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

Version Control

Version	Date
0.2	21/12/2018

This Outline 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 without prejudice to the Council's Final Business Case which is to be considered by the Councils Cabinet on 22nd January 2018. This Outline Business Case will allow, senior management and elected members with sufficient information to; authorise the Plan; delegate officers to complete the procurement phase of the project and; prepare a Final Business Case 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 2019.

1. Strategic case

1.1. Background

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 NO_2 (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 plans[1] to improve air quality, specifically tackling NO_2, in December 2015. The Plan identified 5 cities outside London, including Southampton, where the EU AAQD limit value for NO_2 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 plans[2] to tackle NO_2 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 NO_2 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 NO_2 concentrations) that exceeded the EU AAQD beyond 2020 was the A33, a road commonly referred to as the Western Approach (see figure 1).

Southampton City Council were directed by government to undertake a more localised assessment (feasibility study) of air quality in the city, and produce a business case for a Plan to comply with the EU AAQD for NO_2 in the shortest possible time which will be submitted to the Secretary of State for Environment for approval and subsequent funding. The Business Case will follow the HM Treasury Green Book approach, and is guided by Defra's Clean Air Zone Framework[4].

[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
[4] https://www.gov.uk/government/publications/air-quality-clean-air-zone-framework-for-england

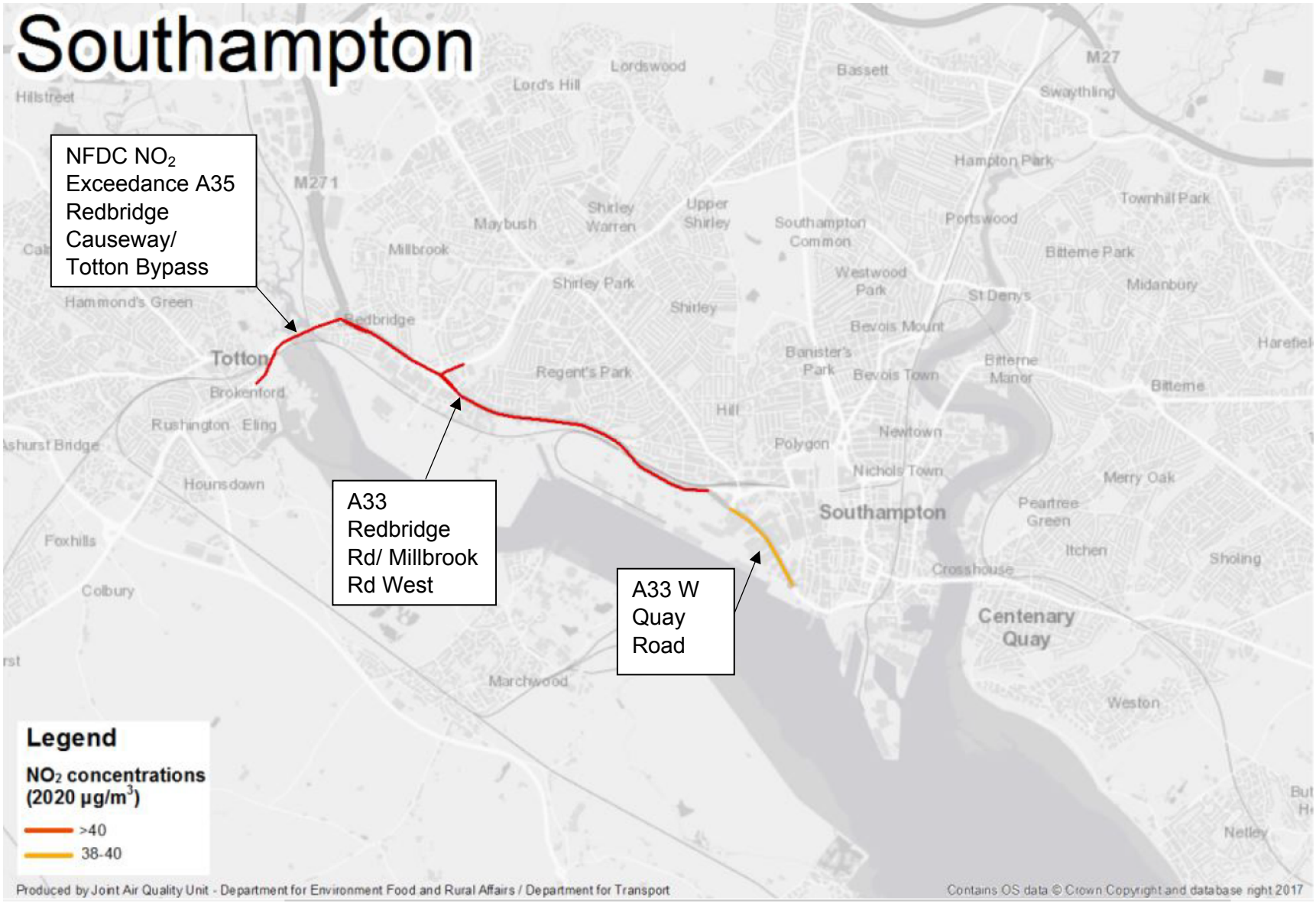


Figure 1 UK NO_2 Plan PCM exceedances (2017)

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[1].

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[2].

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 pollution[5]
- 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 average[6]
- Deprivation is increasing, and Southampton has some of the most deprived areas in England[2]
- The area of NO_2 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 NO_2 exceedance is the yellow line on the left of the map, alongside the area of highest asthma prevalence in the City.

5Royal 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

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

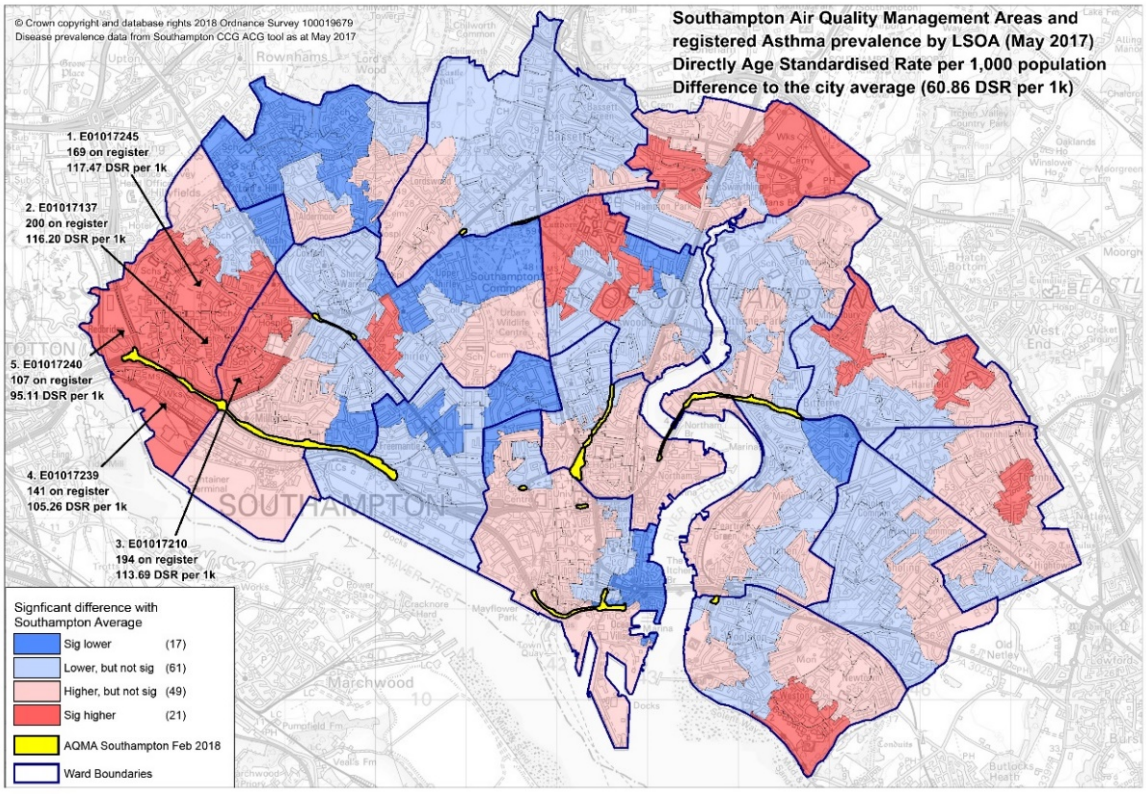


Figure 3 Southampton AQMAs and registered Asthma prevalence by LSOA (May 2017)

