m³ reduction in NO₂ and meeting EU limit values by 2035 for England

Evidence suggests an association between NO₂ and new cases of asthma in children and evidence is accumulating for an association between NO₂ and new cases of asthma in adulthood, diabetes, lung cancer, low birth weight and dementia⁶. The UK Health Forum has modelled the cost and health impact of air pollution, forecasting that if air pollution levels remain constant the total cumulative costs to the NHS and social care is forecast to be up to £5.4 billion by 2035. In England, current levels of NO₂ are predicted to be attributable to 1.1 million new cases of disease by 2035 (an additional 1.3 million cases are attributed to PM_{2.5})⁶. Figure 2 shows the health impact of 1µg/m³ reduction in NO₂ and meeting EU limit values by 2035 for England⁶. This is a national figure and it does not represent Southampton specifically.

⁶ UK Health Forum presentation, Public Health England Conference 2018: <https://www.phe-events.org.uk/hpa/frontend/reg/absViewDocumentFE.csp?documentID=14856>

1.3. Strategic Fit

Southampton City Council Strategy 2016-2020

The local plan for NO₂ compliance will support the council's strategy by contributing to the four priority outcomes:

Outcome	Why is this important?
 Southampton is a city with strong and sustainable economic growth	We want to build on Southampton's unique sea city location and excellent transport links and continue to grow the local economy, bringing investment into the city and increasing employment opportunities for local people.
 Children and young people in Southampton get a good start in life	We want Southampton to be a city where parents, families, communities and services work together to make sure children and young people get a good start in life. Ensuring that children and young people get a good start in life is crucial to enabling them to go on to fulfil their potential and become successful adults who are engaged in their communities.
 People in Southampton live safe, healthy, independent lives	We want Southampton to be a city that is recognised for its approach to preventing problems and intervening early. We want our residents to have the information and support they need to live safe, active, healthy lives and to be able to live independently for longer.
 Southampton is a modern, attractive city where people are proud to live and work	We want to build on Southampton's vibrant and diverse cultural offer to make our city a great place for businesses, visitors and residents. This means making sure that Southampton is green, attractive and easy to get about for our residents, visitors and investors.

Figure 4 Southampton City Council Strategy 2016-2020 Outcomes

A level 2 Clean Air Strategy was adopted that supports the level 1 Health and Wellbeing Strategy, Local Transport Plan and Local Development Plan. This sits alongside the Cycling Strategy and is supported by the Clean Air Zone Plan (local plan for EU AAQD compliance) and the Air Quality Action Plan (local air quality management). The Clean Air Zone Plan will focus on delivering compliance of the EU AAQD Directive within the shortest possible time, ultimately contributing to the four priority outcomes.

The current [local transport plan \(LTP3\)](#) sets out six local goals which are:

- Local Goal 1 (LG1): Increase bus patronage
- Local Goal 2 (LG2): Improve the bus as urban mode of choice
- Local Goal 3 (LG3): Improve the people movement capacity of network
- Local Goal 4 (LG4): Improve awareness of travel options
- Local Goal 5 (LG5): Encourage active travel as urban mode of choice
- Local Goal 6 (LG6): Encourage fewer vehicle trips to city center

The figure on the following page shows how the Clean Air Zone plan will support higher level strategies.

Note: SCC have recently consulted on an updated LTP, information found [here](#).



Figure 5 How the Clean Air Zone Plan (local plan for EU AAQD compliance) and the Clean Air Strategy support the council's strategy.

1.4. Current Air Quality Measures Implemented or Planned

Southampton and New Forest have taken forward and implemented a number of measures to improve air quality. These are detailed below.

Table 2 Air quality measures currently implemented or completed in Southampton

Type	Action	Description	Status	Completion Date	Expansion/change of current measure as part of plan
Taxis and Private Hire	Low Emission Taxi Incentive Scheme	Offering an incentive to cover vehicle licensing and other related costs for three years to encourage greater uptake of hybrid, plug-in hybrid and electric vehicles.	Active – Implemented	2020/21	Expansion proposed as part of this plan.
Taxis and Private Hire	Extension of age limit for hybrid, plug-in hybrid and electric vehicles	Extension of the age limit for low/zero emission vehicles makes them a more attractive vehicle to operate in the long term.	Active – Implemented	2018	
Private Hire	Permit electric vehicles capable of carrying three to eight passengers a private hire licence.	The current policy only permits vehicles that can carry four-eight passengers in comfort. Many electric vehicles do not have this capacity. By licensing vehicles that can carry three to eight passengers in comfort, the opportunity for uptake of electric vehicles is increased.	Active	2018	

Buses	Clean Bus Technology Fund	Retrofitting 145 pre-Euro VI buses with emissions reducing technology	Active – Funding secured and being implemented	2019/20	Traffic Regulation Condition proposed to maintain benefits of CBTF and fleet renewals by Southampton bus operators
HGVs	Sustainable Distribution Centre	SCC providing a procurement framework for public sector use of the Sustainable Distribution Centre. To encourage consolidation of goods coming into Southampton achieving efficiencies and cost savings. Reduction in emissions associated with fewer vehicle movements.	Active	2019	Continuation proposed as part of plan.
HGVs	Delivery and Service Planning	Offering delivery and service plans advising on best practice to reduce emissions and fuel consumption.	Complete – scope for further work	Complete	Continuation proposed as part of plan.
LGVs	Delivery and Service Planning	Offering delivery and service plans advising on best practice to reduce emissions and fuel consumption.	Complete – scope for further work	Complete	Continuation proposed as part of plan.
Private Vehicles	City centre parking season ticket concession	Electric Vehicles are eligible for a 90% discount on an annual city centre parking season ticket. Offers an incentive for drivers to choose electric vehicles.	Active – Being implemented	2018	

Private Vehicles	Itchen Bridge toll exemption	Free passage over the Itchen Bridge for EV drivers. Offers an incentive for drivers to choose electric vehicles.	Active – Being implemented	2018	
Council Fleet Emissions	SCC Fleet EV Replacement	Procurement of low emission vehicles in council and partner fleets. This will reduce emissions from council vehicles.	Active	Ongoing	
Active Travel	SCN1 Cycling Infrastructure	Early Measure funding 2017 awarded to provide enhanced cycle routes along the A33 Western Approach and to install virtual messaging signs (VMS) and a green wall.	Active – Being implemented	2020	
Active Travel	SCN5, 8 and 10 Cycling Infrastructure	Early Measure funding 2018 awarded to provide new and enhanced cycle routes along the north-south and east-west routes into Southampton.	Active	2020	
Engagement	Access Fund/ My Journey	Sustainable travel communication campaign promoting active travel and low emission technology. The brand associated with the 2017-2020 Access Fund to increase sustainable travel in the South Hampshire area.	Active	2020	Proposing additional work on the A3024 Northam Bridge/ Bitterne area as part of plan.
Engagement	Schools	Access Funding for officers to engage with schools to educate and communicate air quality issues and solutions.	Active	2020	

Engagement	Travel Planning	Access Funding for officers to engage with local businesses to educate and communicate air quality issues and solutions.	Active	2020	
Engagement	Clean Air Network	A network to facilitate and enhance discussion of good air quality practice among local stakeholders.	Active	n/a	
Engagement	airAlert	Alerts for registered users when air quality is predicted to be poor.	Active	Ongoing	
Engagement	Anti-Idling Campaign	Campaign to reduce unnecessary engine idling at key locations around the city. Includes social media a billboard presence.	Active	2018	
Planning Policy	Air Quality Supplementary Planning Document	Setting the minimum standard for good air quality practice in new development.	In progress	2019/20	
Southampton City Council Plans and Strategies					
Council Strategy	Local Transport Plan	Local Transport Plan 3 (LTP3) strategy published in 2011, implementation plan published in 2015. Consultation on LTP4 undertaken in 2018.	LTP4 Consultation	LTP4 Approval to adopt to be sought in Spring 2019	
Council Strategy	Clean Air Strategy	A long term (2016-2025) strategy which outlines the Council's strategy for improving air quality.	Active	2025	

Council Strategy	Cycling Strategy	A 10 year strategy for improving cycling infrastructure and encouraging uptake of cycling as a mode of travel.	Active	2025	
Council Strategy	Health and Wellbeing Strategy	2017-2025 Council strategy for improving local health and wellbeing, including “deliver a cleaner environment through a clean air zone with vehicle access restrictions to the city.”	Active	2025	

1.4.1. Cycling Early Measures

Southampton City Council have received funding to implement cycling schemes throughout the city from JAQU's Clean Air Zone Implementation Fund as early measures. This funding will support Southampton in delivering measures that will contribute to reaching legal nitrogen dioxide compliance in the shortest possible time and is included in the baseline. Table 5 describes the cycling schemes that will be implemented. Funding for SCN1 was received in 2017 and funding for SCN5, 8 & 10 was received in 2018. All infrastructure and supporting communications/engagement programmes are scheduled to be implemented prior to 2020.

Table 3 Description of schemes implemented as early measures in Southampton

<p>SCN1 (A33 Western Approach)</p>	<p>Healthy & Active Travel</p> <p>This element consist of the delivery of high quality segregated cycle infrastructure and wayfinding along the A33 to complement and upgrade the existing facilities as part of SCN1. This will complete the SCN1 cycle route from Totton and the New Forest National Park into Southampton City Centre passing the Port of Southampton to encourage more commuting, education and leisure trips to be made by bike.</p> <p>It is broken down into the following components:</p> <ul style="list-style-type: none"> • <u>Second Avenue (Phase 2)</u> – complements recent SCC investment in Second Avenue Phase 1 – construction of a 3m wide shared use cycle path alongside service road adjacent to A33 from First Avenue to Millbrook Roundabout. This will provide cyclists with a dedicated segregated facility instead of the existing on-road route. • <u>Third Avenue</u> – construction of a 3m wide shared use cycle path from Millbrook Roundabout to Regents Park Road, including a physical barrier in form of shared space severing Third Avenue at Millbrook Recreation Ground. This makes Third Avenue a no-through route for all traffic but retains access to the industrial and commercial units, it also creates a more safe and attractive route for cycling by discouraging HGVs from parking here. • <u>Millbrook Road East</u> – junction improvements, traffic calming and cycle facilities to reduce speeds and discourage rat running creating a cycle friendly environment. • <u>First Avenue to Dock Gate 20</u> – a shared use cycle facility from existing cycle facilities at Millbrook Roundabout to Port's main entrance at Dock Gate 20 – this will link with ABP's project to improve cycle facilities within the Port. <p>Legible Cycling – installation of bespoke wayfinding signs, maps and totems to help guide cyclists along the corridor and connecting with other routes in Southampton and beyond</p> <p>Real Time Information & Data Sharing</p> <p>New methods of collecting and disseminating data on travel and journey conditions through Co-operative ITS, to provide real time data on conditions and dynamically manage traffic. This will enable SCC to manage traffic conditions and unplanned events</p>
---	---

	<p>along the A33 effectively to reduce delays and resulting air pollution.</p> <ul style="list-style-type: none"> • <u>Cycle counters</u> - Install 2 new automatic cycle counters along corridor for monitoring • <u>Bluetooth monitoring</u> - Use of Bluetooth technology to monitor journey times to help manage traffic on A33 better inform road users of predicted journey times and conditions and manage traffic signal operations in response to traffic or air quality conditions as part of wider Connected ITS Corridor • <u>2x Enhanced Variable Message</u> - Signs to display colour highway symbols and maps to a standard specification to display information about major events, cruise information or alternative modes or routes. Signs at Redbridge Roundabout and Regents Park Road. <p>Awareness Raising Through existing Southampton Workplace Travel Plan Network work with businesses in Millbrook Trading Estate, including ABP/DP World and SCC, to encourage the provision of attractive and secure facilities such as cycle racks, maintenance facilities, and storage. Investigate feasibility of a local Active Travel Hub/Bike Kitchen in partnership with businesses and community groups. Using the existing TPN to share best-practice. This will raise awareness of sustainable alternatives to single occupancy travel to work and be a route for engagement with local businesses about the CAZ.</p> <p>Green Infrastructure Planting of a Green Wall along sections of the route adjacent the existing cycle route and Freightliner Terminal. It is envisaged this will create a visual amenity and make the route a more attractive one, shelter the route from exposed port operations and prevailing sea winds and assist in reducing existing pollution levels.</p>
<p>SCN5 (Northern)</p>	<p>Delivering a high quality segregated Cycle Freeway and wayfinding along The Avenue to complement and upgrade the existing facilities as part of SCN5. This will complete the corridor from Chandlers Ford and Eastleigh into Southampton City Centre passing the University of Southampton and Southampton Common to encourage more commuting, education and leisure trips to be made by bike. Passes through the Burgess Road AQMA.</p> <p>It is broken down into the following components:</p> <ul style="list-style-type: none"> • <u>The Avenue (South)</u> – complements recent SCC investment on cycle facilities along The Avenue with construction of two ‘with flow’ segregated cycle lanes on The Avenue between London Road and Lodge Road potentially reallocating road space. This will provide cyclists with a dedicated segregated facility instead of the current busy shared use path.

	<ul style="list-style-type: none"> • <u>The Avenue (Common)</u> – continuation of segregated ‘with flow’ cycle lanes through Southampton Common complementing road safety project to reduce the 40mph speed limit to 30mph. This will narrow the carriageway on The Avenue changing how traffic perceives the road creating a safer and attractive route for cycling along busy stretch of road. ‘Floating bus stops’ will be implemented at 7 locations. • <u>Bassett Avenue</u> – junction improvements on existing shared use facilities to provide safer priority over side roads for cyclists, works to A35 Winchester Road roundabout to provide safer crossing and circulation points. Complements £1m worth of highway resurfacing and drainage along Bassett Avenue. <p>Legible Cycling – installation of bespoke wayfinding signs, maps and totems to help guide cyclists along the corridor and connecting with other routes in Southampton and beyond.</p>
<p>SCN 8 & 10 (Eastern)</p>	<p>Delivery of complementary high quality cycle routes and Quietways to the Highways England M27 Southampton Junctions project and links to the SCC NPIF project to deliver cycle freeway on SCN10 Bursledon Road. This will complete and supplement a main corridor in the east of Southampton from the city centre towards Hedge End and Botley along the A3024 corridor. Provide local connections to Bitterne Village District Centre for local services, into Sholing which is an area with pockets of deprivation, and to the schools and college along the length of the corridor. Passes adjacent to the Bitterne Road West AQMA. It consists of the following components:</p> <ul style="list-style-type: none"> • <u>SCN8 Quayside Road-Bitterne Village</u> – provide a Cityway standard alternative route to A3024 Bitterne Road west avoiding the Bitterne Road West AQMA. This could include junction treatment, cycle facilities, improved crossing facilities, cycle bypass lights at traffic signals and wayfinding. • <u>Sholing Quietways</u> – developing a series of Quietway routes from Valentine Primary School via Chessel Health Centre, Early Years provision, a local parade of shops to A3024 Bursledon Road (SCN10) with features such as road closures, upgrading cut-through, speed reduction. Link with local Community Cycle Group Engagement Programme through Monty’s Cycle Hub in Sholing and EU Metamorphosis project to embed cycling from an early age. Enabling all cyclists the ability to access the cycle network and local services. <p>Legible Cycling – installation of bespoke wayfinding signs, maps and totems to help guide cyclists along the corridor and connecting with other routes in Southampton and beyond.</p>
<p>Contribution to New</p>	<p>Hampshire County Council is seeking funding from the Highways England Air Quality designated funds to undertake feasibility and</p>

Forest Waterside Route	<p>design work for a cycle route in the east of the district. This contribution will provide the capacity for the New Forest to ensure that the route is linked with the SCN1 cycle route in Southampton and will contribute towards enhancements. The contribution will be focussed at this area as it is the area where the PCM identifies an exceedance of the EU Air Quality Directive, and is the focus of NFDC's plan for compliance.</p>
Promotion, Engagement & Awareness Raising	<p>Through the existing My Journey and National Clean Air Day programmes of promotion, engagement and awareness raising work with businesses and schools, including University of Southampton, Itchen College and SCC, to encourage the provision of attractive and secure facilities such as cycle racks, maintenance facilities, and storage. Investigate feasibility of a local Active Travel Hub/Bike Kitchen in partnership with businesses and community groups in Sholing and/or Bitterne. This will raise awareness of the new facilities constructed sustainable alternatives to single occupancy travel to work and be a route for engagement with local businesses and schools about the CAZ.</p>

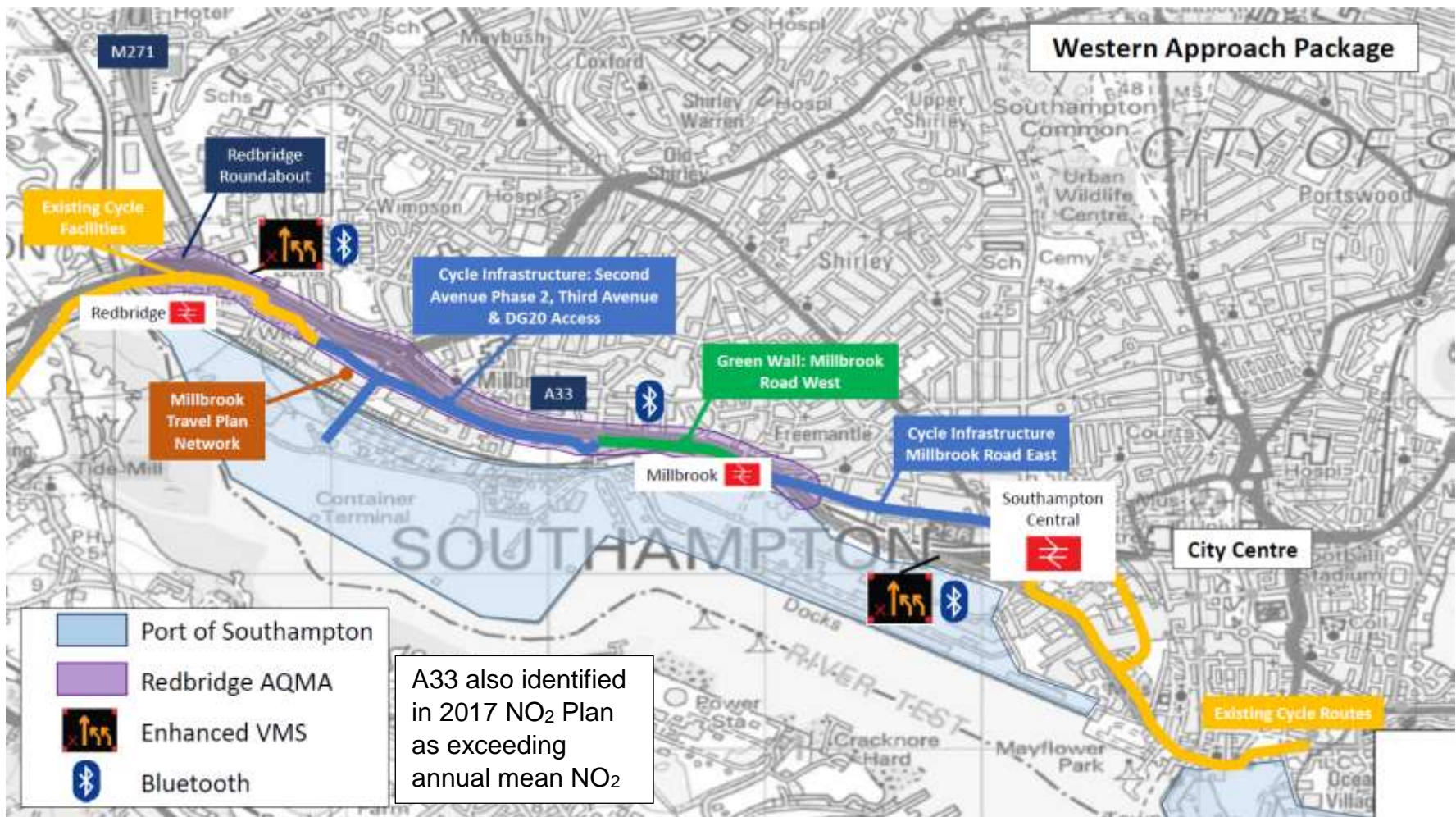


Figure 6 SCN1 A33 Western Approach infrastructure improvements

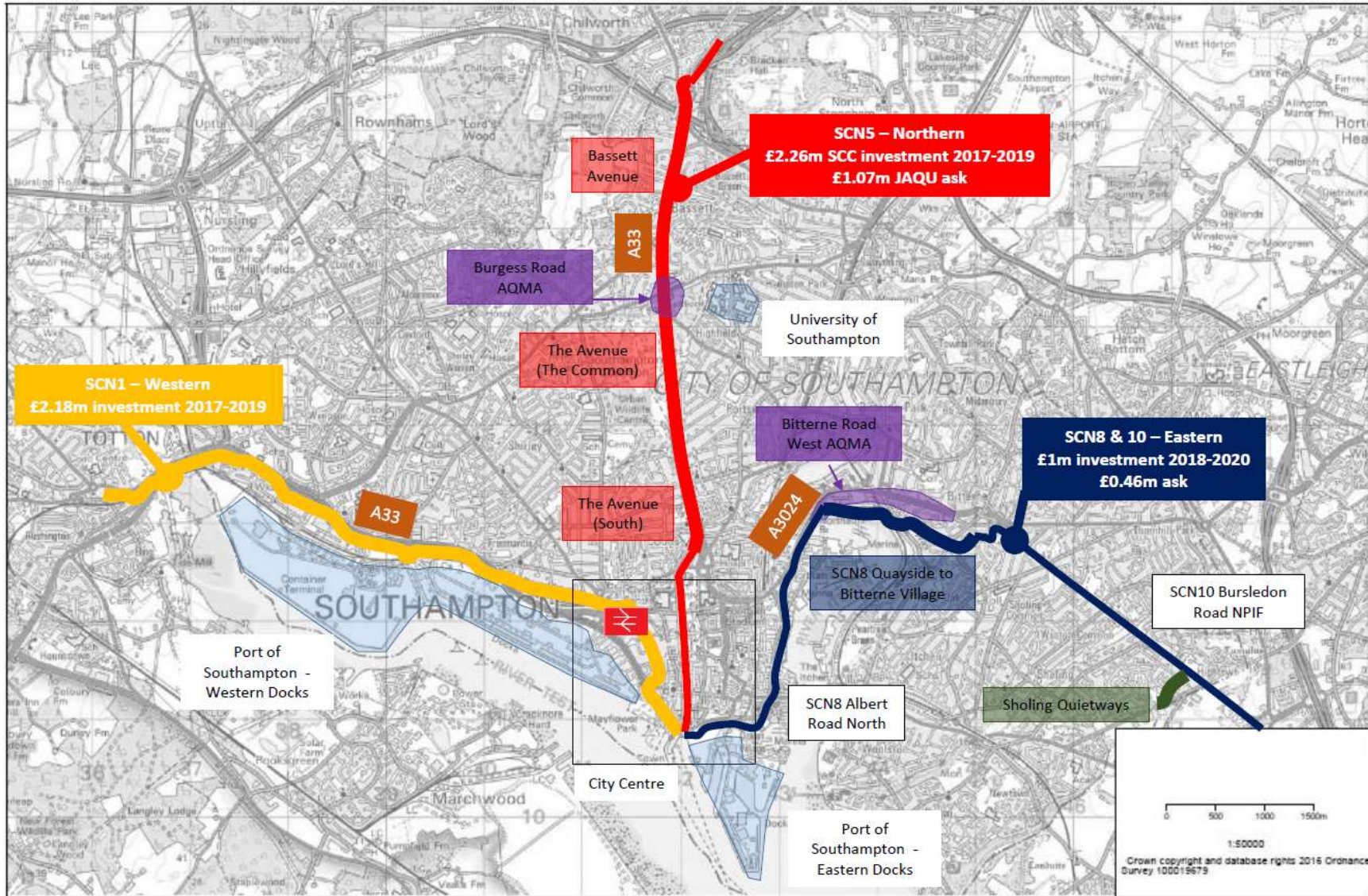


Figure 7 SCN5, 8 & 10 cycle routes

1.4.2. Clean Bus Technology Fund – Retrofitting City Buses

In 2018, Southampton City Council were awarded £2.7m to implement a programme of retrofit for operation buses in the city. The scheme was developed in partnership with the main bus operators in Southampton (First Group, Bluestar, Unilink Wheelers and Xelabus). The project will retrofit Clean Vehicle Retrofit Accreditation (CVRAS) Scheme accredited Selective Catalytic Reduction Technology (SCRT) equipment to 145 buses that are Euro III-V standard during 2017/18 and 2018/19, these retrofitted buses are included in the baseline scenario. At the time of project inception, there were 56 Euro VI buses operating in Southampton, with a further 52 new Euro VI buses due to be delivered by 2018. Accounting for these, the 145 buses represent all of the remaining non-Euro VI buses that will be operating in 2019/20 in Southampton and the wider area via services beyond the city including those to Totton (along the route identified as an EU AAQD exceedance in NFDC), Eastleigh and Winchester, areas that also have air quality management areas (AQMAs).

Vehicles accredited with CVRAS retrofit technology are deemed compliant with the Clean Air Zone minimum standards. The technology used to retrofit the buses is compliant with the Clean Vehicle Retrofit Accreditation Scheme⁷. Figure 8 shows Southampton bus routes relative to AQMA's and the EU AAQD exceedance identified by the national PCM model.

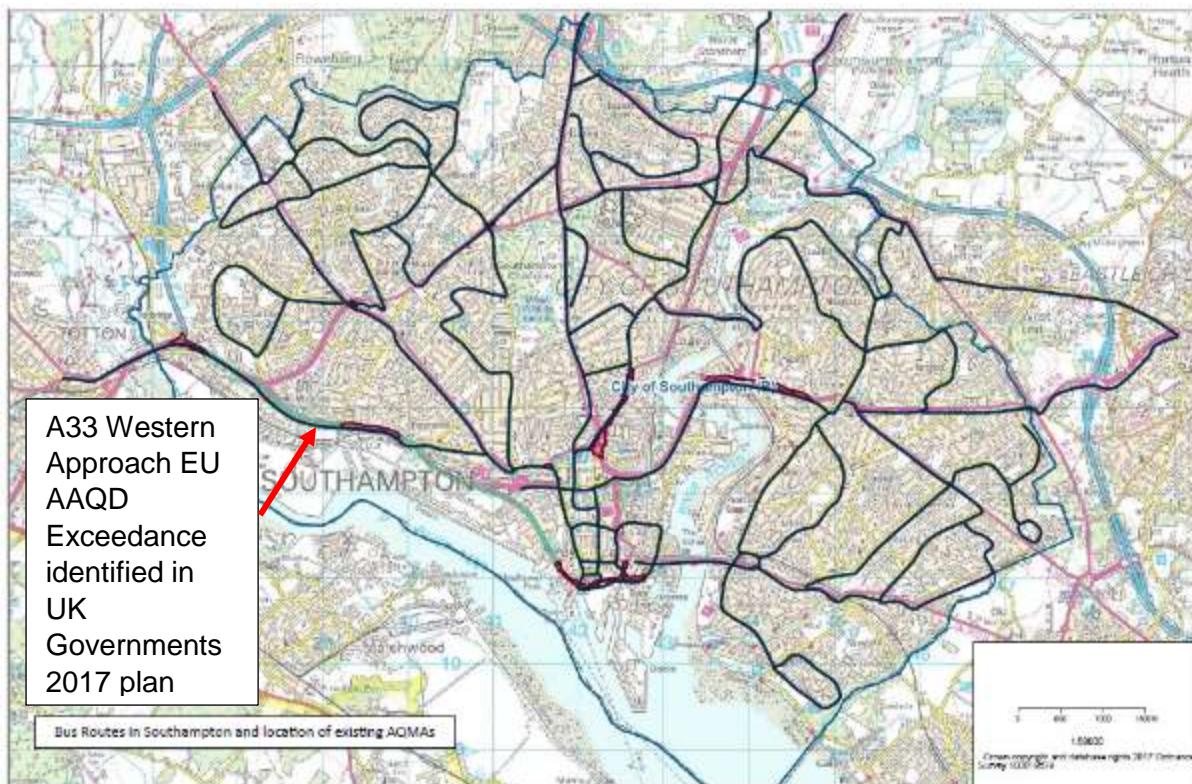


Figure 8 Bus routes relative to AQMA's and EU AAQD exceedance

⁷ <http://www.energysavingtrust.org.uk/transport/clean-vehicle-retrofit-accreditation-scheme-cvras>

1.4.3. Low Emission Taxi Incentive Scheme

Southampton City Council and Eastleigh Borough Council are offering financial incentives for locally licensed taxis to replace older, more polluting vehicles with lower emission alternatives.

Vehicles can be replaced under the scheme if they are pre-Euro 4 petrol/6 diesel. The scheme has £254,880 funding from Defra's Air Quality grant 17/18 and commenced in December 2017. This scheme is included in the baseline.

Table 4 Vehicles eligible as replacements and the financial incentive offered

Option	Description	Cashback Incentive
Full Electric	A vehicle with an original specification of being powered only by a battery charged from the electricity grid.	£3,000
Plug-in Hybrid Electric Vehicle (PHEV)	A vehicle with an original specification of being powered by a plug-in battery and an Internal Combustion Engine (ICE). After the battery range is utilised the vehicle reverts to conventional hybrid operation (Minimum Euro 4 Petrol or Euro 6 Diesel Engine).	£2,000
Full Hybrid	A vehicle with an original specification of being powered by an ICE and is capable of being powered solely using a battery and electric motor. Battery cannot be plugged in, and is charged during driving. (Minimum Euro 4 Petrol or Euro 6 Diesel Engine).	£1,500
Euro 5 or 6 Petrol (Capacity to carry 5-8 passengers or wheel chair accessible only)	Recognising that there is limited availability of low emission vehicles with capacity to carry 5-8 passengers.	£1,500

More information for taxi drivers and firms can be found at the [SCC Low Emission Taxi Incentive webpage](#).

The cashback is provided to those who replace vehicles on the basis that the funding is used to cover the cost of operating and licensing a vehicle in Southampton or Eastleigh.

It is proposed as part of this plan that the scheme is expanded to cover all vehicles that are licensed in Southampton and are not Euro 6 diesel/4 petrol vehicles.

1.5. Local Model Do Minimum Baseline

Appendix 1: AQ1 Tracker Table

Appendix 2: AQ2 Modelling Methodology Report

Appendix 3: AQ3 Air Quality Results Report

Appendix 4: T1 Local Transport Modelling Tracker

Appendix 5: T2 Southampton CAZ Local Model

Appendix 6: T3 Transport Modelling Methodology

Appendix 7: T4 Transport Modelling Forecasting Report

The 2017 National Plan identified exceedance of the EU Ambient Air Quality Directive (EU AAQD) in Southampton and New Forest. The model used to identify this exceedance is the national Pollution Climate Mapping model (PCM)⁸. SCC are required to undertake a more localised study. This local study provides finer resolution than is possible with the national PCM model. Inputs to the model are more localised including speed assumptions, local emission sources and local fleet composition based on ANPR data collected from Southampton.

Transport Model Methodology

Systra have developed a Sub-Regional Transport Model (SRTM) on behalf of Solent Transport to support a wide ranging set of interventions across the region, such as forecasting changes in travel demand, public transport use, and testing impacts of transport policies and interventions.

Air Quality Model Methodology

Ricardo have undertaken air quality modelling using the RapidAir model. The local model obtains a finer resolution of nitrogen dioxide concentrations in Southampton in comparison to the national Pollution Climate Mapping model (PCM). The RapidAir model enables a 1m resolution therefore modelled results can be extracted at receptor points anywhere on each of the 1m model output grid.

The local model output provides NO₂ concentrations for the base year (2015) and projects the pollutant concentrations at the same locations in 2020. The local model therefore provides details of any non-compliant locations within Southampton in 2020. The local model is also able to take into account any additional measures to determine if the air quality compliance will be met or brought forward at particular locations through interventions (i.e. the Clean Air Zone).

Local parameters (model inputs) were also used to establish the local model. These include;

- Local fleet composition (i.e. bus, coach, heavy goods vehicle, light goods vehicle, private car, motorcycle taxi and private hire) informed by an ANPR survey of vehicles in Southampton and the associated emission standards of vehicles, vehicle numbers (as annual average daily traffic AADT), vehicle speeds, fuel use/type and euro standard classification of vehicles.
- Other sources of emissions in Southampton including Southampton Port (vessels and port activity), industrial emissions including Marchwood

⁸ <https://uk-air.defra.gov.uk/research/air-quality-modelling?view=modelling>

Power Station and waste incineration plant in the New Forest. Local rail emissions were also included.

- Local weather data.

The local air quality model is validated with monitoring data collected by SCC from nitrogen dioxide diffusion tubes and automatic monitoring stations across the city.

The model provides results for the annual mean NO₂ concentrations at EU AAQD relevant locations in Southampton. It extends to other roads that are the responsibility of Hampshire County Council in neighbouring authorities and the Strategic Road Network (SRN) managed by Highways England including the M271, M27 and M3. The assessment extended to these areas to determine the impact of the scheme more widely.

Further details on the methodology used to model air quality locally can be found in appendix 2 AQ2 Air Quality Modelling Methodology. Transport evidence deliverables also appended (appendix 4 to 7).

The model provides results for the annual mean NO₂ concentrations at EU AAQD relevant locations in Southampton. It extends to other roads that are the responsibility of Hampshire County Council in Eastleigh and the Strategic Road Network (SRN) managed by Highways England including the M271, M27 and M3. The assessment extended to these areas to determine the impact of the scheme more widely.

Following extensive consultation between 21st June 2018 and 13th September 2018, and as a result of updates to data sources, the do minimum baseline scenario has been revised to reflect the most up to date information available. The full details and of the updates are provided in appendix 3 AQ3 Air Quality Results Report section 2.1.1.

Changes to the transport model

- An updated version of the version of the SRTM has been used
- Updated coding of the Redbridge roundabout to account for the current confirmed scheme design
- Use of the latest 2018 National Road Traffic Forecast (NRTF)

Updates to assumptions for the Port

Vessels travelling to or at berth:

- Activity levels revised to represent latest growth forecasts for container vessels, Roll-on Roll-off vessels and bulk carriers.
- Tighter fuel sulphur limit of 0.1% accounted for by assuming ships comply in 2015 by switching to marine distillate fuel.
- LNG ships are assumed to represent 20% of cruise ships calling at the Port of Southampton with 85% lower NO_x emissions compared to distillate fuel.
- Vessel fuel efficiency annual improvement of 1% in line with national atmospheric emissions inventory (NAEI) assumptions.
- An annual 1% reduction in NO_x emission factor from ships to 2020 for Southampton compared to the NAEI assumption of 0.7%.

Port machinery:

- Activity levels revised to represent latest growth forecasts for port machinery (e.g. straddle carriers relative to container ship forecasts).
- Updated fleet plan for straddle carrier emission standards and model types as of 2018 to project 2020 fleets.

Port related traffic

- Port activity forecast revisions reflected in transport modelling.
- Rail freight share updated to reflect diesel prices, rail freight subsidy provision and a rail lengthening project due for completion in 2020.

Funded Measures

The 2020 results will represent a baseline scenario where only measures currently implemented or being implemented to improve air quality are modelled. (I.e. without any sort of scheme to address NO₂ compliance). The measures already being implemented and included in the baseline scenario are detailed below:

Table 5 Funded measures included in do minimum baseline

Measure	Description
Clean Bus Technology Fund	Retrofitting 145 buses to Euro VI equivalence or better.
Cycling infrastructure enhancements (Early Measures)	SCN 1, 5, 8 and 10 have been funded by CAZ Early Measures funding and are will be delivered by 2020.
Low emission taxi incentive scheme	Offering local taxi drivers incentives to upgrade to cleaner vehicles when they replace non-CAZ compliant vehicles.

Do Minimum Baseline Results

The results represent key locations of interest. Full results are available in appendix 2 air quality results report and are listed at the end of this document. Values are reported as integers as is required by the EU Directive.

Census ID	PCM National NO ₂ Annual Mean (µg/m ³)		Local Model NO ₂ Annual Mean (µg/m ³)		
	2015	2020	2015	2019*	2020
46963	37	32	50	40	38
56347	55	46	43	37	36
6368	58	44	43	37	36
6933	35	30	44	38	37
73615	63	49	46	38	36
75251	42	37	39	33	32

*2019 has been interpolated between values modelled for 2015 and 2020 and is not directly modelled, therefore this provides a less certain value than those in 2015 and 2020.

The PCM National Model identified:

- An exceedance in 2020 at ID 56347
- An exceedance in 2020 at ID 6368
- An exceedance in 2020 at ID 73615
- One location in 2020 at ID 75251 above 35 µg/m³

The Local Model identified:

- No exceedance of 40 µg/m³ in 2020
- Six locations above 35 µg/m³ in 2020

The local modelling shows NO₂ compliance will be achieved at all locations in Southampton in 2020. The highest baseline concentration of NO₂ on the A3024 Northam Bridge is 38 µg/m³. There is approximately an average reduction of 2.5µg/m³ at each location in the city between 2019 and 2020.

In 2019, the highest concentration of NO₂ is 40 µg/m³ at census ID 46963 which is the A3024, Northam Bridge. This is compliant according to the EU Directive where values are reported to the nearest integer, however we must be mindful of the fact that this is at the limit value (i.e. the maximum level that could be deemed compliant), and is not directly modelled (it is an interpolated value between 2015 and 2020, increasing uncertainty in this value). Therefore measures are being proposed that can achieve reductions in NO_x emissions, and can be delivered in 2019, to increase the likelihood of compliance for both 2019 and 2020 (these measures are summarised in table 8).