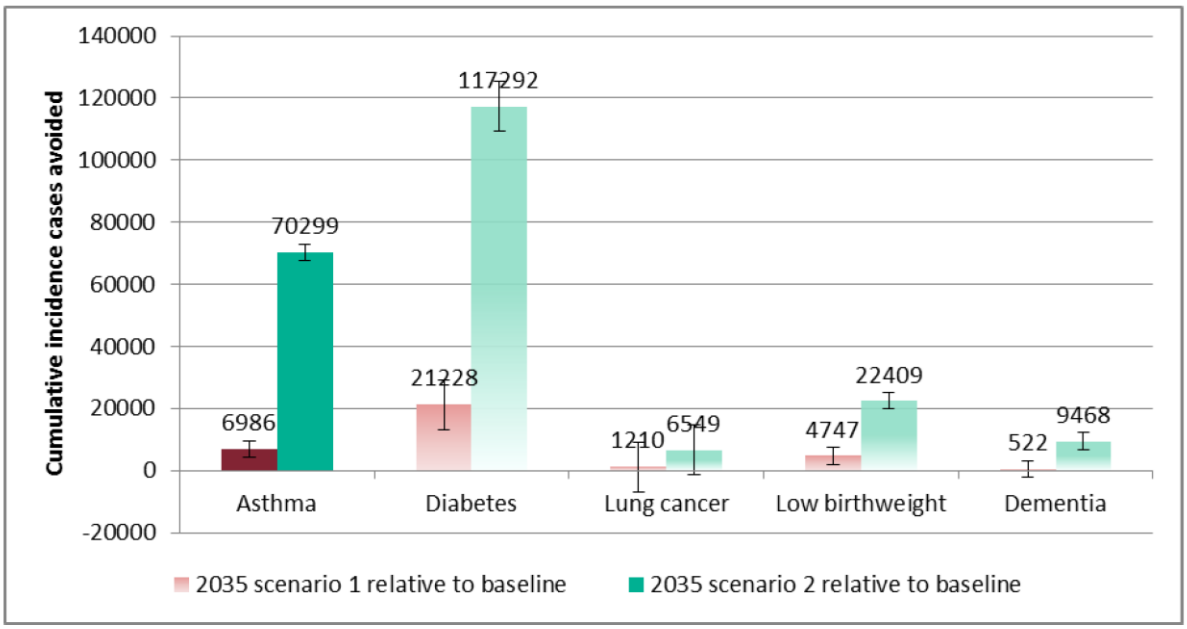


Figure 2 Health impact of 1µg/m^3 reduction in NO_2 and meeting EU limit values by 2035 for England

Evidence suggests an association between NO_2 and new cases of asthma in children and evidence is accumulating for an association between NO_2 and new cases of asthma in adulthood, diabetes, lung cancer, low birth weight and dementia[7]. 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 NO_2 are predicted to be attributable to 1.1 million new cases of disease by 2035 (an additional 1.3 million cases are attributed to $PM_{2.5}$)[7]. Figure 2 shows the health impact of 1µg/m^3 reduction in NO_2 (scenario 1) and meeting EU limit values by 2035 for England (scenario 2)[7] compared to a baseline. (Note: this is a national figure used for illustrative purposes only).

1.3. Strategic Fit

Southampton City Council Strategy 2016-2020

The local plan for NO_2 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.

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

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 1 Air quality measures currently implemented or completed in Southampton

Type	Action	Description	Status	Completion Date
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
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
HGVs	Sustainable Distribution Centre	SCC providing a procurement framework for public sector use of the Sustainable	Active	2019

		Distribution Centre. To encourage consolidation of goods coming into Southampton achieving efficiencies and cost savings. Reduction in emissions associated with fewer vehicle movements.		
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
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
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
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
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	
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 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 2 Description of schemes implemented as early measures in Southampton

SCN1 (A33 Western Approach)	**Healthy & Active Travel** 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. It is broken down into the following components: • Second Avenue (Phase 2) – 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. • Third Avenue – 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. • Millbrook Road East – junction improvements, traffic calming and cycle facilities to reduce speeds and discourage rat running creating a cycle friendly environment. • First Avenue to Dock Gate 20 – 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. 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 **Real Time Information & Data Sharing** 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 along the A33 effectively to reduce delays and resulting air pollution. • Cycle counters - Install 2 new automatic cycle counters along corridor for monitoring • Bluetooth monitoring - 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 • 2x Enhanced Variable Message - 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. **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. **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.
SCN5 (Northern)	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. It is broken down into the following components: • The Avenue (South) – 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. • The Avenue (Common) – 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. • Bassett Avenue – 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. 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.
SCN 8 & 10 (Eastern)	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: • SCN8 Quayside Road-Bitterne Village – 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. • Sholing Quietways – 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. 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.
Contribution to New Forest Waterside Route	Hampshire County Council is seeking funding from the Highways England Air Quality designated funds to undertake feasibility and 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.

Promotion, Engagement & Awareness Raising	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.

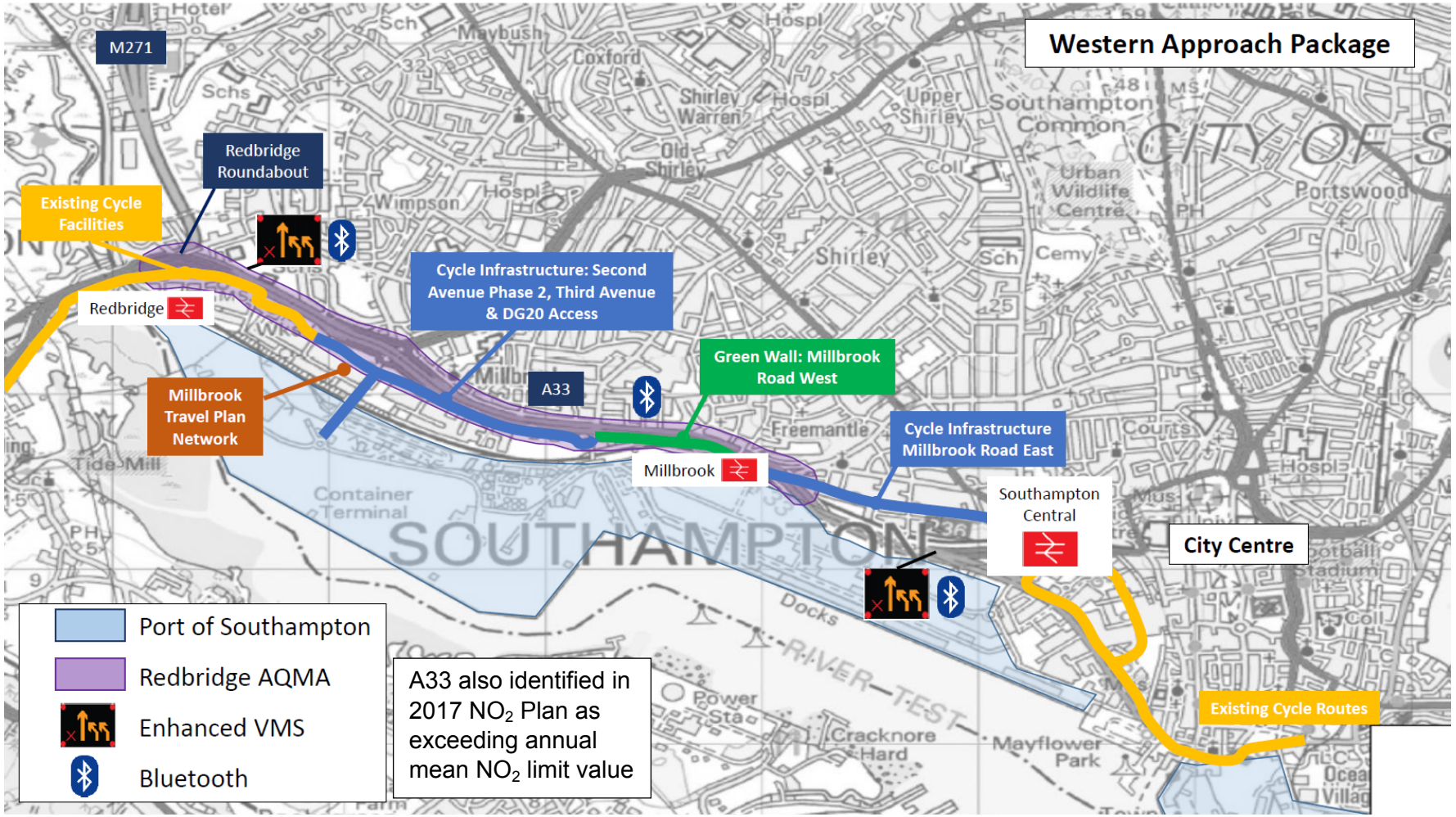


Figure 6 SCN1 A33 Western Approach infrastructure improvements

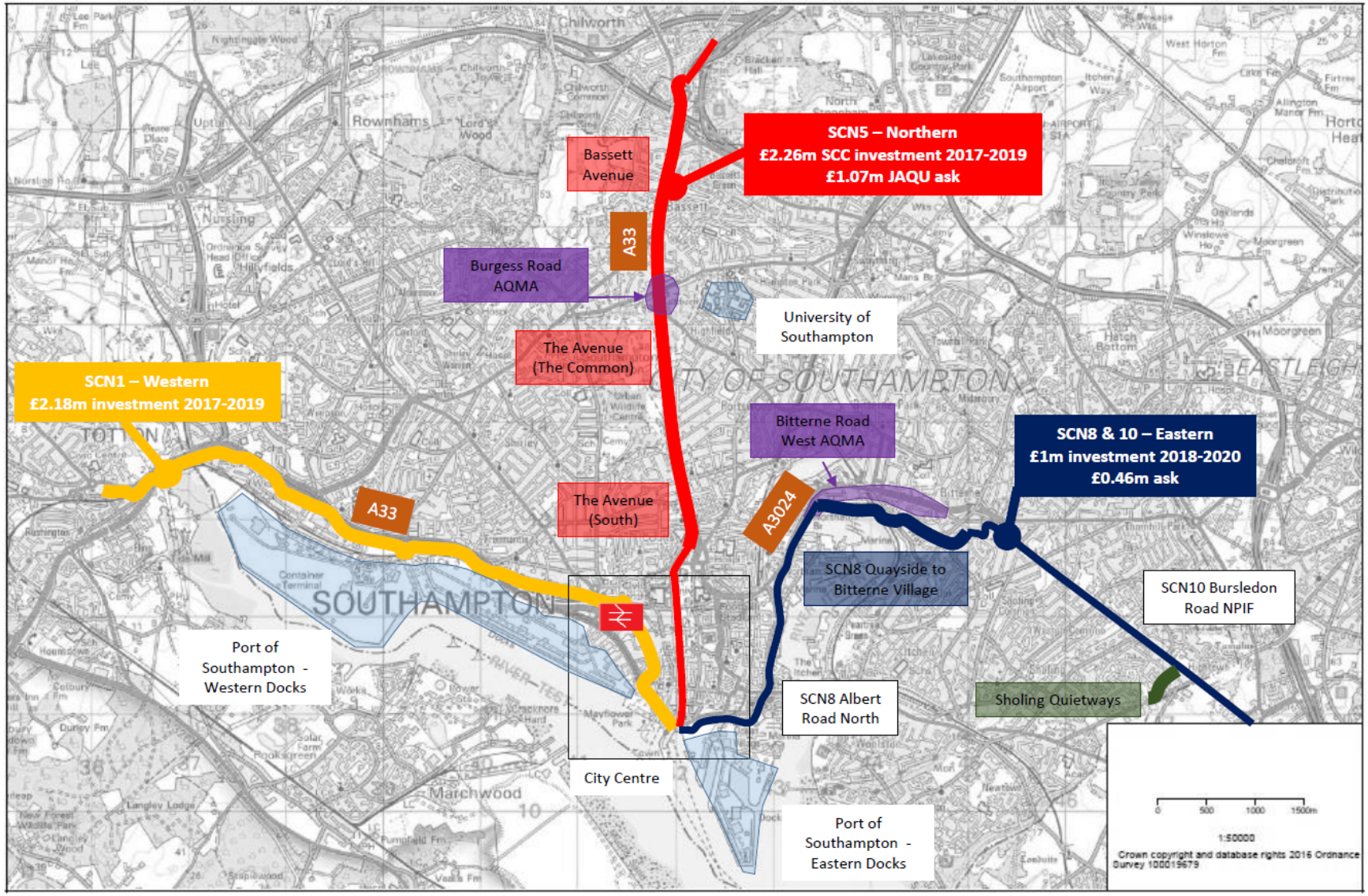


Figure 7 SCN5, 8 & 10 cycle routes

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. 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 complaint with the Clean Vehicle Retrofit Accreditation Scheme[8]. Figure 8 shows Southampton bus routes relative to AQMA's and the EU AAQD exceedance identified by the national PCM model.

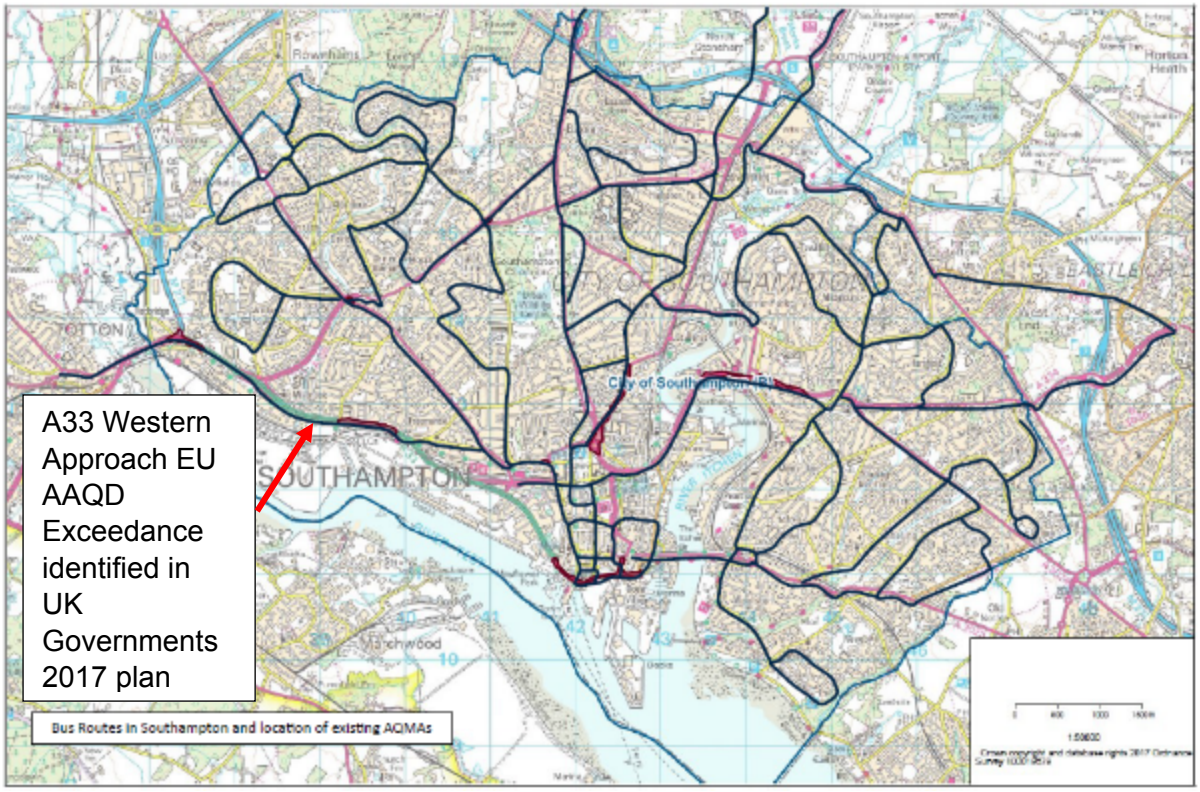


Figure 8 Bus routes relative to AQMA's and EU AAQD exceedance

[8] 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.

Table 3 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.

1.5. Local Model Do Minimum Baseline

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)[9]. 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.

Further details on the methodology used to model air quality locally can be found in the Air Quality Modelling Methodology Report. Transport evidence deliverables are found in appendix 4, 5, 6 and 7 (T1 to T4).

The model provides results for the annual mean NO_2 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 AQ2 Air Quality Methodology Report and AQ3 Air Quality Results Report.

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, RoRo 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).

[9] https://uk-air.defra.gov.uk/research/air-quality-modelling?view=modelling

- 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 NO_2 compliance). The measures already being implemented and included in the baseline scenario are detailed below:

Table 4 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 AQ3 Air Quality Results Report air quality results report and are listed at the end of this document.

Census ID	PCM National NO_2 Annual Mean (µg/m^3)		Local Model NO_2 Annual Mean (µg/m^3)	
	2015	2020	2015	2020
46963	37	32	**50**	38
56347	**55**	**46**	**43**	36
6368	**58**	**44**	**43**	36
6933	35	30	**44**	37
73615	**63**	**49**	**46**	36
75251	**42**	37	39	32

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/m^3

The Local Model identified:

- No exceedance of 40 µg/m^3 in 2020
- Six locations above 35 µg/m^3 in 2020

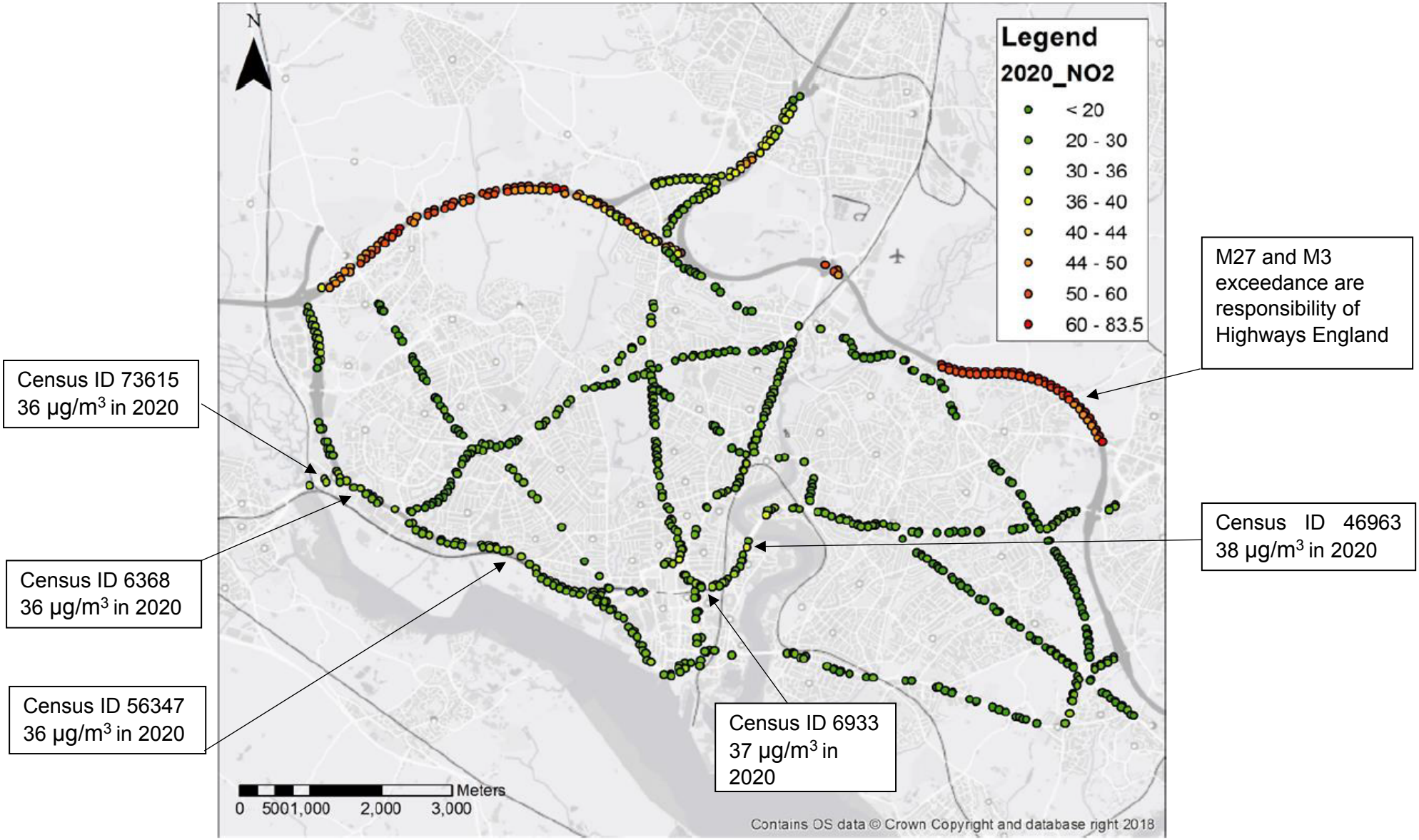


Figure 9 Do minimum Baseline local model annual mean NO_2 at EU AAQD relevant locations in 2020 (µg/m^3)

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 AQ3 Air Quality Results Report section 3.1.

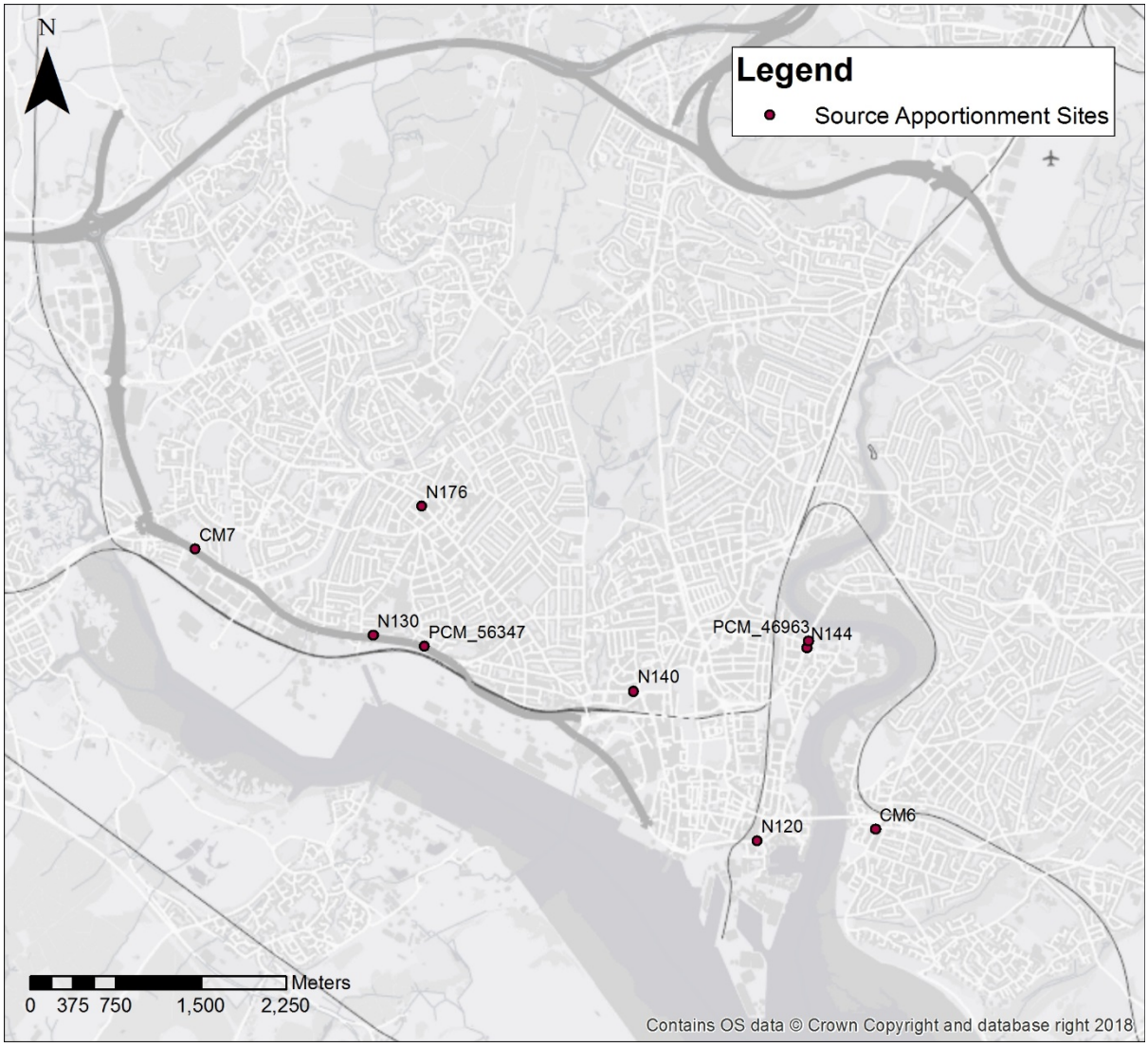


Figure 10 Locations of NO_x source apportionment in Southampton

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.

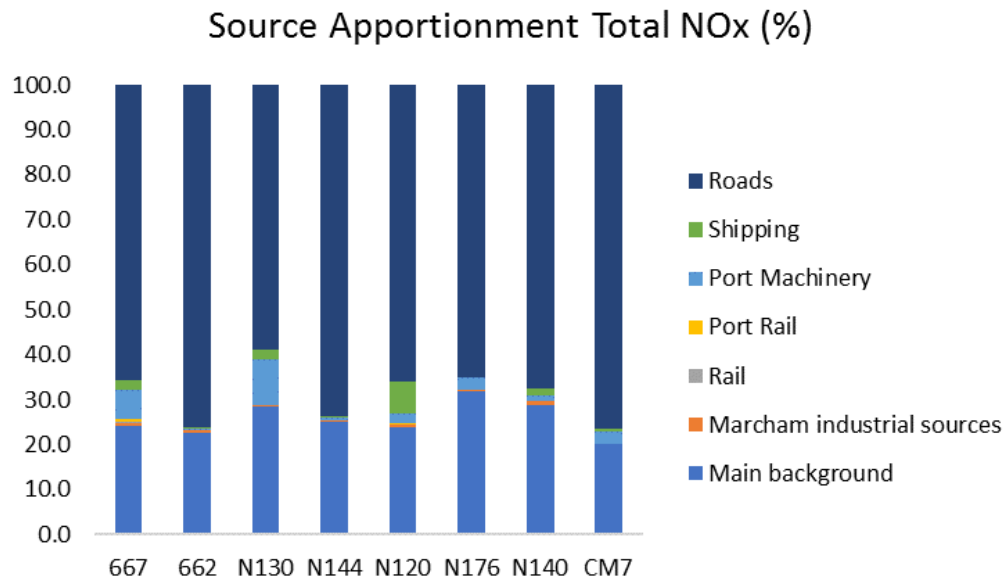


Figure 11 2015 NO_x Source Apportionment

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%.