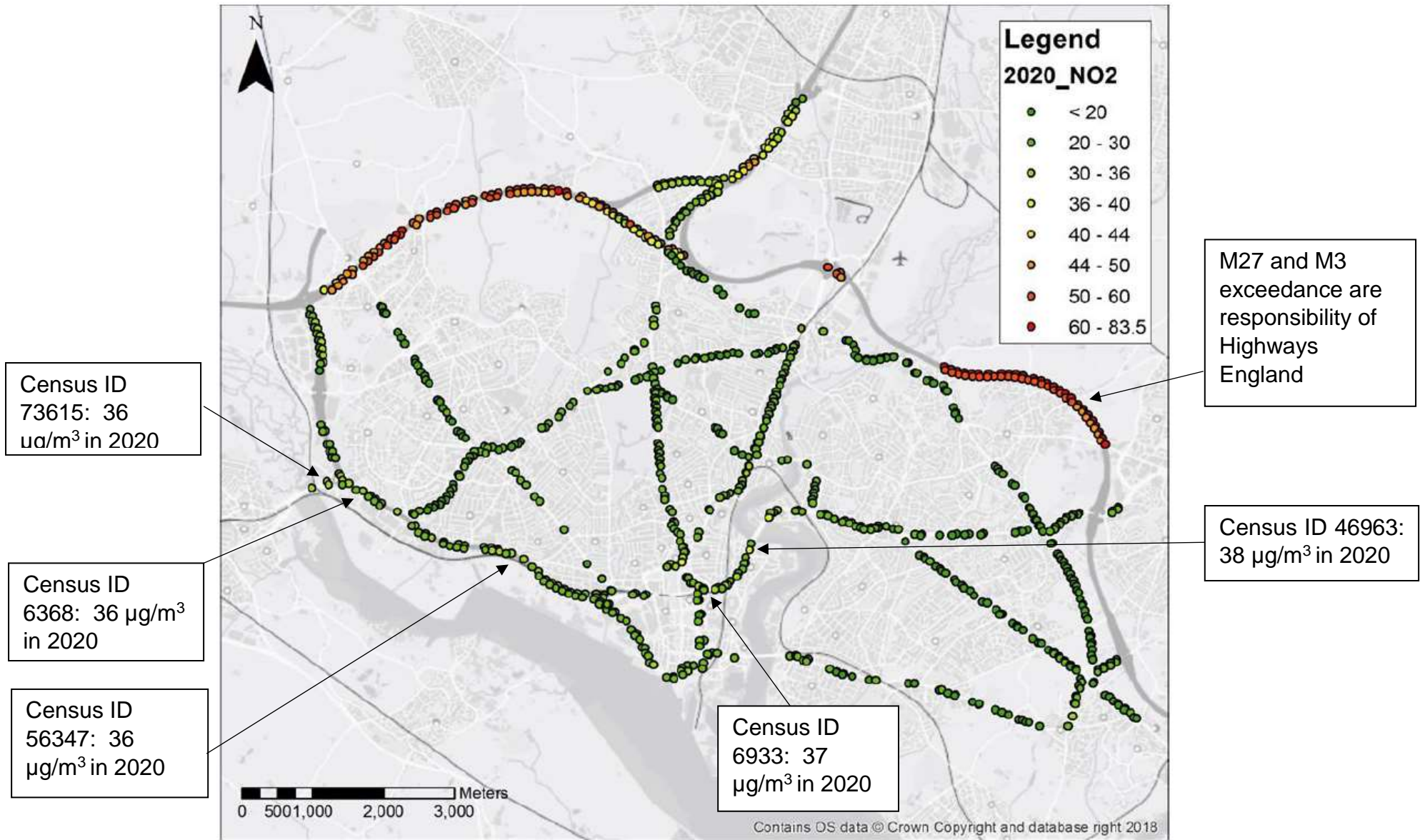


Figure 9 Do minimum Baseline local model annual mean NO₂ at EU AAQD relevant locations in 2020 ($\mu\text{g}/\text{m}^3$)

1.6. Source Apportionment

Source apportionment of NO_x concentrations has been carried out for key locations in Southampton, shown figure 10. Source apportionment was undertaken for the 2015 base year and the 2020 do minimum baseline scenario. A full discussion of the source apportionment is found in appendix 3 section 3.1.

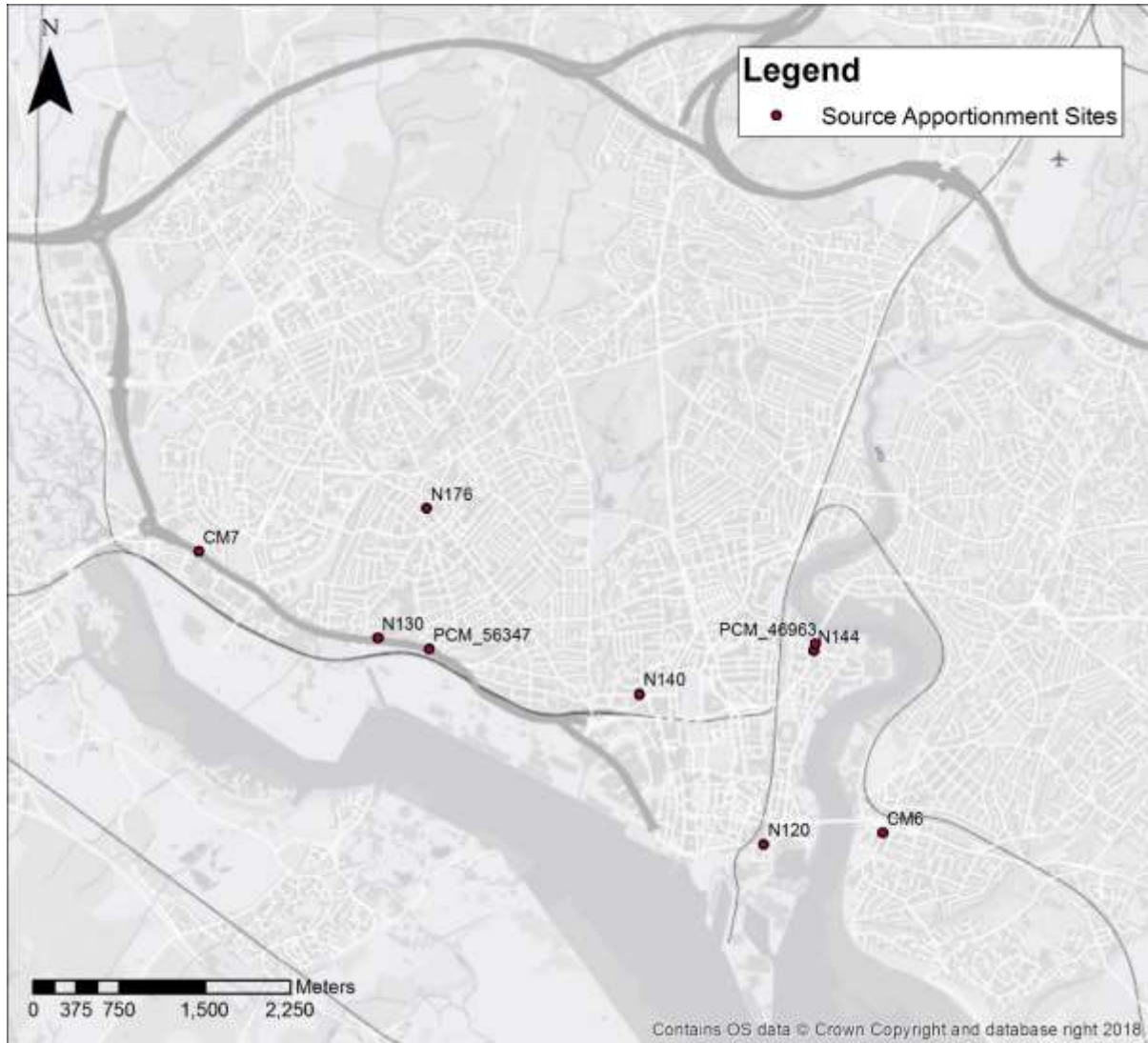


Figure 10 Locations of NO_x source apportionment in Southampton

For 2015, the apportionment of sources contributing to NO_x concentrations identifies that roads contribute most significantly at all locations (59-76%), as shown in figure 11.

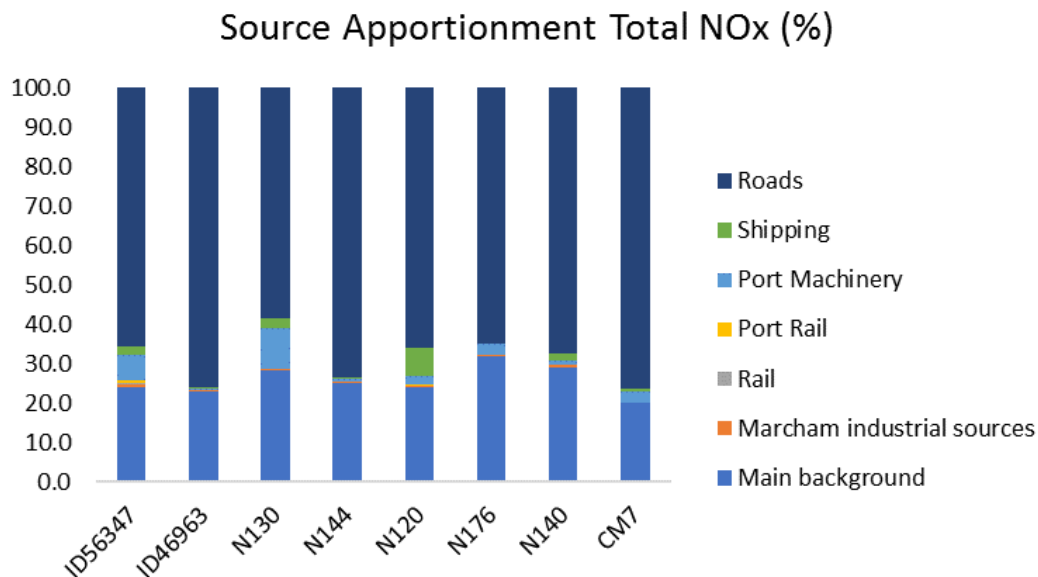


Figure 11 2015 NO_x Source Apportionment

The road contribution can be further broken down to show the contribution from each of the main vehicle types, as shown in figure 12. Diesel cars account for the highest proportion of road traffic emissions (average 41%) followed by HGV emissions (average 22%). The exception to this is site N120, where buses and diesel cars account for 30% of the total emissions each. Emissions from taxis at the source apportionment sites are on average 2%.

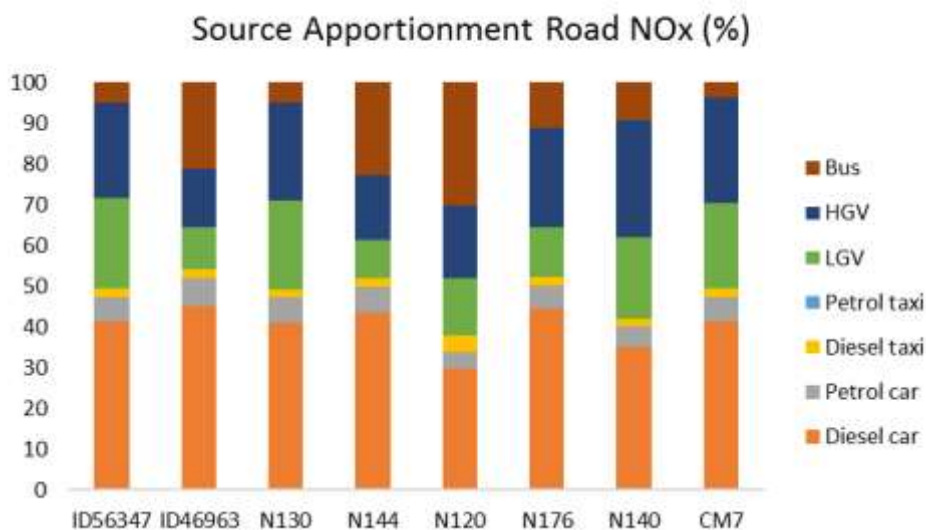


Figure 12 2015 Road NO_x source apportionment

In 2020, the majority of the total NO_x emissions are from road sources (47–76%), as shown in figure 13.

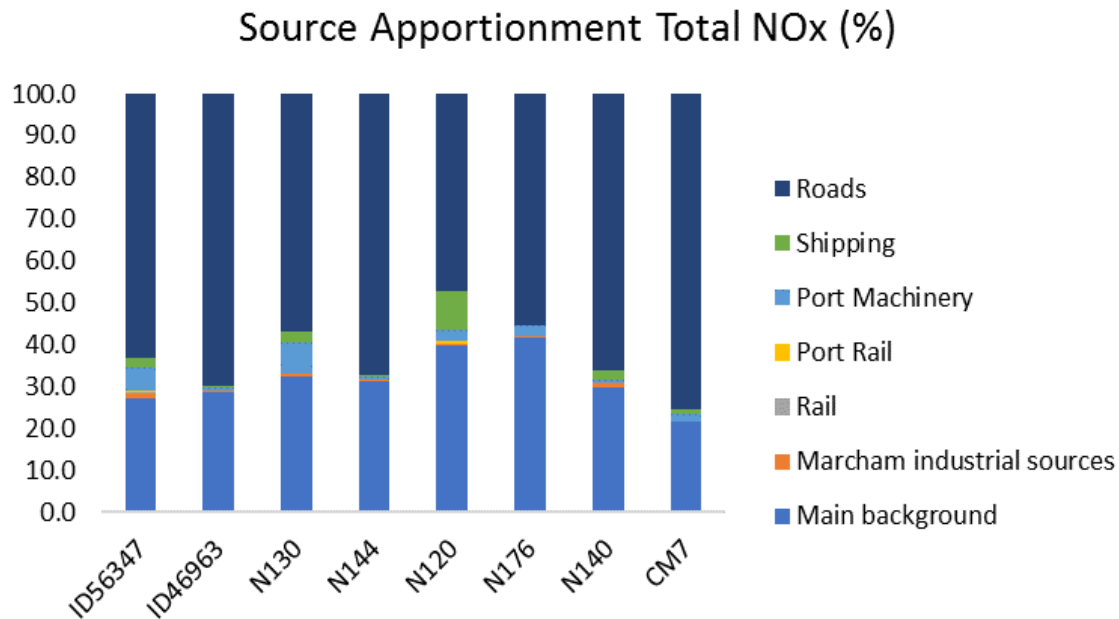


Figure 13 2020 NO_x source apportionment

The road contribution can be further broken down to describe the contribution from each of the main vehicle types and is shown in figure 14. Diesel cars contribute the largest amount to total road NO_x in 2020 (average 56%), followed by LGVs (average 22%). The proportion of emissions from buses has reduced in 2020 as a result of the completion of Southampton’s bus retrofit programme resulting in all buses being Euro VI. At N120, contribution of buses has reduced from 30% in 2015 to 5% in 2020.

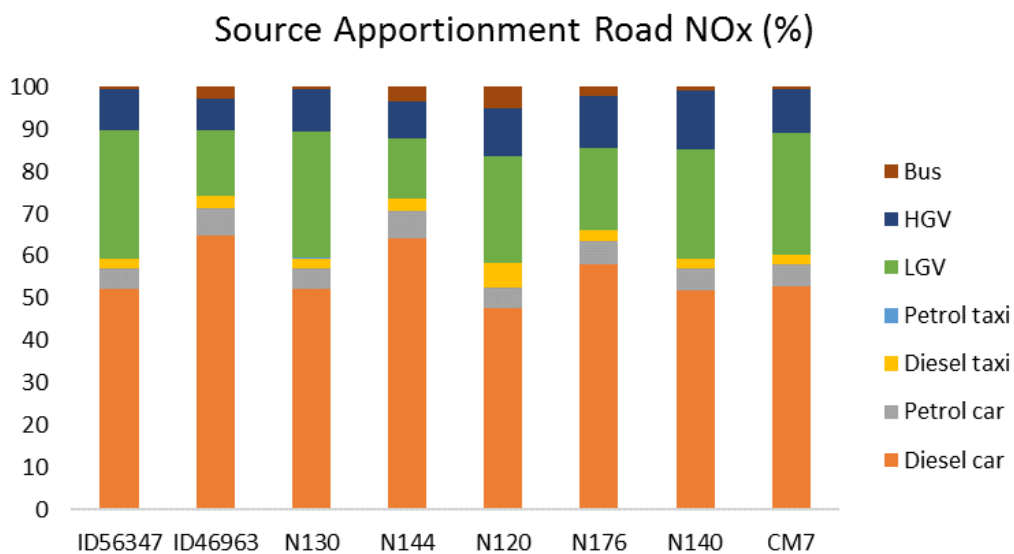


Figure 14 2020 Road NO_x contribution

1.7. Local Air Quality Management

For this plan, NO₂ is modelled at EU relevant locations in accordance with the EU Ambient Air Quality Directive. It has also been possible to model air quality at locations where monitoring is currently undertaken by the council. SCC currently has 10 air quality management areas (AQMAs) in the city, these are shown in the figure below.

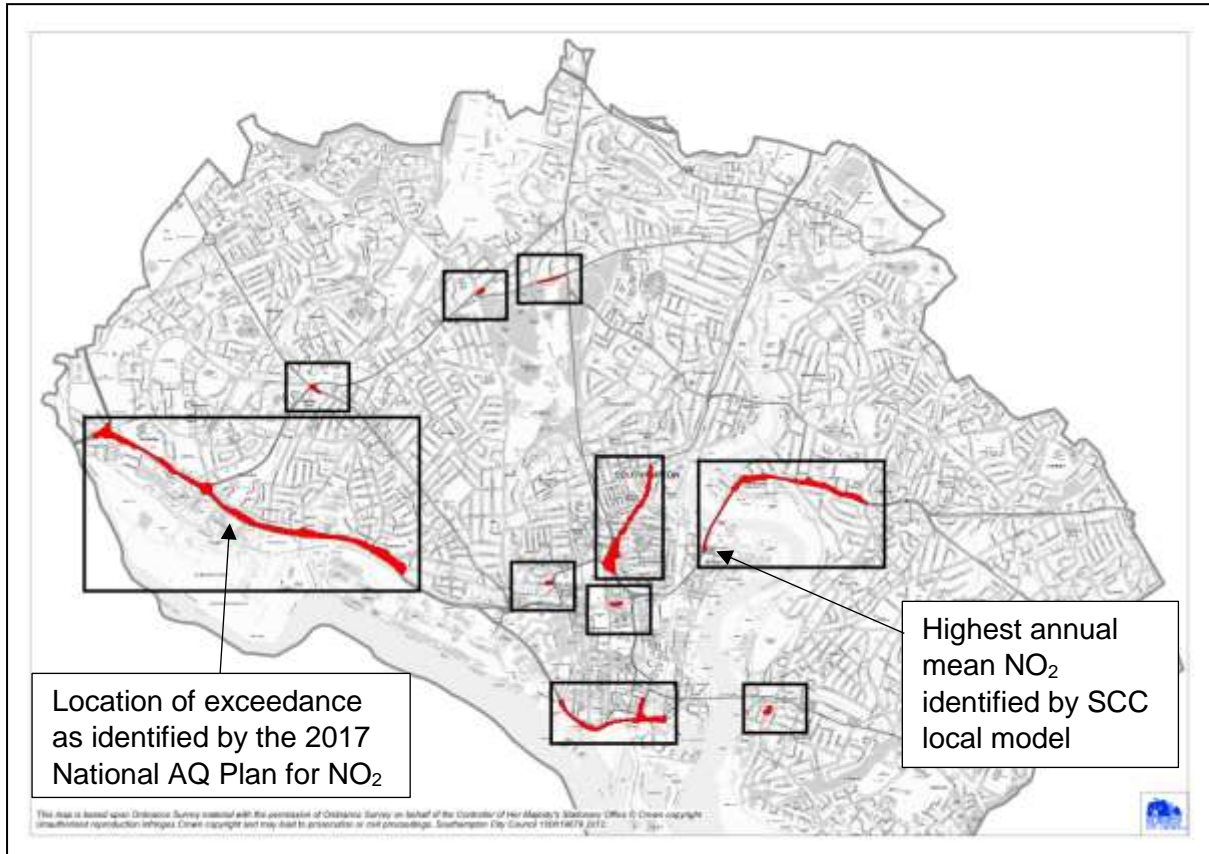


Figure 15 SCC AQMAs and the area identified by the 2017 National Plan for NO₂ as exceeding the EU limit value, and the location identified by the SCC local model as having the highest concentration of annual mean NO₂ (38 µg/m³).

Monitoring for nitrogen dioxide is undertaken at locations across the city, the latest data can be found at www.southampton.my-air.uk.

The modelled 2020 results at monitoring locations were calculated both for the main global adjustment factor that has been used for all other model results and for a local site specific adjustment using just the data at the monitoring location. The local adjusted results give an indication of the concentration if specific context at this location is considered (i.e. local monitoring data specific for that location), accounting for factors that may not be directly assessed in the model.

The results for Southampton indicate that in 2020, compliance with the 40 µg/m³ NO₂ annual mean objective will be achieved at all locations with the global adjustment factor. The local adjusted results show two sites that may be exceeding the limit value in 2020:

- Cranbury Place – this is significantly under predicted by the model as this is a road that is not in the traffic model and so we have no traffic data. As such the local adjustment significantly increases concentration here but this is not a

reliable results as 2015 adjustment will not account for fleet improvement to 2020.

- 5 Commercial Road (N140) – this is under predicted by the globally adjusted model, with local adjustment suggesting there may be little reduction in concentration from 2015 to 2020.

1.8. Consultation and Engagement

A 12-week consultation took place between 21st June 2018 and 13th September 2018.

The aim of the consultation was to:

- a. Communicate clearly to residents and stakeholders the proposals for a Clean Air Zone in Southampton.
- b. Ensure any resident, business or stakeholder who wishes to comment on the proposals has the opportunity to do so, enabling them to raise any impacts the proposals may have.
- c. Allow participants to propose alternative suggestions for consideration which they feel could achieve the objective in a different way.
- d. Provide feedback on the results of the consultation to elected Members to enable them to make informed decisions about how to best progress.
- e. Ensure that the results are analysed in a meaningful, timely fashion, so that feedback is taken into account when decisions are made.

Overall, there were 9,309 separate written responses to the consultation. Detail of the consultation methodology for promoting and assessing the responses along with the results can be found here: https://www.southampton.gov.uk/images/clean-air-zone-consultation-feedback_tcm63-404512.pdf. It is also attached in appendix 11.

The consultation was conducted with a preferred option of a citywide Class B Clean Air Zone. Headline results of the consultation showed that of the respondents:

- 75% felt air quality in Southampton was a fairly or very big problem while 22% thought that air quality was not much of a problem or not a problem at all.
- 80% agreed with the overall aim of the Clean Air Zone with 11% disagreeing or strongly disagreeing.
- 56% agreed with the preferred option, while 33% disagreed or strongly disagreed.
- 20% felt the preferred option would have a positive impact on the city or port economy, while 64% felt it would have a negative impact.
- 77% felt the preferred option would have a positive impact on health while 6% felt it would have a negative impact on health.

During the consultation, engagement with key stakeholders became more focused on the assumptions made, this assisted in ensuring the inputs were robust and best reflected the current and likely future scenario. As a result, updates to assumptions were incorporated in an updated run of the modelling which is presented in section 1.5 (baseline air quality) and the economic case.

1.9. Spending Objectives

Primary Spending Objective

The primary spending objective of the local plan is to deliver a scheme that leads to compliance with NO₂ concentration limits in the shortest possible time.

Secondary Spending Objectives/Critical Success Factors

The secondary spending objectives of the plan for NO₂ compliance within the shortest possible time are consistent with the critical success factors (CSF) and are as follows:

Table 6 Secondary Spending Objectives

Secondary Spending Objective	Description
CAZ framework consistency	Is the option consistent with the governments CAZ Framework?
Distributional impacts	Are there adverse impacts on specific groups?
Value for money	Does the option represent good value for money?
Strategic fit	Does the option support the council's strategies?
Achievability	Southampton City Council's ability to deliver the proposed changes, both implementation of solution and ongoing management of solution.
Deliverability	The markets ability to deliver the proposed solution, in terms of product and services provision.
Affordability	Southampton City Council's ability to afford the proposed solution, both in terms of capital expenditure and revenue to maintain solution.
Eliminate, reduce or mitigate unintended adverse consequences	Does the option eliminate, reduce or mitigate unintended adverse consequences? For example worsening air quality in areas of the city due to traffic diversion or negative economic impacts.
Flexibility	The adaptability of the option to meet the potential changes requirements from the option as the CAZ develops
Evidence Base	Availability of existing supporting evidence for this option that demonstrates its viability, or ability to assess it through transport and air quality modelling.

1.10. Preferred Option

The local modelling shows NO₂ compliance will be achieved at all locations in Southampton in 2020. The highest baseline concentration of NO₂ on the A3024 Northam Bridge is 38 µg/m³. There is approximately an average reduction of 2.5µg/m³ at each location in the city between 2019 and 2020.

In 2019, the highest concentration of NO₂ is 40 µg/m³ at census ID 46963 which is the A3024, Northam Bridge. This is compliant according to the EU Directive where values are reported to the nearest integer, however we must be mindful of the fact that this is at the limit value (i.e. the maximum level that could be deemed compliant), and is not directly modelled (it is an interpolated value between 2015 and 2020, increasing uncertainty in this value). Therefore measures are being proposed that can achieve reductions in NO_x emissions, and can be delivered in 2019, to increase the likelihood of compliance for both 2019 and 2020 (these measures are summarised in table 8).

The non-charging NO₂ concentration values indicate there is minor air quality benefit of introducing the measures, however while NO₂ concentrations at EU relevant locations may not be significantly affected, there are direct emissions reductions as a result of the measures which will convey improvements in air quality once implemented in 2019, and provide additional confidence in achieving compliance whilst reducing exposure, which provides additional health benefits compared to the do minimum option for 2019 and 2020. These measures also increase certainty that assumptions made in the modelling are met. Air quality benefits of non-charging Clean Air Zone will also continue beyond 2020 with additional emission reductions providing assurances that compliance is maintained in years beyond 2020.

Feasibility assessment shows the citywide class B clean air zone can't be implemented before the end of 2019/start of 2020 and will therefore not have a discernible impact on air quality in 2019. Compliance is likely in 2020 and so will not be achieved sooner and therefore is not considered as a shortlist option. More details on the CAZ B assessment are included in appendix C of this document.

Table 7 Summary of preferred option and success factors

Success Factor/ Spending Objective	Comment
Compliance in the shortest possible time (PSO/CSF)	Compliance achieved under do minimum baseline scenario. Preferred option will mitigate risk of exceedance by further reductions in emissions of NO _x .
CAZ framework consistency	Consistent with framework, charging schemes should be explored only where no other options can be identified. Using existing powers to raise the standard of buses, taxis and private hire vehicles (CAZ Framework 1.10).
Distributional impacts	Support provided for those adversely affected by scheme, i.e. incentives for taxi operators to upgrade vehicles.

Value for money	Procurement routes identified in the commercial case ensure that delivering the non-charging option will deliver value for money.
Strategic fit	Supports clean air strategy, health and wellbeing strategy and council strategy. Will complement work underway for the Local Transport Plan.
Achievability	Using Local Authority powers and following cases demonstrates it is achievable within timescales required.
Deliverability	Procurement routes identified
Affordability	Bid for funding to ensure preferred option is affordable
Eliminate, reduce or mitigate unintended adverse consequences	Existing schemes (CBTF) mitigate TRC, support proposed for taxi and private hire vehicles to mitigate licensing requirements.
Flexibility	Monitoring and evaluation programme will assess progress, flexibility to adapt non-charging measures where necessary to meet primary objective.
Evidence Base	Evidence indicates compliance under do minimum baseline and therefore primary objective achieved, preferred option will mitigate risks of uncertainty. Scheme can be reviewed and assessed via monitoring and evaluation programme to produce further evidence.

The table below describes the air quality impact of the measures within the preferred option.

Table 8 Summary of measures for preferred option and air quality impact

Category	Measure	Description	Air Quality Impact (Qualitative and/or quantitative)
Taxi and Private Hire	Taxi Licensing Condition	Change of licensing conditions to require <u>newly licensed</u> vehicles to meet Euro 6 diesel/4 petrol by 2020 and <u>all SCC licensed vehicles</u> to meet Euro 6 diesel/4 petrol by 2023.	1.24 tonnes of NO _x in 2020 Improvements in NO _x and PM are anticipated after announcing condition change in 2019 and therefore will see reductions in emissions prior to 2020.

	Low Emission Taxi Incentive	Financial incentive for taxi and private hire vehicles to replace older more polluting vehicles and upgrade to low emission alternatives. An expansion of the existing low emission scheme.	Financial incentive will overcome barriers to upgrading to cleaner vehicles expressed by the taxi trade and encourage early uptake of hybrid or ULEVs. Announcing the scheme in 2019 will prompt early behaviour change by the taxi fleet and therefore air quality benefits from vehicle upgrades are expected in 2019.
	Non-SCC Taxi Bus Lane Restriction	Restrict access to bus lanes for non-SCC licensed taxis to incentivise vehicles remaining licensed in Southampton.	Mechanism to encourage vehicles to remain licensed with SCC rather than license in areas with less stringent emissions/age standards than proposed.
	ULEV Taxi Trial	Encourage the uptake of ULEVs and will facilitate uptake of the low emission incentive scheme and EVs, by demonstrating the feasibility of EVs as taxis.	By promoting the uptake of ULEV's in SCC's fleet, reductions in exhaust emissions will be achieved. This measure will support the licensing condition change and the low emission taxi scheme.
	2 EV Rapid Charge Points	Install 2 rapid EV charge points dedicated for taxi use at key locations in the city.	Availability of the rapid charge points will promote the uptake of ULEV's in SCC's fleet, reductions in exhaust emissions will be achieved. This measure will support the licensing condition change and the low emission taxi scheme.

Bus	Bus Traffic Regulation Condition	Implemented to support the bus retrofit programme providing a mechanism to ensure full uptake of the scheme by 2020. This will also ensure that the modern standard of the fleet is maintained beyond 2020 and prevent non-Euro VI or retrofit vehicles are able to operate on a license in the city.	Included to ensure positive trend of reducing emissions from buses as a result of the CBTF retrofit programme is maintained.
Freight and Logistics	Freight Consolidation Centre	Subsidised use of a freight consolidation centre outside of Southampton to reduce numbers of vehicles entering Southampton and use cleaner vehicles to undertake journeys.	0.68 tonnes of NO _x in 2020 0.18 tonnes of PM in 2020 Additional benefits include noise, congestion and fuel savings.
	Delivery service plans	Expert review of existing logistical operations and recommendations for implementing actions to improve efficiency and reduce emissions.	Signpost to Freight Consolidation Centre to drive uptake. Recommendations will reduce delivery trips and encourage cleaner logistics, reducing emissions of NO _x from operations.
	Fleet accreditation scheme	Encouraging cleaner vehicles in fleets and recognising where this has been achieved.	Signpost to Freight Consolidation Centre and Delivery and Service Plans to drive uptake. Recommendations will reduce delivery trips and encourage cleaner logistics, reducing emissions of NO _x from operations.

Behaviour Change	A3024 MyJourney Support	Behaviour Change to encourage use of sustainable/active travel and discourage private vehicle use.	Localised behaviour change campaign focussing on Northam/Bitterne area will encourage reductions in private vehicle use and reduce emissions of NO _x and PM.
-------------------------	-------------------------------	--	---

1.11. Key Constraints, Risks and Benefits

Constraints

The key constraints are:

- Ensuring compliance of the EU AAQD for nitrogen dioxide annual mean within the shortest possible time (Primary spending objective).
- Secondary objectives.
- In accordance with the Clean Air Zone Framework.
- Responsibility for compliance of roads within the city boundary and under the authority of Southampton City Council (e.g. not the strategic network roads which is the responsibility of Highways England M3, M27, M271).
- To ensure the plan is proportionate in achieving the primary objective.

Risks and Mitigations

Key risks are outlined below, scheme specific risks are identified in the management case.

Table 9 Key Risks and Mitigations for Project

Risk	Impact	Mitigation
Compliance is not achieved in the shortest possible time	High	<p>Robust technical assessment provides confidence that compliance will be achieved.</p> <p>By implementing the non-charging measures (preferred option), achieving the primary objective is more likely than the do minimum baseline.</p> <p>A monitoring and evaluation programme will measure the impact of the schemes and mitigating action will be taken where necessary.</p>

Secretary of State does not approve the full business case.	High	<p>Development of the business case has been an iterative process working closely with the Joint Air Quality Unit to produce a plan that meets the primary objective and is likely to be accepted by the Secretary of State.</p> <p>The preferred option demonstrates value for money and the primary objective is achieved, with a robust monitoring and evaluation programme.</p>
Full funding for the plan is not awarded	Medium	SCC has ensured that funded measures are scalable but the option which is considered the optimum is identified as the preferred option.
Measures are not supported by stakeholders	High	<p>A communication plan has been developed to ensure all stakeholders will be aware of the plan and the benefits. The preferred option includes suitable support and mitigation for all activities.</p> <p>The consultation identified a desire by the city's stakeholders to engage and work with the council to improve local air quality. All activities in the plan are based on developing this principle.</p> <p>Continuous monitoring and evaluation of the plan will identify and mitigation any issues.</p>

Benefits

They key benefits by implementing this plan are as follows:

- Demonstrating compliance with the EU AAQD within the shortest possible time is likely to be achieved.
- Public health benefits are delivered by improved air quality.
- Measures promote ongoing improvements in public health and air quality (e.g. traffic regulation condition provides mechanism to maintain a modern fleet in the absence of a charging Clean Air Zone).

These benefits will be assessed as part of the monitoring and evaluation programme and benefits realisation, benefits are discussed further in the management case.

2. Economic case

2.1. Preferred Option

The local modelling shows NO₂ compliance will be achieved at all locations in Southampton in 2020. The highest baseline concentration of NO₂ on the A3024 Northam Bridge is 38 µg/m³. There is approximately an average reduction of 2.5µg/m³ at each location in the city between 2019 and 2020.

In 2019, the highest concentration of NO₂ is 40 µg/m³ at census ID 46963 which is the A3024, Northam Bridge. This is compliant according to the EU Directive where values are reported to the nearest integer, however we must be mindful of the fact that this is at the limit value (i.e. the maximum level that could be deemed compliant), and is not directly modelled (it is an interpolated value between 2015 and 2020, increasing uncertainty in this value). Therefore measures are being proposed that can achieve reductions in NO_x emissions, and can be delivered in 2019, to increase the likelihood of compliance for both 2019 and 2020.

The non-charging NO₂ concentration values indicate there is minor air quality benefit of introducing the measures, however while NO₂ concentrations at EU relevant locations may not be significantly affected, there are direct emissions reductions as a result of the measures which will convey improvements in air quality once implemented in 2019, and provide additional confidence in achieving compliance whilst reducing exposure, which provides additional health benefits compared to the do minimum option for 2019 and 2020. These measures also increase certainty that assumptions made in the modelling are met. Air quality benefits of non-charging Clean Air Zone will also continue beyond 2020 with additional emission reductions providing assurances that compliance is maintained in years beyond 2020.

Feasibility assessment shows the citywide class B clean air zone can't be implemented before the end of 2019/start of 2020 and will therefore not have a discernible impact on air quality in 2019. Compliance is likely in 2020 and so will not be achieved sooner and therefore is not considered as a shortlist option. More details on the CAZ B assessment are included in appendix C of this document.

Table 10 Preferred option measures

Category	Measure	Description
Taxi and Private Hire	Taxi Licensing Condition	Change of licensing conditions to require <u>newly licensed</u> vehicles to meet Euro 6 diesel/4 petrol by 2020 and <u>all SCC licensed vehicles</u> to meet Euro 6 diesel/4 petrol by 2023.
	Low Emission Tax Incentive	Financial incentive for taxi and private hire vehicles to replace older more polluting vehicles and upgrade to low emission alternatives. An expansion of the existing low emission scheme.
	Non-SCC Taxi Bus Lane Restriction	Restrict access to bus lanes for non-SCC licensed taxis to incentivise vehicles remaining licensed in Southampton.
	ULEV Taxi Trial	Encourage the uptake of ULEVs and will facilitate uptake of the low emission incentive scheme and EVs, by demonstrating the feasibility of EVs as taxis.
	2 EV Rapid Charge Points	Install 2 rapid EV charge points dedicated for taxi use at key locations in the city.
Bus	Bus Traffic Regulation Condition	Implemented to support the bus retrofit programme providing a mechanism to ensure full uptake of the scheme by 2020. This will also ensure that the modern standard of the fleet is maintained beyond 2020 and prevent non-Euro VI or retrofit vehicles are able to operate on a license in the city.
Freight and Logistics	Freight Consolidation Centre	Subsidised use of a freight consolidation centre outside of Southampton to reduce numbers of vehicles entering Southampton and use cleaner vehicles to undertake journeys.
	Delivery service plans	Expert review of existing logistical operations and recommendations for implementing actions to improve efficiency and reduce emissions.
	Fleet accreditation scheme	Encouraging cleaner vehicles in fleets and recognising where this has been achieved.

Behaviour Change	A3024 MyJourney Support	Behaviour Change to encourage use of sustainable/active travel and discourage private vehicle use.
------------------	-------------------------	--

2.2. Options Sifting

The initial long list sifting exercise that took place in 2016/17 assessed a wide range of possible options that span the extent of the Clean Air Zone Framework's classification system and considered a number of geographic boundaries. This is documented in the appendix 8.

The options sifting assessment identified a short list (as below) with the preferred option of the city wide class B charging clean air zone. The initial shortlist options were as follows:

- Option 1: City wide Class B CAZ
- Option 2: City wide HGV charging scheme
- Option 3: City centre Class A
- Option 4: Non-charging CAZ

In June 2018, SCC and NFDC (at this time NFDC were undertaking the assessment in partnership with SCC) consulted on the short listed options included in a draft outline business and the identified preferred option of a Class B charging clean air zone. The options sifting for the earlier phase of business case development is presented in appendix 8.

The consultation identified a number of assumptions that had been used in the air quality and transport models supporting the above short list and preferred option needed amending to best reflect the likely situation in 2020. Consequently, the baseline air quality model was rerun, the results are shown in section 1.5 of this document and showed compliance with the EU limit value for annual mean NO₂ at all Southampton locations in 2020.

Following this, a revised options appraisal was required in light of the changes to the baseline air quality. Options sifting was undertaken based on the following:

Table 11 Options sifting primary and secondary objectives

Primary Spending Objective	
Compliance within the shortest possible time (Pass/Fail)	Is the option likely to result in compliance with the EU AAQD for NO ₂ within the shortest possible time?
Secondary Spending Objective	
CAZ framework consistency	Is the option consistent with the governments CAZ Framework?
Distributional impacts	Are there adverse impacts on specific groups?
Value for money	Does the option represent good value for money?
Strategic fit	Does the option support the council's strategies?
Achievability	Southampton City Council's ability to deliver the proposed changes, both implementation of solution and ongoing management of solution.
Deliverability	The markets ability to deliver the proposed solution, in terms of product and services provision.
Affordability	Southampton City Council's ability to afford the proposed solution, both in terms of capital expenditure and revenue to maintain solution.
Eliminate, reduce or mitigate unintended adverse consequences	Does the option eliminate, reduce or mitigate unintended adverse consequences? For example worsening air quality in areas of the city due to traffic diversion or negative economic impacts.
Flexibility	The adaptability of the option to meet the potential changes requirements from the option as the CAZ develops
Evidence Base	Availability of existing supporting evidence for this option that demonstrates its viability, or ability to assess it through transport and air quality modelling.

The options are scored according to the following criteria:

- ✓✓ Excellent
- ✓ Good
- Satisfactory or no score
- ✗ Poor

Because the revised baseline showed compliance at all Southampton locations in 2020, it was necessary to repeat the options appraisal assessment in full, including the long-list sifting exercise. We held a workshop to identify any further measures we could implement that we did not consider initially in the previous long list assessment. We identified additional measures, highlighted in the long list in appendix 8, for example, port measures.

SCC conducted the options appraisal focusing on measures that could be implemented in 2019 to provide further confidence of compliance in 2019 and 2020 and deliver emissions reductions as quickly as possible in 2019. The full options appraisal undertaken for this business case is presented in appendix 8 including the reasons behind why each measure was discounted and not taken forward to the short list. As a result, two options have been taken forward to the shortlist.

A third option, citywide CAZ B was also assessed as a benchmark option. Details of this options assessment is summarised in appendix C of this document.

2.3. Shortlist

Do minimum baseline:

As described in section 1.5 of this document. This includes funded measures due for completion by 2020 (low emission taxi incentive scheme, cycling early measures funding and clean bus technology fund).

Table 12 Do minimum modelling approach

Measure	Description	Modelling approach
Baseline traffic and non-transport activity	See section 1.5 of this document.	This includes: <ul style="list-style-type: none"> • Updated traffic model with NRTF18 and revised port related traffic assumptions. • Updated port activity with reduced growth, cruise ship LNG usage and adjusted NO_x factor forecast.
Early measure cycling scheme – routes 1, 5, 8 and 10	See section 1.4.1 of this document.	Additional cycling infrastructure included in the traffic model and this affects private car demand.
Clean Bus Technology Fund (CBTF)	See section 1.4.2 of this document.	All non-Euro VI buses retrofitted to Euro VI (total of 145 buses), so bus fleet set to all Euro VI in the model.