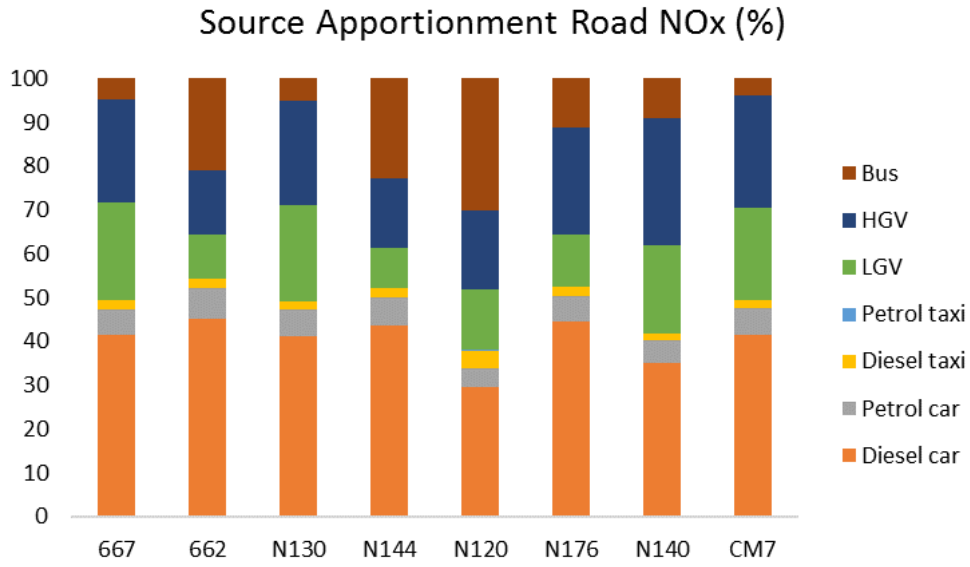


Figure 12 2015 Road NO_x source apportionment

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

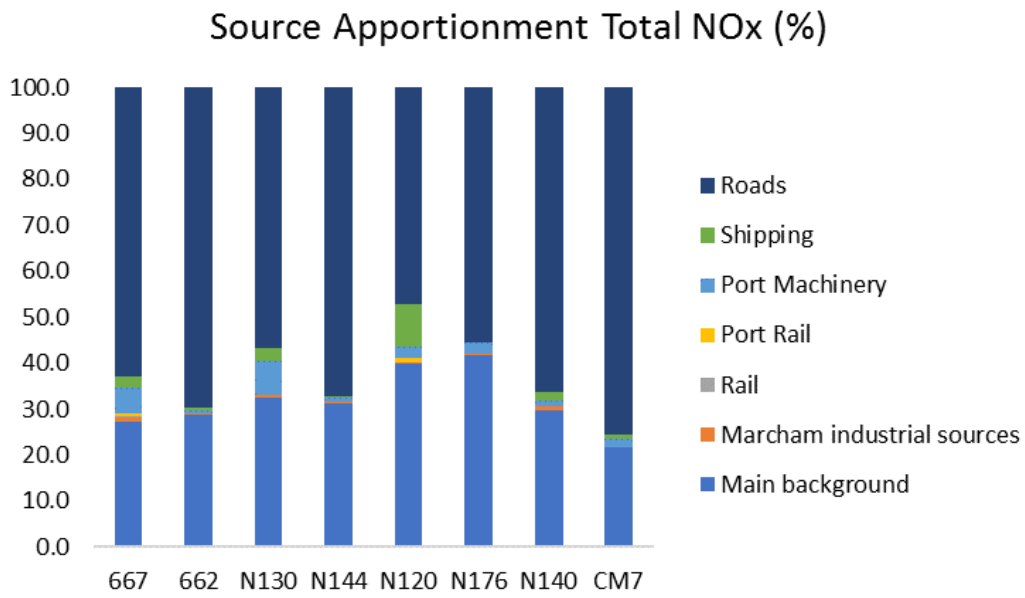


Figure 13 2020 NO_x source apportionment

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.

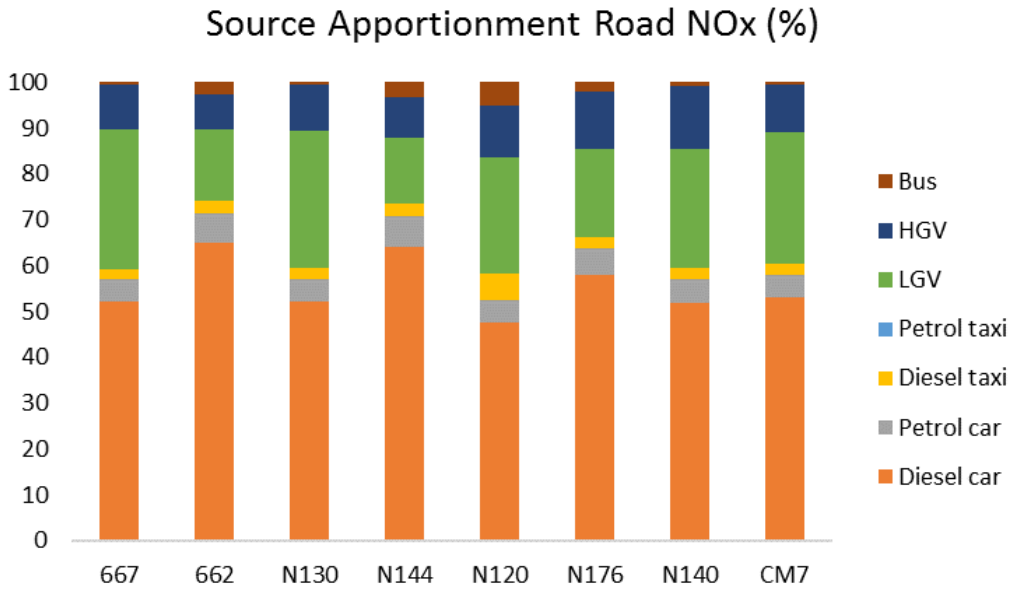


Figure 14 2020 Road NO_x contribution

1.7. 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 the appendices.

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.

1.8. Local Air Quality Management

For this plan, NO_2 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.

The 2020 results 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/m^3 NO_2 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.

1.9. Primary Spending Objective

The primary spending objective of the local plan is to deliver a scheme that leads to compliance with NO_2 concentration limits in the shortest possible time.

1.10. Secondary Spending Objectives

The secondary spending objectives of the plan for NO_2 compliance within the shortest possible time are as follows:

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.

1.11. Preferred Option

The preferred option is to introduce a package of measures to promote ongoing improvements in air quality beyond the do minimum, mitigate risk of exceedance and therefore increasing certainty that compliance is achieved in 2019. The non-charging measures demonstrate value for money according to the net present value, and additional support is provided for local taxi operators to incentivise licensing with clean vehicles in the city in the light of more stringent licensing conditions.

Success Factor/ Spending Objective	**Comment**
Compliance in the shortest possible time (PSO/CSF)	Compliance achieved under do minimum baseline scenario. Preferred option will mitigate risks of uncertainty.
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	Positive net present value.
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.

<u>SCC Measures</u>

- 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.
- Traffic Regulation Condition for Public Service Vehicles

    - Assurance of compliance continues for buses in business as usual
- Taxi licensing conditions require a minimum Euro 6 diesel/4 petrol for newly licensed vehicles in 2020 and all vehicles by 2023 (including alternative fuels where accredited).
    - Bus lane restriction for non SCC taxis to safeguard our local fleet.
    - Expanded low emission taxi incentive scheme for SCC licensed taxis
    - ULEV Taxi Trials for SCC licensed taxis to encourage uptake of ULEVs and facilitate low emission taxi incentive scheme.
    - EV Charge points to support ULEV taxis, facilitate low emission taxi incentive scheme and for public use to reduce private vehicle emissions.
- A3024 MyJourney support for Northam/Bitterne to promote active and sustainable travel and reduce private vehicle use and mitigate risks of exceedance identified through the sensitivity assessment.

Port Measures

It was not considered feasible to include shore power or the port booking system within the final preferred option submitted as part of this business case because:

- They demonstrated no benefit to nitrogen dioxide concentrations at EU relevant locations under the non-charging scenario.
- Southampton does not hold the authority or any other mechanisms for implementing and ensuring a prompt and effective delivery.
- The net present value of the two port measures was negative and therefore did not represent value for money.

However, the council will continue to work with the Port community and Associated British Ports to support them with the delivery of their Clean Air Strategy commitments[10] and deliver benefits outside the scope of this plan.

1.12. 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.

[10] http://www.southamptonvts.co.uk/admin/content/files/PDF_Downloads/13342%20Associated%20British%20Ports%20Air%20Quality%20Strategy%20Report%20v14.pdf

Risks and Mitigations

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

Risk	Impact	Mitigation
Compliance is not achieved in the shortest possible time	High	Robust technical assessment provides confidence that compliance will be achieved. By implementing the non-charging measures (preferred option), achieving the primary objective is more likely than the do minimum baseline. A monitoring and evaluation programme will measure the impact of the schemes and mitigating action will be taken where necessary.
Secretary of State does not approve the full business case.	High	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. The preferred option demonstrates value for money and a net benefit.
Full funding for the plan is not awarded	Medium	SCC has ensured that funded measures are scalable but that which is considered the optimum is identified as the preferred option.
Measures are not supported by stakeholders	High	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. 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. Continuous monitoring and evaluation of the plan will identify and mitigation any issues.

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. Options Sifting

The long list sifting exercise 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

In June 2018 SCC and NFDC consulted on options included in an outline business and identified a preferred option. The options sifting for the earlier phase of business case development is presented in SCC Options Appraisal appendix. 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

The consultation identified a number of assumptions that required amending to ensure they air quality and transport models best reflected the likely situation in 2020. The baseline air quality model was rerun, the results are shown in section 1.5. Of this document.

A revised options appraisal was required in light of the changes to the baseline air quality which predicts compliance at all relevant locations in Southampton under the authority of Southampton City Council by 2020.

Options sifting was undertaken based on the following:

Primary critical success factor (Primary Spending Objectives)

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 critical success factors (Secondary Spending Objectives)

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

The full options appraisal undertaken for this business case is presented in SCC Options Appraisal. Three options have been taken forward to the shortlist:

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

Non-charging Clean Air Zone:

- 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.
- Traffic Regulation Condition for Public Service Vehicles
- Taxi licensing conditions require a minimum Euro 6 diesel/4 petrol for newly licensed vehicles in 2020 and all vehicles by 2023 (including alternative fuels where accredited).
    - Bus lane restriction for non SCC taxis to safeguard our local fleet.
    - Expanded low emission taxi incentive scheme for SCC licensed taxis
    - ULEV Taxi Trials for SCC licensed taxis to encourage uptake of ULEVs and facilitate low emission taxi incentive scheme.
    - EV Rapid Charge points to support ULEV taxis, facilitate low emission taxi incentive scheme and for public use to reduce private vehicle emissions.
- MyJourney support for the Northam/Bitterne area to encourage uptake of sustainable and active travel.

City wide Class B Clean Air Zone: A city wide scheme that would enforce a minimum emission standard by levying a charge on non-compliant vehicles, i.e. those that do not meet Euro 6/VI diesel or Euro 4 petrol and are identified in a Class B Clean Air Zone in the Clean Air Zone Framework. These include buses, coaches, private hire vehicles, taxis and heavy good vehicles.

2.2. Short List Modelling Approach

Do Minimum Baseline

As described in section 1.5 of this document.

Non-Charging

The city wide measures build on the existing measures for which funding has been approved and seek to expand on these. The measures modelled are:

- **City centre Euro VI bus traffic condition –** this is being 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 and freight consolidation** – a number of key sites are being targeted for these measures, however, the one most likely to see significant impact by 2020 is the hospital and has therefore been included in the modelling. Provision of delivery service plans beyond that included in the modelled will facilitate the freight consolidation centre uptake.

Two measures have been discussed and agreed for potential implementation with the Port for this non-charging CAZ package:

- **Shore power –** direct connection to shore side electrical power prevents the need for ships to run auxiliary engines whilst in port. This is limited to what is feasible to deliver within the time constraints of this project, i.e. by 2020.
- **Emission related charges using the port booking system –** the container port is proposing a scheme where it would charge non-compliant vehicles a £5 charge to access the port during peak hours.

Other measures are deemed as mitigation for exceedance risk or are to facilitate the uptake of schemes and are therefore not modelled. These are described here:

- **CAZ compliance set in taxi licencing standards by 2020 for newly licensed vehicles and all vehicles by 2023 –** Taxi licensing conditions require a minimum Euro 6 diesel/4 petrol for newly licensed vehicles in 2020 and all vehicles by 2023 (including alternative fuels where accredited).
    - **Bus lane restriction** for non-SCC vehicles only is a mitigation for the increasing stringency on licensing conditions to mitigate the risk of taxi and private hire vehicles licensing elsewhere where licensing conditions may be less stringent.
    - **Expanded low emission taxi scheme** is to encourage uptake of low emission vehicles beyond the existing Defra AQ grant provision, providing funding for estimated non-euro 6 diesel/ euro 4 petrol vehicles by 2023. There will also be an incentive for wheel chair accessible vehicles and vehicles that can carry 5-8 passengers to upgrade to euro 6 diesel vehicles recognising the limited availability of low emission alternatives on the market.
    - **ULEV Taxi Trial** will 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.
    - **EV Rapid charge points** will facilitate use of electric vehicles by taxi drivers and will also be available to the public to encourage

- **Fleet Accreditation Scheme** will drive uptake of the DSPs and freight consolidation.
- **MyJourney Support for Northam/Bitterne** will mitigate the risk of exceedance at Northam bridge accounting for sensitivity of Euro 6 light duty vehicles.

City wide CAZ B

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 results of HGV behaviour and then affect route choices for other vehicle types.

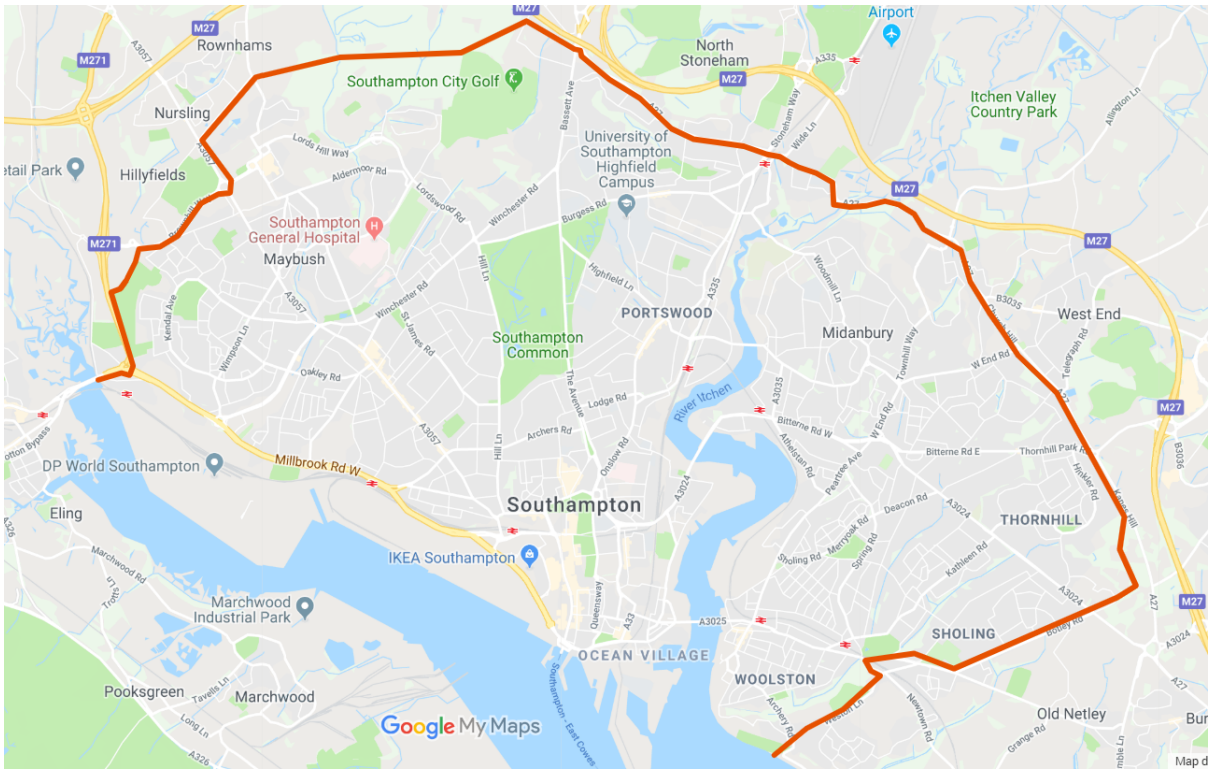


Figure 15 CAZ City wide boundary assessed for the city wide Class B Clean Air Zone

Table 5 Summary of Modelling approach for scenarios.

Option	Components	Modelling approach
Do minimum baseline	Baseline traffic and non-transport activity	This includes: • 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	Additional cycling infrastructure included in the traffic model and this affects private car demand.
	Clean Bus Technology Fund (CBTF)	All non-Euro VI buses retrofitted to Euro VI (total of 145 buses), so bus fleet set to all Euro VI in the model.
	Low emission taxi incentives	Funding to upgrade taxis. Current upgrades are to petrol hybrids. Projected uptake of 113 vehicles. This increase in hybrids is similar to the existing up take rate assumed in the fleet project tool so no further changes made.
Non-charging CAZ	CBTF plus bus traffic condition	Same modelling assumption as Do Minimum above. Inclusion of road traffic condition has no further impact as all buses already Euro VI.
	Early measure cycling scheme – routes 1, 5, 8 and 10	Same modelling assumption as Do Minimum above
	Low emission taxi incentives and licensing condition in 2023	Same modelling assumption as Do Minimum above
	Freight DSP and consolidation	Only the impact of the scheme on the hospital has been considered and is expected to remove 640 LGVs and 113 HGVs movements from the network weekly due to consolidation. These flows have been removed in the transport model.
	Shore power for cruise liners	By 2020 the Port has estimated that 20% of cruise ships will be able to be plugged in to shore power. When 'plugged in' the modelling assumes that the fuel consumption of aux engines "at berth" is reduced by 90% (allowing time for vessels to connect and disconnect from power). This is estimated to reduce cruise ship NOx emissions at berth by 12.1%.
	Port emissions-based booking scheme	A £5 charge is applied to all non-compliant (non-Euro VI) HGVs accessing the container terminal during peak hours. This generates a shift from peak to off peak. Applying this charge in the transport model indicates that 1% of non-compliant port related HGVs would shift from peak to off peak travel times.
City Wide CAZ B	City Wide CAZ B	A City-wide CAZ B, using upgrade assumptions provided by JAQU, is run through the transport

		model to assess behaviour of non-complaint vehicles. The compliant and non-compliant fleet are then modelled in the AQ model.
	Early measure cycling scheme – routes 1, 5, 8 and 10	Same modelling assumption as Do Minimum above
	CBTF	Same modelling assumption as Do Minimum above.
	Low emission taxi incentives and licensing conditions in 2023	Same modelling assumption as Do Minimum above

2.3. Options Appraisal

2.3.1. 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 AQ3 where there is further discussion of the results.

Table 6 Air Quality Options Appraisal summary

	Do minimum baseline local model annual mean NO_2 µg/m^3	**Non-charging local model annual mean NO_2 µg/m^3**	**City wide CAZ B local model annual mean NO_2 µg/m^3**
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

*Interpolated result from 2015 and 2020 model outputs.

Modelled NO_2 results have also been extracted from the model for each of the monitoring locations in Southampton. These results provide an indication of the impact of the options in relation to areas of concern in relation to local air quality management. These results show that all of the monitoring locations were below the 40 µg/m^3 limit value in the baseline 'do minimum' scenario and remain so for all the options modelled.