Non-charging Clean Air Zone:

A package of non-charging clean air zone measures that can be introduced by the end of 2019 or sooner and will improve concentrations of annual mean nitrogen dioxide at EU relevant locations and/or reduce emissions of NO₂ and NO_x and therefore reduce exposure. Results of the air quality modelling and emissions reduction calculations are described in section 2.4.1.

Table 13 Non-Charging Clean Air Zone measures and modelling approach

Category	Measure	Assessment Approach
Taxi and Private Hire	Taxi Licensing Condition	Emissions factor toolkit (EfT) to estimate NO _x emission reductions.
	Low Emission Taxi Incentive	Mitigation – Not explicitly modelled. AQ impacts qualitatively assessed. Included in baseline AQ model.
	Non-SCC Taxi Bus Lane Restriction	Mitigation – Not explicitly modelled. AQ impacts qualitatively assessed.
	ULEV Taxi Trial	Mitigation – Not explicitly modelled
	2 EV Rapid Charge Points	Mitigation – Not explicitly modelled. AQ impacts qualitatively assessed.
Bus	Bus Traffic Regulation Condition	Air quality model - All operational buses in Southampton are Euro VI (as modelled for CBTF in do minimum) – same as baseline model.
Freight and Logistics	Freight Consolidation Centre	Transport model – Remove 640 LGVs and 113 HGVs movements from the network weekly due to consolidation. These flows have been removed in the transport model. RapidEms to estimate NO _x emission reductions.
	Delivery service plans	Mitigation – Not explicitly modelled. AQ impacts qualitatively assessed.
	Fleet accreditation scheme	Mitigation – Not explicitly modelled. AQ impacts qualitatively assessed.
Behaviour Change	A3024 MyJourney Support	Mitigation – Not explicitly modelled. AQ impacts qualitatively assessed.

2.4. Options Appraisal

2.4.1. Air Quality

Table 6 summarises the air quality options appraisal. The full results are listed at the end of this document and in the air quality report in appendix 3 where there is further discussion of the results.

Table 14 Air Quality Options Appraisal summary

	Do minimum baseline local model annual mean NO₂ µg/m³	Non-charging local model annual mean NO₂ µg/m³
Census ID	2020	2020
46963	38	38
56347	36	36
6368	36	35
6933	37	37
73615	36	36

The non-charging NO₂ concentration values indicate there is minor air quality benefit of introducing the measures, however while NO₂ concentrations at EU relevant locations may not be significantly affected, there are direct emissions reductions as a result of the measures which will convey improvements in air quality once implemented in 2019, and provide additional confidence in achieving compliance whilst reducing exposure, which provides additional health benefits compared to the do minimum option for 2019 and 2020. These measures also increase certainty that assumptions made in the modelling are met. Air quality benefits of non-charging Clean Air Zone will also continue beyond 2020 with additional emission reductions providing assurances that compliance is maintained in years beyond 2020.

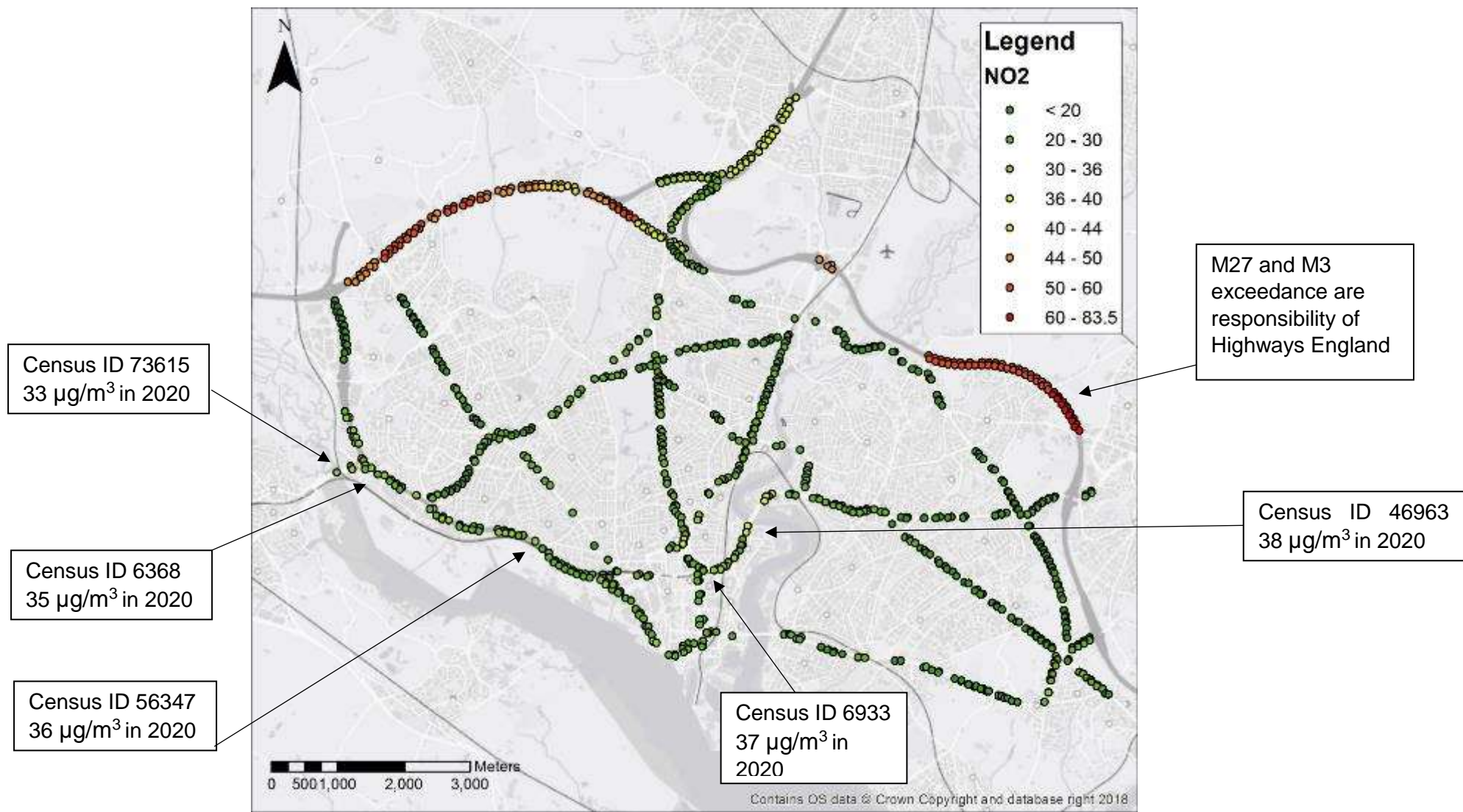


Figure 16 Non-Charging local model annual mean NO₂ at EU AAQD relevant locations in 2020 ($\mu\text{g}/\text{m}^3$)

The following table describes the impact on air quality of the options, both quantitative and qualitatively.

Table 15 Summary of preferred option air quality impact

Category	Measure	Description	Modelling Approach	Quantitative Air Quality Impact	Qualitative Air Quality Impact
Taxi and Private Hire	Taxi Licensing Condition	Change of licensing conditions to require <i>newly licensed</i> vehicles to meet Euro 6 diesel/4 petrol by 2020 and <i>all SCC licensed vehicles</i> to meet Euro 6 diesel/4 petrol by 2023.	Emissions factor toolkit (EfT)	1.24 tonnes of NO _x in 2020	Accelerate uptake of cleaner vehicles. Announcing the scheme in 2019 will prompt early behaviour change by the taxi fleet and therefore air quality benefits from vehicle upgrades are expected in 2019.
	Low Emission Taxi Incentive	Financial incentive for taxi and private hire vehicles to replace older more polluting vehicles and upgrade to low emission alternatives. An expansion of the existing low emission scheme.	Mitigation – Not explicitly modelled		Financial incentive will overcome barriers to upgrading to cleaner vehicles expressed by the taxi trade and encourage early uptake of hybrid or ULEVs. Announcing the scheme in 2019 will prompt early behaviour change by the taxi fleet and therefore air quality benefits from vehicle

					upgrades are expected in 2019.
	Non-SCC Taxi Bus Lane Restriction	Restrict access to bus lanes for non-SCC licensed taxis to incentivise vehicles remaining licensed in Southampton.	Mitigation – Not explicitly modelled		Mechanism to encourage vehicles to remain licensed with SCC rather than license in areas with less stringent emissions/age standards than proposed.
	ULEV Taxi Trial	Encourage the uptake of ULEVs and will facilitate uptake of the low emission incentive scheme and EVs, by demonstrating the feasibility of EVs as taxis.	Mitigation – Not explicitly modelled		By promoting the uptake of ULEV's in SCC's fleet, reductions in exhaust emissions will be achieved. This measure will support the licensing condition change and the low emission taxi scheme.
	2 EV Rapid Charge Points	Install 2 rapid EV charge points dedicated for taxi use.	Mitigation – Not explicitly modelled		Availability of the rapid charge points will promote the uptake of ULEV's in SCC's fleet, reductions in exhaust emissions will be achieved. This measure will support the licensing condition change and the low emission taxi scheme.

Bus	Bus Traffic Regulation Condition	Implemented to support the bus retrofit programme providing a mechanism to ensure full uptake of the scheme by 2020. This will also ensure that the modern standard of the fleet is maintained beyond 2020 and prevent non-Euro VI or retrofit vehicles are able to operate on a license in the city.	Air quality model - All operational buses in Southampton are Euro VI (as modelled for CBTF in do minimum)		Funding for CBTF achieves funding to ensure behaviour change of bus operators and mitigates risk that in the absence of a charging CAZ or other regulation, older vehicles return to the Southampton fleet.
Freight and Logistics	Freight Consolidation	Subsidised use of a freight consolidation centre outside of Southampton to reduce numbers of vehicles entering Southampton and use cleaner vehicles to undertake journeys.	Transport model – Remove 640 LGVs and 113 HGVs movements from the network weekly due to consolidation. RapidEms (Ricardo emissions tool) -	Indiscernible NO ₂ impact at EU AQ Compliance locations 0.68 tonnes of NO _x in 2020 0.18 tonnes of PM in 2020	The 0.68 tonnes of NO _x are calculated based on the case included within the modelling. On delivering this scheme it is intended to capture more cases and therefore result in higher emissions savings. This is also only for 2020, the consolidation centre is intended to operate for 10 subsequent years and therefore the emissions reductions will continue beyond 2020, reducing exposure and conveying health benefits as a result.

	Delivery and Service Plans	Expert review of existing logistical operations and recommendations for implementing actions to improve efficiency and reduce emissions.	Not explicitly modelled – qualitative assessment		Signpost to Freight Consolidation Centre to drive uptake. Recommendations will reduce delivery trips and encourage cleaner logistics, reducing emissions of NO _x from operations.
	Fleet Accreditation Scheme	Encouraging cleaner vehicles in fleets and recognising where this has been achieved.	Not explicitly modelled – qualitative assessment		Signpost to Freight Consolidation Centre and Delivery and Service Plans to drive uptake. Recommendations will reduce delivery trips and encourage cleaner logistics, reducing emissions of NO _x from operations.
Behaviour Change	A3024 MyJourney Support	Behaviour Change to encourage use of sustainable/active travel and discourage private vehicle use.	Not explicitly modelled – qualitative assessment		Workplaces that we engaged with on previous schemes benefited from an estimated growth in the number of cycle journeys of around 7% during commuting times. Similarly, school engagement indicated that combining smarter choices activities with infrastructure may deliver an uplift in cycling levels of between 12% and 16% that infrastructure alone cannot

					achieve. This will contribute to reduced emissions of NO _x in the area by removing private vehicle journeys and replacing them with cycle journeys.
--	--	--	--	--	--

2.4.2. Air Quality - Uncertainty and Sensitivity

The following table shows the sensitivity assessments undertaken on the air quality model and discusses the outcome.

Table 16 Air Quality Model Sensitivity Assessment

Sensitivity	Description	Method	Outcome
High Port Growth	Return the port growth to that originally sourced from the 2016 Port Masterplan, with all other assumptions keep the same, as a worst-case scenario.	Model in air quality model for do minimum baseline	The high port growth sensitivity tests indicates some minor increases in concentrations on the Western Approaches (A33) but this is not enough to change the compliance outcome for the 'do minimum' baseline.
Non Charging CAZ	Test the effect of reducing the air quality benefit conveyed by the non-charging measures.	Half the benefit of the non-charging scheme on concentrations.	The non-charging CAZ has already been shown to have limited impact on concentration and so reducing the impact of these measures further has the same outcome.
Future emission standards	Adjust light vehicle Euro 6 fleet mix to all Euro 6a to represent a worst-case 'high emissions' scenario.	Rerun emission calculations and dispersion model for the 2020 Do-minimum scenario only.	By setting all Euro 6 light duty vehicles to the Euro 6a standard increases concentrations in 2020 by on average 4% (or 1-2 $\mu\text{g}/\text{m}^3$). This is not sufficient for any location to exceed the 40 $\mu\text{g}/\text{m}^3$ limit value but it does take on link (ID46963 – A3024 Northam Bridge) up to the limit. Given model uncertainty this increases the risk of exceedance in the do minimum baseline.
Lower f-NO ₂	Lowering proportion of primary NO ₂ (f-NO ₂).	Lower f-NO ₂ values in projected year by 40% - this has been applied to the 2020 baseline model outputs only.	By lowering the proportion of primary NO ₂ (f-NO ₂) in the NO _x to NO ₂ conversion significantly reduces concentrations by an average of 5% but this

			varies from, 0% to 15% depending on traffic composition. This reduction would effectively reduce all concentrations below 35 $\mu\text{g}/\text{m}^3$, except for those on motorway links, and so remove any remaining risk on exceedance.
Emissions at low speed (high emissions)	JAQU suggests a method for assessing both a 'high emissions' and 'low emissions' sensitivity test for HGVs and buses modelled at speeds of less than 12kph. Therefore filtered all road links in the Southampton 2020 base year model with speeds less than 12kph.	Extracted modelled NO_2 and fNO_2 concentrations at 4m from the roadside, multiplied total Road NO_x for all vehicles by the maximum scaling factor derived, which at 10kph is 103.6% for buses. Then applied the model calibration road NO_x adjustment factor, converted NO_x to NO_2 and compared annual mean concentrations with the 40 $\mu\text{g}/\text{m}^3$ limit value.	At all receptor locations the re-adjusted NO_2 annual mean concentrations ranged from 18 to 23 $\mu\text{g}/\text{m}^3$, so were significantly less than the limit value.
Emissions at low speed (low emissions)		Discussion	Impact not quantified as no exceedance on links where speeds of <12kph. Concentrations would reduce further.
Zonal vs full model domain calibration	Zonal vs full model domain calibration	Discussion	No sensitivity undertaken. Discussion supporting use of full model domain provided in appendix 2.

Background NO ₂ calculation	Background NO ₂ calculation	Discussion	No sensitivity undertaken. Discussion supporting decision in appendix 2.
f-NO ₂ and calibration	JAQU suggest - If there are a number of roadside chemiluminescence monitors within a model domain the local authority may wish to run a sensitivity test to examine the possible impact of this effect by calibrating for NO _x using data from chemiluminescence monitors only (then calibrating for NO ₂ using all monitoring sites)'	Discussion	Only three roadside chemiluminescence monitors in domain with sparse coverage. Diffusion tubes while more uncertain provide more robust set of model agreement statistics. No sensitivity undertaken. Discussion supporting decision in appendix 2.
Surface roughness length	JAQU suggest that local authorities model both high and low surface roughness sensitivity tests, scaling surface roughness by appropriate amounts (which will vary on a case by case basis).	Discussion	No sensitivity undertaken. Discussion supporting decision in appendix 2.
Meteorology	Potential for inter-annual variability in meteorological conditions to impact on modelled concentrations	Discussion	No sensitivity undertaken. Discussion supporting decision in appendix 2.

The key outcome of these sensitivity tests is as follows:

- Higher levels of port growth – this increases concentrations by a maximum of $0.5 \mu\text{g}\cdot\text{m}^{-3}$ so did not have an impact on the final results;
- Lower performance of Euro 6 – setting all light duty vehicles to base Euro 6 standard increased concentrations by up to $2 \mu\text{g}/\text{m}^3$ which pushed one PCM location up to $40 \mu\text{g}/\text{m}^3$ and another to just over $35 \mu\text{g}/\text{m}^3$ in the 'do minimum' so increases the risk of an exceedance arising in 2020.
- Lower fNO₂ by 40% - this significantly reduces concentrations and removes all the locations potentially at risk of exceedance in the baseline.
- Lower impact of the non-charging CAZ option – the impact of this option was limited so there is no scope to reduce the benefit.

2.4.3. Analytical Assurance

The analytical assurance statement is included in appendix 9.

2.5. Cost Benefit Analysis

	AQ emissions impacts	Upgrade costs	Charging zone Implementation costs	Opex change	Fuel consumption	CO2 emissions	Welfare effects	SDC	Shore-side power	NPV
Non Charging CAZ	1.26	-0.15	-	-0.00	0.05	0.03	-0.01	0.52	-1.46	0.22

Notes: +ve values denote benefit / -ve values denote costs; all impacts are in 2018 prices; all impacts are discounted to 2018; (*) Air quality impacts represent reductions in emissions valued using the damage costs. These results are distinct from those presented in the air quality modelling report, which focus on concentrations and comparison to the legal limits, although a key input into this economic work is the underlying air quality modelling used to form compliance assessment.

Table 17 – Monetised impacts of NCH CAZ at sub-measure level

	AQ emissions impacts	Upgrade costs	Implementation costs	Opex change	Fuel consumption	CO2 emissions	Welfare effects	Travel time effects	NPV
Taxi licence	£37,459	- £152,510		- £1,998	£46,868	£25,607			- £44,574
SDC	£268,115		- £1,084,813		£251,692			£1,620,057	£1,055,051
Port booking			- £268,874				- £9,749		- £278,623
Shore-side power	£950,056		- £6,331,518		£1,667,126	£3,204,309			- £510,028

Notes: + ve values denote benefit / -ve values denote costs; all impacts are in 2018 prices; all impacts are discounted to 2018

Where cells blank, impacts not estimated or are not associated with measure

An illustration of the present value of the non-charging option is shown in figure 17 compared to the CAZ B benchmark option (discussed and summarised further in appendix C of this document).

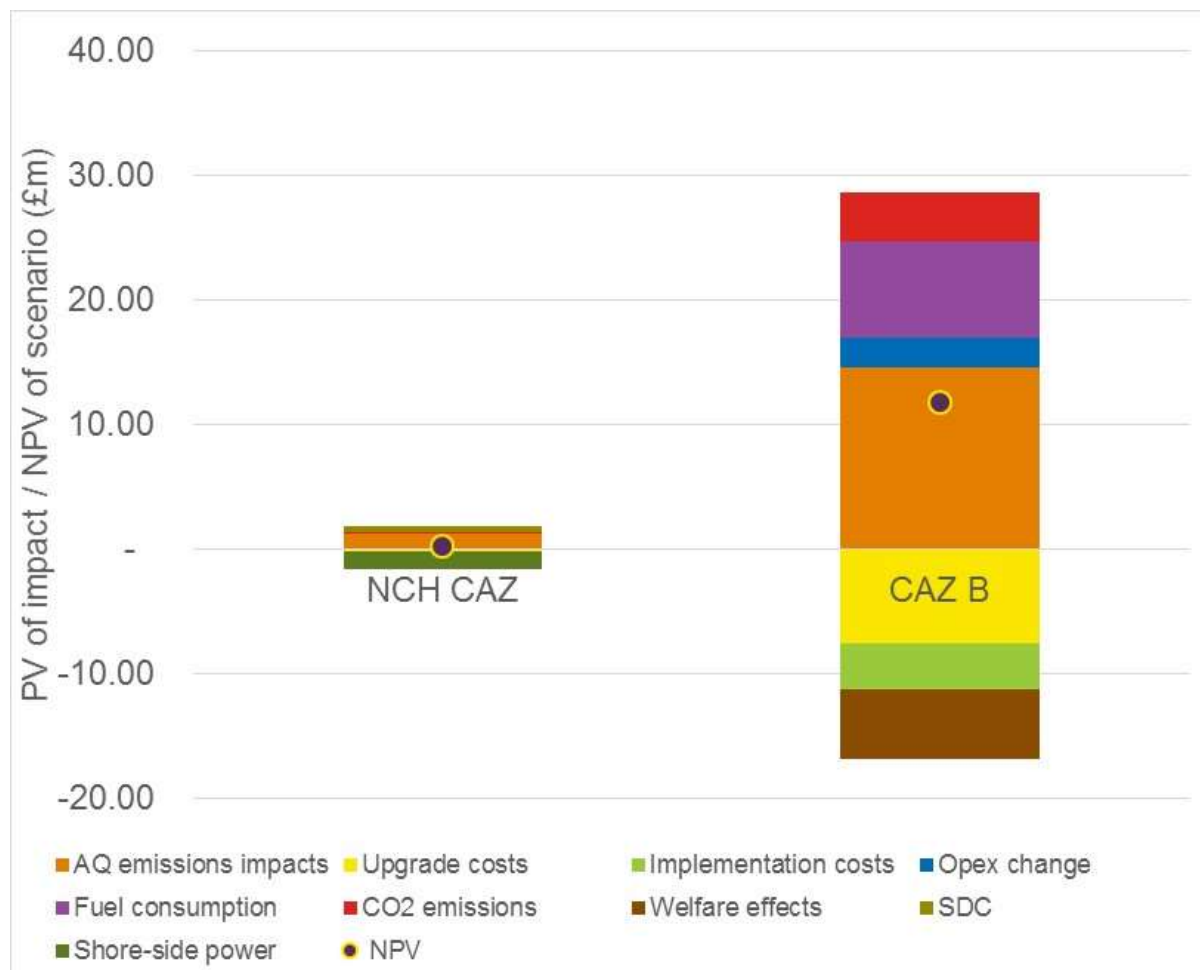


Figure 17 Present Value results of the non-charging and CAZ B option.

Note: Bars represent present value (PV) of impacts; dots represent aggregate net present value (NPV) of all impacts associated with CAZ option; all impacts are assessed relative to 'do nothing' baseline; +ve values denote benefit / -ve values denote costs; all impacts are in 2018 prices; all impacts are discounted to 2018

The NPV calculated for the non-charging Clean Air Zone also includes the shore-side power and port booking systems. These measures will be included within a supplement to this business case for consideration.

E1 Economic Appraisal Methodology Report is attached in appendix 10 with further discussion and detailed analysis on the economic appraisal results. In summary, a non-charging Clean Air Zone has a:

- Positive NPV overall
- But has much smaller impact on businesses and affordability risk
 - In particular, low risk for port and its operations
 - Some measures will provide a benefit for business, such as the SDC
 - Likewise, has much smaller impact on household affordability
- It is informative to look at results at a sub-measure basis:

- Taxi licence uplift in 2023 and shore-side power deliver slight net costs but the BCR is close to 1 hence the assessment could change under different sensitivities around the central analysis.
- Freight consolidation centre delivers a positive NPV - even where only one DSP is implemented as assumed in this economic analysis (albeit for a fairly large site), the benefits outweigh these upfront costs.

There are risks around deliverability - Several barriers exist to implementing and delivering these measures, creating potentially higher risk to delivering additional savings (though compliance in terms of this business case's primary objective – EU annual mean NO₂ - is achieved under the do minimum scenario). However, the management case details key risks and mitigations proposed to overcome these to ensure successful delivery of the schemes.

2.5.1. Cost Benefit Analysis – Uncertainty and Sensitivity

To determine whether uncertainties have a significant impact on the recommendations made in the E1 Economic Appraisal Methodology Report, a sensitivity analysis was undertaken (full details are provided in that report). The sensitivity analysis involves developing lower and upper bounds around important assumptions and input values used in the analysis. If the recommendations stand up to this 'stress testing', the robustness of the analysis is confirmed.

The sensitivity analysis is conducted around the following key inputs, which covers those sensitivities identified by JAQU as requiring testing, and are discussed in further detail in E1 Economic Appraisal Methodology report are:

1. Behavioural assumptions
2. Implementation costs and Optimism bias
3. Damage Costs
4. Vehicle growth
5. Carbon prices
6. Welfare cost (rule of half)
7. Scrappage costs and vehicle upgrade assumptions
 - Scrap proportion.
 - Vehicle costs
 - Depreciation
8. Shoreside power
 - Cruise ship adoption rate
 - Cruise ship idle power draw

The Net Present Value (NPV) of the non-charging CAZ is sensitive to the assumptions, and more so than the citywide B CAZ (Discussed in appendix C of this document) – i.e. under many of the sensitivity tests the NPV of the option changed sign. This reflects overall that the NPV of the measure is very close to zero under the central case.

2.6. Distributional Analysis

Distributional Analysis has been carried out on the non-charging and CAZ B options. The methodology used is based on the Webtag guidance issued by DfT⁹. The full report is included in appendix 11 E3 Distributional Analysis.

Non-Charging CAZ Distributional Impact on Air Quality

This assessment does not relate specifically to compliance with the EU Ambient Air Quality Directive of achieving an annual mean of 40 µg/m³ for nitrogen dioxide. This is described in section 1.5. The options impact on compliance is discussed in sections 2.3.1. It does however provide insight to aggregated changes in air quality across Lower Super Output Areas. This is useful for determining the distributional impact of the option in terms of populations exposed to air pollution and their demography. The distributional impact of the options in terms of air quality is not significant and therefore no distributional impact can be concluded.

Non-charging CAZ shows improving air quality in the majority of LSOA, but also limited deterioration in a handful of LSOAs (predominantly at the outskirts of the assessment domain). As the average NO₂ concentrations in these LSOAs are relatively low (< 20 µg/m³), this is likely to be due to general noise in the traffic model, which is causing slight increases in LSOA average concentrations.

The non-charging clean air zone shows the largest improvements in air quality are observed in the city centre of Southampton and to the north eastern edge of the city.

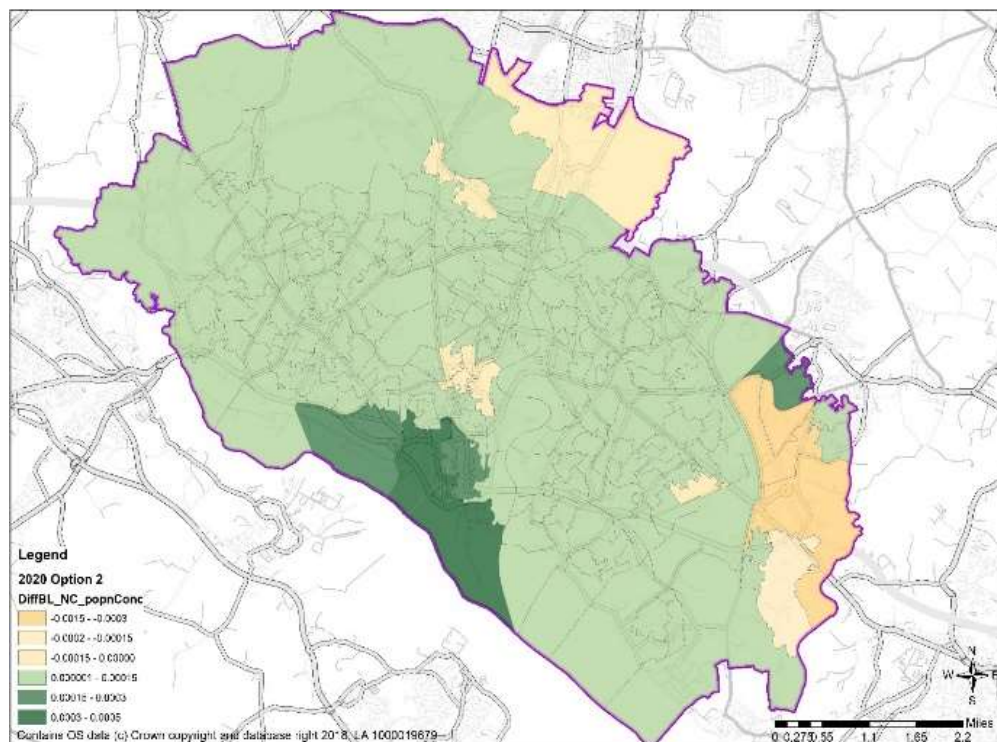


Figure 18 2020 population concentration change compared to baseline

⁹ DfT (2015); 'WebTAG: TAG unit A4-2 distributional impact appraisal, December 2015'; <https://www.gov.uk/government/publications/webtag-tag-unit-a4-2-distributional-impact-appraisal-december-2015>

Non-Charging CAZ Distributional Impact on Business

- A non-charging CAZ will levy costs – e.g. on taxi drivers required to upgrade for the license condition change.
- That said, several non-charging measures could bring significant cost-savings to businesses if implemented successfully – e.g. driver and opex savings through DSPs, and fuel savings from shore-side power.
- Under both options, bus operators face concerns over retrofitting and the potential of higher operating costs and cancellation of services due to taking buses out of operation. However, continued work on the Clean Bus Technology Fund means that buses will be compliant by 2020.

Non-Charging CAZ Distributional Impact on Households

CAZ B will have a greater impact on households' affordability risk than the Non Charging CAZ, given:

- Both options will affect taxi operators but impacts on taxi operators will come sooner through a city-wide CAZ B, as non-compliant vehicles will face the charge from 2020. It is also possible that the costs will be greater.
- A city-wide CAZ B will affect HGVs more significantly, with potential knock on effects on employment and the prices of consumer goods.

Households could be affected by the policy options through several pathways; however, the impacts are largely dependent upon the impacts on businesses and their subsequent responses to the effects of the CAZ or non-charging measures.

The impacts are likely to fall most significantly upon lower-income households or more vulnerable population groups, who are more reliant on public transportation and taxi services. Although most of impacts are negative, it is important to consider the health benefit to local households following policy implementation as well as the new business and employment opportunities a shift towards low-carbon vehicle infrastructure could bring to the city.

The mitigation measures proposed to support taxi drivers to upgrade to cleaner vehicles through a financial incentive and other measures to encourage the use of ULEV vehicles will benefit households through providing the funding and support for business to invest in lower emission vehicles and meet the requirements of the non-charging option (i.e. taxi licensing condition and traffic regulation condition).

Summary

A summary of the distributional analysis from E3 Distributional Analysis is as follows:

Table 18 Non-charging CAZ distributional analysis summary table

Scenario	Air quality	Business Affordability	Household affordability
Non-charging measures	-	x	x

Notes: '-' means no significant or neutral effect, 'x' denotes a small negative effect, 'xxx' denotes large negative distributional effect.

2.7. Clean Air Fund

JAQU are funding measures to improve air quality through the Clean Air Implementation Fund and are supporting those affected by plans through the Clean Air Fund. In response to the impacts on businesses, mitigations are proposed and therefore funding from the Clean Air Fund is being sought. The impacts identified for taxi operators will be mitigated through financial support to upgrade to cleaner vehicles and other support measures to educate and encourage the use of low emission vehicles:

- Expanded low emission taxi incentive scheme
- ULEV Taxi Trial
- Non-SCC vehicles restricted from bus lanes
- 2 rapid charge points for taxi and private hire use

Measures to ensure uptake of the Delivery and Service Planning and Fleet Accreditation scheme require financial support to facilitate delivery. These are described in table 19. Measures proposed to mitigate impacts are shown in table 13.

The Clean Bus Technology Fund is currently being implemented and will see all operational buses in Southampton running engines that will be compliant with the traffic regulation condition proposal.

Table 19 Summary of Groups and Impacts

Group impacted	How are they impacted
Bus companies	<ul style="list-style-type: none"> • Traffic regulation condition will require minimum emission standard (the existing CBTF will retrofit all operational buses to Euro VI where required to meet this standard therefore no additional mitigation is requested).
Taxi and private hire	<ul style="list-style-type: none"> • Licensing condition changes require newly licensed vehicles to meet Euro 6 diesel
Freight/HGV operators	<ul style="list-style-type: none"> • Planning guidance we're developing will require new developments in the city to undertake a DSP/fleet accreditation as a condition for approval • SCC procurement will require contracts to demonstrate DSP/fleet accreditation. • Green city charter will include and encourage local stakeholders to adopt DSP/fleet accreditation and consider it for our own procurements. • SCC will seek to include fleet accreditation in our formal agreement with DPW/ABP as a consideration for new contracts and or the booking system (see appendix 12 for SCC/DPW MoU, this currently refers to a £5 charge based on number plates however SCC will seek to include DSP's and Fleet Accreditation within the subsequent formal agreement).

Table 20 Clean Air Fund Summary

Measure	Who will it help?	Cost
Bus lane enforcement for non-SCC licensed taxi and private hire vehicles	<u>Taxi and private hire drivers</u> by providing incentive to remain licensed in Southampton and mitigate risk of licensing elsewhere due to new licensing requirements for vehicle emissions.	£88,500
Low Emission Taxi Incentive Scheme expansion	Financial support for <u>taxi and private hire drivers</u> to upgrade to low emission alternatives ahead of the age policy due to change in licensing conditions for vehicle emission standards. Also supports Euro 6 for wheel chair accessible vehicles and those that carry 5-8 passengers recognising limited availability of low emission alternatives currently on the market.	£164,250
EV Charge Points	<u>Taxi and private hire drivers</u> by facilitating upgrades to low emission vehicles and encourage upgrades beyond vehicles operated solely by combustion vehicles.	£100,000
ULEV Taxi Trials	<u>Taxi and private hire drivers</u> by providing incentive to remain licensed in Southampton and mitigate risk of licensing elsewhere due to new licensing requirements for vehicle emissions. Complements Low Emission Taxi Incentive Scheme and EV charge points by facilitating upgrade to low emission vehicles.	£36,000
Delivery and Service Planning	<u>HGV operators</u> impacted by requirements to undertake DSP within SCC AQ Planning Guidance and agreement with the Port. Complements Sustainable Distribution Centre (SDC) and fleet accreditation measure by signposting participants to SDC and fleet accreditation schemes.	£450,000
Fleet Accreditation	<u>HGV operators</u> impacted by requirements to undertake DSP within SCC AQ Planning Guidance and agreement with the Port.	£170,000

	Complements Sustainable Distribution Centre (SDC) and Delivery and Service Planning (DSP) measure by signposting participants to SDC and DSP schemes.	
DSP and Fleet Accreditation additional business support	HGV operators. Call off pool of available support days - DSP site assessments and recruitment preparation; business implementation support; workshops; HGV advice and strategy.	£75,000

2.6. Justification of Preferred Option

Taxi Licensing Conditions and Supporting Measures

Require a minimum Euro 6 diesel/4 petrol for hackney carriage and private hire vehicles licensed in Southampton by 2020 for newly licensed vehicles and all vehicles by 2023 (alternative fuels acceptable where accredited by the clean vehicle retrofit accreditation scheme). While this has not been included in the modelled due to the insignificant impact in 2020 on NO₂ compliance, it is deemed an essential mechanism to ensure the positive trend observed in the city's fleet continues. The consultation also identified that taxi operators, firms and drivers are willing to contribute to improvements in air quality.

Ongoing improvements in the fleet will also help mitigate the risk of exceedance at the Northam Bridge location (ID 46963) where road emissions contribute 67%, with diesel taxis contributing 3% of the road source.

Recognising that an additional licensing condition for hackney carriage and private hire vehicles in Southampton will represent an additional burden and may put local drivers at a disadvantage, supporting measures are proposed that will also convey air quality benefits. These are:

Bus lane restriction for non SCC taxis to incentivise our local fleet to remain licensed in SCC

Implementing licensing conditions to improve air quality risks local taxi and private hire vehicles being licensed in other authorities. To safeguard our local fleet it is proposed to restrict non-SCC licensed taxis from bus lanes to incentivise SCC vehicles to remain licensed by SCC. This will be supported by the low emission incentive scheme that is available for SCC drivers.

Expanded low emission taxi incentive scheme for SCC licensed taxis

The existing scheme has £254,880 of Defra Air Quality Grant funding which at the time of scheme inception was anticipated to deliver 1681.5 Kg of NO_x per year across Southampton and Eastleigh (£151,624 per tonne NO_x per year), a total of 19.2% reduction in estimated total taxi emissions. If the award of £164,250 was successful we could expect (based on the existing scheme assumptions) to achieve 1.08 tonnes of NO_x per year reduced emissions.

2 EV Charge points to support ULEV taxis, facilitate low emission taxi incentive scheme and for public use to reduce private vehicle emissions

Feedback from the consultation was that although taxi operators were willing to upgrade their vehicles to electric where feasible, the availability of charging infrastructure in the city is a limiting factor. It is proposed to support the uptake of the low emission scheme and incentivise uptake of EVs by introducing electric charge points at key locations in the city that are accessible by taxi and private hire drivers.

Traffic Regulation Condition for Public Service Vehicles

The implementation of a traffic regulation condition (TRC) for public service vehicles will be a mechanism to ensure the programme of bus retrofits and recent investment in fleets in the city continues. The source apportionment shows that from 2015 to 2020 under the do minimum scenario that accounts for the CBTF scheme, NO_x attributed to buses falls significantly, at location N176 contribution falls from 11% to 2% and at N120 it falls from 30% to 5%.

In the absence of a charging Clean Air Zone or a TRC, it is possible that older, more polluting buses may reenter the fleet in Southampton reversing the positive trend observed, risking ongoing improvement. Furthermore, the consultation identified that bus operators in the city are willing to play their role in improving air quality in the city and the TRC proposal builds on this relationship.

Freight consolidation and delivery and service planning

For HGV operators in the city supported by Delivery and Service Planning and Fleet Accreditation Schemes to drive uptake of freight consolidation. The Net Present Value of the SDC is positive.

Evidence of existing benefit

Case study analysis has been conducted by the Transport Systems Catapult (TSC) reviewing existing consolidation for a local business in Southampton through the Southampton Sustainable Distribution Centre and has quantified the benefits derived from real-world data. The analysis shows that consolidation considerably reduces the operational costs to all parties involved with the FCC (both running fleet cost and would-be penalty fees savings) and through reduced emissions. Additional operational costs savings across different impact categories also include:

- Distance related costs: costs that increase proportionally with the total distance travelled by the logistic suppliers. This accounts for fuel consumption, tyre wear and fleet repair and maintenance costs;
- Time related costs: costs that increase proportionally to the amount of hours operated by the logistics supplier including driver costs;
- Fixed costs: costs that are incurred regardless of the operation level undertaken by the freight transport fleet such as vehicle finance and overhead costs.

It is modelled that by managing the local business's supply chain through a FCC logic, upwards of 70,000 vehicle miles are reduced per annum through the city of Southampton.

Evidence of potential benefit: Public sector

A second case study undertaken by the TSC reviewed the potential cost and environmental benefits for the key public sector stakeholder in Southampton should a FCC continue to be available for use and utilised.

Under current working conditions frequent and unscheduled courier deliveries at the main loading bay creates high levels of congestion as well as environmental impacts in the surrounding areas, leading to increased delivery times, pollution and air quality impacts. In addition, the current logistics model adopted by requires a large amount of resources, including both labour and space requirements that could be better utilised and re-allocated to serve more productive tasks. Adoption of a freight consolidation model would improve efficiency by enabling the scheduling and pre-sorting of a set number of deliveries per day. A logistics consolidation model was investigated to divert supplier deliveries into an existing multi-user FCC. Items would then be handled and combined on the minimum number of appropriate, efficient and clean vehicles to ship to one end user. TSC modelled the potential trade-offs between the business-as-usual operational model at the Hospital compared to the use of a FCC model for all the parties involved. It considered the positive implications of the FCC, but also took into account the additional costs associated with the extra supply chain 'leg' being introduced. The result of the study demonstrated that that the economic and wider air quality benefits of using a FCC could off-set additional costs imposed by the FCC should the service already be available. At the point of switching to the FCC the hospital would be running at an operational deficit whereby the additional costs imposed by the extra supply chain leg outweigh the operating cost savings but once volumes are at a sufficiently large enough level this is reversed.