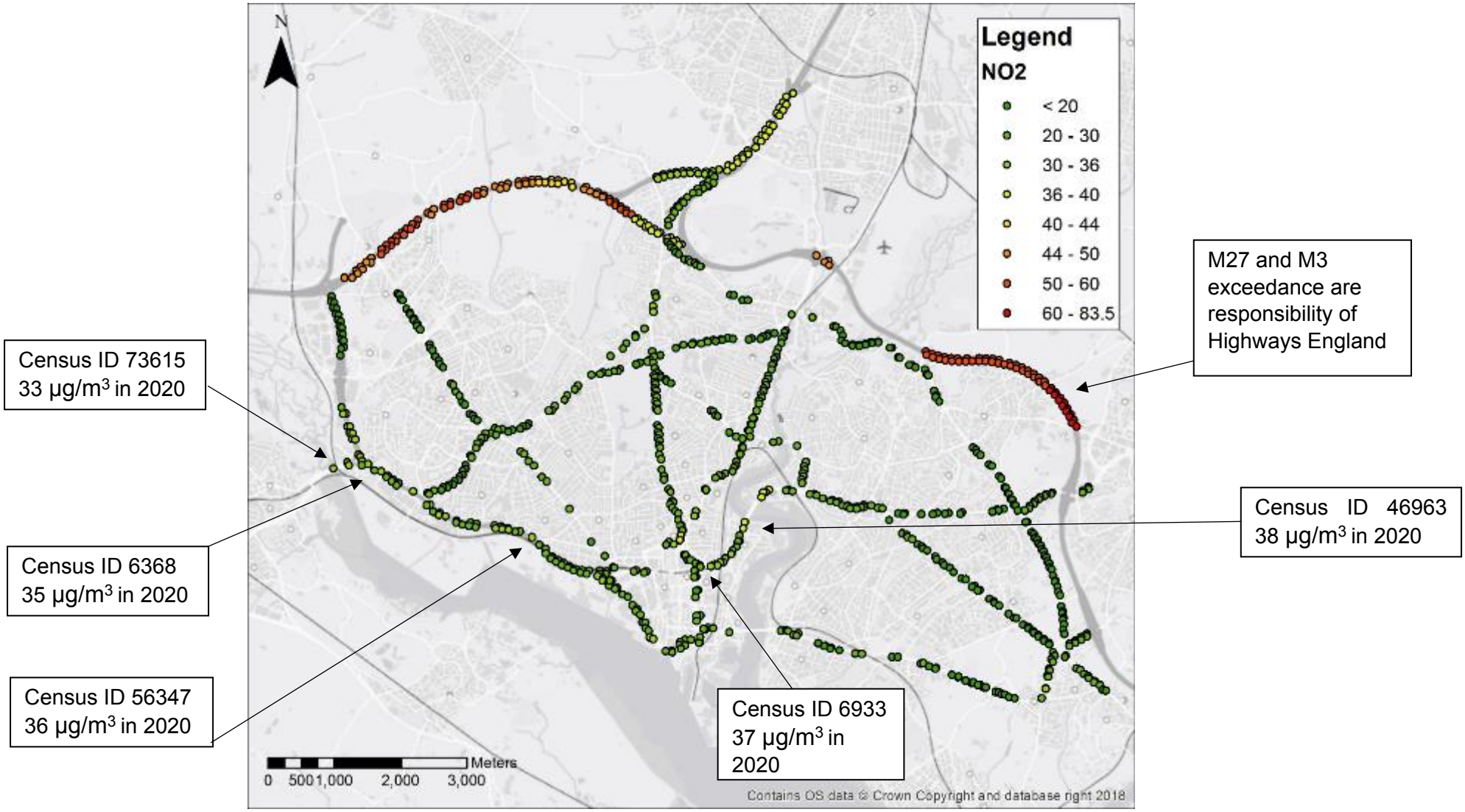


Figure 16 2020 Non-Charging local model annual mean NO_2 at EU AAQD relevant locations in 2020 (µg/m^3)

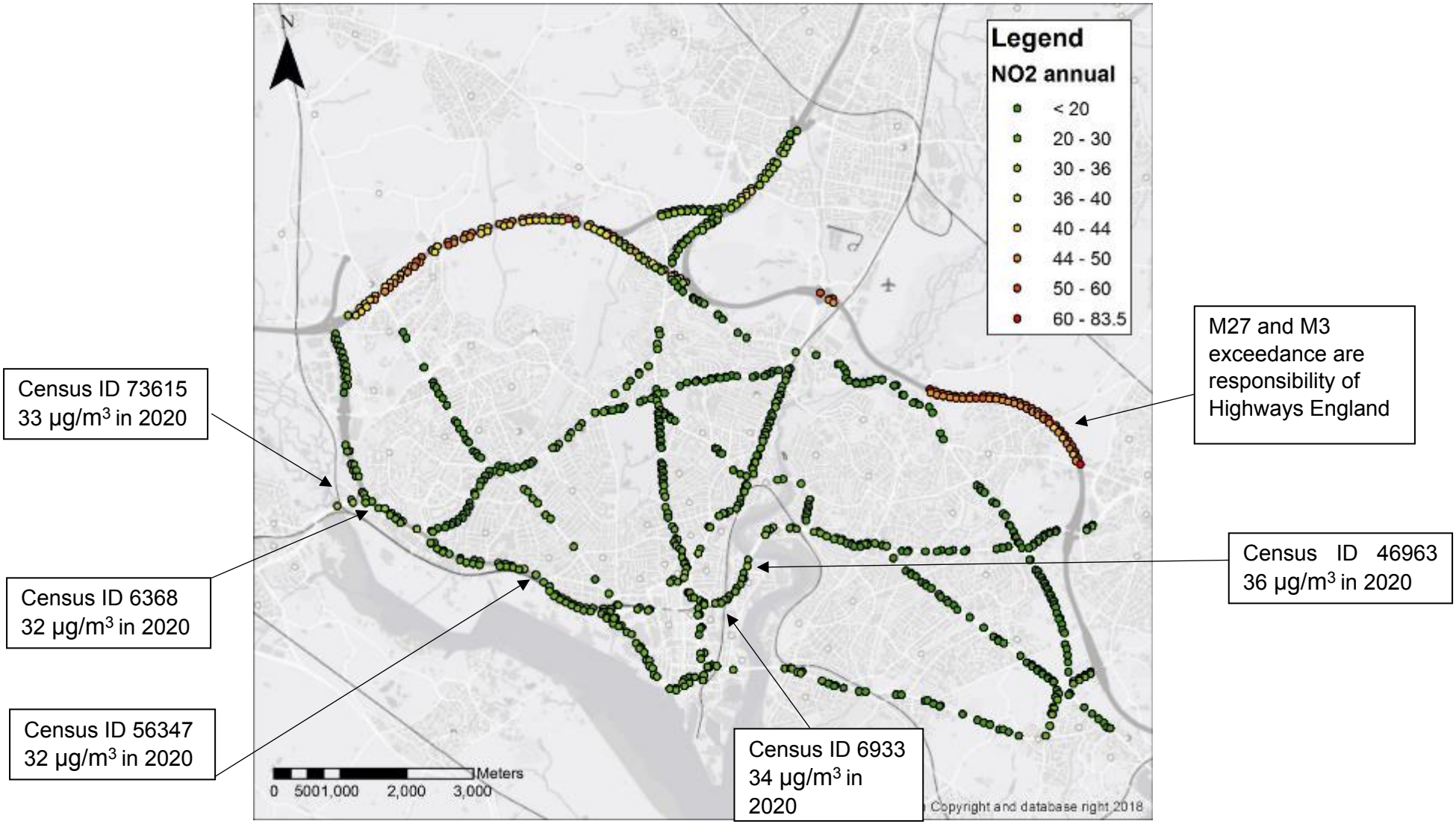


Figure 17 2020 CAZ B local model annual mean NO_2 at EU AAQD relevant locations in 2020 (µg/m^3)

2.3.2. Cost Benefit Analysis

Table 7 - Monetised impacts associated with CAZ options (cumulative discounted impact (PV) from 2020-30 (£m 2018 prices))

	AQ emissions impacts	Upgrade costs	Implementation costs	Opex change	Fuel consumption	CO2 emissions	Welfare effects	SDC	Shore-side power	**NPV**
NCH CAZ	-1.26	0.15	0.00	0.00	-0.05	-0.03	0.01	-0.19	1.79	**0.43**
CAZ B	-14.57	6.82	3.66	-2.41	-7.71	-3.87	2.40	0.00	0.00	**-15.67**

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 8 – Monetised impacts of NCH CAZ at sub-measure level

	AQ emissions impacts	Upgrade costs	Implementation costs	Opex change	Fuel consumption	CO2 emissions	Welfare effects	**NPV**
Taxi licence	-£37,459	£149,912		£1,998	-£46,868	-£25,607		**£41,976**
SDC	-£268,115		£1,084,813	-£1,546,278				**-£729,580**
Port booking			£268,874				£9,749	**£278,623**
Shore-side power	-£950,056		£6,331,518		-£1,549,647	-£2,993,109		**£838,707**

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

The economic appraisal is attached in E1 Economic Appraisal Methodology with further discussion and detailed analysis on the economic appraisal results. A summary is presented in table 7.