It was modelled that by managing the supply chain through a FCC logic, the current volume of deliveries to site (upwards of 900 per week) could be reduced to 20 deliveries per week to account for the current requirements.

The full technical report, commissioned by Department for Transport can be found here: https://s3-eu-west-1.amazonaws.com/media.ts.catapult/wp-content/uploads/2018/07/13095627/Public-Sector-Logistics-Consolidation_On-Line-Report-web.pdf

Other Benefits

Table 21 Other Freight Consolidation Centre Benefits

Benefits classification	Benefits of freight consolidation centres
Environmental	Reduction of greenhouse gas emissions
	Improved air quality
	Reduction in noise levels
	Use of electric vehicles for the last mile delivery
Traffic	Reduction in goods vehicle traffic
	Improved safety, i.e. fewer collisions, injuries (KSIs), reduced threat and intrusion
	Opportunity to disconnect trunking from urban delivery, allowing trunking operations to be conducted at night
	Decreasing the demand for kerbside loading space
Operational	Shared reverse logistics and home delivery facilities
	Reduced and better managed local HGV journeys serving the retail environment
	Improved delivery service level
	Opportunities for stock buffering
	Encourage and support clients' recycling commitments (WRAP)
Economic	Overall reduction of operational costs for haulier and end users
	Reduce loss of goods (shrinkage) within the supply chain
	Potential for reduced delivery bay requirements and associated costs
	Avoided CAZ charge for those unable to upgrade to Euro VI

Benefits evidenced by this modelling and future projections

The air quality modelling undertaken for this exercise for 2020 has identified a reduction in NO₂ of approximately 0.1µg/m³. Whilst this does not affect compliance the additional benefits discussed and the economic benefit in section 2.3.2 demonstrates value for money.

It has also been calculated by the Transport Systems Catapult that should the University Hospital NHS Trust transfer their supply chain to the Sustainable Distribution Centre over 5.09 tonnes of NO_x will be reduced from point of implementation in 2019 up to 2030 as a direct air quality improvement. It has been assumed by the Transport Systems Catapult that the delivery vehicles servicing the

Hospital are making multiple drops and not just going to the hospital and back. The calculations work on the basis that the vehicle is not removed from the network outright, but a trip to the Hospital is removed. It was assumed that removing a trip to the Hospital from the vehicles overall journey is the equivalent to removing 2 miles. However, insight provided from a previous DSP for the Hospital would suggest that a high proportion of the vehicles servicing the Hospital are NHS supply chain contract specific vehicles. On this basis it can be assumed that they would be taken off the network outright as they exist only to serve NHS specific demands. As a result the Transport Systems Catapult results can be taken as a minimum value and represent a conservative take on the potential air quality benefits the SDC would realise.

The CO₂ reduction for the same period is estimated to be upwards of 1,144 tonnes.

A3024 MyJourney Support

The source apportionment identifies the road contribution to the Northam Bridge location (ID 46963), as 45%, with diesel cars contributing 64% and petrol cars contributing 6% to this in 2020. The sensitivity assessment has identified this location as sensitive to light duty vehicle emissions where the concentration of NO₂ is on the limit value under high light duty vehicle emissions scenario. Therefore, to mitigate this risk, it is proposed to focus a communications campaign via the MyJourney programme to encourage use of active and sustainable travel along this corridor.

Southampton City Council has a long-standing behaviour change programme aiming to encourage more people to walk and cycle in and around the 'Southampton Travel to Work Area'. This includes an established, award-winning, active travel brand 'My Journey'¹⁰ alongside a programme of regular interventions and tools targeted at schools, workplaces and in the community. Led Rides, cycle training, direct marketing, bike loans, bike maintenance workshops and journey planning all offer residents the opportunity to overcome the barriers they have to walking and cycling more regularly. Over the past 18 months this has resulted in engagement with 106 businesses, 42 schools (equating to over 14,000 pupils), and 14 new community cycle clubs added to over 15,000 participants in led rides and events. A principal objective of the programme is to address single occupancy car use by widening the range of available travel choices so that getting around more actively and healthily becomes attractive, easy and convenient¹¹.

This programme of measures is targeted at core corridors into and out of the city centre and dovetailed with capital investment in improved cycle infrastructure as part of the city's ambitious plans to double cycling rates from 7.4% along these corridors by 2020 as set out in its Cycling Strategy.

Planned Infrastructure Change

- As part of Southampton Cycle Network Route 8 (SCN8), a 'Quietway' route will be delivered along Quayside Road to Bitterne Village using CAZ Early Measures funding of £350k with works to commence in February 2019. This will provide safer more attractive route for cyclists from Northam River Bridge to Bitterne Village avoiding the air quality hotspot on A3024;

¹⁰ <https://myjourneysouthampton.com/>

¹¹ <https://www.southampton.gov.uk/roads-parking/transport-policy/ltp4.aspx>

- This will then link with further planned works on the A3024 Bursledon Road to complete a continuous cycle route from the city centre to Hampshire as part of Highway England’s M27 Southampton Junctions scheme. This will bring further improvements to cycle facilities, bus priority and journey time reliability and includes installation of electric vehicle charge points, sustainable travel hubs, and junction improvements.
- Southampton City Council is one of 10 cities shortlisted for the Transforming Cities Fund. The A3024 is one of four corridors identified within the funding submission.

Complementary behaviour change requirement

The potential benefits of this significant capital investment can be maximised if matched with targeted behaviour change measures in and amongst the local community in Bitterne and Northam. Providing people with the right information, tools and skills so that they can make independent and informed journeys is important to open up opportunities for work, leisure, or education, get people to increase their levels of physical activity, whilst helping reduce the negative impacts of congestion and pollution. These are as follows:

Table 22 MyJourney Measures

Measure	Description
Marketing campaign	Targeted direct marketing in the east of the city promoting newly completed cycle infrastructure works along Quayside Road and A3024.
Journey Planning	Additional layers to localised journey planner highlighting newly established Quietways route. Targeted advice to residents to outline options for localised journeys.
Tailored cycle mapping	Tailored cycle mapping for local area.
Staff time for local promotional activity	Staff hours required to project manage marketing and communications.
Staff time for schools and communities officer	Direct engagement, intensive work in local schools and community groups, manage consultation work on capital works and undertake co-design of local schemes.
Project resources	Contingency budget for schools and communities officer for additional tools and resources.

Value for money

Evidence from analysis of other SCC projects show that active travel interventions (focused on walking and cycling) generally offer very high value for money, when assessed using a WebTAG compliant method. Given the value of the intervention proposed within this business case, assessing value for money using this method isn't possible. However, evidence from current work being delivered as part of our DfT Access Fund sustainable travel behaviour change programme demonstrates that on average workplaces that we engaged with benefited from a growth in the number of

cycle journeys of around 7% during commuting times. Similarly, school engagement indicated that combining smarter choices activities with infrastructure may deliver an uplift in cycling levels of between 12% and 16% that infrastructure alone cannot achieve.

Additional Qualitative Benefits

- Efficiency and multiplying infrastructure and operational benefits: by helping to bring about mode shift away from the private car, the projects improve the efficiency of and journey time savings on the existing transport network;
- Public health benefits: economic impact from increased physical activity with savings for the NHS, reduce absenteeism and associated health benefits;
- Wide economic benefits: the City Centre Action Plan and Southampton and Hampshire Local Transport Plans identify the importance of improving cycling and walking participation to drive local economic growth and contribute to the future vision of Southampton
- Impact on individuals costs of travel: likely to be small reductions in cost of travel as cycling and walking, with a zero cost, is cheaper than motorised transport;
- Impact of cost for workplaces such as reduction in demand for car parking or operation of grey fleet vehicles;
- Labour mobility: increasing the labour pool availability and ability to access jobs where they may have been a barrier before, and for employers to access a skilled workforce.

The additional My Journey support outlined in this business case will add another tool to allow active travel levels to move past the critical 'tipping' point, after which walking and cycling will be a transport norm rather than the exception. Although projects are targeted on the Northam/Bitterne area we would expect some additional benefit to be achieved across the whole of Southampton and towns – particularly given the strong intra area flows.

Summary

The local modelling shows NO₂ compliance will be achieved at all locations in Southampton in 2020. The highest baseline concentration of NO₂ on the A3024 Northam Bridge is 38 µg/m³. There is approximately an average reduction of 2.5µg/m³ at each location in the city between 2019 and 2020.

In 2019, the highest concentration of NO₂ is 40 µg/m³ at census ID 46963 which is the A3024, Northam Bridge. This is compliant according to the EU Directive where values are reported to the nearest integer, however we must be mindful of the fact that this is at the limit value (i.e. the maximum level that could be deemed compliant), and is not directly modelled (it is an interpolated value between 2015 and 2020, increasing uncertainty in this value). Therefore measures are being proposed that can achieve reductions in NO_x emissions, and can be delivered in 2019, to increase the likelihood of compliance for both 2019 and 2020.

The non-charging NO₂ concentration values indicate there is minor air quality benefit of introducing the measures, however while NO₂ concentrations at EU relevant locations may not be significantly affected, there are direct emissions reductions as a result of the measures which will convey improvements in air quality once

implemented in 2019, and provide additional confidence in achieving compliance whilst reducing exposure, which provides additional health benefits compared to the do minimum option for 2019 and 2020. These measures also increase certainty that assumptions made in the modelling are met. Air quality benefits of non-charging Clean Air Zone will also continue beyond 2020 with additional emission reductions providing assurances that compliance is maintained in years beyond 2020.

Feasibility assessment shows the citywide class B clean air zone can't be implemented before the end of 2019/start of 2020 and will therefore not have a discernible impact on air quality in 2019. Compliance is likely in 2020 and so will not be achieved sooner and therefore is not considered as a shortlist option. More details on the CAZ B assessment are included in appendix C of this document.

Table 23 Preferred Option Measures

Measure	Description	Reason/Justification
Taxi Licensing Condition Change	Require newly licensed vehicles to meet Euro 6 diesel/4 petrol in 2020 and all vehicles Euro 6 diesel/4 petrol by 2023.	Require upgrade of taxi fleet beyond existing age limits to accelerate Euro 6 diesel/4 petrol uptake.
Restrict access to non-SCC licensed vehicles to SCC bus lanes	Incentivise SCC drivers to license in Southampton and therefore meet Euro 6 diesel/4 petrol licensing requirements.	Mitigate risk that vehicles license outside of SCC and do not meet new licensing requirements.
Expansion of Low Emission Taxi Incentive Scheme	Cashback on 3 years of licensing and operational costs to incentivise uptake of low emission vehicles.	Mitigate financial burden

ULEV Taxi Trial	Offering taxi drivers chance to trial a ULEV taxi to demonstrate benefits and cost savings.	<p>Demonstrate business case for owning and operating a ULEV taxi and encourage uptake of low emission vehicles in fleet.</p> <p>NO_x emission reductions of 1.24 tonnes in 2020.</p> <p>PM emission reductions of 0.01 tonnes in 2020.</p>
2 EV Charge Points for taxi use	Install 2 EV charge points for ULEV taxis at key locations in city.	<p>Mitigate risk that ULEV/low emission vehicles are not taken up due to lack of charging infrastructure availability.</p> <p>Provide charging infrastructure to taxi drivers as an alternative to drivers purchasing their own infrastructure i.e. reduce operating costs of ULEV taxi.</p>
Traffic Regulation Condition for operational buses in Southampton	Traffic regulation condition for operational public service vehicles in Southampton.	Mitigate risk that CBTF upgrades (included in modelling) are not maintained in absence of regulation in the city.
Freight Consolidation	Freight is consolidated at a location outside of Southampton to reduce vehicle movements inside the city and use Euro VI vehicles when vehicles access the city from the freight consolidation centre.	<p>Included in modelling for 2020 non-charging.</p> <p>NO_x emission reductions 0.68 tonnes in 2020.</p> <p>Particulate matter (PM) emission reductions of 0.18 tonnes in 2020.</p>

Delivery and Service Planning	Reviewing logistical operations in the city and identifying opportunities to reduce emissions of NO _x .	Drive uptake of freight consolidation.
Fleet Accreditation	Review vehicle fleets and logistical operations.	Drive uptake of freight consolidation.
A3024 MyJourney Support	Programme of communications and incentives to encourage sustainable and active travel in the Northam/Bitterne area.	Mitigate risk identified by air quality model of exceedance in Northam/Bitterne area.

3. Commercial Case

3.1. Summary of Service requirements and Outputs

Table 24 shows a summary of the measures required to implement the preferred option and the associated procurement routes where required. Further detail on the commercial case for each measure is also presented in this section.

Table 24 Measures and associated procurement requirements summary

Good/Service	Description	Procurement Route	Contract Length	Contract manager	Contact type
Taxi Licensing Condition Change	Changes to licensing conditions to accelerate uptake of modern vehicles with lower emissions.	None.	None.	None.	None.
ULEV Taxi Trial	Trial scheme for SCC licensed taxis to trial ultra-low emission vehicles	Grant contribution	3 years	Scientific Services	Grant agreement
2x rapid EV charge points	Install 2x rapid charge points at city owned car parks for use by taxi/private hire and public	Hampshire county council EV charge point framework. http://www3.hants.gov.uk/en/ergyandsustainability/electric-vehicle-chargepoints.htm	Framework call off	Strategic Transport	Contract
Low emission taxi incentive scheme expansion	Expand existing low emission taxi scheme to accommodate more vehicles.	Direct grant award from SCC to successful applicant to scheme.	n/a	Scientific Service	Grant agreement

Sustainable Distribution Centre	Operation of a Freight Consolidation Centre for the city to divert and reduce HGV movements.	SCC procurement strategic partner Capita	10 years	Strategic Transport	New contract
Delivery and Service Planning	A technical service to help organisations re-appraise their delivery and servicing strategies to reduce freight impacts	SCC procurement strategic partner Capita	3 years	Strategic Transport	New contract
HGV Fleet Accreditation Scheme	Fleet recognition scheme to engage and influence the environmental impact of operators of commercial vehicles on local air quality. Including consultancy services	SCC procurement strategic partner Capita.	3 years	Strategic Transport	New contract
ANPR cameras for monitoring and evaluation	ANPR cameras to collect data on fleet composition for use in monitoring and evaluation.	Strategic partnership with Balfour Beatty Living Places.	3 years	Balfour Beatty Living Places	Contract via strategic partners
5 Diffusion tubes	Diffusion tubes to monitor monthly NO ₂ concentrations.	Existing contract with diffusion tube supplier, Gradko Environmental.	3 years	Scientific Service	Extension to existing contract

Traffic assumptions check	Check assumptions made in transport modelling are being reflected in ANPR data obtained	Sub regional transport model agreement with Hampshire County Council	3 years	Scientific Service	Existing framework (as used for feasibility study)
Communication materials/ A3024 My Journey Marketing support	Any collateral requirements for CAZ communication and MyJourney media buying (e.g. leaflets, posters).	SCC procurement strategic partner Capita https://www.southampton.gov.uk/business-licensing/supply-council/	n/a	Comms (Comms plan) Strategic Transport (MyJourney Support)	Business as usual purchasing

3.2. Southampton City Council's Capability to Deliver

The feasibility study and development of a business case for delivering compliance has been resourced by JAQU. This resource will not be available past submission of the Full Business Case to the Secretary of State and therefore additional staff resource is requested (see management section 4.5) to oversee the day-to-day management of implementing the preferred option.

The Council has a project management office (PMO) which provide project management expertise and resource is requested to enable the implementation to benefit from this service.

Existing resource is available to undertake key governance roles (i.e. Scientific Service – Service Manager).

3.2.1. Highways Services Partnership – Balfour Beatty Living Places

The following Schemes will be delivered through the Council's Strategic Highways Service Partner – Balfour Beatty Living Places (BBLP):

- Development and design for introducing a traffic regulation condition for public service vehicles and subsequent highways works (including signage, road markings where appropriate).
- Signage, design and development for the bus lane restrictions for non-SCC taxis.
- Monitoring and evaluation implementation of ANPR traffic survey.

In 2010, SCC entered into a ten year multi-million pound Highways Strategic Partnership (HSP) with BBLP through an OJEU process, this was extended in 2018 for a further five years. The contract provides all the design and construction services needed for the Southampton schemes. Relevant features of the partnership include the use of Targeted Costing, shared risk management, and minimisation of environmental impacts.

3.2.2. SCC Procurement

Procurement of services and infrastructure required for the preferred option will be undertaken by Southampton City Council (SCC). SCC directly provides some services from in-house staff and resources. Where SCC needs to provide goods, services and works that can't be provided in-house, they are procured from external providers. Procurement is the process used to do this and is administered by Capita, the Councils strategic service partner. SCC is committed to achieving Best Value from the supply chain and recognise that best practice procurement is essential to achieving 'value for money' and improving service quality.

The council is a Public Body and must comply with all pertinent EU and UK Procurement Legislation and therefore, staff must, by law, adhere to the same. A number of policies and procedures have been developed to help us achieve these objectives and to ensure that our procurement activities:

- Comply with European Union (EU) and UK procurement legislation
- Conform to the councils Contract Procedure Rules as ratified by Full Council in May 2017, as well as all relevant internal policies, procedures and objectives.
- Achieve evidenced value for money in terms of quality and the price paid

- Test and demonstrate whether social value has been achieved
- Are open and transparent and safeguard against allegations of corruption, fraud or bias
- Are well documented to provide a clear audit trail
- Manage and address risks as well as opportunities

SCC contract procedure rules require:

1. Establish contract value at the start of every procurement.
2. Engage at the earliest opportunity with the Procurement Services Team (PST).
3. Definition of the need of the requirement and ensuring all options for delivery are explored.

Tender Procedure

The Rules and the associated procurement procedures vary according to the value of the contract, with stricter more rigorous procedures for higher value transactions. This is to ensure that the benefits of a more thorough, complex process are not outweighed by the cost relative to the value of goods, services or works in question. This is outlined in Table 25.

Table 25 Relevant procedure to be followed for different levels of contract value

Estimated Contract Value	Procedure to be followed
<ul style="list-style-type: none"> • £181,302** or over for goods and services* • £4,551,413** or over for works 	The OJEU Procurement Procedure
<ul style="list-style-type: none"> • £100,000 up to £181,301** for goods and services • £100,000 up to £4,551,412** for works 	The Procedure for High-Value Transactions
<ul style="list-style-type: none"> • £1,000 up to £99,999 for goods, services and works 	The Procedure for Intermediate-Value Transactions
<ul style="list-style-type: none"> • Up to £999 for goods, services and works 	The Procedure for Low-Value Transactions
<p>** Please note that these are the OJEU Thresholds (“OJEU Thresholds”) and are correct as at 1 January 2018 but are amended biennially in January.</p>	

3.3. Licensing Condition Commercial Case Key Service/Contract Requirement

Revising licensing conditions for taxi and private hire vehicles in Southampton to encourage early uptake of newer, cleaner vehicles has no associated capital expenditure. This will be delivered as business as usual by the licensing team in Southampton.

Key Milestones

Table 26 Licensing condition change key milestones

Date/ Commence	Phase	Milestone	Owner
31/01/19	Design	Drafting of revised conditions commence	SCC Licensing
01/04/19	Design	Consultation (12 weeks maximum)	SCC Licensing
24/06/19	Design	Review, amend and finalise conditions	SCC Licensing
w/c 02/09/19	Implementation	Licensing committee sign off	SCC Licensing Committee
w/c/ 16/09/19	Operation	Adopt conditions	SCC Licensing

Total Cost

No associated cost.

Procurement Route

No associated procurement.

Contractual Issues

None.

3.4. Bus Lane Restrictions Commercial Case

Key Contract/Service Requirement

Bus lane restrictions for non-euro 6 diesel/4 petrol taxi and private hire and non-locally licensed taxi and private hire vehicles will require revisions to existing signage.

This will be undertaken by Southampton’s highways strategic partner Balfour Beatty Living Places (BBLP). A key constraint for this brief will be to ensure work is completed in accordance with this business case’s project plan, and advantage of using this framework is that the scheme can be implemented quickly and BBLP are familiar with the road network and undertaking similar schemes in Southampton.

Outcomes:

- Revised signs communicating restriction of non-SCC licensed taxis in Southampton bus lanes.
- Amended Traffic Regulation Order to ensure enforcement is possible of new requirement.

Key Milestones

Table 27 Bus Lane taxi private hire restrictions key milestones

Date/ Commence	Phase	Milestone	Service risk	Mitigation	Owner
08/04/19	Design	Commission BBLP	-	-	SCC Strategic Transport
15/04/19	Design	Design and feasibility (6 weeks)	Exceeds timescales	BBLP familiar with existing local infrastructure and process.	BBLP
27/05/19	Design	Consultation (maximum 12 weeks)	Major flaw identified in proposal. Due process not followed.	Review design work and mitigate according to nature of issue. Contractual resolution.	BBLP / SCC Strategic Transport
w/c 19/08/19	Build	Sign-off	SCC require service change.	Contract communication protocol identified at commission.	SCC Strategic Transport

2/09/19	Build	Capital works	Issue on site prevent installation.	BBLP feasibility will identify issues prior to build. Risk/mitigations defined during design and dynamic risk assessment for unforeseen risks.	BBLP
14/10/19	Operation	Enforcement commence	TRO successfully challenged	Amended with SCC legal input.	SCC Strategic Transport

Total Cost

Table 28 Cost for bus lane restriction measure

Non-SCC Licensed Taxi/PHV Bus Lane Enforcement				
Requirement	Year	Note	Assumption	Cost
Non-SCC Bus Lane Restriction	1	TRO amendment	Professional judgement and experience of similar projects	£8,000
Signage	1	140 signs @ £500	Based on four signs per bus lane with 35 bus lanes in Southampton	£70,000
Contingency for signage				£10,500
TOTAL				£88,500

Procurement Route

BBLP Highways Services strategic partnership.

Contractual Issues

Table 29 Contractual issues for bus lane restriction measure

Duration of contract	Prior to end of 2019
Roles/Responsibilities	SCC Strategic Transport will be contract managing. BBLP will provide project management, technical input and provide design, feasibility and capital works.
Payment mechanism	Payment made following successful and timely completion of bus lane enforcement signage replacement and deliverables related to TRO amendment (October 2019 at the latest).
Change control	BBLP will attend CAZ Project Board to request a change, SCC will follow change request procedure described in management case.
Performance management	Performance monitored in accordance with existing service partnership terms. Key outcomes measured: <ol style="list-style-type: none"> 1. Delivery in accordance with specified timescales 2. No measurable impact on transport network. 3. Successful enforcement system for bus lane infractions.
Compliance with regulation	Regulations must be adhered to. For Bus Lane Enforcement signage a key regulation is a traffic regulation order (TRO), signage must adhere to this to ensure enforcement is robust
Operational/contract administration	Ongoing contract administration undertaken by SCC Strategic Transport and BBLP commercial team. Maintenance will be absorbed by existing arrangements for street furniture maintenance on road network.
Arrangements for resolution of disputes/ disagreements	CAZ Project Board used to identify and resolve disagreements. BBLP invited when required.
Allocation of risk	Payment mechanism allocates delivery risk to BBLP. Failure to deliver key outcomes can prevent receipt of payments.

3.5. Low Emission Tax Incentive Scheme Expansion Commercial Case Key Contract/Service Requirement

The value of the incentives currently offered are shown below, with the value of the individual running costs shown in table 30. In addition to those shown in table 2, plug-in and full electric vehicles will receive a further contribution to costs for insurance over the three year period. Any insurance costs that fall below the incentive value (i.e. additional £1,500 for electric or £500 for plug-in) will be recouped as per the conditions of the grant agreement.

Outcomes:

- The existing scheme is altered to allow grants for upgrading pre-euro 6 diesel and pre-euro 4 petrol wheelchair accessible vehicles or vehicles that carry 5-8 passengers with euro 6 diesel vehicles.
- Is expanded to cover all vehicles that are pre-euro 6 diesel and pre-euro 4 petrol in Southampton City Councils fleet.

The scheme currently offers the following cashback on licensing costs for replacing vehicles:

Full Electric: £3000

Plug-in Hybrid Electric Vehicle (PHEV): £2000

Full Hybrid: £1,500

Euro 5/6 petrol* (Carries 5-8 passengers or wheel chair accessible only): £1,500

**Recognising the limited availability of low emission and petrol vehicles that carry 5-8 passengers or are wheel chair accessible, it is proposed to also allow Euro 6 diesel vehicles.*

Table 30 Value of running costs for taxis in Southampton and Eastleigh

	Southampton Cost (£)		Justification
	Private Hire	Hackney Carriage	
Annual Licence (Annual)	161	210	Direct Licensing Cost
Compliance Test (Annual)	55	55	Direct Licensing Cost
VOSA MOT (Annual)	54.85	54.85	Direct Licensing Cost
Change of vehicle (Once only)	56	45	Direct Licensing Cost
Meter Refitting (Once only)	72	72	Based on current market – consultation with SCC Licensing
Camera Fitting (Once only)	120	120	Based on current market - consultation with SCC Licensing
Vehicle Service	335	335	Based on market and current scheme predominantly Toyota vehicles
Cost for 3 years	1730.55	1866.55	Assume 2 service per 3 years - not licensing requirement

It is proposed that this scheme is extended to ensure sufficient funds to offer incentives to all vehicles in the fleet that do not meet euro 6 diesel or euro 4 petrol.

Key Milestones

Table 31 Low emission taxi incentive scheme milestones

Date/ Commence	Phase	Milestone	Service Risk	Mitigation	Owner
31/12/18	Design	Comms plan development	-	-	SCC Comms
31/01/19	Build	Comms Launch	-	-	SCC Comms
08/04/19	Build	Scheme Launch	-	-	SCC Scientific Service / Comms
08/04/19	Operation	Year 1 funding level	Uptake not meeting targets	Comms/ awareness increase	SCC Scientific Service / Licensing
08/04/20	Operation	Year 2 funding level	Uptake not meeting targets	Comms/ awareness increase	SCC Scientific Service / Licensing
08/04/20 08/04/21 08/04/22	Operation	Monitoring and evaluation	data not provided	Grant conditions require provision of data for monitoring and evaluation	SCC Scientific Service

Operating Model

Applicants for the low emission taxi incentive scheme will first receive a conditional grant offer which outlines the key terms and conditions for the scheme. Once they have demonstrated that they have replaced their old vehicle with a new vehicle that meets these conditions, the grant will be issued in full. The conditions require that the vehicle remains licensed for a minimum three years (to ensure the grant covers licensing costs only). An annual review will ensure vehicles have remained licensed. Where the vehicle is not licensed within three years of receiving the grant, SCC will require the grants are repaid.

The grants are awarded on a conditional basis and checks will be made annually to ensure the vehicles remained licensed in accordance with the conditions.

Total Cost

Table 32 Low emission taxi incentive scheme cost of measure

Low Emission Taxi Incentive Scheme Expansion			
Requirement	Year	Note (See calculations for assumption)	Cost
Incentive grant	1	63 vehicles at £1,500	£94,500
	1	5 vehicles at £3,000	£15,000
Incentive grant	2	63 vehicles at £750	£47,250
	2	5 vehicles at £1,500	£7,500
TOTAL			£164,250

Procurement Route

No associated procurement.

Contractual Issues

Table 33 Contractual issues referring to conditional grants offered to successful taxi/private hire operators

Duration of contract	3 years following acceptance and successful change of vehicle
Roles/Responsibilities	SCC CAZ Team – Contract administration Driver – Provide monitoring data
Payment mechanism	Cheque paid on evidence of successfully licensed vehicle.
Change control	CAZ Project Board change management process as described in the management case.
Compliance with regulation	State aid compliant.
Operational/contract administration	SCC CAZ Team administer contract Operational – SCC Licensing undertake annual checks and initial vehicle checks.
Arrangements for resolution of disputes/ disagreements between the parties	SCC Legal team will resolve disputes that arise with taxi drivers regarding conditional grants and agreed grant conditions. These are clearly set out and signed by operators prior to funding being provided.

Allocation of risk	SCC delivered scheme. Driver holds risk once grant awarded to ensure vehicle remains licensed as SCC can reclaim grants for breach of contract.
---------------------------	---

State Aid

The proposed £7,000 limit on funding for any individual operator is intended to ensure that funding is evenly spread, and cannot for example be dominated by a few large operators for large scale fleet renewal which could risk distorting the market.

Procurement of individual vehicles would be the responsibility of each taxi operator and ensuring they get best value for their vehicle purchase is their responsibility. Their participation in the scheme would be at their commercial risk.

SCC contributions would not be directly linked to vehicle cost or value for money achieved by the operators, the contributions would be fixed and would only be paid out in full if an eligible (older) vehicle is replaced by an eligible vehicle and then operated as a taxi, with provision of monitoring data on schedule, for three years. Due to the nature of the project (a large number of small grants) rather than procurement of a single (or several) large cost elements, there are relatively few other procurement complexities for this scheme. There are no identified state aid issues as no individual grant will exceed £7,000 and the total value of support in each market is less than 200,000 euros and the contributions are for the running costs of vehicles rather than incentivising the purchase of the vehicle itself.

3.6. EV Charging Infrastructure Commercial Case

Key Service/Contract Requirement

SCC propose to install 2 rapid electric vehicle charge points for use by taxi operators and the general public with the intention of supporting the uptake of EVs and facilitating the low emission taxi incentive grant.

Outcomes:

- Site feasibility for location of 2 EV rapid charge points at strategic points for best use by taxi and private hire vehicles.
- Installation of 2 EV rapid charge points dedicated for taxi and private hire vehicle use.
- 10 years maintenance and on-costs included in upfront cost.

The procurement route for the EV charge points will be through the Hampshire County Council Electric Vehicle Infrastructure Framework¹². This was a Collaborative tender with Hampshire County Council to appoint contractor to carry out the installation of city-wide charging infrastructure for EVs and has been completed. The tender encompassed the following requirements for deploying EV charging points, divided into three categories:

- **Service** – Data and Contract management, with an end-to-end service offer;

¹² <http://www3.hants.gov.uk/energyandsustainability/electric-vehicle-chargepoints.htm>

- **Installation** – For both new points and replacements or adoption of existing charge points;
- **Consultancy** – The development of EV charging point location proposals and feasibility work.

The contractor is responsible for installation of recharge points, management of the network, maintenance and liability of the network, and marketing. The tender is a single supplier 4 year framework from which any public sector organisation, named in the documentation within Hampshire and the surrounding areas, can call works off, with a contract length of 4 years and a subsequent call off period of 7 years. This includes a comprehensive delivery of the project from the supplier, including feasibility, management of the arrangements and facilitation including liaisons for way leaves, planners, landlords, clients, and district network operators. Southampton City Council is named and can therefore call off this Framework.

Joju Solar Ltd have been named as the framework service provider following the tender by Hampshire County Council and will be undertaking the works commissioned by SCC as part of this plan.

The framework enables business model for both EV charge points procured will be **100% public sector funded**: In this investment model the named authority will provide 100% of the initial investment (from JAQU Clean Air Fund), and the supplier will provide an income charge from the point of installation to the named authority. The charge point will be wholly owned by Southampton authority in this model.

The specification also outlines expectations around;

- Communications;
- Reporting of faults;
- Routine maintenance programme with a 2 year servicing warranty;
- Adoption of existing charge points;
- Reporting;
- Promotion and publicity;
- Mapping of charge points on SAT-NAVs;
- Online mapping and information on availability;
- Responsibilities of the charge point provider with respect to civil engineering and builders works;
- Software and hardware requirements (Open protocol architecture including Firmware (command and control));
- User interface to ensure a consistent, high quality, standardised and easy to use charging point for the end user;
- Accessibility and risk reduction; and,
- Signage and display and branding.

Installation works for the EV charge points are built into the contractors work programme, a site feasibility study will be undertaken prior to the full business case. Initial capacity checks and liaison with the DNO has been undertaken.

Key Milestones

Table 34 EV Rapid charge points key milestones

Date/ Commence	Phase	Milestone	Service risk	Mitigation	Owner
01/04/19	Design	DNO Quotations	Supply capacity not available	Joju conduct site feasibility with suitable supply capacity	Joju
01/04/19 – 22/04/19	Design	Charge point design			Joju
22/04/19 – 03/06/19	Build	Instruct DNO (6 weeks before connection)			Joju
07/04/19 – 29/04/19	Design	Footpath permits	Objections	Site feasibility shared at early stage with BBLP	Joju
06/05/19 – 20/05/19	Build	Civil works	Unforeseen issues emerges delaying timeline	Dynamic risk assessment	Joju
20/05/19 – 03/06/19	Build	Charge point installation			Joju
03/06/19	Build	DNO connections			Joju
10/06/19	Build	Meter installation			Joju
10/06/19	Operation	Final commissioning	Not commissioned	HCC conduct regular checks at each delivery	HCC Property Services

Total Cost

Table 35 Cost of EV chargers measure

EV Charge Point			
Requirement	Year	Note	Cost
EV charge point equipment, install	1	2x rapid charge points	£100,000
TOTAL			£100,000

Procurement Route

Hampshire county council EV charge point framework. Value for money is assured as the framework undertook an OJEU process that itself demonstrated value for money. This was completed in 2018. Information on this framework is available here. <http://www3.hants.gov.uk/energyandsustainability/electric-vehicle-chargepoints.htm>

SCC also undertook a procurement prior to the existence of the Framework to procure 30 EV charge points, the outcome of this was that the same supplier was successful through our own process, giving SCC confidence that value for money will be realised.

Contractual Issues

Table 36 Contractual issues for EV chargers

Duration of contract	Access agreement signed with Hampshire EV framework granting open access to provider services.
Roles/Responsibilities	SCC – Client HCC – Framework manager Joju Solar Ltd – Framework service provider
Performance management	Performance targets for delivery and maintenance including response to call-outs set within framework.
Payment mechanism	Payment will be made following completion of works and sign off from a partner at Hampshire County Council assigned to undertake quality assurance checks of works on behalf of SCC associated with this framework.
Change control	CAZ project board and change governance process in management case.
Compliance with regulation	Evidence of hardware and software compliance with EV charging regulations required prior to commencement of works.
Operational/contract administration	SCC Strategic Transport is client

	<p>HCC performance management and compliance checks</p> <p>Operational and maintenance contract defined in framework – 3 years warranty as standard on hardware. Maintenance charge defined in framework at set rate and incorporated into costs.</p>
Arrangements for resolution of disputes/ disagreements between the parties	<p>HCC Framework manager act as mediator to any issues arising.</p> <p>Performance targets for delivery and maintenance including response to call-outs set within framework.</p>
Allocation of risk	<p>Due diligence during framework procurement ensured necessary checks around commercial viability and track record were undertaken. Payment mechanism ensures invoice upon satisfactory delivery of requirements.</p>

3.7. ULEV Taxi Trial Commercial Case

Key Service/Contract Requirement

Some of the highest mileage vehicles on our roads are our taxis (including both hackney carriage and private hire vehicles), which complete the majority of their mileage in our most densely populated areas. Our engagement and consultation work has identified the feasibility of using zero or low emission vehicles is hugely important to taxi drivers. With the service provider (Electric Blue) SCC will work with the taxi community to and provide them with the financial motivation to switch to EVs, whilst demonstrating the minimal impact an EV would have on their daily lives.

Electric Blue have secured funding from the European Regional Development Fund to deliver the scheme in Southampton, Winchester and Basingstoke for three years.

Southampton City Council has agreed a Memorandum of Understanding with Electric Blue to support the scheme in Southampton and provide net match funding of £12,000 per year for the duration of the scheme, subject to Southampton Council securing their funding and agreeing to the terms of the Grant Funding Agreement and a Collaboration Agreement (to be pursued in accordance with SCC Contract Procedures Rules section 19.2.2).

Outcomes:

- Trials delivered in Southampton to enable taxi drivers to experience ultra-low emission vehicles.
- Provide data allowing drivers to compare their habits and costs in a diesel vehicle in comparison to a ULEV, demonstrating the benefits of these vehicles.

Key Milestones

Table 37 ULEV Trial milestones

Date/ Commence	Phase	Milestone	Service risk	Mitigation	Owner
01/04/19	Operation	Implementation	Not implemented in time	Implement in accordance with existing schemes	Electric Blue
01/04/20	Year 1	Annual report	Under performance	Marketing / review evaluate and promote	Electric Blue
01/04/21	Year 2	Annual report	Under performance	Marketing / review evaluate and promote	Electric Blue
01/04/22	Year 3	Annual report	Under performance	Marketing / review evaluate and promote	Electric Blue

Total Cost

Table 38 Cost for ULEV Taxi trial measure

ULEV Taxi Trial			
Requirement	Year	Note	Cost
ULEV Taxi Trial	1	Scheme	£12,000
	2	Scheme	£12,000
	3	Scheme	£12,000
TOTAL			£36,000

Procurement Route

No associated procurement route as no procurement required (grant contribution only).

3.8. Bus Traffic Regulation Condition Commercial Case

Key Service/Contract Requirements

Southampton have been awarded £2.7m from the Clean Bus Technology Fund to upgrade buses to a standard that would meet compliance if a charging Clean Air Zone were introduced that included buses. This scheme is currently being implemented and is scheduled for completion by the end of 2019. To ensure there is no adverse impact on the viability of services, the traffic regulation condition will not be implemented prior to the end of 2019 or until we are satisfied that the outcomes of the CBTF scheme have been delivered.

Outcomes:

- Introduce a traffic regulation condition in Southampton that will require a minimum Euro VI emission standard from operation buses in the city.

Key Milestones

Key milestones are based on consultation with authorities that have implemented a traffic regulation condition. Due to the extent of the consultation that occurred for the Clean Air Zone and the funding secured for the CBTF, this timeline represents a conservative approach. However, the TRC will not be implemented prior to the start of 2020 due to existing CBTF timescales.

Table 39 Key milestones for bus traffic regulation condition

Date/ Commence	Phase	Milestone	Service Risk	Mitigation	Owner
01/04/19	Design	In principle approval	-	-	SCC
08/04/19	Design	Stakeholder engagement (8 weeks)	Objections received	CBTF funding to upgrade vehicles. Early engaging.	BBLP
03/06/19	Design	Draft Traffic Regulation Condition (TRO) (5 weeks)	-	-	BBLP
08/07/19	Design	Request to Traffic Commissioner	-	-	BBLP
30/09/19	Design	Formal consultation (12 weeks)	Objections received.	CBTF funding to upgrade vehicles.	BBLP

				Early engaging.	
December 2019	Build	Approval	Not approved.	Early engagement and briefings.	SCC
01/01/20	Operation	Adoption	-	-	SCC

Total Cost

Table 40 Costs for bus traffic regulation condition measure

Traffic Regulation Condition for Public Service Buses			
Requirement	Year	Note	Cost
Traffic Regulation Condition	1		£8,000
TOTAL			£8,000

Procurement Route

BBLP Highways Services strategic partnership. Stakeholder engagement has been undertaken throughout the CAZ consultation and will continue through engagement from SCC staff and bus operators through business as usual processes. The benefit of this route is the existing strategic framework allows immediate progress on approval of funding. BBLP are also experienced in delivering traffic related schemes in the city as the highways services partner.

Table 41 Contractual issues for bus traffic regulation condition

Duration of contract	Prior to end of 2019
Roles/Responsibilities	SCC Strategic Transport will be contract managing. BBLP will oversee TRC implementation.
Payment mechanism	Payment made following successful and timely completion of TRC.
Change control	BBLP will attend CAZ Project Board to request a change, SCC will follow change request procedure described in management case.
Performance management	Performance monitored in accordance with existing service partnership terms.
Compliance with regulation	Traffic regulation condition must be developed in accordance with regulations and legal requirements.

Operational/contract administration	Ongoing contract administration undertaken by SCC Strategic Transport and BBLP commercial team.
Arrangements for resolution of disputes/ disagreements	CAZ Project Board used to identify and resolve disagreements. BBLP invited when required.
Allocation of risk	Payment mechanism allocates delivery risk to BBLP. Failure to deliver key outcomes can prevent receipt of payments.

3.9. Freight Measures Commercial Case

This measure proposes to introduce three measures to reduce emissions from HGV freight in the city. These are:

1. Freight Consolidation Centre – A facility outside of the city that will consolidate deliveries onto cleaner vehicles and enable fewer total journeys to be made within the city. This is an extension to an existing consolidation centre agreement that has been extended by 1 year to facilitate the CAZ feasibility and decision making. At the end of 2019 a procurement is required to establish a framework agreement for delivering a freight consolidation centre and applying subsidy to promote its use.
2. Delivery and Service Plans (DSP) – Providing expert advice to HGV/logistic operators on how best to reduce emissions from activity and promote efficient, sustainable logistics. This will be delivered by an external contractor who has been identified through SCC’s procurement process. DSP’s will commence in April 2019 on confirmation of funding and will complement the freight consolidation centre by signposting participants to the availability of the scheme and supporting subsidy.
3. Fleet Accreditation – An expert review of a HGV/Freight operator’s vehicle fleet and identify areas for improvements in emissions. This will be delivered by an external contractor who has been identified through SCC’s procurement process. Fleet Accreditation will commence in April 2019 on confirmation of funding and will complement the freight consolidation centre by signposting participants to the availability of the scheme and supporting subsidy. Business Support will also be provided by the appointed contractor for the fleet accreditation and delivery and service plans.

The freight and logistics sector plays a critical role for the wider Southampton economy. Given its significance, Southampton City Council has established a Sustainable Distribution Centre (SDC) on the outskirts of the city to reduce the air quality impact of freight movements without jeopardising the ability of the freight industry to service the city and surrounding area. The SDC provides an alternative delivery site for those HGV operators with older vehicles and reduces HGV movements into the city overall by consolidating loads.

A very specific operating model has been put in place for the SDC to reduce the financial burden on the public sector and deliver value for money for end users.

- Less capital funding is required for the scheme as the SDC makes use of a pre-existing facility;
- Consolidation is not treated as a standalone service but coupled with other freight services;
- The procurement framework that has established the SDC, which concluded in December 2018, provided the contractual route for public sector bodies to access the SDC. It has been in place for 5 years allowing organisations to review supply contracts due for renewal over that time frame and consider the costs and operational changes for switching to a new model of delivery. A key lesson from this has been that the length of the framework provides contractual certainty for potential users and more justification for altering business practice to such a significant extent.
- Alternative consolidation models have been wholly dependent on public subsidy to underpin the facility costs and all operating costs as a stand-alone service. The establishment of a new SDC (freight consolidation) procurement framework for Southampton and the surrounding area is an opportunity to reduce reliance on public funding but accelerate the growth in the absence of a charging clean air zone.

Southampton's position allows for its SDC to service the wider sub-region and provide consolidation and last-mile logistics for a much wider area than the city itself. This will directly benefit neighbouring areas with air quality concerns including Eastleigh, New Forest, Fareham, Winchester and Portsmouth. The Isle of Wight also stands to benefit. The current SDC framework expired in December 2018. The City Council is reliant on Government Air Quality funding to re-procure the framework and allow the freight consolidation service to continue as there is no other funding stream currently available nor anticipated within the timescales.

In order to meet the timescales of the Clean Air Zone feasibility study and business case, procurement has commenced at risk for the delivery and service plans and fleet accreditation, and considerable design and development work has been undertaken to ensure on approval, the scheme can be implemented immediately.

There is a recognition that for those organisations operating commercial HGV fleets and/or those organisations who depend on suppliers who operate HGVs, expert advice and support will need to be provided to facilitate and accelerate the move to low emission vehicles and sustainable logistics behaviours including the use of the SDC. To this end there are two further interventions identified. These are the implementation of Delivery and Servicing Plans (DSPs) and a Fleet Recognition Scheme.

In addition to conducting DSPs and/or undertaking a fleet review as part of a recognition scheme and providing recommendations, businesses also require resource and expert support to conduct any audit, assessment, analysis and initial implementation phases of a DSP or of a fleet recognition scheme. Additional

consultancy support and time to aid the implementation of recommendations in DSPs is therefore also required.

Options are presented in the financial case which set out differing levels of investment in these measures.

3.9.1. Freight Consolidation Commercial Case

Key Service/Contract Requirement

Including but not limited to:

- 10 year framework
- Private sector charging rates are no more expensive than charging rates provided for in framework agreement for public sector
- Service provider expected to lead role in recruitment of new service users in collaboration with SCC and DSP service provider.
- Freight consolidation must provide service suitable for delivering in Southampton and surrounding area.
- Assist new users in negotiating cost reductions from their suppliers to allow for reduced transport costs linked to the change in trunking time and avoiding time taken to access Southampton city centre.
- Need to ensure equal opportunities policy consistent with SCC's.
- Need to maintain freight consolidation branding for the life of the framework agreement.
- Ensure all relevant public liability, employer liability insurance, professional indemnity, controlled drugs licence and goods in transit insurance that are necessary for it to operate all the services required.
- Expected to demonstrate an ongoing and existing commitment to operating in a sustainable manner in line with the principles of SCC's emerging Green City Charter.
- Service provider expected to be operational within 8 weeks of appointment.
- The facility must be capable of receiving goods 24 hours a day, 7 days a week.
- The facility must be capable of storing goods stored on short, medium and long term basis depending on the requirements of the user and providing a pick and pack operation.
- Must be capable of offering specific services including but not limited to:
 - Labelling and barcoding
 - Inventory control
 - Just in time delivery
 - Reordering facility
 - Inter-branch transfers of goods
 - Reverse logistics (drop something off and take something back e.g. waste)
 - Secure and controlled areas for sensitive goods
 - Market standard level of security and fire prevention arrangements in place
 - Provision of online information about service
 - Performance reporting

Southampton has operated its Sustainable Distribution Centre (SDC) since 2013. The SDC performs the role of a Freight Consolidation Centre for the city. The operating model is as follows:

- The SDC service operator is procured via a single-operator framework. The framework sets out the parameters/expectations of the operator and offers a pathway for public sector bodies to access their services. The framework offers suitable due diligence enabling users to have confidence in service quality. The longevity of the framework is also critical in instilling confidence in potential users who require contractual security for their supply chain. The higher the confidence there is in the stability and continued availability of the Freight Consolidation Service the higher the likelihood of any potential user switching from existing supply arrangements particularly if it involves supply chain changes at scale – this will be a key factor for a new Southampton SDC framework established as part of this local plans package of measures. For potential users, including the University Hospital Southampton, a 10 year framework would be necessary to account for the volume of supplies that would be re-directed and to secure the likelihood of the contract coming to fruition;
- Framework ended as of 17th December 2018. An interim agreement has been secured to allow continued use of the facility until the new long term framework is procured. Funding required to allow for continuation of an SDC service for the city and surrounding area;
- The framework sets out secured/negotiated commercial rates for the loading and unloading of vehicles, the storage costs per square metre and the transshipment rates based per pallet. This transparency means that individual contract negotiations with potential users don't need to occur;
- The SDC service operator is required to have a facility/warehouse already in operation that could be used for consolidation purposes but is shared with other logistics operations and utilises shared warehouse staff, vehicles and infrastructure (a shared user facility). Consolidation needs to be a business not standalone. This is critical so that the public sector does not incur the CAPEX cost associated with setting up a new facility and covering the operational overheads without diverse income streams. It also removes the burden of securing land, planning permissions and other expenses and time delays;
- The SDC service operator is required to provide comprehensive warehousing, racked and un-racked secure storage services, Advanced Stock Control, 24/7 operations and Coordinated waste, recycling and reverse logistics;
- The SDC service operator is required to be capable of offering the options of pre-retail services so that goods arrive at the end users ready to go on the shelf. This should include but is not limited to unpackaging, picking and packing, boxed to hanging, labelling and bar-coding and break-bulk services;
- The SDC service operator is required to have the ability to deliver 24 hours a day 7 days a week;
- The service is targeted at large-scale public sector bodies and organisations with significant throughput of deliveries, light construction activity and logistics chains delivering into the area;
- The SDC services provider is required to assist its new users in negotiating cost reductions from their existing suppliers to allow for reduced transport costs linked to the change in trunking time and avoiding time taken to access Southampton City Centre;

- To enable competitive rates to be offered, to encourage early take-up and to cover some of the initial transfer costs for new users a financial subsidy is to be available for users which will be administered by the operator. Over time and following initial set-up, as volumes increase, supply chain costs should reduce;
- Added to subsidy support available to new and potential users, Delivery and Servicing Plans (DSPs) are offered to organisations in Southampton and the surrounding area. A DSP aims to identify economic, operational and environmental efficiency opportunities for organisations related to their freight and servicing activities. DSPs help to sign-post the potential for consolidation. Details about the format and dispensation of DSPs is covered in section 5.2 below;
- Over and above the actual assessment and analysis involved in DSPs, organisations can require resource and expert support to develop the full business case for transfer of goods to a consolidation centre and to commence the initial implementation phases of a DSP. Additional consultancy time is to be made available to businesses to enable them to put in place the measures outlined in a DSP, with time available to help aid the switch-over to the consolidation centre.

Two models of operation are applied depending on the user and their needs:

1. Transshipment, whereby goods are transferred from the supplier's vehicle to a Euro VI vehicle, using the Southampton SDC only for the unloading, organisation and loading of goods; and,
2. Threshold consolidation, whereby all deliveries of goods to the SDC are held in the consolidation centre until a pre-established time interval or volume of goods is achieved to 'trigger' the delivery of the goods to the end customer, fulfilled by a Euro VI vehicle.

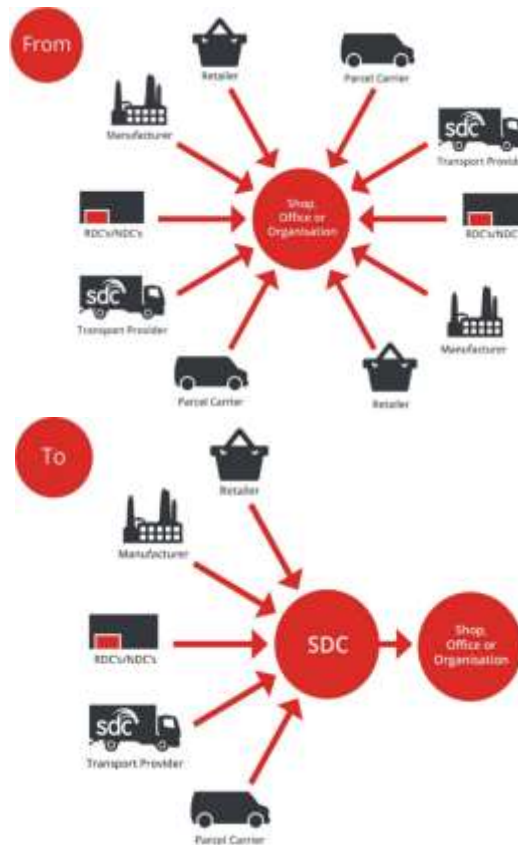


Figure 19 Freight consolidation operating models

Freight Consolidation Centre Financial Model

The costs for the consolidation of goods at a FCC may be divided into two key categories:

1. Space requirements, relating to the amount of space required to temporarily store items for a given period of time (costed in weekly increments); and,
2. Staffing requirements (staff time), relating to the staff time required to load / unload, and managed freight within the consolidation centre.

The impacts of each of these two categories on the costs of consolidation for a company are highly variable between each potential model of operation as outlined above. For example, costs for the transshipment model will likely comprise a higher proportion of staffing requirement associated with the transfer of goods from a supplier's vehicle to a Euro VI vehicle, with low- / no- costs associated with space requirements due to the transient nature of the goods; whereas, costs for the threshold consolidation of goods at the SDC will accrue costs related to space requirements (depending on the characteristics of the freight, e.g. standard / stackable / difficult), with a highly variable set of costs associated with the administrative burden related to the receipting, picking and creation of documentation.

In the event of a transshipment method of consolidation being implemented, financial subsidy would be best applied to cover, in part or in full, the costs up to an agreed number of onward deliveries per day to make the subscription to consolidation services attractive. However, if a threshold consolidation model is selected, subsidies may need to be structured to cover, in part or in full, the costs associated with the

onward deliveries and the storage costs. However, it should be noted the expected total number of onward deliveries for threshold consolidation would likely be lower due to the consolidation of goods within the FCC.

For both models of consolidation the total financial and air quality benefits yielded by suppliers is dependent upon participation resulting in no further requirement to travel inside of the Southampton CAZ. For this to be achieved, an assessment of their supply chain within the Southampton CAZ will be required as part of any successful scheme moving forward. For this reason, the Southampton FCC operating model would provide potential users with the necessary expertise to undertake such an assessment.

How is Subsidy Applied

The subsidy will be broadly applied to ease the initial financial burden that may be present for some operators for transferring goods or altering their supply chains if they are 'in-contract' with an existing supplier.

An example is SCC previously stored its legal records in 7 secure locations across the city under a lease. These records were consolidated and stored at the existing sustainable distribution centre, but the leases incurred cancellation fees when the records were moved.

This initial upfront expense may have prevented the move as the budget wasn't immediately available to account for this even though there would be long term savings by moving. Similarly, if the hospital were to push forward with a move to the freight consolidation centre then the consolidation of all hospital supplies off-site will necessitate spending on additional roll cages and equipment. There may be enhancement works required at the hospital to enable digital receipting of goods which may also come at a cost requiring up-front investment which there may not be a budget readily available for.

Changing the way goods are supplied to sites across the city will unearth a multitude of practical barriers that will potentially require some investment to prevent them putting off interested parties from progressing with switching to an SDC.

Supporting Uptake of Freight Consolidation

There is a recognition that for those organisations operating commercial HGV fleets and/or those organisations who depend on suppliers who operate HGVs, expert advice and support will need to be provided to facilitate and accelerate the move to low emission vehicles and sustainable logistics behaviours including freight consolidation. To this end there are two main interventions identified. These are the implementation of Delivery and Servicing Plans (DSPs) and a Fleet Recognition Scheme.

Both of these interventions share the characteristics of making changes to transport and logistics management behaviour, utilising existing technologies to better effect and, if possible, utilising new, cleaner technology. Both interventions have provenance and credibility, backed up by case studies across the UK and, in some cases, Europe. Both need financial support to implement.

Key Milestones

Table 42 Key milestones for freight consolidation procurement following ending of existing interim arrangement

Date commence	Phase	Key Milestones	Owner
01/02/2019	Design	Completion of PLD Gateway	SCC Strategic transport and SCC procurement
01/03/2019	Design	Finalise specification	SCC Strategic transport
01/03/2019	Design	Finalise T&Cs	
01/03/2019	Design	Preparation of all required tender documentation	SCC procurement
01/03/2019	Design	Prepare Advert/OJEU Notice	SCC procurement
01/03/2019	Design	Approve Advert/OJEU Notice	SCC procurement
01/03/2019	Design	Publish Advert/OJEU Notice	SCC procurement
03/03/2019	Design	Issue Tender	SCC procurement
03/04/2019	Design	Close Tender	SCC procurement
w/c 04/04/2019	Design	Evaluate Tender	SCC Strategic transport and SCC procurement
w/c 11/04/2018	Design	Draft award report for Client approval	
w/c 11/04/2018	Design	Issue Client with link to Procurement Services Satisfaction Survey	
12/04/2019	Design	Standstill Period	
26/04/2019	Design	End of Standstill	

w/c 26/04/2019	Design	Compile Contract documentation and issue to Legal	
26/05//2019	Design	Bind and Issue Contract for signing (Legal)	4 week SLA with legal
	Design	Mobilisation Period required by the Client i.e. 3 / 6 months	
01/01/2020	Operation	Contract Commences	

Total Cost

Table 43 Costs for freight consolidation measure

Freight measures				
	Year	Target	Note	Cost
Freight Consolidation Centre				
Marketing	1-10	10 major users per year	Engagement costs through business networks and direct marketing	£200,000
Monitoring and Evaluation and contract management overheads	1-10	10 major users per year	Contract management costs, data capture, processing and reporting performance	£200,000
Subsidy	1	Early adopters	Financial support for start-up and switch over for early adopters	£500,000
TOTAL				£900,000

Procurement Route

The financial models required to operate a freight consolidation centre vary considerably depending on the nature of the clean air zone implemented in Southampton. If a charging scheme is required there will be a financial burden on businesses operating in Southampton and a freight consolidation centre would be a mechanism to mitigate this impact. However, in the absence of a charging mechanism there will need to a different financial model. It is therefore critical that the nature of the Clean Air Zone adopted in Southampton is understood as this will impact the response of the market to the tender.

To mitigate the risk that tender responses are not consistent with the preferred option, SCC has negotiated an interim arrangement with the current framework agreement

for the Sustainable Distribution Centre enabling continuity of service whilst the conclusion of the procurement of a new framework agreement is still outstanding.

The extension has been negotiated on the basis that the new framework terms and conditions will supersede the existing arrangements once in force. This has enabled the procurement of the new framework to commence once the Clean Air Zone business case is in the public domain rather than prior.

Framework tender documentation is prepared and ready to go to market once the market has a clear view on the approach Southampton will adopt.

Following this, the process will be a 10 year Single Supplier Framework for Sustainable Distribution Centre Services. The longevity of the framework is critical to enable confidence in the market. The location of the service is a key consideration to the success of the operation of this contract. Suitable sites must meet key considerations to facilitate this contract:

- 1) Located outside of the Clean Air Zone to be able to facilitate reducing emissions within Clean Air Zone (under non-charging, the city boundary);
- 2) Within proximity to be able to service the requirements in less than 1 hour. To enable a successful contract, the service time into Southampton must be small enough to be comparable with driving the delivery directly. This will dictate location based upon the practicality of delivery performance;
- 3) The SDC facility needs to comply with storage requirements governed by GDPR, to enable all kinds of goods to be stored and distributed;
- 4) The SDC must be capable of receiving deliveries of goods 24/7 in order to provide greater flexibility to the user's suppliers and increase the potential for night time delivery receipt and dispatch of goods;
- 5) Pricing to cover the whole range of services;
- 6) Secure storage and recovery services; limiting access within the storage facility to reduce risks of losses

An open OJEU procurement process will be followed to test the market for site availability and suppliers finding the best service offering to meet the specification. General Data Protection Regulations (GDPR) requirements in terms of records storage security and processes should will be a key factor in tender assessments to ensure data security for prospective users of the service. This procurement process will ensure value for money is achieved.

Contractual Issues

Table 44 Contractual issues for freight consolidation measure

Duration of contract	Interim agreement rolling for further 12 months to allow for new framework procured for 10 years.
Roles/Responsibilities	SCC framework manager Operator provision of facility and service
Payment mechanism	Annual recharge to cover management costs and marketing expenses, subsidy allocated on a case by case basis dependent on client needs. Administered by SCC Strategic transport and Operator.
Change control	Framework will establish long term service conditions to give confidence to the market. This will secure set rates for storage, overheads (e.g. staff time) and transition. Reason for framework is for set commercial terms that will be transparent and consistent therefore change is not anticipated.
Failure remedies	DSP and Fleet accreditation time will focus on addressing barriers if they emerge.
Performance management	Must provide regular performance reporting consistent with SCC monitoring and evaluation plan in this document.
Compliance with regulation	Relevant regulations must be adhered to. License to handle controlled drugs as a company (medicinal and pharmaceutical items) required to fulfil needs of potential NHS users.
Operational/contract administration	SCC Strategic Transport will act as contract managers.
Arrangements for resolution of disputes/ disagreements	SCC's and freight consolidation service providers obligations defined in the framework agreement will set out legal expectations for compliance with industry best practice, satisfying conditions in the tender specification. Legal conditions established in framework agreement that will define the conditions that would require termination of contract and the process to follow.
Allocation of risk	Interim 12 months agreement risk is apportioned solely to private partner. This has been agreed on the basis that a longer term framework will be procured. SCC and the private partner will share risk for newly procured

	<p>framework but 10 year framework and subsidy support will reduce risk for private partner by covering operational and management overheads that lead to financial barriers encountered by clients.</p> <p>Current risk without investment the consolidation centre does not generate the level of interest necessary to realise the benefits.</p>
--	---

3.9.2. Delivery Service Planning Commercial Case

Key Service/Contract Requirement

The appointed supplier will need to provide specific expertise for undertaking DSPs, with evidence of past experience provided in the procurement process.

DSP's as defined in the specification should at a minimum

- Quantify the numbers of delivery and service vehicles visiting their premise by activity type and time;
- Manage deliveries and service activity to reduce and re-time trips
- Assesses procurement strategies to evaluate how to reduce / consolidate orders that generate freight movements
- Identify where safe and legal loading can take place
- Use delivery companies who can demonstrate their commitment to environmental (and air quality) best practice and use Euro VI vehicles
- Save time and money
- Improve safety and reliability
- Reduce the environmental impact of participating organisations
- Cut congestion in the local area

A Delivery and Servicing Plan (DSP) aims to identify economic, operational and environmental efficiency opportunities for organisations, related to their freight and servicing activities, that will challenge several of the business operating procedures for the receipt of physical supplies and services in their location.

Funding is sought to deliver DSP's to businesses and organisations in Southampton that will benefit from the service and ultimately reduce their vehicle trips and subsequent emissions of NO_x.

A DSP includes an audit of a businesses' internal procurement and inventory management activities and strategies, and a survey of the resultant freight and servicing vehicle activity at its premises. Following these assessments the information collected is analysed to create a comprehensive overview of the businesses' delivery and servicing activities, and formulate a set of recommendations designed to improve the management of inventory within a business.

A DSP helps local organisations:

- Re-appraise their delivery and servicing strategies to reduce freight impacts;

- Identify the areas of a business which generate significant amounts of delivery and servicing activities to business' premises;
- Assess the economic and environmental efficiency of the inventory management processes (including procurement) and the freight and servicing activities;
- Formulate a set of bespoke recommendations and solutions for a business based on the previous two aims. Solutions will be categorized into 'quick-wins' and 'long-term wins'.

There are many locations in which a DSP can be implemented, each of which essentially follow a hierarchy of ease for gaining acceptance and implementation. Influencing factors include the size of the DSP, the physical geography and the business profile and, in particular, the number of organisations occupying a target DSP site(s). The implementation strategy for Southampton would be as follows:

- Identify candidate geographical areas or zones within the CAZ;
- Identify the businesses by premises and activity;
- Create a hierarchy of business and premises;
- Make direct approaches to selected businesses;
- Commence the DSP process with engaged businesses – looking at quick wins in the first year;
- During the completion of Year 1 implementation, produce a series of case studies for future promotion of the benefits to other businesses;
- During subsequent years target additional businesses and premises, working through the hierarchy.

Key Milestones

Procurement for the DSP has commenced at risk, provisional contract award will finish in January 2019 with contract commencement due in April 2019 on confirmation of funding.

Table 45 Milestones for DSP

Date/ Commence	Phase	Milestone	Service Risk	Mitigation	Owner
Complete (December 18)	Design	Tender to market	-	-	SCC
Complete (January 19)	Design	Tender evaluation	-	-	SCC
28/01/19	Design	Provisional award	-	-	SCC
28/01/19	Design	Standstill	-	-	SCC
01/04/19	Design	Contract award/commence	-	-	SCC

01/04/19	Operation	Year 1 offer	KPIs not delivered	Regular performance reviews	DSP Provider
01/04/20	Operation	Year 2 offer	KPIs not delivered	Regular performance reviews	DSP Provider
01/04/21	Operation	Year 3 offer	KPIs not delivered	Regular performance reviews	DSP Provider

Total Cost

Table 46 Cost for DSP measure

Delivery and Service Plan				
	Year	Target	Note	Cost
Delivery and Servicing Plans (DSPs)	1-3	10 DSPs per year	Cost of £15k per DSP	£450,000
TOTAL				£450,000

Procurement Route

SCC procurement strategic partner Capita, The OJEU Procurement Procedure. This is a competitive tendering process that will compare quality and cost to establish the supplier that offers the best value for money and will provide confidence in delivering by demonstration of previous experience and capability in the field.

Subject to final commercial checks, stand-still period and contract award/acceptance, SCC expect to appoint Transport Research laboratory (TRL) to undertake this service.

Contractual Issues

Table 47 Contractual issues for DSP

Duration of contract	3 year contract, commencing upon approved receipt of funding (anticipated Mar/Apr 2019).
Roles/Responsibilities	SCC Strategic Transport will contract manage DSP service provider will undertake DSP, monitoring and evaluation and marketing.
Payment mechanism	Invoicing scheduled to be agreed within the conditions of the contract. Anticipated to be monthly invoicing for previous months work.
Change control	Progress reports will be discussed at monthly progress calls and with face to face meetings every quarter. This

	will enable transparency of performance and inform any changes required should KPI's not be delivered.
Failure remedies	As above.
Performance management	<p>Monthly performance project reports and a dashboard to update on progress. They will also collate a list, updated monthly, of recommendations in DSP reports, building up a library of measures that will allow common themes or needs to be identified.</p> <ul style="list-style-type: none"> • Number of organisations engaged • Recent and planned activity • Red Amber Green (RAG) status • Ongoing actions and decision points
Compliance with regulation	All relevant regulation will be adhered to.
Operational/contract administration	SCC Strategic Transport will act as contract managers.
Arrangements for resolution of disputes/ disagreements	Established in contract terms.
Allocation of risk	Payment of DSPs provided following successful delivery therefore financial risk allocated primarily to provider.

3.9.3. Fleet Accreditation Scheme Commercial Case Key Contract/Service Requirements

The appointed supplier will need to provide specific expertise for undertaking fleet accreditation, with evidence of past experience provided in the procurement process.

Fleet accreditation as defined in the specification should at a minimum:

- Engage and influence the environmental impact of operators of commercial vehicles on local air quality, particularly NOx and PM emissions;
- Target local freight operators and service providers operating HGVs;
- Help operators reduce fuel consumption;
- Provide the tools and ongoing support for members to reduce operating costs;
- Assess fuel management, driver skills, vehicle specification and maintenance, use of IT support systems, and targeting and monitoring of performance;
- Provide an action plan to guide operators on how to improve performance;
- Provide a means of acknowledging and rewarding successful implementation of recommended measures;
- Baseline fleet performance and provide follow-up (post-implementation) assessment to quantify improvement;

- Provide recommendations for ongoing engagement and improvement.

A fleet recognition scheme puts in place an effective mechanism to engage and influence the environmental impact of operators of commercial vehicles on local air quality. Funding is sought to deliver DSP's to businesses and organisations in Southampton that will benefit from the service and reduce emissions of NO_x.

The scheme will be open to freight operators and service providers operating HGVs. It will offer fuel management and operational efficiency support, designed to help operators reduce fuel consumption. The scheme will need to be publicised widely, which is included within the contract required to deliver the fleet accreditation scheme, across the large number of logistics and servicing organisations in the City Region which use commercial vehicles either as their primary business or in support.

The Scheme works on the principle of reviews that are undertaken by an appointed external expert on the vehicles on an individual basis for environmental credentials, including Euro Engine Standard and any additional fuel saving technology and environmental features, such as anti-idling cut-off and in-cab fuel monitoring. All Scheme vehicles are awarded a star rating and these are then aggregated to give the operator's total vehicle star rating.

Applicants also undergo an assessment of their operational fuel management practices. This assessment focuses on the following areas: their fuel management programme, driver skills development regime, vehicle specification and maintenance, use of IT support systems and targeting and monitoring of performance. The operational practice assessment is then combined with the aggregated vehicle star rating to provide an overall Scheme star rating between 1 star and 5 stars, with 5 stars being the optimum.

Upon becoming a member of the scheme, operators receive a short action plan, known as a Road Map, setting out measures which would help to improve their operational practices from air quality, environmental and economic perspectives. The Road Map is based on best practice and is directly applicable to the operator. Other features include member workshops as well as a follow-up operator contact process throughout the duration of their membership. Successful implementation of the measures contained in their Road Map, as well as improvements to their fleet, could enable operators to increase their star rating up to 5 stars, the maximum available. Ongoing engagement and improvement is one of the key tenets of the Scheme.

The successful uptake of the scheme depends on commercial vehicle operator awareness of the scheme, operator interest in becoming a member and members implanting the management changes from their individual bespoke assessment and action plan Road Map. In order to do this Southampton City Council will publicise the scheme widely across the large number of logistics and servicing organisations which use commercial vehicles either as their primary business or in support.

Resource will be concentrated on smaller members with local operation. In this way they can benefit from the advice available via the scheme which can include reference to local initiatives and the Freight Consolidation Centre. Implementation costs are provided in the financial case.

Key Milestones

Procurement for the Fleet Accreditation (FA) and Additional Business Support has commenced at risk, provisional contract award will finish in January 2019 with contract commencement due in April 2019 on confirmation of funding.

Table 48 Key milestones for Fleet accreditation

Date/ Commence	Phase	Milestone	Service Risk	Mitigation	Owner
Complete (December 18)	Design	Tender to market	-	-	SCC
Complete (January 19)	Design	Tender evaluation	-	-	SCC
28/01/19	Design	Provisional award	-	-	SCC
28/01/19	Design	Standstill	-	-	SCC
01/04/19	Operation	Contract award/commence	-	-	SCC
01/04/19	Operation	Year 1 offer	KPIs not delivered	Regular performance reviews	FA Provider
01/04/20	Operation	Year 2 offer	KPIs not delivered	Regular performance reviews	FA Provider
01/04/21	Operation	Year 3 offer	KPIs not delivered	Regular performance reviews	FA Provider

Total Cost

Table 49 Cost for fleet accreditation Option 3

Freight measures (Option 3)				
	Year	Target	Note	Cost
ECOSTARS Commercial Fleets	1	50 members	Initial recruitment and scheme launch	£70,000
	2	30 members	Recruitment and member support	£50,000
	3	30 members	Recruitment and member support	£50,000
Additional business support	1-3	Call off pool of available support days - DSP site assessments and recruitment preparation; business implementation support; workshops; HGV advice and strategy.		£75,000
TOTAL				£245,000

Procurement Route

An open OJEU tender process will be followed to secure a specialist supplier for the delivery of a DSP and fleet recognition scheme. This is a competitive tendering process that will compare quality and cost to establish the supplier that offers the best value for money and will provide confidence in delivering by demonstration of previous experience and capability in the field.

Key considerations for both DSP and fleet accreditation scheme procurement are as follows:

- 1) Contractor will be required to have specific expertise for the delivery of two main interventions, DSPs/Fleet recognition scheme
- 2) Contractor will be required to undertake audit, assessment, analysis and initial implementation phases of the DSP or fleet accreditation scheme.
- 3) A rolling annual programme of consultancy support for local organisations for a total of three years.
- 4) Provision of a minimum of 10 DSPs per year over three years.
- 5) Provide a fleet recognition scheme designed to help operators improve air quality to a minimum of 50 local HGV, coach or bus operators, all with operations in the local area in year 1 with further targeted recruitment in years 2 and 3.
- 6) Provide an annual outcome report detailing the level of engagement and results of all DSPs delivered, and fleet recognition scheme deliverables.
- 7) Appointed supplier will be required to submit monthly performance reports.

Subject to final commercial checks, stand-still period and contract award/acceptance, SCC expect to appoint Transport Research laboratory (TRL) to undertake this service.

Contractual Issues

Table 50 Contractual issues for fleet accreditation

Duration of contract	3 year contract, commencing upon approved receipt of funding (anticipated Mar/Apr 2019).
Roles/Responsibilities	SCC Strategic Transport will contract manage Fleet Accreditation service provider will undertake Fleet Accreditation, monitoring and evaluation and marketing.
Payment mechanism	Invoicing scheduled to be agreed within the conditions of the contract. Anticipated to be monthly invoicing for previous months work.
Change control	Progress reports will be discussed at monthly progress calls and with face to face meetings every quarter. This will enable transparency of performance and inform any changes required should KPI's not be delivered.
Performance management	Monthly performance project reports and a dashboard to update on progress. They will also collate a list, updated monthly, of recommendations in DSP reports, building up a library of measures that will allow common themes or needs to be identified. <ul style="list-style-type: none"> • Number of organisations engaged • Recent and planned activity • Red Amber Green (RAG) status • Ongoing actions and decision points
Compliance with regulation	All relevant regulation will be adhered to.
Operational/contract administration	SCC Strategic Transport will act as contract managers.
Arrangements for resolution of disputes/ disagreements	Established in contract terms.
Allocation of risk	Payment of DSPs provided following successful delivery therefore financial risk allocated primarily to provider.
Option	SCC are requesting funding to deliver additional consultancy support. This was to ensure business can implement recommendations outlined in the DSPs, remove any blockages and develop full business cases

	<p>for implementation. This has been included in the tender for the DSP.</p> <p>Additional consultancy support should;</p> <ul style="list-style-type: none"> • Promote the implementation of DSPs in Southampton; • Provide local case studies showcasing best practice to promote and further spread the uptake of DSPs in the Southampton area; • Accelerate the implementation of DSP recommendations.
--	---

3.10. Communications Commercial Case

Key Service/Contract Requirements

Communications plan is provided in appendix 13 including key milestones and service/contract requirements.

Outcomes:

- A communications plan that is able to adequately convey the messages to stakeholders that will ensure uptake and deliver emission savings.

Total Cost

Table 51 Costs for communications

Communications			
Requirement	Year	Assumption	Cost
Communications	1-3	Based on professional judgement and similar campaigns	£55,740
Total			£55,740

Procurement Route

Where additional marketing materials are required, SCC will undertake procurement in accordance with the council's procurement procedure rules and in accordance with the contract value. This is a competitive tendering process that will compare quality and cost to establish the supplier that offers the best value for money and will provide confidence in delivering by demonstration of previous experience and capability in the field. Contractual terms will be in accordance with SCC's standard business as usual purchasing of communications materials.

3.11. A3024 MyJourney Support Commercial Case Key Contract/Service Requirements

Outcome:

- Delivering a targeted behaviour change campaign at the A3024 Northam/Bitterne area to reduce private vehicle use and encourage active sustainable travel through marketing, journey planning and additional resources.

Table 52 Measures for MyJourney A3024 support

Measure	Service Requirement	Procurement Route
Marketing campaign	Targeted direct marketing in the east of the city promoting newly completed cycle infrastructure works along Quayside Road and A3024.	SCC procurement procedure intermediate value transactions to secure media buying agency.
Journey Planning	Additional layers to localised journey planner highlighting newly established Quietways route. Targeted advice to residents to outline options for localised journeys.	Existing resource
Tailored cycle mapping	Tailored cycle mapping for local area.	SCC procurement low value transaction – business as usual purchasing
Staff time for local promotional activity	Staff hours required to project manage marketing and communications.	Existing post
Staff time for schools and communities officer	Direct engagement, intensive work in local schools and community groups, manage consultation work on capital works and undertake co-design of local schemes.	n/a
Project resources	Contingency budget for schools and communities officer for additional tools and resources.	n/a (multiple low value SCC transactions – business as usual purchasing)

Procurement Route

Media buy for campaign will be done through an open tender process. This is a competitive tendering process that will compare quality and cost to establish the supplier that offers the best value for money and will provide confidence in delivering by demonstration of previous experience and capability in the field. A media buying agency is in the process of being secured for multiple MyJourney campaigns in the forthcoming months. The tender process is due to conclude in February 2019 with a preferred agency selected.

The journey planner development and enhancements will be undertaken through the existing sole supplier. An authorised exemption request is in place to be able to carry this out without having to go out to the market – the reason being that the journey planner is an existing product supplied by a specific organisation.

The license for the development of bespoke/personalised maps for local organisations and schools has already been procured and is ready to be used as and when the funding is confirmed.

Any recruitment required to support the A3024 MyJourney support scheme will be undertaken internally against an already defined job specification to ensure quick turnaround. Collateral and resources will be procured where necessary through the councils strategic procurement partner Capita. Suppliers are already secured for direct marketing materials. Schools engagement will build upon established links with schools in the area.

Key Milestones

Table 53 A3024 MyJourney support milestones

Date/ Commence	Phase	Milestone	Service Risk	Mitigation	Owner
01/04/19	Design	A3024 Journey Planning – Commission web developer	-	-	SCC
22/04/19	Build	A3024 Journey Planning – Google mapping integration	Switching platforms to google maps from existing	Internalising management of website to SCC IT	SCC
20/05/19	Operation	A3024 Journey Planning – Engagement	Low awareness	Staff time allocated to deliver	SCC
01/04/19	Design	Cycle Mapping – Secure license for platform	-	-	SCC

22/04/19	Build	Cycle Mapping – Produce bespoke mapping for key stakeholders in local area	-	-	SCC
20/05/19	Operation	Cycle Mapping – Engagement	Low awareness	Staff time allocated to deliver and performance managed	SCC
01/04/19	Design	Schools and Community Engagement – Sign off job description (SCC Service Manager Strategic Transport)	-	-	SCC
01/04/19	Build	Schools and Community Engagement – Joint working agreement with key partner to secure staff resource	Delay in staff recruitment	Legal mechanism with Hampshire CC to appoint staff resource at short notice	SCC
03/06/19	Operation	Schools and Community Engagement – Appoint staff resource	-	As above	SCC
17/06/19	Operation	Schools and Community Engagement – Carry out activity	Low levels of engagement	Officer integrated into team and performance managed	SCC
Feb 2019	Design/ Build	Marketing Campaign – Media buying	-	-	SCC

01/04/19	Design/ Build	Marketing Campaign – Design of materials	Poor quality production	MyJourney design guide in place.	SCC
13/05/19 – 20/05/19	Operation	Marketing Campaign – Walk to school week (2x schools in area)	Low interest from schools	Staff time committed to engagement	SCC
02/09/19 (entire month)	Operation	Marketing Campaign – Love to ride Cycle September campaign	Low uptake	Engagement plan, media buy and staff time allocated	SCC
01/05/19	Operation	Marketing Campaign – A3024 Eastern Corridor Campaign (Matches Early Measures SCN 8 &10 completion)		Engagement plan, media buy and staff time allocated	SCC
03/06/19 – 10/06/19	Operation	Marketing Campaign – Love to ride bike week campaign		Engagement plan, media buy and staff time allocated	SCC

Total Cost

Table 54 Costs for A3024 MyJourney support measure

MyJourney Promotion		
Requirement	Note	Cost
Marketing campaign	Targeted direct marketing in the east of the city promoting newly completed cycle infrastructure works along Quayside Road and A3024.	£25,000
Journey Planning	Additional layers to localised journey planner highlighting newly established Quietways route. Targeted advice to residents to outline options for localised journeys.	£7,000
Tailored cycle mapping	Tailored cycle mapping for local area.	£3,000
Staff time for local promotional activity	Staff hours required to project manage marketing and communications.	£15,000
Staff time for schools and communities officer	Direct engagement, intensive work in local schools and community groups, manage consultation work on capital works and undertake co-design of local schemes.	£40,000
Project resources	Contingency budget for schools and communities officer for additional tools and resources.	£13,000
TOTAL		£103,000

Contractual Issues

Table 55 Contractual issues for A3024 MyJourney support

Duration of contract	End March 2020.
Roles/Responsibilities	SCC Strategic Transport will contract manage all activity. HCC will provide resource where necessary.
Payment mechanism	Marketing – Retrospective invoicing for deliverables Staff Time – In accordance with SCC HR policy/procedure Journey Planning - Retrospective invoicing for deliverables License for cycle mapping – Purchased up front

Change control	Centre for Sustainable Travel Choices Board which oversees Access Fund programme will have direct oversight of proposed campaigns and activities. Delivered by SCC therefore controlled by SCC change management via this board.
Performance management	Centre for Sustainable Travel Choices Board which oversees Access Fund programme has performance dashboard which is reported on quarterly, this reviews modal split along core corridors as well as % increases in cycling rates in key schools being engaged for this work. University of Southampton responsible for performance dashboard updates and reporting.
Compliance with regulation	All regulations adhered to where necessary through compliance with SCC procurement processes.
Operational/contract administration	SCC Strategic Transport will contract manage all activity. SCC Delivering scheme.
Arrangements for resolution of disputes/ disagreements	SCC Delivering scheme.
Allocation of risk	SCC Delivering scheme.

3.12. Monitoring and Evaluation Commercial Case

Key Contract/Service Requirement

The preferred monitoring and evaluation involves the deployment of temporary ANPR provided by a third party to monitor key entry points to the CAZ. Regular surveys would be undertaken by a 3rd party to conform to JAQU guidelines with some focus on key problem areas or key routes, procured through the highways services strategic partnership with BBLP.

The decision to request funding for ANPR camera surveys was taken on the basis that it would provide the most robust dataset to assess how the fleet composition is maturing in relation to the assumptions made in the transport and air quality modelling.

Diffusion tube provision and data analysis is required and will be supplied by Gradko who currently supply SCC's diffusion tubes for local air quality management.

Traffic assumptions will be assessed through Systra using the Hampshire Sub-Regional Transport Model Framework.

Key Milestones

Diffusion tube data collection will commence from February 2019 in accordance with the LAQM calendar and will continue to follow LAQM exposure dates for three years. ANPR surveys will be conducted at the end of the year for three years¹³. Three-monthly reports will be created for JAQU in accordance with their monitoring requirements (see monitoring and evaluation in the Management Case).

Table 56 Monitoring and evaluation milestones

Date/ Commence	Phase	Milestone	Service Risk	Mitigation	Owner
Complete	Design	Feasibility (informing this plan)	-	-	SCC/ BBLP
06/02/19	Operation	Diffusion tube commence (for three years Feb 2021)	Reliant on	Due diligence when appointing Gradko to ensure all accreditations met.	SCC
December '19	Operation	ANPR Survey 1	-	-	BBLP
December '19	Operation	Analysis and reporting 1	-	-	BBLP/ Systra
December '20	Operation	ANPR Survey 2	-	-	BBLP
December '20	Operation	Analysis and reporting 2	-	-	BBLP/ Systra
December '21	Operation	ANPR Survey 3	-	-	BBLP
December '21	Operation	Analysis and reporting 3	-	-	BBLP/ Systra

¹³ <https://laqm.defra.gov.uk/diffusion-tubes/data-entry.html>

Total Cost

Table 57 Costs for monitoring and evaluation

Monitoring and Evaluation			
Requirement	Year	Assumption	Cost
5 diffusion tubes	1	Based on existing costs	£200
	2		£200
	3		£200
ANPR Data Processing/ Survey	1	Based on cost estimates provided by BBLP	£108,000
Analysis and Reporting	1		£26,000
ANPR Data Processing	2		£108,000
Survey	2		£26,000
ANPR Data Processing	3		£108,000
Survey	3		£26,000
Traffic Forecast Check	1	Based on estimate provided by Systra	£3,000
	2		£3,000
	3		£3,000
Transport & Dispersion modelling			£10,000
Contingency on ANPR Costs 15%			£48,600
Contingency on Analysis and Reporting 15%			£13,000
TOTAL			£483,200

Procurement Route

BBLP Highways Services strategic partnership for ANPR survey.

Diffusion tubes for monitoring air quality will be included as an extension to an existing contract with Gradko Environmental. Gradko were appointed after demonstrating value for money through SCC's procurement process.

Traffic assumptions will be assessed through Systra using the Hampshire Sub-Regional Transport Model Agreement – SCC were named on the tender which appointed Atkins as a strategic partner to deliver a range of services for Hampshire County Council, including the sub regional transport model, sub-contracted to Systra. This route was used for the CAZ feasibility study to undertake the required Transport modelling, which will provide the benefit of consistency with the original study when utilised in the future for assumption checking.

Contractual Issues

Table 58 Contractual issues for monitoring and evaluation

Duration of contract	Apr 2019 – Dec 2021
Roles/ Responsibilities	<p>SCC Strategic Transport will be contract managing.</p> <p>BBLP will provide project management, technical input and provide design, feasibility and capital works.</p> <p>Gradko will provide diffusion tube supply and analysis of results.</p> <p>Systra will undertake transport assumptions checks</p>
Payment mechanism	<p>Payment following successful delivery of requirements, annually after each CAZ survey.</p> <p>Gradko are paid monthly on delivery of results to SCC.</p>
Change control	BBLP will attend CAZ Project Board to request a change, SCC will follow change request procedure described in management case.
Performance management	<p>Performance monitored in accordance with existing service partnership terms. Key outcomes measured:</p> <ol style="list-style-type: none"> 1. Delivery in accordance with specified timescales 2. No measurable impact on transport network. 3. Successful monitoring and evaluation capturing required data.
Compliance with regulation	<p>Regulations must be adhered to regarding ANPR data collection, in accordance with GDPR.</p> <p>Diffusion tubes from an accredited laboratory.</p>
Operational/ contract administration	<p>Ongoing contract administration undertaken by SCC Strategic Transport and BBLP commercial team.</p> <p>No maintenance required.</p>
Arrangements for resolution of disputes/ disagreements	CAZ Project Board used to identify and resolve disagreements. BBLP invited when required.
Allocation of risk	<p>Payment mechanism allocates delivery risk to BBLP.</p> <p>Failure to deliver key outcomes can prevent receipt of payments.</p>

4. Financial Case

4.1. Background

The UK Government has committed to funding feasibility studies for plans to bring about compliance with legal NO₂ objectives in the shortest possible time. These feasibility studies recommend a preferred option for implementation that achieves this objective. The implementation of the plan also has a UK Government commitment for funding in both the Implementation Fund (IF, £255m) and the Clean Air Fund (CAF, £220m) totalling £475m.

4.2. Southampton City Council - Statement of Financial Position

Southampton City Council is a unitary authority located on the South Coast, providing a wide range of services including Education, Adult Social Care, Children's Services, Public health, Environmental Services and Housing.

The Council's latest reported financial position is outlined in its audited Statement of Accounts for 2017/18. The Statement of Accounts are available to view here:

<http://www.southampton.gov.uk/council-democracy/council-data/statement-accounts.aspx>

The audited Statement of Accounts has been prepared in line with current UK GAAP. The Council's net budget for the provision of services in 2017/18 was £192m, which included savings and efficiencies totalling some £30m. The reported overall underspend on service expenditure in 2017/18 was £2.2m. The service budget for 2018/19 is £184m. The Council has seen significant reductions in government grant funding over the past 8 years. This is set against a background of increasing demand for services and increased customer expectation for high quality services. This drives the medium term financial strategy and an outcome based budgeting process is in place to ensure that resources are aligned to the key priorities in the Council's financial strategy.

The Council's Balance Sheet shows net assets of £848M, with usable reserves of £146m. These reserves include capital receipts and capital grants & contributions totalling £46.9m, which are fully allocated to the existing capital programme, and specific reserves of £86m allocated to specific agreed projects or risk mitigations, and including schools reserves balances. Also within the usable reserves are the Council's General Fund balance of £11.3m and minimum HRA balance of £2m. These are set aside for contingency against unforeseen circumstances, are based on an analysis of risk and are regularly reviewed. The level of reserves held have been deemed appropriate by the council's external audit which reviewed as part of their Value For Money opinion which concluded that they were satisfied that the Council has appropriate arrangements in place to deliver the savings required to achieve its medium term financial strategy.

The Council has in place a Treasury Management strategy to ensure that the cash flows of the organisation are properly managed on a day to day basis, with investment in low risk financial instruments.

The Council has a Capital programme totalling £411.3m over five year period 2017/18 to 2021/22. The programme is funded through a combination of government grants and external contributions, HRA receipts, internal resources and borrowing. The Council's Treasury Management Strategy calculates prudential indicators to ensure the affordability of borrowing to support the Capital programme. Prudential Code borrowing limits the amount of borrowing the Council can undertake and this represents a constraint on capital investment.

The council's financial performance is regularly reported and the latest report can be found here:

<http://www.southampton.gov.uk/modernGov/ieListDocuments.aspx?CId=126&MId=3828&Ver=4>

The proposal in this business case is seeking full government funding from the Clean Air Fund (CAF) and Clean Air Implementation Fund (IF), and therefore will not impact on the council's revenue budgets. This is demonstrated in the financial model at the end of this case.

4.3. Background

The purpose of this financial case is to support the application for grant funding from the JAQU IF and the CAF, providing evidence that the case is robust and setting out the financial assumptions and cost estimates behind the funding application.

4.4. Costs

The costs for introducing and implementing measures are comprised of implementation costs (capital costs), and where relevant, operating and maintenance costs (O&M). Where available, costs were estimated using local information and local data. Some of the costs are derived from per item cost estimates and a forecast of the resources required, and the required infrastructure. Where this is not possible, costs are estimated on the basis of additional analysis, simplifying assumptions, professional judgement or relevant cost information from similar local schemes. The Government green book suggests that a contingency allowance is made for the cost of known risk and any unforeseen outcomes, based on risk assessment of risk. The key projects for which contingency has been allowed for are the Freight Distribution Centre and Monitoring evaluation costs, and these have been categorised as Systems & Development projects under Green Book guidance. The table below is extracted from Annex 5 of the Guidance and suggests an optimism bias of between 10% and 200% of project costs dependent on the scale and nature of the project. A contingency adjustment of 15% has been allowed for on this basis. None of the projects are expected to place longer term general fund commitments on the Council's Revenue or Capital budget.

Table 59 Generic Optimism Bias Adjustment Percentages

Spending Type	Optimism Bias Adjustment (%)			
	Works Duration		Capital Expenditure	
	Lower	Upper	Lower	Upper
Standard buildings	1	4	2	24
Non-standard buildings	2	39	4	51
Standard civil engineering	1	20	3	44
Non-standard civil engineering	3	25	6	66
Equipment/development	10	54	10	200
Outsourcing	n/a	n/a	0	41

It is assumed that the City Council can reclaim Value Added Tax (VAT) incurred. All costs presented in this case exclude VAT.

4.4.1. Licensing Condition Financial Case

Changes to the licensing conditions for taxi and private hire vehicles will be delivered as business as usual and there is no funding request associated with this measure.

4.4.2. Bus Lane Restriction Financial Case

Altering the existing bus lanes in Southampton to restrict non-SCC licensed vehicles to incentivise drivers to remain licensed in Southampton. Costs for the Transport Regulation Order are based on our experience of implementing Traffic Regulation conditions, and includes development, consultation and communication. A contingency on this cost of 15% has been included in the estimate to allow for cost uncertainty.

There will be a signage requirement for implementing the restriction and this has been based on four signs per bus lane for 35 bus lanes, based on an estimated cost of £500 per sign. There are already signs extant at bus lanes and therefore maintenance of the new signs can be contained within existing budgets. A 15% contingency has been allocated to the cost of signs to allow for cost overrun and unforeseen installation costs.

Table 60 Bus lane enforcement costs

Non-SCC Licensed Taxi/PHV Bus Lane Enforcement				
Requirement	Year	Note	Assumption	Cost
Non-SCC Bus Lane Restriction	1	TRO amendment	Professional judgement and experience of similar projects	£8,000
Signage	1	140 signs @ £500	Based on four signs per bus lane with 35 bus lanes in Southampton	£70,000
Contingency for signage				£10,500
TOTAL				£88,500

4.4.3. Low Emission Scheme

The City Council is keen to increase the uptake of low or zero emission taxis within Southampton City Council boundaries. The proposed measures are designed to incentivise taxi drivers of vehicles not meeting Euro 6 (diesel) or Euro 4 (petrol) to move to ULEV (electric or hybrid), or petrol/diesel vehicles meeting the current Euro standards.

The calculation behind the incentives required for the low emission taxi scheme is based on a current fleet size of 1,152 vehicles, of which 701 are non-compliant. Allowing for known existing replacements under the existing scheme, and allowing for natural fleet turnover of 9.8% per annum, there will be 136 non-compliant vehicles in 2023 and will therefore be eligible for the grant.

Key assumptions of this calculation are:

- Fleet size remains constant.
- 9.8% vehicles upgrade to compliant vehicles naturally per year due to licensing requirements.
- The existing scheme can account for a further 61 SCC licensed vehicles (excluding Eastleigh Borough Council licensed vehicles) and remaining uptake will be for petrol hybrid vehicles.
- Assumes the existing low emission scheme is split 2/3 SCC and 1/3 EBC as agreed under the original grant award.
- Assumes electric vehicle charge points discussed below are implemented, uptake for EVs is expected to be 5 vehicles per annum. This is reasonable as current uptake is 0 for EVs in the current low emission scheme without any additional incentives.

No contingency was assessed as the assumptions made for this calculation were based on the most likely outcome. The scheme will operate on a first come first serve basis.

Table 61 Costs for low emission taxi scheme

Low Emission Taxi Incentive Scheme Expansion			
Requirement	Year	Note (See calculations for assumption)	Cost
Incentive grant	1	63 vehicles at £1,500	£94,500
	1	5 vehicles at £3,000	£15,000
Incentive grant	2	63 vehicles at £750	£47,250
	2	5 vehicles at £1,500	£7,500
TOTAL			£164,250

4.4.4. EV Charge Points

Delivery of EV charge points will encourage the uptake of EVs under the low emission incentive scheme. The charging points are intended to be located at strategic points across the city to allow for ease of access for taxis. The current cost estimates on EV charge points are based on market engagement with the Hampshire EV Framework supplier. A schedule of rates are appended to the Framework for transparency. No contingency has been assessed, based on the assumption that sites are selected based on the budget allocated. The upfront cost includes an advanced payment for 10 years data sharing from the charge point, and maintenance charges. It is envisaged that the energy costs for EV points will be incurred by SCC, and as they are not public points, these costs can be offset by charging for the use of the points.

Table 62 EV Charge point costs

EV Charge Point			
Requirement	Year	Assumption	Cost
EV charge point equipment, install	1	Based on experience with EV market, professional judgement and likely disruption with civil work, deemed sufficient to cover needs.	£100,000
TOTAL			£100,000

4.4.5. ULEV Taxi Trial

SCC will work with the taxi community to and provide them with the financial motivation to switch to EVs, whilst demonstrating the minimal impact an EV would have on their daily lives. No contingency is required as the £12,000 per year is a grant contribution only.

Table 63 ULEV taxi trial costs

ULEV Taxi Trial			
Requirement	Year	Assumption	Cost
ULEV Taxi Trial	1	Based on grant contribution required per year for scheme	£12,000
	2		£12,000
	3		£12,000
TOTAL			£36,000

4.4.6. Bus Traffic Regulation Condition

During 2018/19, the Council has invested in retrofitting the existing bus fleet to ensure all service buses are compliant with Euro VI standards. The Traffic Regulation Condition will require buses operating in Southampton to meet Euro VI emissions standards. This condition will ensure older, non-compliant buses do not re-enter the fleet after 2019 and reversing the positive trend.

Costs are based on our experience of implementing Traffic Regulation conditions for existing enforcement, and includes development, signage, enforcement, consultation and communication. A contingency of 15% has been included in this estimate to allow for cost overrun.

Table 64 Costs for Traffic Regulation Condition for buses

Traffic Regulation Condition for Public Service Buses			
Requirement	Year	Assumption	Cost
Traffic Regulation Condition consultation, drafting and adoption.	1	Professional judgement and experience of similar projects	£8,000
TOTAL			£8,000

4.4.7. Freight Measures (Freight Consolidation, Delivery and Service Planning and Fleet Accreditation Scheme)

These costs are based on quotation in appendix 13 following a desk study on Southampton's CAZ. Options are presented which set out differing levels of investment in these measures. An appraisal of the expected outcome that level of investment would then deliver is as follows:

The level of investment made into HGV supporting measures, including the SDC, DSPs and Fleet Accreditation Scheme can be scalable. The reach and impact of the SDC can be varied depending on the level of subsidy made available to potential early adopters, the duration of the framework agreement put in place with an SDC operator and the number of potential users targeted. The number of organisations receiving DSPs and direct expert support can also be scaled with it in mind that the level of investment made will be proportional to the scale of the benefit any scheme can be expected to deliver.

Option 1 represents the bare minimum required in order to maintain the existing level of use of the SDC for 3 years whilst enabling some potential new users to be targeted. The limited duration of the framework (3 years) and scale of the subsidy will present limitations on any prospects of addressing the needs of large scale municipal bodies such as the University Hospital NHS Trust where transition to a consolidation model will be complex and costly in the immediate short term and will require longer term contractual security.

Table 65 Freight measure costs option 1

Freight measures (Option 1)				
	Year	Target	Note	Cost
Freight Consolidation Centre				
Marketing	1-3	5 users per year	Engagement costs through business networks and direct marketing	£60,000
Monitoring and Evaluation and contract management overheads	1-3	5 users per year	Contract management costs, data capture, processing and reporting performance	£60,000
Subsidy	1	Early adopters	Financial support for start-up and switch over for early adopters	£100,000
Delivery and Servicing Plans (DSPs)				
Delivery and Servicing Plans (DSPs)	1-2	6 DSPs per year	Cost of £15k per DSP	£180,000
	1-2	Call off pool of available support days - DSP site assessments and recruitment preparation; business implementation support and case studies workshops; HGV advice and strategy.		£50,000
Contingency at 15%				£67,000
TOTAL				£517,000

Option 2 sets out HGV measures comparable in scale to those undertaken in the city previously under the Local Sustainable Transport Fund between 2012 and 2017. Contract management, performance reporting and marketing expenses remain equal to those set in Option 1 on an annual basis but due to the 5 year length of the framework the level of aspiration in terms of new users is improved on a year by year basis. The longer framework period provides greater levels of assurance to those organisations who would have to undertake significant change and start-up costs associated with shifting to the SDC and therefore a higher chance of success. Option 2 represents the minimum anticipated level of support, investment and contract duration required by the University Hospital NHS Trust to make their switch to a consolidation model both likely and sizeable. It does not represent the optimal level of

investment to see wide scale and lasting changes to public sector supply chain movements, but it is expected that Option 2 will allow the continuity of the SDC and bring about sufficient change to solidify the city's compliance projections.

Table 66 Freight measure costs option 2

Freight measures (Option 2)				
	Year	Target	Note	Cost
Freight Consolidation Centre				
Marketing	1-5	10 major users per year	Engagement costs through business networks and direct marketing	£100,000
Monitoring and Evaluation and contract management overheads	1-5	10 major users per year	Contract management costs, data capture, processing and reporting performance	£100,000
Subsidy	1	Early adopters	Financial support for start-up and switch over for early adopters	£250,000
Delivery and Servicing Plans (DSPs)				
Delivery and Servicing Plans (DSPs)	1-3	8 DSPs per year	Cost of £15k per DSP	£360,000
	1-3	Call off pool of available support days - DSP site assessments and recruitment preparation; business implementation support; workshops; HGV advice and strategy.		£75,000
Contingency				£133,000
TOTAL				£1,018,000

Option 3, the recommended option, offers a long-term and comprehensive programme of support to organisations in the city. The extended duration of the SDC framework will provide confidence to large-scale organisations in the city, with large supply chains generating large numbers of HGV movements, to transition to a new supply chain model. Provision is made for wide-scale engagement with potential users of the SDC, and sufficient DSP and expert support to increase certainty of new users adopting recommended changes in the management of their fleets and supply chains. A fleet accreditation scheme is also available to businesses alongside DSPs and enables SCC to offer a complementary package of support to local businesses and the required expertise to instigate changes in the make-up of working fleets in the city, procurement practices, stock management, and the supply of goods. Higher initial

investment in the SDC, subsidy support and the longer length of the SDC framework will enable increase the likelihood of larger organisation to transition to using the facility and deliver economies of scale.

Table 67 Freight measure costs option 3

Freight measures (Option 3)					
	Year	Target	Note	Assumptions	Cost
Freight Consolidation Centre					
Marketing	1-10	10 major users per year	Engagement costs through business networks and direct marketing	Costing based on marketing support provided to the SCC since 2015	£200,000
Monitoring and Evaluation and contract management overheads	1-10	10 major users per year	Contract management costs, data capture, processing and reporting performance	This has been based on the contract management costs previously tendered for the SDC.	£400,000
Subsidy	1	Early adopters	Financial support for start-up and switch over for early adopters	Costs of support are dependent on the outcome of DSPs for each adopter, and assessed at £10,000 per DSP.	£300,000
Supporting measures					
Delivery and Servicing Plans (DSPs)	1-3	10 DSPs per year	Cost of £15k per DSP	Consultancy cost based on quotations provided.	£450,000
ECOSTARS Commercial Fleets	1	50 members	Initial recruitment and scheme launch	Consultancy cost based on quotations provided.	£70,000

	2	30 members	Recruitment and member support	Consultancy cost based on quotations provided.	£50,000
	3	30 members	Recruitment and member support	Consultancy cost based on quotations provided.	£50,000
Additional business support	1-3	Call off pool of available support days - DSP site assessments and recruitment preparation; business implementation support; workshops; HGV advice and strategy.		Consultancy cost based on quotations provided.	£75,000
		Contingency at 15%			£240,000
TOTAL					£1,835,000

4.4.8. A3024 MyJourney Support

The A3024 MyJourney Support is to encourage replacement of private vehicles in the Northam/Bitterne area for sustainable and active travel.

The Marketing campaign is aligned to similar marketing campaigns undertaken by the Council on Access fund projects. The cost of the project is based on an assessment of the cost of mail drops, billboard and bus stop advertising and benchmarked against a recent similar campaign that was tendered for the Council's Move in March initiative.

The Journey Planning cost is based on the required software development requirements to enable more functionality within the existing Journey Planner software.

Costs for tailored cycle mapping relate to the software licensing required to implement and are based on quotation from the existing software provider.

The staff time involved in local promotional activity is assessed as equivalent to 0.3FTE of a senior communications officer, and has been costed on the basis of existing SCC pay grades and associated on costs. The cost of staff time for schools and communities officer has been based on the hourly rate of an existing sustainable delivery travel partner, and benchmarked against the delivery of similar schemes within the sustainable travel behaviour change programme.

Upgrades to mapping and xxx are upgrades to existing software systems. There is an existing budget in place for the ongoing maintenance of these systems.

The costing includes contingency of £13,000 based on 15% of the delivery costs.

Associated costs are defined below.

Table 68 Costs for MyJourney support

MyJourney Promotion		
Requirement	Assumption	Cost
Marketing campaign	Mirrors similar campaigns in access fund; tendered to media agency at capped rate	£25,000
Journey Planning	Earmarked development costs	£7,000
Tailored cycle mapping	Based on estimated cost provided by supplier	£3,000
Staff time for local promotional activity	0.2FTE of a grade 9 senior comms officer and on cost.	£15,000
Staff time for schools and communities officer	Schools time £40k; based on approximate rate for sustainable delivery travel partner, and based on experience of delivering similar schemes based on access fund sustainable travel behaviour change programme	£40,000
Project resources	15% of the above costs as a contingency on the project	£13,000
TOTAL		£103,000

4.4.9. Communications

A breakdown of communications costs is provided in appendix 12. Costs are based on existing marketing and communications procurements and professional judgement based on experience of similar schemes (e.g. MyJourney and Clean Air Network).

Table 69 Costs for communications

Communications			
Requirement	Year	Assumption	Cost
Communications	1-3	Based on professional judgement and similar campaigns	£55,740
Total			£55,740

4.4.10. Monitoring and Evaluation

SCC has commissioned BBLP to undertake an options appraisal of the monitoring and evaluation of fleet composition and identify associated cost estimates. Costs for diffusion tubes are based on existing contract. Costs for ANPR Data Processing are based on cost estimates provided by BBLP. A contingency of 15% has been built into the cost of ANPR monitoring to allow for variations in cost, and £80,000 has been allowed for over the monitoring period to address uncertainties and changes in road infrastructure, and implementing feedback on prior year survey results.

Table 70 Costs for monitoring and evaluation

Monitoring and Evaluation			
Requirement	Year	Assumption	Cost
5 diffusion tubes	1	Based on existing costs	£200
	2		£200
	3		£200
ANPR Data Processing/ Survey	1	Based on cost estimates provided by BBLP	£108,000
Analysis and Reporting	1		£26,000
ANPR Data Processing	2		£108,000
Survey	2		£26,000
ANPR Data Processing	3		£108,000
Survey	3		£26,000
Traffic Forecast Check	1	Based on estimate provided by Systra	£3,000
	2		£3,000
	3		£3,000
Transport & Dispersion modelling			£10,000
Contingency on ANPR Costs 15%			£48,600
Contingency on Analysis and Reporting 15%			£13,000
TOTAL			£483,200

4.5. Resource

Costs are estimated based on SCC's 2018/19 pay scales accounting for inflation and relevant on costs in subsequent years, applied to an assessment of the level of staffing resource required to progress the initiatives in this Business Case. The grades listed are subject to SCC's job evaluation process, but are currently based on similar active roles.

Table 71 Costs for resources

Description	Grade*	Duration/ Recruitment	Estimated Cost
Scientific Services Manager (0.2 FTE) To provide management and oversight to the project team.	12	Existing resource	£21,300
CAZ Support (1 FTE) <ul style="list-style-type: none"> To administer, manage and evaluate the incentive scheme. Support Communications Officer on taxi related matters. Support Licensing department on delivery of revised licensing conditions. Support all schemes and monitoring and evaluation of plan. 	8	Existing resource 2 years	£85,000
CAZ Team Leader – (1 FTE) <ul style="list-style-type: none"> To promote, administer and contract manage and evaluate the DSP/SDC/ accreditation scheme. Facilitate business change amongst participants. Support Communications Officer on related matters. To deliver the monitoring and evaluation activities. Contract manage external support services. Collate all associated reporting. Contract manage to Taxi Trial scheme. Line management responsibility for the CAZ support and communications officer. 	10	2 years fixed term	£110,400
CAZ Communications Officer (1 FTE) <ul style="list-style-type: none"> To promote the CAZ support/mitigation measures to ensure active engagement with stakeholders. To deliver all related communication activities including proactive and reactive management of media. To share experiences with relevant stakeholders to add value to schemes. Embed within Communications team. Comms plan runs for three years but level of staffing to be assessed following years 1 and 2. £46k assumed for year 3 contingency. 	9	2 years fixed term	£144,650
Projects & Change Team (0.4 FTE) Consisting of 0.1 FTE Project Manager, 0.05 FTE Business Analyst, 0.05 FTE Programme Manager & 0.2 Business Change Manager. These roles will	9-11	Existing resource	£24,000

provide support for a 6 month period to the implementation of the CAZ.		over 6 months	
Total Year 1			£179,800
Total Year 2			£158,800
Contingency based on 1 FTE Communications Officer*			£46,750
Total			£385,350

**If existing marketing plan is not sufficient and requires further resource, contingency available.*

4.6. Funding and Cost Assumptions

There are several key funding and cost assumptions that are being applied to the financial model, in line with the developing Full Business Case. The key assumption is that the implementation of the preferred option and subsequent monitoring and evaluation is publicly funded upfront through the implementation fund. Cost assumptions have been used where relevant for determining project costs, and have been detailed above in the narrative to each measure.

4.7. Assurance of Cost Estimate

A full determination of assurances was undertaken as part of the Full Business Case. This included a review of the model by the Council's Chief Finance Officer on the finalised financial model in the Full Business Case.

4.8. Managing Costs and Risks

Costs will be managed by ensuring all procurement follows the procurement strategy outlined in the Commercial Case. The assessment of tenders through this process will be based on both quality and price to ensure value for money.

The budget management responsibility will fall to the project manager and appointed contract managers (for example cycle infrastructure works carried out by existing partners Balfour Beatty will be managed by the Transport Delivery team whereas Consultancy for HGV mitigation and fleet recognition will likely be contract managed by Scientific Services). Quarterly budget reports at the Clean Air Implementation Board will identify any issues and mitigate where necessary.

4.9. Other Funding Sources

Southampton City Council anticipate that funding will be sourced from the Government's Clean Air Fund and Implementation Fund. The financial model assumes no funding from external sources or direct funding from the council itself. Other opportunities will be considered as and when they arise and the Council's will work closely with JAQU to capture any further funding opportunities

4.10. Summary

A letter signed by Chief Financial Officer, S151 officer, is attached in appendix 14.

The City Council is requesting the following funding in order to implement our package of measures to achieve compliance:

Table 72 Revenue and capital, clean air fund and implementation fund- summary

Scheme	Revenue	Capital	Source
Taxi Licensing Condition Change	£8,000	-	Clean Air Fund
Restrict non-SCC vehicles from bus lanes	-	£80,500	Clean Air Fund
Low emission taxi incentive scheme	-	£164,250	Clean Air Fund
ULEV Taxi Trial		£36,000	Clean Air Fund
Taxi Electric Vehicle Charging Points	-	100,000	Clean Air Fund
Bus Traffic Regulation Condition	8,000		Implementation Fund
MyJourney A3024 Scheme	103,000		Implementation Fund
Communications	55,740		Implementation Fund
Officer Support To Mitigating Measures.	385,350		Implementation Fund
Monitoring And Evaluation	483,200		Implementation Fund
Sustainable Delivery Centre		900,000	Implementation Fund
Delivery Support plans		450,000	Clean Air Fund
Fleet Accreditation		170,000	Clean Air Fund
Additional Business Support		75,000	Clean Air Fund
Contingency on Sustainable Delivery Centre projects		240,000	Clean Air Fund
Total Funding request	1,043,290	2,215,750	

Our total funding bid is for £3,259,040. A summary of the capital and revenue elements requested from the Implementation Fund and Clean Air Fund is provided as part of the financial model illustrated below.

Summary of Financial Model:

1. Capital & Revenue Expenditure Summary

The table below provides a summary of the funding requested and associated spend profile.

Capital & Revenue Expenditure Summary							
Non Charging Clean Air Zone measures							
	(£'000s)			SPEND PROFILE			
Uses	Impl. Fund	Clean Air Fund	Total	2019/20	2020/21	2021/22	Total
Taxi Incentives							
Taxi Incentive Grants		110	110	94	16		110
TAXI ULEV incentive grants		54	54	47	7		54
Taxi try-before you buy		36	36	12	12	12	36
Taxi bus lane signage		81	81	81			81
Rapid chargers		100	100	100			100
							-
Freight Distribution Centre							
Early Adopters subsidy	500		500	500			500
Marketing, monitoring & evaluation re SDC	400		400	200	200		400
3 Years provision of delivery and service planning		450	450	150	150	150	450
3 Years fleet accreditation scheme		170	170	70	50	50	170
Additional Business Support		75	75	25	25	25	75
SDC Contingency		240	240	240			240
							-
Ongoing capital expenditure							
Overall mitigations							-
Scheme Decommissioning							-
Totals	900	1,316	2,216	1,519	460	237	2,216
Implementation Revenue costs							
Project officer support	385		385	193	193		385
Taxi bus lane restriction TRO		8	8	8			8
Bus operation conditions TRC	8		8	8			8
My Journey support	103		103	103			103
Communications	56		56	56			56
Monitoring & Evaluation	483		483	161	161	161	483
							-
Totals	1,035	8	1,043	529	354	161	1,043
Sources - Capital							
Implementation Fund - capital	900		900	900	-	-	900
Clean Air Fund - Capital		1,316	1,316	1,316	-	-	1,316
							-
Sources - Revenue							
Implementation Fund - Revenue	1,035		1,035	1,035			1,035
Clean Air Fund - Revenue		8	8	8			8
Totals	1,935	1,324	3,259	3,259	-	-	3,259

a. Grant Funding Summary

The following table summarises the capital and revenue amounts requested from the Clean Air Fund and Implementation Funds.

Summary Funding Request					
	(£'000s)	2019/20	2020/21	2021/22	TOTAL
Implementation Fund					
Capital		900	-	-	900
Revenue		1,035	-	-	1,035
Total		1,935	-	-	1,935
Clean Air Fund					
Capital		1,316	-	-	1,316
Revenue		8	-	-	8
Total		1,324	-	-	1,324
Total					
Capital		2,216	-	-	2,216
Revenue		1,043	-	-	1,043
Total		3,259	-	-	3,259

b. Scheme cash flows

The following table provides the expected cash flows.

CASH FLOW STATEMENT						
Non Charging Clean Air Zone measures						
Income		2018/19	2019/20	2020/21	2021/22	Totals
	(£'000s)					
Scheme Revenues						
External Contributions						-
CAZ Early Measures funding		-	-	-	-	-
Implementation Fund - capital grant		-	900	-	-	900
Implementation Fund - revenue grant		-	1,035	-	-	1,035
Clean Air Fund - Capital grant		-	1,316	-	-	1,316
Clean Air Fund - Revenue grant		-	8	-	-	8
CBTF grant		-	-	-	-	-
Total		-	3,259	-	-	3,259
	(£'000s)					
Cash Expenditure						
Capital Setup Costs						-
Implementation & setup costs - capital			1,519	460	237	2,216
Implementation costs & setup - revenue		-	529	354	161	1,043
Ongoing Revenue Expenditure						-
Interest on CAZ sinking fund		-	-	-	-	-
CAZ Operation & Maintenance		-	-	-	-	-
Total		-	2,048	814	398	3,259

Impact on Financial Statements

The table below demonstrates the impact of the proposals on the Council's financial statements. The majority of capital expenditure is to be spent on Capital assets not under the ownership of the Council, and is therefore treated as Revenue Expenditure Funded by Capital Under Statute (REFCUS). The grant funded proposals do not impact on the cost of providing services and do not impact on General Fund or specific reserves already earmarked within the Council's Medium Term Financial Framework.

5. Management Case

5.1. Legal Statement with respect to Inquiry

As the Authority is not proposing a Scheme under the 2000 Act in its final plans (subject to decision on 22nd January 2019) we do not currently anticipate the need to hold a public inquiry under s.170(2) of that Act.

In the event Members decide to proceed with a scheme under the 2000 Act which incorporates a charging scheme then whether or not an Inquiry would be held would be a matter to be determined when considering whether or not it is 'necessary' to do so in accordance with the requirements of the Act. Having completed a full and detailed consultation with the public, SCC is of the view that an Inquiry will not be considered necessary subject to the content of any representations received in response to publication of any Order under the Act and it would be unlawful for the Authority to pre-determine that question in advance of any such consideration.

SCC can confirm that it will not consider the question of whether an Inquiry is required to be held under the Act without prior consultation with the Secretary of State but as the current draft proposals do not include a relevant scheme under the 2000 Act the requirements of paragraph 5 (b), (d) and (f)(i) and (ii) are of no effect / not applicable unless Cabinet decides to progress an alternative option on 22nd January.

5.2. Approvals

Approval to submit the Full Business Case to JAQU on 31st January 2019 has followed the below process with links to the relevant document of Southampton City Council's constitution.

- Overview and scrutiny 16th January 2019
 - https://www.southampton.gov.uk/policies/08-part-4-overview-scrutiny-procedure-rules_tcm63-363583.pdf
- Cabinet 22nd January 2019 (decision notice in appendix 15)
 - https://www.southampton.gov.uk/policies/07-part-4-executive-procedure-rules_tcm63-363582.pdf
- Delegated powers to submit 31st January 2019 and make any subsequent amendments that do not significantly alter the direction of the preferred option, delegated to Mitch Sanders, Director for Transactions and Universal Services SCC.
 - https://www.southampton.gov.uk/policies/07-part-4-executive-procedure-rules_tcm63-363582.pdf (Section 1.3)

To ensure timely implementation following approval of funding JAQU, a paper will be taken to full Council on 20th March 2019 seeking pre-emptive approval to spend the funding (as total bid is over £2,000,000, see link below for virement rules). This will ensure SCC are ready to implement the preferred option as soon as funding from JAQU is received.

- https://www.southampton.gov.uk/policies/06-part-4-budget-policy-framework-procedure-rules_tcm63-363581.pdf

5.3. Southampton City Council and New Forest District Council Joint Work

The exceedance identified by the PCM and reported in the 2017 national plan for NO₂ extends beyond Southampton's boundary to that of NFDC. As a result, a Memorandum of Understanding was signed by both authorities that outlined the intent for SCC and NFDC to work in partnership to produce a joint preferred option for compliance with the legal NO₂ objective within the shortest possible time. Modelling has shown that NFDC will itself be compliant in 2019 without any mitigation actions.

Following ongoing work to develop the SCC business case for submission in January 2019, NFDC chose to progress a separate application to JAQU to meet their ministerial direction submission deadline of the end of 2018. A mutual decoupling of work was agreed in Nov '19, all relevant information (joint consultation, modelling etc.) was provided to NFDC to enable them to complete their deadline.

5.4. Timeline for Preferred Option Implementation

A timeline for implementation of the measures to improve NO₂ concentrations can be found in appendix 16.

This project has three main phases of work, the first being development, submission and approval (assumed for the purposes of timeline development) of the Business Case. The first phase is programmed to complete in March 2019 once a response to the submitted business case has been received by SCC and NFDC from JAQU.

The second phase of the project will be focused on implementation of the approved option and is programmed to run from April 2019 following approval of funding from government.

The third phase is monitoring and evaluation of the schemes implemented ensuring that compliance with the EU AAQD continues.

5.5. Project Management

The project methodology utilised on this project by SCC is an adaptation of Association of Project Management, implementing the traditional aspects of the waterfall approach. The project will have a defined board structure at tactical and strategic levels and will have a standard suite of project documentation (Business Case, logs for risks, issues, decisions etc.). Due to the complex nature of the work required the management of the project will be divided, with the Scientific Services Manager being responsible for the project, the Clean Air Team Leader providing dedicated support and the Project Manager providing additional support for governance and methodology application.

The contract management elements of any work related to Strategic Transport will be completed by the Service Manager Strategic Transport (Pete Boustred). The Service Manager Strategic Transport will be a member of both the Project and Air Quality Implementation Boards, ensuring appropriate oversight of any works undertaken by contractors directly related to Strategic Transport.

Any additional third party contract management will be undertaken by the Clean Air Team Leader (or alternative work stream lead identified in section 5.5.). They will receive procurement and Legal support from the internal SCC teams as required. The

Clean Air Team Leader will be required to update the Project and Air Quality Implementation boards both through verbal update and through completion of relevant sections of the project highlight report.

Any relevant contractors will be invited to the project board as required and deemed suitable. If invited to the project board they will be one of the first agenda items and then dismissed from the remainder of the meeting. This will ensure appropriate oversight is undertaken, while maintaining a professional separation from them and any other agenda items. The Scientific Services Manager and Clean Air Team Leader will be responsible for ensuring communications between the contractor and the project is maintained and that all relevant information is shared.

At a national level a number of tasks are required to be completed by Government Departments or national organisations such as DVLA, the oversight of these works will be undertaken by the Joint Air Quality Unit (JAQU). Regular communications will be undertaken between the SCC CAZ team and JAQU to ensure that SCC planning is undertaken with the latest information.

5.6. Work Stream Management

All work stream will in the first instance report to and be coordinate by the Clean Air Team lead as the implementation lead for the work of the Clean Air Zone. The work streams will complete a bi-weekly highlight report this will feed into the Clean Air Team Lead's report. When required the work stream leads will be invited to the project board to report on progress or any issues.

5.6.1. Licensing Conditions

Delivery of licensing condition changes will be overseen by the licensing team and will report to the CAZ Project Board. The key milestones for the project are as follows:

- 1) Inform trade reps and Chair of licensing committee of proposal.
- 2) Draft conditions
- 3) 12 week consultation, inform the trade and post on website.
- 4) Consider responses, 12 weeks.
- 5) Submit report to licensing committee with recommendation to adopt from a fixed date after the committee meeting.

This is a business as usual process and has been undertaken by the licensing team recently to change the conditions to allow hybrid and electric vehicles to be licensed for 12 years opposed to 9 years, and allow electric vehicles that can hold three passengers only to be licensed.

Approval will be required for changes in licensing conditions and will be adopted by the SCC Licensing Committee in 2019 prior to implementation.

Table 73 Licensing condition key risks and mitigations

Risk	Likelihood H/M/L	Impact	Mitigating action
Licensing conditions not implemented	L	Taxi and private hire vehicles are	Regular status updates on progress

		not encouraged to upgrade quickly	of project reported to CAZ project board.
Trade reaction is to reject proposals	M	Licensing committee do not adopt proposals.	Communication of benefits to trade and address concerns through consultation and as part of communications plan.

5.6.2. Bus Lane Restrictions

The Bus Lane Restriction for non-SCC vehicles is being implemented by the Strategic Transport team and is being implemented as part of a mitigation strategy to provide an incentive for taxi and private hire operators to remain licensed in Southampton despite an increase in stringency on licensing conditions in 2023. This will be delivered and managed by BBLP who will report to Strategic Transport and the CAZ Project Board on progress where necessary. The framework with BBLP has general terms for performance management which will be applied in this case and overseen by the contract manager.

Project status and financial updates will be reported to the CAZ Project Board. Monitoring and evaluation will be conducted as part of the CAZ monitoring and evaluation programme and reported to JAQU as per the requirements of the funding.

Key Benefits:

- Provide an incentive to local taxi operators to prevent licensing elsewhere due to increasing stringency of licensing conditions.

5.6.3. ULEV Taxi Trial

Project status and financial updates will be reported to the CAZ Project Board. Monitoring and evaluation will be conducted as part of the CAZ monitoring and evaluation programme and reported to JAQU as per the requirements of the funding. This work stream will be led and contract managed by the CAZ Team Leader.

SCC will collaborate with an initial sample drivers to accurately track vehicle location, driving profile, and idle times using telematics. This information will be used to provide the drivers with a personal comparison between their current vehicle and an equivalent EV, demonstrating its practicality for their typical operations and the relative operating costs (fuel, road tax, and servicing). This will be broken down into savings for the duration of the trial and extrapolated to show savings over one year, three years, and five years, respectively. The data will also be used to help possible locations for charge points, in order to facilitate maximum utilisation. It will highlight those journeys that could have been completed without running out of charge, and where additional charging may have been required and the type of charger suited to that location.

By adopting this approach, it ensures that when converting to EVs the infrastructure is situated in locations that drivers need. Whilst some hotspots are easily identifiable, such as local train stations and city centre taxi ranks, the assessment will assist in

identifying additional locations which might otherwise be easily overlooked, such as neighbourhood shopping centres and community hubs, business centres, link roads and common destinations outside of the City.

Up to 48 drivers will be selected from the initial sample per year and offered the opportunity to trial a fully electric vehicle for up to 6 months. The trial will be assessed again using telematics so as well as providing the driver with the practical experience a further report demonstrating operating benefits over a longer period can be provided to reinforce assumptions made in the original assessment. The scheme is funded for three years. After the three years the grant has covered all the costs of licensing required and the vehicle no longer needs to prove that it is operating licensed as a taxi in Southampton.

Table 74 ULEV trial key risks and mitigations

Risk	Likelihood H/M/L	Impact	Mitigating action
Taxi operators reject scheme	L	No uptake of scheme.	Communications and promotion to demonstrate benefits will be clearly evident to drivers. Electric Blue have previous experience delivering schemes.

Key Benefits:

- Evidence for benefits of ULEVs clearly demonstrated to fleet. Accelerated uptake of EVs.
- Supports low emission taxi incentive scheme.

5.6.4. Low Emission Taxi Incentive Scheme

Southampton City Council and Eastleigh Borough Council have received joint funding from the Joint Air Quality Unit (JAQU) for the implementation of a financial incentive scheme to encourage replacement of older, more polluting vehicles in the private hire and hackney carriage fleet, with low emission vehicles. The financial incentives are offered through the licensing process by providing an incentive on purchase of low emission vehicles designed to cover some of the costs associated with licencing, inspection and certification fees (i.e. running costs) over 3 years.

The process is as follows:

1. Licence holder applies for scheme
2. SCC/EBC licencing check current vehicle meets requirements
3. SCC Scientific Services (SS) check proposed vehicle meets requirements (e.g. is hybrid/electric/plug-in)
4. SCC SS issue conditional grant offer to licence holder
5. Licence holder has 3 months to purchase proposed vehicle
6. Proposed vehicle is purchased and successfully licenced on same plate number as current vehicle
7. SCC SS issue cheque to licence holder

8. Checks throughout the year and on vehicle relicense to ensure vehicle is licenced for subsequent three years

The key terms and conditions of the scheme are:

- The replacement vehicle must be licensed for a subsequent three years by EBC or SCC.
- The old vehicle must not be relicensed in EBC or SCC for a subsequent three years.
- The old vehicle has been licensed by EBC or SCC and operated in the area for at least 12 months prior to applying.
- The replacement vehicle must have driven at least 8,000 miles as a licensed vehicle in the 12 months prior to applying.
- Limited funds available, the Scheme is operating on a first come first serve basis.
- Single cashback payment on successfully licensing replacement vehicle.
- More than one application may be submitted, grant award will be limited to up to £7,000 per applicant.
- Southampton City Council and Eastleigh Borough Council may at its absolute discretion reject any application and will give reasons to justify that decision.
- Grants will not be awarded retrospectively.

The new proposed scheme will follow this model. The work stream lead will be the CAZ Team Leader who will work with licensing to implement the scheme. As the scheme is currently in existence the project risks will be managed and mitigated in accordance with those identified through the AQ Grant. Project status updates and financial updates will be provided at the CAZ project board.

The scheme will be operated over two years from April 2019, with the incentive being halved in the second year to encourage quicker uptake of the scheme.

Table 75 Low Emission Taxi Scheme Expansion 2 Year Model

Option	Cashback Incentive Year 1	Cashback Incentive Year 2
Full Electric	£3000	£1,500
Plug-In Hybrid Electric Vehicle (PHEV)	£2000	£1,000
Full Hybrid	£1500	£750
Euro 6 Diesel or Petrol*	£1500	£750

*(Capacity to carry 5-8 passengers or wheel chair accessible only)

On approval from JAQU for funding, a request will be made through the AQ Grant returns process to join up to the two funding sources and align the models for the schemes.

Key Benefits:

- Support local taxi operators to upgrade vehicles beyond Euro 6 diesel/4 petrol.

- Reduce emissions from taxi and private hire vehicle fleet.
- Year 2 reduction will encourage quicker uptake of the scheme.
- Supports Wheel Chair Accessible and 5-8 passenger vehicles to upgrade and reduce emissions.

5.6.5. EV Charging Infrastructure

This project will be delivered by the Strategic Transport team, led by the Sustainable Cities team leader. This will be delivered alongside the councils Electric Vehicle Action Plan, which has its own associated project plan and performance dashboard. Progress on the two EV charge points will be reported to the Clean Air Zone Project Board. Monitoring and evaluation will be conducted as part of the CAZ monitoring and evaluation programme and reported to JAQU as per the requirements of the funding.

Approvals and agreements must be sought from the district network operator and SCC highways prior to installation, however this will be included within HCC's framework providers feasibility study to ensure any site has obtained such approval prior to installation.

Key Benefits:

- Encourage uptake of electric vehicles amongst the private vehicle and taxi/private hire fleet
- Support the taxi incentive scheme
- Reduce exhaust emissions of NO_x and PM
- Reduce CO₂ emissions where sourced from renewable energy

Rapid charge points will not be exclusive for taxi operators and therefore state aid does not apply as they will be open and publically accessible.

Table 76 EV Charge points key risks and mitigation

Risk	Likelihood H/M/L	Impact	Mitigating action
EV Charge point procurement not achievable in timescales	L	No charge points delivered, ULEV Trial and low emission scheme less effective	Hampshire EV Framework as procurement route reduces risk as works can be called directly from framework.
Minimal utilisation of charge points.	M	Charge points underutilised.	Communications campaign promotes use and uptake. Low emission incentive scheme and ULEV Trials promotes use.
2 rapid EV charge points are insufficient for requirement	L	Uptake of EVs requires additional charge point installation.	Funding from existing EVAP scheme can be diverted to meet demand, however

			current demand and limited EVs in taxi fleet being low reduces this risk. An ongoing programme will see future delivery of charge points across the city.
Costs are underestimated	M	EV charge points cannot be funded	Reduce number of charge points. Divert funds from existing EVAP budget.
No suitable location can be identified	M	Charge points are difficult to access for taxi operators/ drivers/ firms	Contractor to undertake site feasibility studies. Likely to use council property / council owned car parks in the vicinity of the city centre that are accessible to taxi operators. Key requirement of procurement is that it meets taxi driver needs. Engagement with taxi fleet underway.
Charge points not installed prior to end of 2019	L	Impact on AQ low but will affect uptake of low emission scheme and ULEV Trials.	Brief will stipulate key constraint of implementation prior to the end of 2019 and as quickly as possible. Project integrated into existing Electric Vehicle Action Plan which also reports to Cabinet Member and Project Board.

5.6.6. Traffic Regulation Condition for Public Service Vehicles

The implementation of a traffic regulation condition (TRC) will be managed by the strategic transport team and will report to the CAZ project board. The Strategic Transport team will oversee the BBLP who will design, develop and manage the scheme. The SCC Legal team will be required to draft the traffic regulation condition. Project status and financial updates will be reported to the CAZ Project Board.

Monitoring and evaluation will be conducted as part of the CAZ monitoring and evaluation programme and reported to JAQU as per the requirements of the funding.

The process required to implement a Traffic Regulation Condition based on consultation with authorities that have implemented similar schemes is as follows:

1. Informal consultation with trade
2. Design and development
3. Further consultation with trade on specifics
4. Formal request to Traffic Commissioner for TRC
5. Consultation by Traffic Commissioner
6. Approval and adoption (assuming no objections received)

Oxford is an example of an existing successful Traffic Regulation Condition for buses, where they have designated an area of the city centre a Low Emission Zone¹⁴.

Pre-engagement with bus operators in the city is essential to ensuring all stakeholders buy in to the scheme and the TRC can be implemented. SCC has a designated Public Transport Officer who will facilitate this process with BBLP and other CAZ project team members. The consultation exercise for this plan has also engaged with bus operators in the city to examine the effects of implementing a regulation (a clean air zone that may charge buses to operate in the city if they do not meet compliance) and therefore it could be considered that a TRC is not dissimilar in its objectives. Engagement with other authorities identified cost to upgrade vehicles as a key concern, in Southampton this burden has been alleviated through the Clean Bus Technology Fund programme.

Enforcement of the TRC will be based on officers reviewing bus licenses and checking that vehicles meet the requirements. Ultimately, the penalty and incentive for operators to comply is revoking the operating license. The scheme will however be built on partnership with the operators and therefore enforcement is unlikely.

Buses must meet a minimum Euro VI standard to comply with the traffic regulation condition or be fitted with accredited technology through the Clean Vehicle Retrofit Accreditation Scheme run by the Energy Savings Trust¹⁵.

Key benefits:

- Provide mechanism to encourage a modern bus fleet and lower emissions.
- Support ongoing improvements in the bus fleet and support the Clean Bus Technology Fund.

Table 77 TRC key risks and mitigations

Risk	Likelihood H/M/L	Impact	Mitigating action
TRC not implemented prior to the end of 2019	L	Low impact on AQ as CBTF retrofit in place to upgrade vehicles.	Project management principles.

¹⁴ <https://www.oxford.gov.uk/info/20216/air-quality-management/208/oxfords-low-emission-zone-lez>

¹⁵ <http://www.energysavingtrust.org.uk/transport/clean-vehicle-retrofit-accreditation-scheme-cvras>

Bus operators reject proposals and/or are not prepared for introduction	M	Objections prevent implementation of TRC.	Communication plan to ensure all operators are aware. Implementation not before that originally proposed for the CAZ (i.e. end of 2019) to ensure retrofit programme can be complete. The order will be amended if objection received to address objection and another consultation will take place.
Services are unviable due to TRC and reduce use of public transport.	L	If this occurs, there is a potential impact on air quality as it may drive use of private vehicles.	Buses currently accessing CBTF to retrofit to compliant standard. Communications campaign with operators to raise awareness. Business Change manager to assist with any adaption required.

5.6.7. Freight Measures

Freight consolidation, delivery and service planning and fleet accreditation will be delivered by the Strategic Transport team, overseen by the Sustainable Cities Team leader. Project status and financial updates will be reported to the CAZ Project Board. Monitoring and evaluation will be conducted as part of the CAZ monitoring and evaluation programme and reported to JAQU as per the requirements of the funding. Key benefits are outlined in the economics section of this document.

Table 78 Freight consolidation, delivery and service planning and fleet accreditation risk and mitigations

Risk	Likelihood H/M/L	Impact	Mitigating action
Key organisations in the city, the surrounding area and the Isle of Wight are unaware that a freight consolidation centre service is available to them	H	Low number of users switch to the SDC and there is limited reduction in HGV numbers on the road	A marketing budget is to be allocated to support the promotion of the scheme for the duration of its existence under a new 10-year

			framework agreement
Businesses do not possess the internal expertise or insight to judge the value of the change the SDC might provide or develop a business case for the switch to a consolidation model	H	Potential users are dissuaded from switching to a consolidation model	DSPs and consultancy support will be offered as a free service for a 3 year period for potential users to undertake the assessment work required along with the business case development
Limitations or short term availability of the freight consolidation model promoted through the SDC dissuades key potential users from switching due to the time and cost associated with introducing a change to supply chain arrangements	H/M	Potential users are dissuaded from switching to a consolidation model	The SDC framework will be established for a 10-year duration to build confidence in the market
No suitable standalone SDC service provider is available within the timeframes required	L	No SDC service is available as mitigation for organisations in the city until after the CAZ is in place	The SDC service framework put out to tender will require tenderers to evidence a sustainable business model including integration of additional freight services alongside consolidation
The costs associated with the provision of an SDC service are unsustainable without the provision of public subsidy support	M	Long term operation is not possible and users have confidence undermined which impacts the switch over of supply contracts	The SDC service framework put out to tender will require tenderers to evidence a sustainable business model including integration of additional freight services alongside consolidation
No long term fleet management evaluation, review or incentives exist to bind	M	Initial changes to fleet is short lived and costly. Longer	Provision of ECOSTARS fleet recognition scheme to provide specialist

organisations to sustainable fleet management behaviours		terms benefits are not realised	support and incentive to local organisations to realise long term benefits
Despite identifying the benefit of switching to an SDC, businesses do not have the ability or staff capacity to instigate changes to the supply chain fast enough	L	Benefits of SDC are not realised quickly.	Provision of additional consultancy time to undertake the necessary business case development providing organisations with the confidence to switch and in the time required
There is insufficient transparency in the operation of any SDC service and quantifying any benefits are unclear. No independent or third party judgement of performance exists	M	An assessment of the impact on fleet operations is unclear	Data capture, reporting and assessment will be applied to the SDC framework and costs associated with carrying out the work will be accounted for within the CAZ business case
Key users requirements for the supply of specialist goods are not met by the SDC	M	SDC is limited to certain users and the benefits are constrained	The new SDC framework will set specific requirements for any tenderer to possess a controlled drugs license for the handling of sensitive materials required by potential major users such as the University Hospital. This will enable pharmacy functions to be accounted for along with the transportation of samples
The SDC service provider is limited to when it operates due to disproportionate operating costs or low	M	SDC is limited to certain users and the benefits are constrained	The new SDC framework requires that freight consolidation is not a standalone service but one of a package

demand as a standalone service			of freight services. This builds in economic resilience. The framework also stipulates 24/7 service provision as a key assessment criteria effecting award of the contract
The time required to establish a freight consolidation centre including new facilities and standalone service is prohibitive and/or disproportionately expensive	M	SDC is unable to function in time to enable the benefits to be realised	The new SDC framework stipulates that the service should operate out of existing premises to prevent the CAPEX costs associated with constructing a new facility

5.6.8. MyJourney

The MyJourney programme is managed by the Sustainable Cities Team Leader and the MyJourney Programme Officer. Additional support is requested to deliver to project manage the work stream marketing and communications requirements. The Access Fund board oversees MyJourney monitoring and evaluation and progress reports and status updates are presented at this group. The work stream lead will attend the CAZ Project Board to provide project status and financial updates.

Key Benefits:

- Reduced private vehicle use reduces exhaust emissions.
- Focus on Northam Bridge/Bitterne area mitigates risk of exceedance.

Risks and mitigations will be managed by the existing MyJourney Access Fund programme.

5.6.9. Communications

Communications will be overseen by the CAZ Communications Officer. It is essential for the successful implementation of the schemes to ensure that stakeholders are aware and maximise investment. A communications plan is included in appendix 13.

5.7. Additional Resource Requirement

Table 79 Additional resource requirements

Description	Grade*	Duration/ Recruitment
Scientific Services Manager (0.2 FTE) - To provide management and oversight to the project team.	12	Existing resource
CAZ Support (1 FTE) – To administer, manage and evaluate the incentive scheme. Support Communications Officer on taxi related matters. Support Licensing department on delivery of revised licensing conditions. MyJourney support. Embed within Sustainable Transport team.	8	Existing resource 2 years
CAZ Team Leader – (1 FTE) - To promote, administer and contract manage and evaluate the DSP/SDC/ accreditation scheme. Facilitate business change amongst participants. Support Communications Officer on related matters. To deliver the monitoring and evaluation activities. Contract manage external support services. Collate all associated reporting. Contract manage to Try before you Buy scheme.	10	2 years fixed term
CAZ Communications Officer (1 FTE) To promote the CAZ support/mitigation measures to ensure active engagement with stakeholders. To deliver all related communication activities including proactive and reactive management of media. To share experiences with relevant stakeholders to add value to schemes. Embed within Communications team	9	2 years fixed term
*Projects & Change Team (0.4 FTE) – Consisting of 0.1 FTE Project Manager, 0.05 FTE Business Analyst, 0.05 FTE Programme Manager & 0.2 Business Change Manager. These roles will provide support for a 6 month period to the implementation of the CAZ.	9-11	Existing resource over 6 months

*Projects and Change Team Management Support

The Projects and Change Team will support the initial months of the plan launch to ensure successful implementation. Business Analyst will aid process development for expanding the low emission taxi incentive scheme and assisting with processes related to bus lane restrictions, licensing condition changes and the traffic regulation condition for buses. Programme and project managers will assist with governance in the initial phases, overseeing reporting of project status and financial updates. The Business Change Manager will work closely with the Communications and Engagement Officer to ensure that all activities are aligned and deliver against the project objectives. To ensure appropriate activities are undertaken, a Business Change Plan will be developed to scope the required change and how this will be delivered. The primary role of the Business Change Manager will be to offer support to the implementation phase work streams, ensuring that all required cultural and

behavioural change is taken into consideration and undertaken, with the objective of supporting long term changes in behaviour. A Business Change Plan will be developed once all relevant contractors are appointed, this is to ensure that they complement the work the contractors will undertake and to avoid any chance of duplicated activity.

5.8. Reporting

Once the submission of the business case for the preferred option has taken place, a reporting process will begin (please see appendix 17 for template of reporting dashboard). The reporting format will consist of a dashboard report for each work stream which will feed into a project status overview completed by the Project Manager. These dashboards will act as means for each work stream and the project to report against the baselines for; time, cost and quality. They will also act as a formal measure by which; decision requests, risks and issues can be escalated.

The highlight reports will be produced on a fortnightly basis due to the short period of project implementation required for a Non-Charging Clean Air Zone. Once these reports are completed they will be taken to the project board for review and scrutiny.

It is anticipated that JAQU will be provided with a regular update on the project as its implementation develops. JAQU will be asked to provide SCC with templates by which they wish to monitor the projects implementation and spend.

The Clean Air Zone board will remain in place until the end of 2019, any ongoing oversight, monitoring and evaluation will be completed by the Air Quality Implementation board.

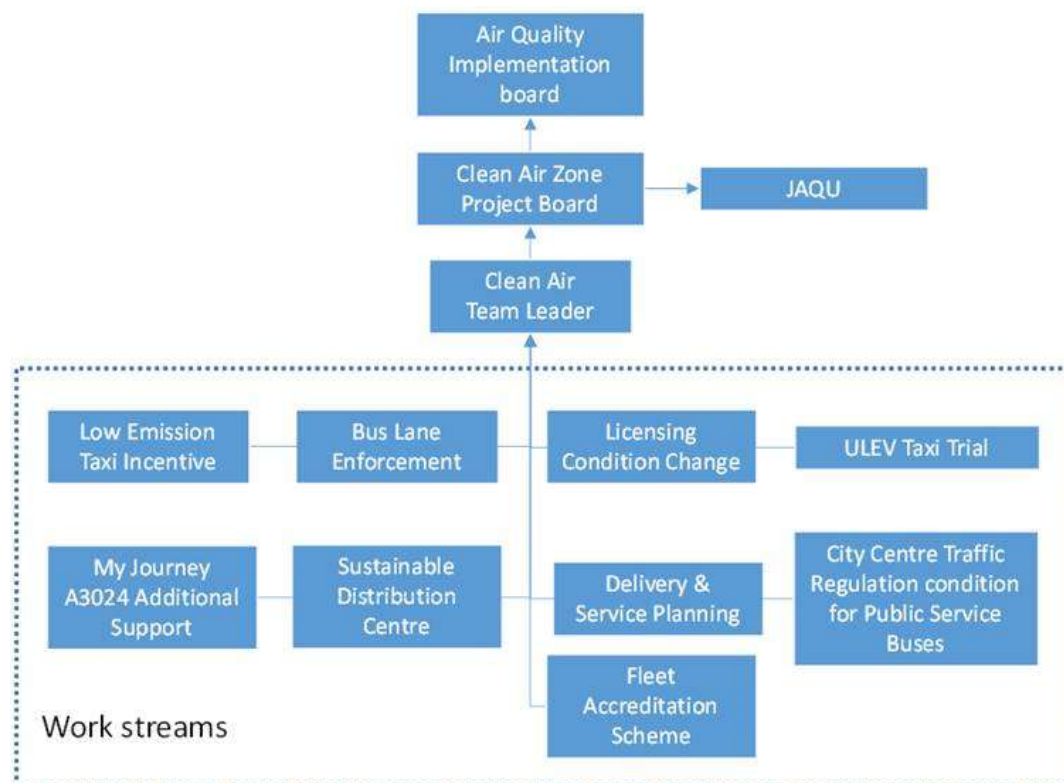


Figure 20 Reporting line chart for Clean Air Zone Implementation

5.9. Change Control Process

Any change that is not within the agreed project scope will need to be requested through a specific change control process which will be managed by the Project team in the first instance. The inclusion of this process does not anticipate change, but places a clearly defined process in place by which any required changes can be managed. The decision making process will be undertaken as follows:

- Change impact falls within delegated authority of the Scientific Services Manager and Clean Air Team Leader within defined contingency levels (please see table below). Any challenges to the decision made will be escalated to the Project board for a decision or in any urgent cases the Senior Responsible Owner (SRO).
- The Project Delivery Lead will have delegated authority to approve changes up to 50% of each agreed contingency type (Time, Cost & Quality) if required, these changes will still need to be reported to the project board. Any changes between 50% – 100% of any contingency will require approval by the Project Board or in an emergency the Senior Responsible Owner. Any changes above 100% of contingency will be required to be approved by both the Cabinet Lead for the project and Chief Executive of the Council, with the SRO presenting the request and reason for change. Any changes outside of expected tolerances that are not within SCC remit to control, are also likely to require escalation to JAQU.

Category	Clean Air Team Leader	Scientific Services Manager	Project Board approval limit for variance	Cabinet Member Approval and Chief Executive approval
Budget	0 - 50% of contingency	50-75% of contingency	75 –100% contingency	100%+ contingency
Timescale	Minor changes which don't impact the overall timeline for delivery.	Minor changes which don't impact the overall timeline for delivery.	Minor changes which don't impact the overall timeline for delivery.	Any changes which may result in a change to project delivery date, which may require JAQU engagement.
Scope*	Minor changes which do not alter the outcome specified.	Minor changes which do not alter the outcome specified within the bid.	Minor changes which do not alter the outcome specified within the bid.	Any significant change to outcomes, which may require JAQU engagement.

Appendix 18 contains the Change Request Form, once this is raised each request will be documented in the Change Request log which is attached in appendix 19. The Change Request log will detail the request and the decision made regarding the request. Any decision will be recorded in the decision log and each decision made should be made available to the Project Board, with any significant decisions / changes provided as an agenda update to both the Project and Implementation boards.

5.10. Governance Structure

For the implementation of the Clean Air Zone a two board structure is in place, the first being a tactical level project board designed to support the Clean Air Zone Team Leader in progressing the required works and providing oversight, scrutiny and escalation. The Project board will sit on a fortnightly basis due to the short timescales for implementation, this will ensure regular oversight to address any issues that may arise. Once implementation works are complete, the project board will close and handover any remaining responsibility for benefit realisation and oversight to the Air Quality Implementation Board.

Table 80 Clean Air Zone Project Board

Authority	Role	Project Role
Southampton City Council	Service Director for Universal and Transactional Services	Senior Responsible Officer
Southampton City Council	Scientific Service – Service Manager	Management & oversight for delivery team
Southampton City Council	Clean Air Team Leader	Delivery Lead for the CAZ works
Southampton City Council	Strategic Transport - Service Manager	Internal Stakeholder & Contractor Manager
Southampton City Council	Sustainable City Programme Manager	Internal Stakeholder
Southampton City Council	PMO Project Manager	Internal governance support and Quality Assurance
Southampton City Council	Service Lead: Legal Services Partnership	To provide Legal support and scrutiny to the project
Southampton City Council	Public Health	Internal Stakeholder (Strategic Objective – Health)
Southampton City Council	Finance	Internal Stakeholder (Budget management and Value for Money)

Southampton City Council	Marketing Coordination Manager – Sustainable Travel and Air Quality	Project Communications and Stakeholder Engagement
Southampton City Council	Licensing Manager	Work stream lead – Licensing Conditions
Other as required	Various – Business Change Manager, subject matter experts etc.	Various

The Terms of Reference for this board can be found in appendix 20.

Overseeing the Clean Air Zone Project Board would be the Air Quality Implementation board. The objective of the Implementation Board is to provide strategic overview and scrutiny of the project to key stakeholders and interested parties. The board will provide a forum by which the project can be viewed within the context of other Air Quality initiatives. Recommendations from this board will be taken to the project board for consideration, but they are not required to be acted upon by the project, however a response to each recommendation will be provided. The Air Quality Implementation boards sit on a monthly basis and are made up of multiple partner organisations (Hampshire County Council, New Forrest District Council etc.). Following closure of the CAZ project board (at the point of implementation completion), the Air Quality Implementation board will continue to monitor any remaining benefits to be realised. The board will utilise the monitoring and evaluation plan and subsequent reports on progress to ensure the benefits are being realised.

CAZ Governance Chart

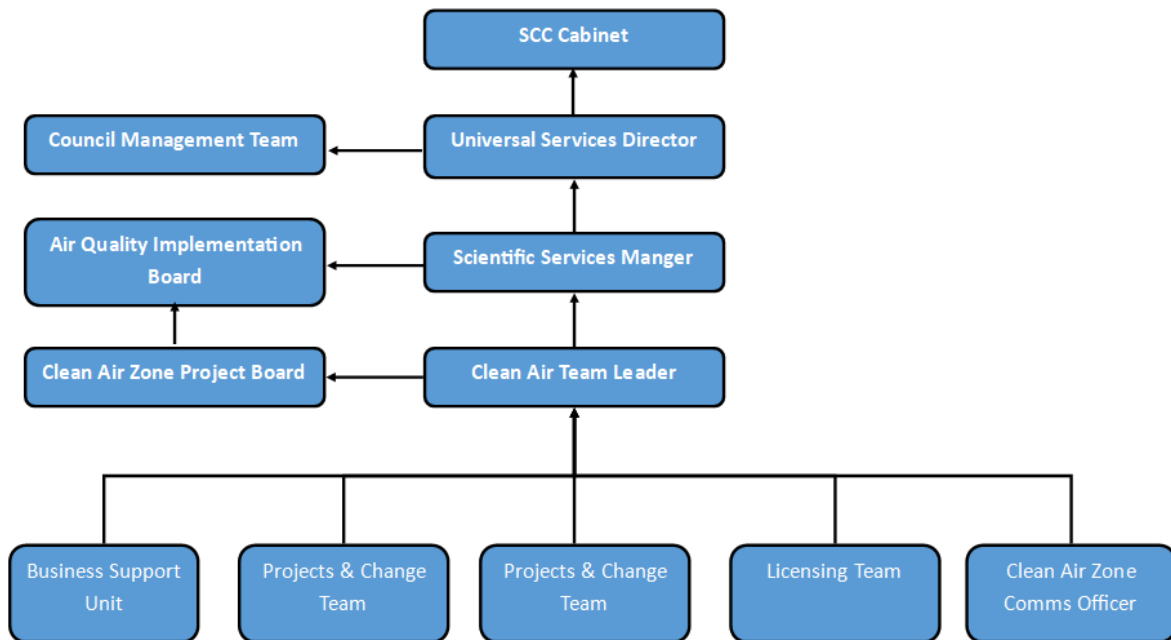


Figure 21 Project governance process

5.11. Managing Risk

The Clean Air Zone Project will utilise a standard project Risk and Issue approach as follows. The Risk and Issue registers (RAID log – Risk, Assumptions, Issues & Dependencies) will be populated through holding bi-monthly risk workshops with internal stakeholders and project team members to ensure an as accurate and robust management of the register as possible (appendix 22). Each risk will be assigned an owner who will be responsible for implementing any agreed mitigation actions. Any risks which have; Departmental, Service or organisational wide impacts will be escalated through existing processes as and when required, this will be agreed on a case by case basis by engagement with the relevant Service Lead and organisational Risk Manager. The risk register will be monitored as a standing agenda item at each project board and bi-monthly risk and issue workshops will be held to ensure regular review of the register.

When a risk is realised it will be escalated to the Issue Register where it will be monitored at every project board. Should an issue require more regular monitoring this will be undertaken through exception, utilising any required methods to undertake mitigation actions and exception reporting (dashboard) for monitoring. As with risks, any issues which have wider impacts on service areas or organisation wider will be escalated as required.

Scoring will follow a traditional and corporate standard; Red, Amber and Green (RAG) rating and will be scored on a scale of Likelihood (Very Unlikely – Almost Certain) and Impact (Minor - Extreme). An initial risk score will be listed and then a target residual risk score following mitigation actions. The RAID log template is attached in appendix 19. Individual work stream risks are outlined in section 5.5.

To limit the risk of cost over runs, contingencies have been applied to costs in the financial case. The commercial case describes risk apportionment.

5.12. Project Stakeholder Management

Stakeholder management is undertaken in accordance with RACI principles.

Stakeholders are identified according to their role in project delivery and the extent to which they are directly involved into one of four categories:

1. **Responsible** - The Stakeholder is directly involved in delivery of the project
2. **Accountable** - The Stakeholder is accountable for delivery and spend
3. **Consultee** - The Stakeholder has a direct interest in the project and needs to be formally consulted as part of the project delivery
4. **Informed** - The Stakeholder has no direct interest in the project but is informed of progress as part of a regular dialogue on delivery of the overall programme.

Full detail of CAZ Implementation project stakeholders and their RACI category is found in appendix 21. The full CAZ consultation report is found in appendix 23.

5.13. Monitoring and Evaluation

Performance of existing schemes included in the baseline, including low emission taxi incentive scheme, early measures cycling infrastructure and clean bus technology

fund have monitoring and evaluation requirements specific for the funding they have received.

The monitoring plan will check progress against outcomes and can be defined as the formal reporting and evidencing that spend and outputs are successfully delivered, benefits achieved and milestones met. JAQU will undertake a programme of national monitoring and evaluation. SCC will facilitate this through the following actions:

Table 81 JAQU monitoring programme requirements

Task	Action
Before and after reports	Share monitoring and evaluation every three months. Liaise with JAQU to highlight any issues raised in the report.
Rapid assessment case studies	Assist the evaluation team in their requests for additional data, whether in providing it directly or liaising between organisations. Discuss with JAQU the outcome of the case study and engage on any next steps.
Deep dive case studies	Assist the evaluation team in their requests for any new data. Engage with the evaluation team, assisting them in identifying the impact of the local plan.
Feasibility study – monitoring	Discussed below.
Feasibility study – evaluation	Discussed below.

Southampton City Council will also undertake additional monitoring to ensure that the measures are achieving objectives and goals for uptake, and if necessary amendments to schemes can be made to address any issues. A summary of the measures that will require further monitoring and how this will be conducted is included in Table 82. Monitoring will be primarily through numbers of grant awards made, and comparing “before and after” scenarios.

Table 82 Measures included in the preferred option that require monitoring

Measure	Outcome	Metric
Low emission taxi incentive scheme	Reduced non-euro 6 diesel/4 petrol vehicles in SCC licensed fleet	Numbers of grants issued. Applications for grants will include estimated vehicle mileage per year and make/model of vehicle to enable more robust estimates of emission reductions.

		Relative proportion of hybrid and electric vehicles in fleet.
EV charge points	Use of charge points	Quantified use of charge points based on numbers of charge sessions, kilowatt hours (kWh) used, total occupation time.
ULEV Taxi Trial	Trials of EV taxis through scheme	<p>Numbers of participants for the EV trial scheme.</p> <p>Conversion of trial to EV usage, monitored through follow-up questionnaire and liaison with the licensing department.</p> <p>Relative proportion of hybrid and electric vehicles in fleet.</p>
Bus traffic regulation condition	Euro VI buses operating within TRC zone	Bus operating licenses that meet requirement.
Freight consolidation	Reduced logistics vehicles operating within city, improved air quality and congestion benefits.	<ul style="list-style-type: none"> • Number of SDC users vehicles and products per type of user (Retail, Office, Hospitality, Public Sector, etc.) received per day by vehicle type; • Number of deliveries made per type of user (Retail, Office, Hospitality, Public Sector, etc.) per day by vehicle type; • Time of vehicle receipts into the SDC in (percentages) per type of user (Retail, Office, Hospitality, Public Sector, etc.); • Time of onward deliveries out of the SDC (percentages) per type of user (Retail, Office, Hospitality, Public Sector, etc.); • Number and percentage of vehicle trips saved for all SDC users per month; • Number and percentage of consolidated loads for all SDC users per month; • Number of new businesses contacted per month;

		<ul style="list-style-type: none"> • Level of subsidy used (report quarterly); • Level of square footage being used by the SDC users (overall); • Types of vehicles used by suppliers; • Types of vehicles used by the SDC; • Average size of consignment per SDC user type (hoteliers, retails, office based, LAs and public bodies); • Reporting complaints and remedies to correct; • Feedback from delivery companies and scheme users, if any; • Percentage of delivery accuracy (i.e. correct item, correct venue) and report of failures; • Percentage of returns from users (damaged); • Number and percentage of SDC items lost or gone missing; • Percentage of users who got first pick in delivery schedules; • Percentage of on time deliveries within agreed delivery boundaries; • Number of jobs created at the SDC (report quarterly); • Percentage of racking occupied by SDC specific customers/month • Number and percentage of users helped to negotiate cheaper delivery rates with their suppliers (report quarterly); • Mileage covered and fuel used by SDC vehicles.
<p>Delivery and Service Planning</p>	<p>Accelerated uptake of CAZ compliant vehicles, reduce vehicles undertaking deliveries, increase efficiencies, increased uptake of freight consolidation.</p>	<ul style="list-style-type: none"> • Number of vkms saved • Number of vehicles off the road • Emissions reductions <p>Monitored through requirements in the grant conditions for participants to supply before and after cases.</p>

MyJourney scheme	Reduction in private vehicle use	MyJourney has a specific monitoring programme that will report to CAZ project board reductions in private vehicle uses, uptake of cycling and success of campaigns.
------------------	----------------------------------	---

The primary objective of this plan is to deliver compliance with the EU limit value for ambient nitrogen dioxide, primary monitoring will therefore be essential to monitoring progress and identifying risks of not achieving the objective. Table 83 summarises the existing air quality monitoring network that will be utilised to assess ambient air quality in the city. Figure 22 shows the locations of these monitoring points across the city.

The modelling also makes a number of assumptions regarding traffic composition and emissions. Table 84 also shows the existing monitoring that is available to assess how these assumptions compare to reality.

Table 83 Existing monitoring

Metric	Type	Data frequency	Quantity	Control
NO ₂ concentration	Diffusion tube	Monthly (annually bias adjusted)	70+	Local
NO ₂ concentration	Automatic monitoring station	Real-time	2 x Local 2 x National	Local/ National AURN
PM Concentration	Automatic monitoring station	Real-time	2	Local/ National AURN
12 Hour Traffic Counts	Automatic Traffic Count	12 Hourly (annual rotation)	31	Local
Traffic Flow	DfT Count Data	Annually	n/a	National

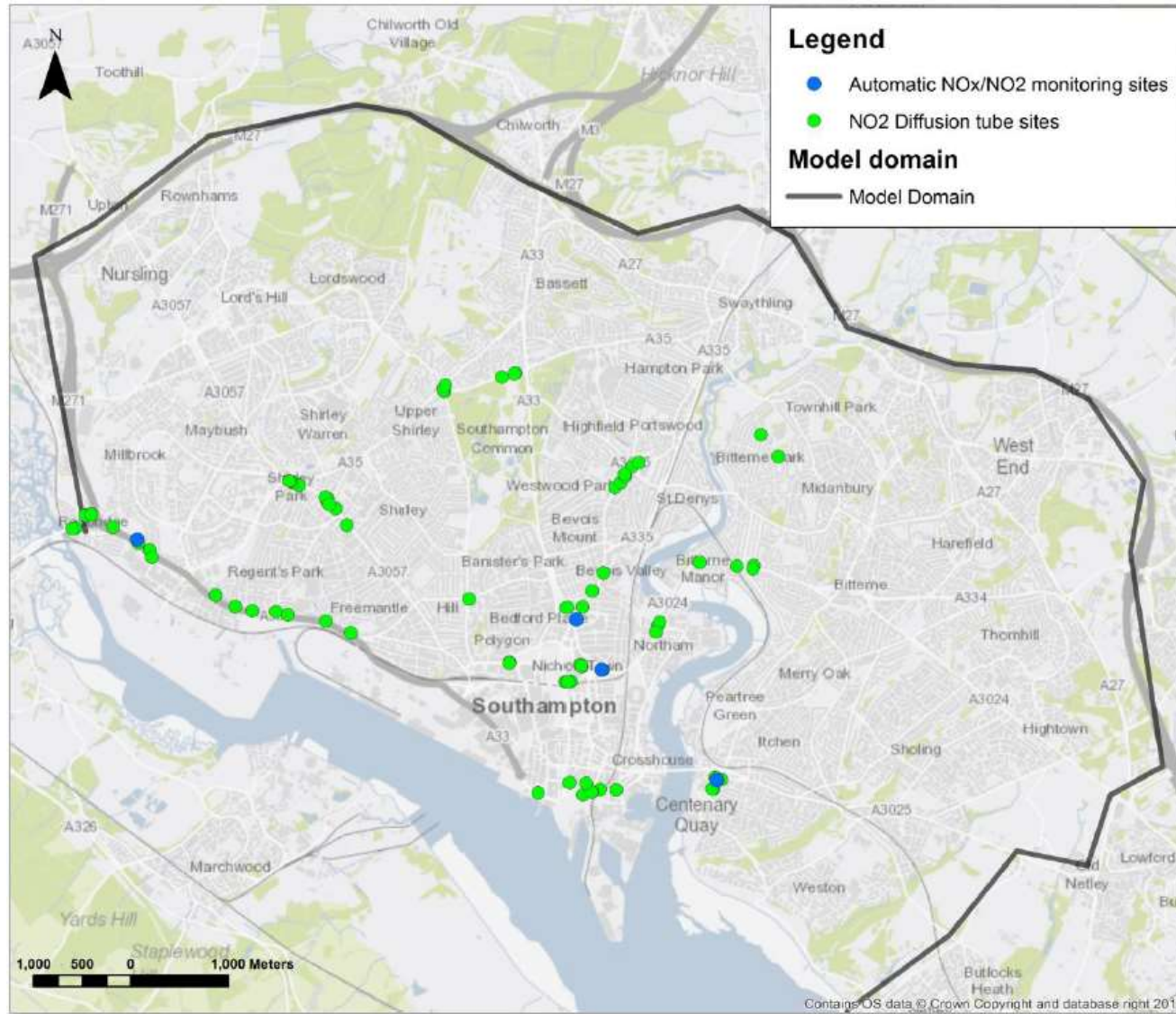


Figure 22 Locations of existing NO₂ monitoring in Southampton

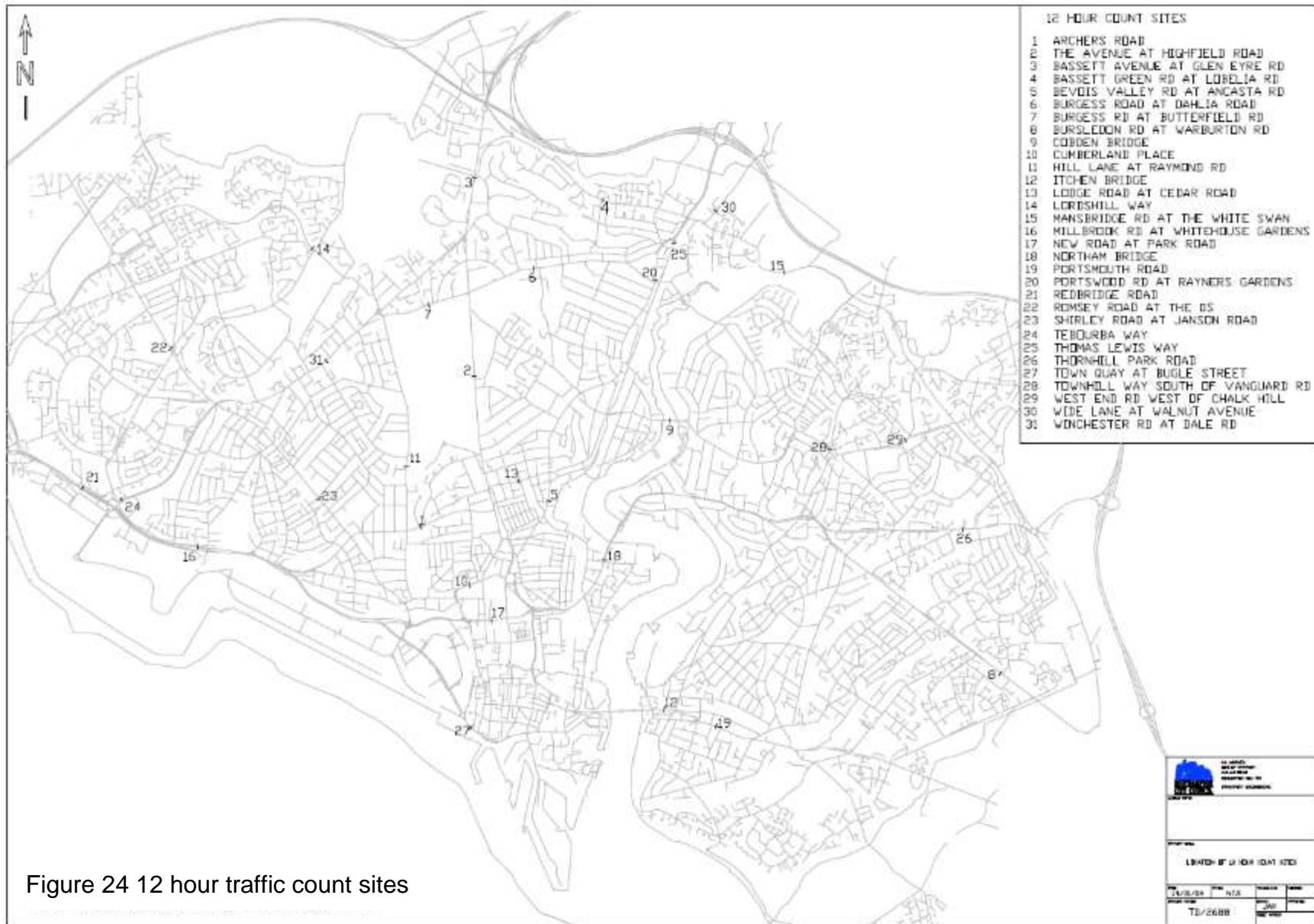


Figure 24 12 hour traffic count sites

Table 84 Additional monitoring requirements

Option	Metric	Cost	Coverage	Data Quality	Decision	Funding Source
5 new diffusion tubes	NO ₂ Concentrations	Low	5 sites at Census ID's above 35	Monthly readings ± 25% uncertainty	Preferred – Monthly readings adequate for non-exceedance locations.	Implementation fund
Use existing 12 hour traffic count sites	Traffic flows	None	31 sites	Moderate	Discounted – Does not capture fleet composition or emissions standards.	SCC resource
Permanent ANPR system Reduced number of sites (main routes into city) with front read only cameras.	Traffic flows, composition and emission standard	High	Key routes into city	Good	Discounted – disproportionate cost	Implementation fund
Permanent ANPR System Reduced sites, rolling programme of monitoring or certain times of day with front read only cameras	Traffic flows, composition and emission standard	High	Key routes into city	Good	Discounted – disproportionate cost	Implementation fund
Mobile ANPR system	Traffic flows, composition	High	Key routes into city		Discounted – disproportionate cost	Implementation fund

Rapid deployment cameras to carry out rolling programme of monitoring key entry points to zone.	and emission standard					
Temporary ANPR Survey basis undertaken by 3 rd party to tie in with JAQU guidelines with some focus on problem area and key routes, no direct asset procurement.	Traffic flows, composition and emission standard	High	Key routes into city covering 6 key routes into the city.	Good	Take forward – costs proposed in financial case. Good data capture, inform future modelling. Risk transfer to third party. Undertaken for feasibility study, process understood. Delivery route through existing arrangements.	Implementation fund

Table 85 New diffusion tube locations to assess Census IDs above 35 µg/m³

Diffusion Tube Location	Grid reference (X, Y)
Northam Road	443000 112410
Millbrook Road West	439521 112777
Redbridge Road	438000 113400
Saint Andrews Road	442350 112285
Redbridge Causeway	437182 113720

5.13.1. Benefits Realisation

The project will run benefit workshops every quarter to monitor the realisation of the projects benefits, until such time as all benefits are realised. It will be the responsibility of the Clean Air Team Leader to arrange and facilitate these workshops and to gather evidence from the monitoring and evaluation work to feed into this review. Should any issues be identified with benefit realisation, a report will be compiled with recommendations to the Air Quality Implementation board in how to address any concerns or problems. Update reports will also be provided to the Air Quality Implementation board to brief them on the progress of the project.

As some of the benefits will continue past the life of the team and the Clean Air Zone itself, these will be passed to the Air Quality Implementation board to monitor as part of the wider Air Quality work. The benefits register can be found below:

Table 86 Local Plan for NO₂ Compliance Benefits Register

Benefit	Description	Measurement		Baseline
		How	When	
EU Ambient Air Quality Directive compliance within SCC boundary	Improved NO ₂ concentrations bring about compliance with EU AQ Directive	Local NO ₂ monitoring and modelling	Annually (Monitoring and Evaluation Report)	Reported in AQ Review and Assessment. Baseline exceeding EU AAQD. CAZ option compliant by 2019.
Compliance with LAQM objectives	Improved NO ₂ concentrations bring about compliance with LAQM	Local NO ₂ monitoring and modelling	In accordance with JAQU requirements (Monitoring and Evaluation Report)	Reported in AQ Review and Assessment. Baseline compliance achieved at LAQM relevant receptors.
Public health improvements	Reduced emissions and achieving EU AAQD limit value (by proxy World Health Organisation guidance value) will result in health benefits.	Public health outcomes framework (PHOF) and assessment of local data (including asthma prevalence, COPD emergency admissions, birth weight etc.) to identify improvements. Direct correlation with AQ improvements difficult. PHE tool for estimating healthcare costs ¹⁶	In accordance with JAQU requirements (Monitoring and Evaluation Report)	PHOF 3.01. Fraction of mortality attributable to particulate air pollution = 6.0%. Other public health data presented within Equality and Safety Impact Assessment supporting business case.

¹⁶ <https://www.gov.uk/government/publications/air-pollution-a-tool-to-estimate-healthcare-costs>

Emissions reductions in Southampton	CAZ promoting uptake of cleaner vehicles will result in emissions reductions of NO _x and other pollutants.	Annual emissions of NO _x (and other pollutants) within CAZ	In accordance with JAQU requirements (Monitoring and Evaluation Report)	Ricardo air quality modelling for NO _x and PM estimated emissions reductions - demonstrate emission reductions.
Emissions reductions beyond Southampton	SDC, DSP, TRC and licensing conditions prompts uptake of cleaner vehicles will result in emissions reductions of NO _x and other pollutants.	Annual emissions of NO _x (and other pollutants) outside CAZ, qualitative assessment and simple Eft emissions reduction estimates where possible.	In accordance with JAQU requirements (Monitoring and Evaluation Report)	Ricardo air quality modelling for NO _x and estimated PM emissions reductions. Neighbouring authority data.
Fuel/opex/GHG savings	SDC, DSP, TRC and licensing conditions prompts uptake of cleaner vehicles and conveys cost savings in fuel/opex and GHG emissions	Monitoring and evaluation plan to include estimates of fuel/opex/GHG savings conveyed. HGV mitigation measures include DSP and consolidation which means data will be readily available.	In accordance with JAQU requirements (Monitoring and Evaluation Report)	Qualitative assessment of options impacts only. Business as usual not qualitatively assessed. Improvements in opex/fuel/GHG savings based on business as usual therefore assume CAZ is improvement.
Noise, accidents and congestion reductions	Consolidation and DSP will deliver reduced vehicle km's travelled and additional benefits.	Monitoring and evaluation plan to include estimates of noise, congestion, accidents savings delivered. HGV mitigation measures include DSP and consolidation which means data will be readily available.	In accordance with JAQU requirements (Monitoring and Evaluation Report)	Qualitative assessment of options impacts only. Business as usual not qualitatively assessed. Improvements in opex/fuel/GHG savings based on business as usual therefore assume CAZ is improvement.

Increased active sustainable travel in Northam/Bitterne area	MyJourney support for Northam/Bitterne area will focus on reducing private vehicle use to mitigate risk of exceedance.	MyJourney Access Fund monitoring and evaluation programme.	In accordance with JAQU requirements (Monitoring and Evaluation Report)	Existing rates of cycling and sustainable travel in Northam/Bitterne area.
--	--	--	---	--

Appendices

Appendix A: PCM v Do Minimum Baseline Results (NO₂ µg/m³)

CensusID	LA Name	Road Name	Length (m)	PCM Baseline					Local Baseline					
				2015	2017	2018	2019	2020	2015	2016	2017	2018	2019	2020
Southampton Links														
16340	Southampton Council	A35	1,082	28	27	26	25	24	32	30	29	28	26	25
16891	Southampton Council	A3024	2,346	33	32	31	30	28	39	37	35	33	32	30
16892	Southampton Council	A335	454	39	37	36	34	33	35	34	33	32	31	29
17531	Southampton Council	A3024	1,701	28	27	26	25	24	29	27	25	23	21	20
17532	Southampton Council	A33	531	33	32	31	30	29	33	32	31	30	29	28
17974	Southampton Council	A33	403	30	29	28	27	25	37	35	34	32	30	29
18113	Southampton Council	A3035	1,374	23	22	22	21	20	24	23	22	21	20	19
26062	Southampton Council	M271	585	39	36	35	33	31	51	47	43	40	36	32
26296	Southampton Council	A27	3,195	31	30	29	28	27	39	37	36	34	32	31
26351	Southampton Council	A33	805	37	36	35	33	32	40	38	36	35	33	31
26371	Southampton Council	A35	1,552	28	27	26	25	24	30	29	27	26	25	24
27635	Southampton Council	A3057	1,340	24	24	23	22	21	25	24	23	22	21	21
36987	Southampton Council	A334	1,657	30	29	28	27	26	25	24	23	22	21	20
37658	Southampton Council	A3025	2,303	27	26	25	24	23	33	32	31	29	28	26
38212	Southampton Council	A33	734	40	39	38	37	35	36	35	34	33	32	31
46375	Southampton Council	A35	1,394	30	29	28	27	26	35	33	32	31	29	28
46963	Southampton Council	A3024	1,663	37	36	35	33	32	50	47	45	43	40	38
46964	Southampton Council	A335	1,151	36	35	33	32	31	35	34	33	32	31	29
48317	Southampton Council	A33	498	31	30	30	29	28	24	23	23	22	21	21
48456	Southampton Council	A33	195	30	29	29	28	27	25	25	24	23	23	22
48513	Southampton Council	A33	285	29	28	28	27	27	27	27	26	25	24	23
56347	Southampton Council	A33	3,252	55	52	50	48	46	43	42	40	39	37	36
56374	Southampton Council	A35	711	33	32	31	30	29	30	29	27	26	25	24
57434	Southampton Council	A33	153	33	32	31	30	29	35	33	32	30	29	27
57672	Southampton Council	A33	162	36	35	35	35	34	32	31	29	28	26	25
6292	Southampton Council	A27	1,062	32	31	30	29	28	26	25	24	23	22	21
6349	Southampton Council	A33	1,506	34	32	31	30	29	33	32	30	29	27	26

6367	Southampton Council	A35	1,743	29	28	27	26	25	31	30	29	27	26	25
6368	Southampton Council	A35	1,678	58	52	49	46	44	43	41	40	38	37	36
6933	Southampton Council	A33	2,249	35	33	32	31	30	44	42	41	39	38	37
70064	Southampton Council	A33	239	34	33	32	31	30	24	23	22	22	21	20
70066	Southampton Council	A33	219	30	29	28	28	27	32	31	30	29	28	27
70108	Southampton Council	A27	421	25	25	24	23	22	18	17	17	16	15	15
70109	Southampton Council	A35	772	24	23	22	21	21	25	23	22	21	20	19
73605	Southampton Council	A3025	750	24	23	22	22	21	26	25	24	23	22	21
73613	Southampton Council	A3057	166	23	22	21	20	19	22	21	20	20	19	18
73615	Southampton Council	A35	289	63	58	55	52	49	46	44	42	40	38	36
75250	Southampton Council	A33	293	32	31	30	30	29	37	36	34	33	31	29
75251	Southampton Council	A33	275	42	40	39	38	37	39	37	36	35	33	32
75252	Southampton Council	A33	987	43	41	40	39	38	37	36	34	33	32	30
75253	Southampton Council	A35	1,010	39	38	36	35	33	30	29	28	27	26	25
75258	Southampton Council	M27	569	44	43	41	39	37	54	53	52	51	50	50
7569	Southampton Council	A3035	2,011	30	29	28	27	26	33	32	30	29	27	26
7580	Southampton Council	A3057	3,057	30	29	28	27	26	41	38	35	32	29	26
86003	Southampton Council	A33	276	37	36	35	34	33	34	34	33	32	31	30
99871	Southampton Council	A3024	1,401	37	36	35	34	32	42	40	38	36	34	32
99872	Southampton Council	A335	2,089	34	32	31	30	29	37	36	36	35	35	34
37658	Southampton Council	A3025	447	27	26	25	24	23	33	32	31	29	28	26
46964	Southampton Council	A335	246	36	35	33	32	31	35	34	33	32	31	29
6292	Southampton Council	A27	892	32	31	30	29	28	26	25	24	23	22	21
73613	Southampton Council	A3057	678	23	22	21	20	19	22	21	20	20	19	18
7569	Southampton Council	A3035	119	30	29	28	27	26	33	32	30	29	27	26
Other links in Southampton study area														
7988	Eastleigh Borough Council	A27	264	27	27	26	25	24	27	26	25	23	22	20
7992	Eastleigh Borough Council	A334	121	37	36	34	33	31	27	26	25	24	23	22
8129	Eastleigh Borough Council	A3025	58	24	23	22	22	21	21	20	20	19	18	17
8559	Eastleigh Borough Council	A3025	642	35	34	33	32	31	40	39	37	36	34	33
16269	Eastleigh Borough Council	A27	126	23	23	22	21	20	23	23	22	21	21	20

16321	Eastleigh Borough Council	M3	1211	36	34	32	31	30	52	51	50	49	48	47
17793	Test Valley Borough Council	M27	876	45	43	41	40	38	80	77	73	70	67	63
28018	Test Valley Borough Council	M27	387	53	50	48	46	43	49	46	44	41	38	36
29041	Test Valley Borough Council	M3	579	31	31	30	29	27	45	43	42	41	39	38
36039	Eastleigh Borough Council	A3024	552	37	35	34	33	31	39	37	36	34	32	30
36293	Eastleigh Borough Council	A27	647	26	25	25	24	23	24	23	22	21	20	20
38107	Test Valley Borough Council	M27	140	55	54	51	49	46	57	56	55	55	54	54
47635	Test Valley Borough Council	A3057	62	25	24	23	23	22	22	21	21	20	19	19
48064	Eastleigh Borough Council	M27	1212	41	40	38	37	35	83	82	80	79	77	76
56058	Test Valley Borough Council	M271	327	47	44	42	40	38	41	40	38	36	35	33
56931	Eastleigh Borough Council	A334	470	41	39	37	36	34	35	33	32	30	29	27
73606	Eastleigh Borough Council	A3024	285	28	26	25	24	23	29	28	27	26	24	23
73607	Eastleigh Borough Council	A27	12	27	27	26	25	24	22	21	21	20	19	18
73609	Eastleigh Borough Council	M27	343	40	39	37	36	34	66	64	63	62	60	59
73614	Test Valley Borough Council	M271	476	44	42	40	38	36	28	26	25	24	23	22
75259	Test Valley Borough Council	M27	704	52	50	48	46	44	79	76	73	71	68	66
36375	New Forest District Council	A35	30.625	57	53	50	48	45	45	43	41	39	37	35

Appendix B: Air Quality Options Results (NO₂ µg/m³)

CensusID	Road Name	LA Name	Length (m)	Do Minimum	Non-charging CAZ	CAZ B
Southampton links						
16340	A35	Southampton Council	1,082	25	25	23
16891	A3024	Southampton Council	2,346	30	30	28
16892	A335	Southampton Council	454	29	29	27
17531	A3024	Southampton Council	1,701	20	20	19
17532	A33	Southampton Council	531	28	28	27
17974	A33	Southampton Council	403	29	29	26
18113	A3035	Southampton Council	1,374	19	19	18
26062	M271	Southampton Council	585	32	32	29
26296	A27	Southampton Council	3,195	31	31	27
26351	A33	Southampton Council	805	31	31	28
26371	A35	Southampton Council	1,552	24	24	22
27635	A3057	Southampton Council	1,340	21	20	19
36987	A334	Southampton Council	1,657	20	20	20
37658	A3025	Southampton Council	2,303	26	26	26
38212	A33	Southampton Council	734	31	31	29
46375	A35	Southampton Council	1,394	28	28	26
46963	A3024	Southampton Council	1,663	38	38	36
46964	A335	Southampton Council	1,151	29	29	27
48317	A33	Southampton Council	498	21	21	20
48456	A33	Southampton Council	195	22	22	21
48513	A33	Southampton Council	285	23	23	22
56347	A33	Southampton Council	3,252	36	36	32
56374	A35	Southampton Council	711	24	24	22
57434	A33	Southampton Council	153	27	27	25
57672	A33	Southampton Council	162	25	25	23
6292	A27	Southampton Council	1,062	21	21	20
6349	A33	Southampton Council	1,506	26	26	24
6367	A35	Southampton Council	1,743	25	25	23
6368	A35	Southampton Council	1,678	36	35	32
6933	A33	Southampton Council	2,249	37	37	34
70064	A33	Southampton Council	239	20	20	20
70066	A33	Southampton Council	219	27	27	26
70108	A27	Southampton Council	421	15	15	15
70109	A35	Southampton Council	772	19	19	18
73605	A3025	Southampton Council	750	21	21	20
73613	A3057	Southampton Council	166	18	18	17
73615	A35	Southampton Council	289	36	36	33
75250	A33	Southampton Council	293	29	29	27
75251	A33	Southampton Council	275	32	32	30
75252	A33	Southampton Council	987	30	30	28
75253	A35	Southampton Council	1,010	25	25	23
75258	M27	Southampton Council	569	50	49	44

7569	A3035	Southampton Council	2,011	26	26	25
7580	A3057	Southampton Council	3,057	26	26	25
86003	A33	Southampton Council	276	30	30	29
99871	A3024	Southampton Council	1,401	32	31	29
99872	A335	Southampton Council	2,089	34	34	32
37658	A3025	Southampton Council	447	26	26	26
46964	A335	Southampton Council	246	29	29	27
6292	A27	Southampton Council	892	21	21	20
73613	A3057	Southampton Council	678	18	18	17
7569	A3035	Southampton Council	119	26	26	25
Other links in Southampton study area						
7988	A27	Eastleigh Borough Council	264	20	20	19
7992	A334	Eastleigh Borough Council	121	22	22	21
8129	A3025	Eastleigh Borough Council	58	17	17	17
8559	A3025	Eastleigh Borough Council	642	33	33	30
16269	A27	Eastleigh Borough Council	126	20	20	19
16321	M3	Eastleigh Borough Council	1211	47	47	43
17793	M27	Test Valley Borough Council	876	63	63	55
28018	M27	Test Valley Borough Council	387	36	36	32
29041	M3	Test Valley Borough Council	579	38	38	34
36039	A3024	Eastleigh Borough Council	552	30	30	26
36293	A27	Eastleigh Borough Council	647	20	20	19
38107	M27	Test Valley Borough Council	140	54	54	47
47635	A3057	Test Valley Borough Council	62	19	19	18
48064	M27	Eastleigh Borough Council	1212	76	76	68
56058	M271	Test Valley Borough Council	327	33	33	30
56931	A334	Eastleigh Borough Council	470	27	27	26
73606	A3024	Eastleigh Borough Council	285	23	23	21
73607	A27	Eastleigh Borough Council	12	18	18	17
73609	M27	Eastleigh Borough Council	343	59	59	53
73614	M271	Test Valley Borough Council	476	22	22	20
75259	M27	Test Valley Borough Council	704	66	61	53
36375	A35	New Forest District Council	31	35	35	31

Appendix C: CAZ B Assessment

A Class B Clean Air Zone was also assessed as a benchmark option. The details of the modelling methodology and results are as follows:

City wide CAZ B Modelling Methodology

The charging scheme assesses a £100 charge for buses, coaches and heavy goods vehicles and a £12.50 charge for private hire and hackney carriage vehicles that do not meet a minimum emission standard (euro 6/VI diesel or euro 4 petrol). The boundary was set as shown in figure 15 below.

This option has been modelled in the transport model to assess potential diversionary or destination shifts as a result of the scheme. Within the transport model buses are fixed and taxis are not directly included (they have been estimated as a proportion of car traffic). As such the traffic response to the CAZ B is largely limited to changes in HGV traffic. However, this may have a knock-on effect to other vehicles classes if journey times change as a result of HGV behaviour and then affect route choices for other vehicle types.



Figure 25 CAZ City wide boundary assessed for the city wide Class B Clean Air Zone

Air Quality Modelling Results

Table 87 City Wide CAZ B Annual Mean NO₂ (µg/m³) 2020 compared to the shortlist options do minimum and non-charging

	Do minimum baseline local model annual mean NO₂ µg/m³	Non-charging local model annual mean NO₂ µg/m³	City wide CAZ B local model annual mean NO₂ µg/m³
Census ID	2020	2020	2020
46963	38	38	36
56347	36	36	32
6368	36	35	32
6933	37	37	34
73615	36	36	33

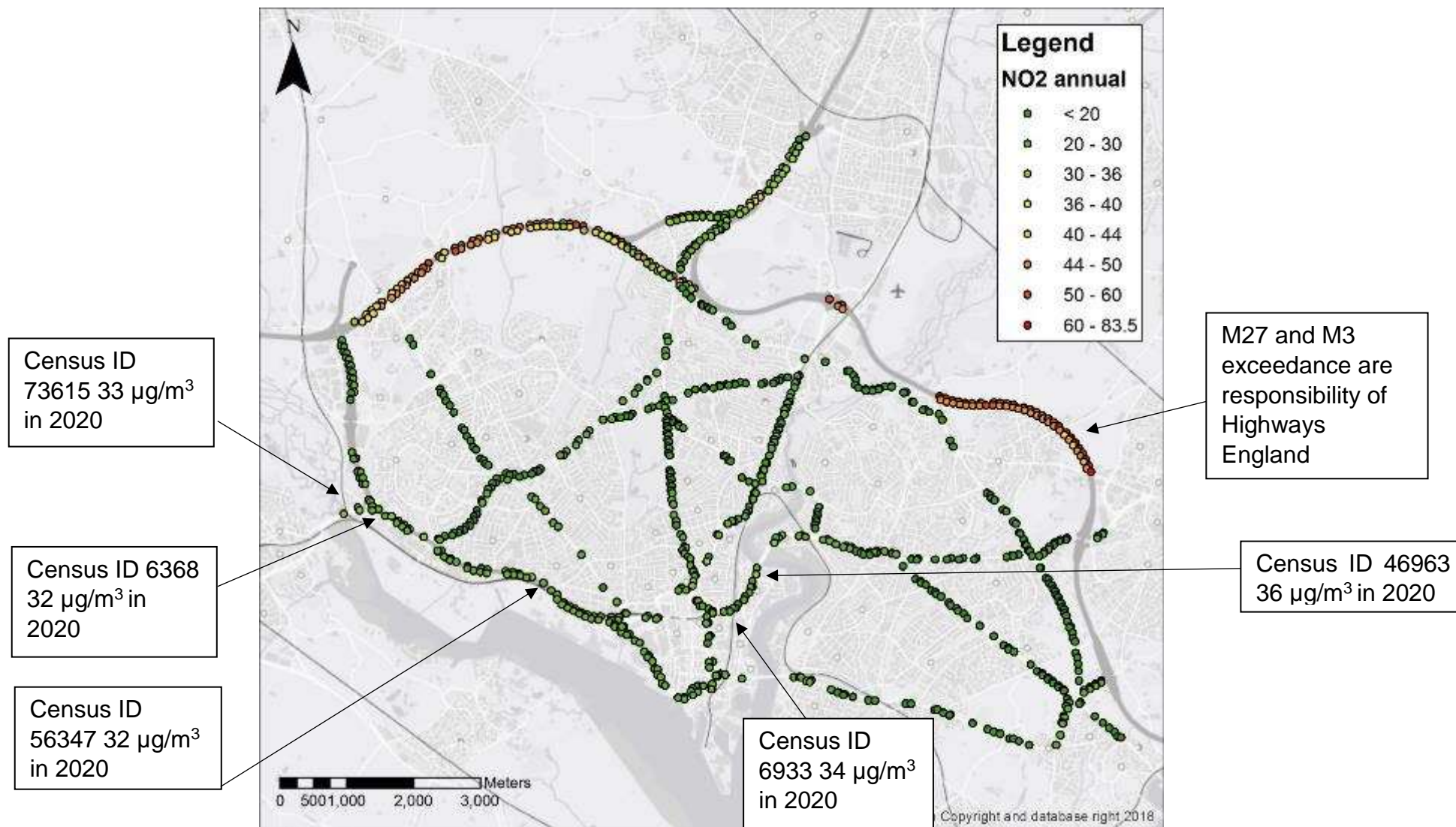


Figure 26 Key locations annual mean NO₂ ($\mu\text{g}/\text{m}^3$) 2020 city wide CAZ B

Economic Appraisal

E1 Economic Appraisal Methodology Report details the economic assessment for the city wide CAZ B. In summary, a CAZ B:

- Has a positive NPV and largest net benefit
- Delivers large air quality emissions reduction, which will deliver greatest health and environmental benefits
 - But assessment does not capture impacts outside the zone, which could provide additional benefit or cost (where non-compliant vehicles are swapped and continue to operate outside the CAZ)
 - Assessment is sensitive to behavioural assumptions, for which standard JAQU assumptions have been used given no local information was available to inform these parameters
- Lower implementation costs overall (but not necessarily for SCC who may face more of the costs of implementing CAZ B relative to sub-measures under NCH CAZ)
- But implies largest cost and impact on businesses
 - Cost could have adverse effects on HGV and coach operators, and taxi drivers who may struggle most with affordability of upfront costs of compliance. This will particularly be the case for smaller operators
 - Important risk that activity may shift away from Southampton port
 - Also, will be some indirect impact on household affordability (although less so than for businesses)
- Avoids high risk around deliverability of HGV non-charging options.
 - But option is not devoid of risks: there is uncertainty around behavioural response to the CAZ and there is an issue around identification of taxis in absence of national database

Economic Appraisal – Uncertainty and Sensitivity Assessment

The net present value (NPV) of the CAZ B is sensitive to some of the assumptions adopted, in particular the first order (e.g. % that upgrade) and second order (i.e. % that scrap of those that upgrade) behavioural assumptions. There may be scenarios within the uncertainty range around these parameters under which the NPV could be negative and upgrade costs much higher. However, the ranking of the NPV when compared to the non-charging CAZ does not change under any sensitivity scenario.

Cost Benefit Analysis

	AQ emissions impacts	Upgrade costs	Charging zone Implementation costs	Opex change	Fuel consumption	CO2 emissions	Welfare effects	SDC	Shore-side power	NPV
NCH CAZ**	1.26	-0.15	-	-0.00	0.05	0.03	-0.01	0.52	-1.46	0.22
CAZ B	14.57	-7.61	-3.66	2.41	7.74	3.89	-5.59	-	-	11.76

Notes: +ve values denote benefit / -ve values denote costs; all impacts are in 2018 prices; all impacts are discounted to 2018;

(*) Air quality impacts represent reductions in emissions valued using the damage costs. These results are distinct from those presented in the air quality modelling report, which focus on concentrations and comparison to the legal limits, although a key input into this economic work is the underlying air quality modelling used to form compliance assessment.

(**) The non-charging CAZ also includes shore side power and the port booking system which are discussed in the Supplement to this business case.

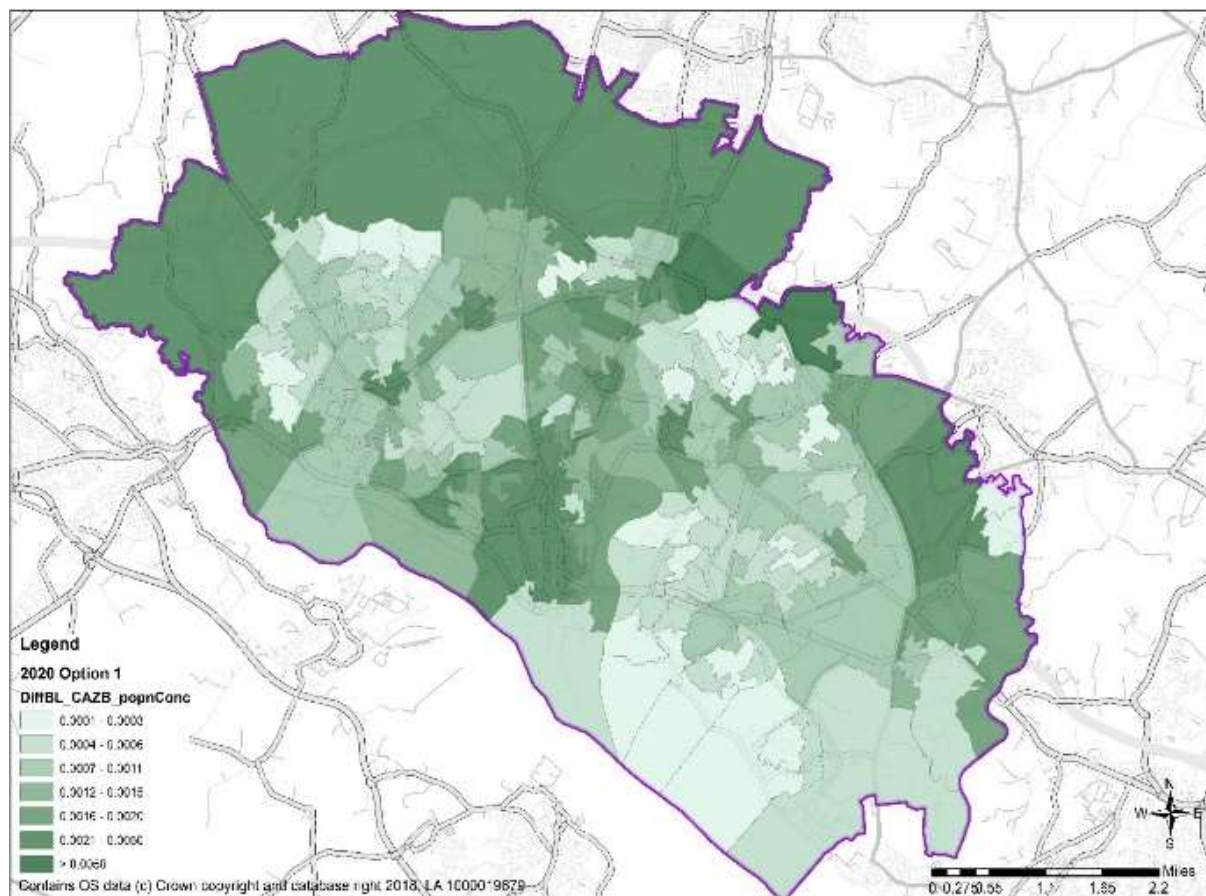
Distributional analysis

There is an overall improvement in air quality following the introduction of the city-wide Class B CAZ. In no Lower Super Output Area (LSOA) does air pollutant concentrations get worse. The North-western area of the city, as well as the city-centre experience greatest air quality improvements due to implementation.

CAZ B delivers an air quality improvement in all LSOAs in the modelling domain. Hence, for both indices of multiple deprivation (IMD, a metric used to assess deprivation/income) and children grouping variables in the Webtag analysis, all quintiles on average see an improvement in air quality in terms of NO₂ concentrations. Hence all areas experience equal benefit relative to their population.

The figures below show the population weighted NO₂ concentration for options compared to the 2020 baseline model. CAZ B delivers more for vulnerable groups due to greater overall improvements in air quality. In contrast, the non-charging CAZ delivers a more mixed scenario, with some receptors experiencing a minor worsening of air quality.

In reference to sensitive receptors, CAZ B delivers more for vulnerable groups due to greater overall improvements in air quality. In contrast, the non-charging CAZ delivers a more mixed scenario, with some receptors experiencing a minor worsening of air quality.



Note: It is important to note that although this analysis displays whether quintiles have a higher proportion of people benefiting/losing, it gives no indication of the magnitude of the effect they are experiencing.

Reviewing the other metrics assessed, the highest average concentration reductions are felt by areas with a lower proportion of children under the city-wide Class B CAZ. Concentrations under non-charging display a more mixed pattern, as quintile 1 benefits from the highest reduction, but air quality worsens in quintiles 2 and 3. That said, looking at a basic count of LSOAs, slightly more LSOAs in quintiles with fewer children experience an increase in concentrations under non-charging CAZ.

In summary, CAZ B delivers greater overall improvements in air quality. However, across the metrics the results are mixed and do not suggest a very clear pattern of distributional impact. Even where a clear pattern could be observed (e.g. average concentration changes under CAZ B are higher for households with fewer children), such results are not significant. In other words, both policy options are neither particularly progressive nor regressive in distributional terms.

Impacts on Business

All options are likely to have an impact on businesses:

- Under CAZ B the adverse impacts are expected to be largest as the scheme will affect a much broader range of vehicles, vehicle types and hence businesses.
- A non-charging CAZ will still levy costs – e.g. on port to install and operate shore-side power, on HGV operators affected by a port booking scheme (though the final preferred option being proposed will not include shore-side power or the port booking system therefore these impacts are mitigated), and on taxi drivers. That said, several non-charging measures could bring significant cost-savings to businesses if implemented successfully – e.g. driver and opex savings through DSPs, and fuel savings from shore-side power.
- Under both options, bus operators face concerns over retrofitting and the potential of higher operating costs and cancellation of services due to taking buses out of operation. However, continued work on the Clean Bus Technology Fund means that buses will be compliant by 2020.

Impacts on Households

CAZ B will have a greater impact on households' affordability risk than the Non Charging CAZ, given:

- There will be indirect impacts on households through costs on coach operators being passed through under a CAZ B.
- Taxis are used proportionately more by persons with mobility issues. Hence any costs passed through are likely to have a regressive impact (impacts could in part be mitigated where support is provided to bus and taxi operators to comply) under a CAZ B.
- Both options will affect taxi operators but impacts on taxi operators will come sooner through a city-wide CAZ B, as non-compliant vehicles will face the charge from 2020. It is also possible that the costs will be greater.

- A city-wide CAZ B will affect HGVs more significantly, with potential knock on effects on employment and the prices of consumer goods.

Households could be affected by the policy options through several pathways; however, the impacts are largely dependent upon the impacts on businesses and their subsequent responses to the effects of the CAZ or non-charging measures.

The impacts are likely to fall most significantly upon lower-income households or more vulnerable population groups, who are more reliant on public transportation and taxi services. Although most of impacts are negative, it is important to consider the health benefit to local households following policy implementation as well as the new business and employment opportunities a shift towards low-carbon vehicle infrastructure could bring to the city.

The mitigation measures proposed to support taxi drivers to upgrade to cleaner vehicles through a financial incentive and other measures to encourage the use of ULEV vehicles will benefit households through providing the funding and support for business to invest in lower emission vehicles and meet the requirements of the non-charging option (i.e. taxi licensing condition and traffic regulation condition).

Summary

A summary of the distributional analysis from E3 Distributional Analysis is as follows:

Scenario	Air quality	Business Affordability	Household affordability
City-wide CAZ B	-	x x x	x x
Non-charging measures	-	x	x

Notes: ‘-’ means no significant or neutral effect, ‘x’ denotes a small negative effect, ‘x x x’ denotes large negative distributional effect.