Table 9 Economic appraisal summary

Option	Rationale
CAZ B	• Positive NPV – delivers largest air pollutant emission reductions with largest costs • Avoids high risk around deliverability of HGV non-charging options. • Delivers large air quality emissions reduction, which will deliver greatest health and environmental benefits, from which poorer households will benefit most • Largest impact on businesses, with potential adverse effects on HGV and coach operators, and taxi drivers who may struggle most with affordability of upfront costs of compliance ○ Also will be some indirect impact on household affordability (although less so than for businesses) • Potential risk around deliverability of identifying taxis under charging CAZ in absence of national database

NCH CAZ	• Negative NPV – delivers smaller air pollutant emission reductions and secondary benefits, and higher implementation costs (in particular shore side power) push NPV of option to negative
	• But has much smaller impact on businesses and affordability risk
	  ○ 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 delivers a slight net cost but the BCR is close to 1 hence the assessment could change under different sensitivities around the central analysis.
	  ○ Sustainable distribution 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.
	  ○ Port booking system: the NPV of this measure is negative but an air quality impact could not be valued given the damage cost methodology does not account for time of day of emission
	  ○ Shore-side power: overall the NPV is negative, predominantly due to large upfront investment cost. However, if the number of vessels using the shore-side power facility scales up over time and/or the installations lasts longer than 10 years, the NPV may be close to/at NPV neutral.
	• There are risks around deliverability - Several barriers exist to implementing and delivering these measures, creating potentially higher risk to delivering additional savings

2.4. Uncertainty and Sensitivity

Table 10 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 $\mu g/m^3$). This is not sufficient for any location to exceed the 40 μgm^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 µg/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 NOx 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 µg/m^3 limit value.	At all receptor locations the re-adjusted NO_2 annual mean concentrations ranged from 18 to 23 µg/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 AQ3.
Background NO_2 calculation	Background NO_2 calculation	Discussion	No sensitivity undertaken. Discussion supporting decision in AQ3.
f-NO_2 and calibration	JAQU suggest - If there are a number of roadside chemiluminescence monitors within a model domain the	Discussion	Only three roadside chemiluminescence monitors in domain with sparse coverage. Diffusion tubes while more uncertain provide

	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)'		more robust set of model agreement statistics. No sensitivity undertaken. Discussion supporting decision in AQ3.
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 AQ3.
Meteorology	Potential for inter-annual variability in meteorological conditions to impact on modelled concentrations	Discussion	No sensitivity undertaken. Discussion supporting decision in AQ3.

The key outcome of these sensitivity tests is as follows:

- Higher levels of port growth – this increases concentrations by a maximum of 0.5 $\mu g.m^{-3}$ 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 $\mu g/m^3$ which pushed one PCM location up to 40 $\mu g/m^3$ and another to just over 35 $\mu g/m^3$ in the 'do minimum' so increases the risk of an exceedance arising in 2020.
- Lower fNO_2 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.

2.5. Analytical Assurance

The analytical assurance statement is included in the appendices.

2.6. Justification of Preferred Option

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 (see section 2.3.2).

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 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 11 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 NO_2 of approximately 0.1µg/m^3. 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 CO_2 reduction for the same period is estimated to be upwards of 1,144 tonnes.

Traffic Regulation Condition for Public Service Vehicles

The implementation of a traffic regulation condition (TRC) for public service vehicles is seen as an important 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 renter 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.

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 NO_2 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 safeguard our local fleet

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. This will support drivers in upgrading their vehicles to cleaner alternatives.

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.

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 NO_2 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[11]' 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 convenient[12].

[11] https://myjourneysouthampton.com/
[12] https://www.southampton.gov.uk/roads-parking/transport-policy/ltp4.aspx

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;
- 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:

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	Supplementary budget for schools and communities officer for additional tools and resources.

Port Measures

Port measures modelled are not included within the preferred option. Removing shore power and the port booking system for HGVs from the non-charging package of

measures is not considered to impact on compliance as do minimum business as usual achieves compliance in 2019.

3. Commercial Case

3.1. Summary of Service requirements and Outputs

Good/Service	Description	Procurement Route	Contract Length	Contract manager	Payment Mechanism
ULEV Taxi Trail	Trail 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/energyandsustainability/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	SCC procurement strategic partner Capita.	3 years	Strategic Transport	New contract

	vehicles on local air quality. Including consultancy services				
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
Communication materials/ A3024 My Journey support	Any collateral requirements for CAZ communication (e.g. leaflets, posters).	SCC procurement strategic partner Capita https://www.southampton.gov.uk/business-licensing/supply-council/	n/a	Communications	Business as usual purchasing

3.2. Southampton City Council's Capability to Deliver

3.3. 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.

3.4. Delivering Non Charging Measures

3.4.1. Taxi Measures

3.4.1.1. Licensing Condition

Revising licensing conditions 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.

3.4.1.2. Bus Lane Restrictions

Bus lane restrictions for non-euro 6 diesel/4 petrol taxis 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.

3.4.1.3. Low Emission Taxi Incentive Scheme Expansion

The value of the incentives currently offered are shown below, with the value of the individual running costs shown in table 2. 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.

It is proposed that this 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.

Table 12 Incentives offered to taxi and private hire vehicles through the Low Emission Taxi Incentive Scheme

Option	Description	Cashback Incentive
Full Electric	A vehicle with an original specification of being powered only by a battery charged from the electricity grid.	£3000
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).***	£2000
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).***	£1500
Euro 6 Diesel* (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.	£1500

****Altered from existing scheme to allow Euro 5 or 6 petrol to Euro 6 diesel***

Table 13 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.

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.

3.4.2. EV Charging Infrastructure

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.

The procurement route for the EV charge points will be through the Hampshire County Council Electric Vehicle Infrastructure Framework[13]. 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;
- **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,

[13] http://www3.hants.gov.uk/energyandsustainability/electric-vehicle-chargepoints.htm

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.

The framework enables 3 business models to be used;

- **100% supplier funded:** This refers to the investment model where the supplier provides 100% of the capital funding and retains 100% of the revenue from the charging point, until the charging point returns the initial investment. From this point the supplier will provide the named authority with an income charge from the net revenue (10%) and ownership of the asset will be transferred to the authority at the end of the contract period.
- **Part supplier, part public sector funded:** This model is where the named authority would provide part of the upfront capital, with the supplier providing the remainder of the capital outlay. The point at which the initial investment is recouped will be calculated to incorporate the public sector initial investment, and from that point the supplier will provide the named authority with an income charge from the net revenue.
- **100% public sector funded:** In this investment model the named authority will provide 100% of the initial investment, 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 the named 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.

The charge points will be publically available to all users and therefore state aid will not apply.

3.4.3. ULEV Taxi Trail

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 so far agreed a non-binding 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).

3.4.4. Bus Traffic Regulation Condition

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.

A brief BBLP are currently working to includes a key constraint that the scheme must however be implemented by the start of 2020. BBLP will also undertake detailed design, consultation and implementation through the existing strategic partnership.

3.4.5. Freight Measures

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 concludes 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 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 serves to benefit. The current SDC framework expires in December 2018. The City Council is reliant on Government Air Quality funding to re-procure the framework and allow the SDC 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 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, this is presented in the financial case.

3.4.5.1. Freight Consolidation

Delivery Model

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 ending as of 17th December 2018. 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 transhipment 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 within 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.

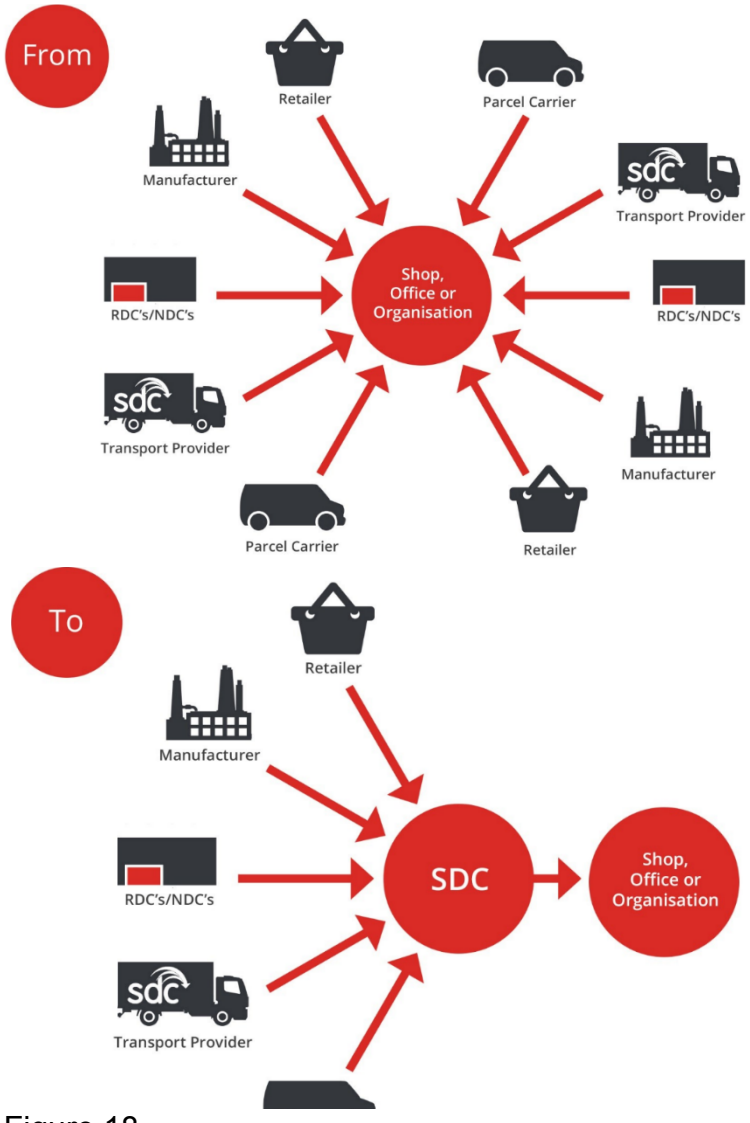


Figure 18

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

1. Transhipment, 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.

Distribution 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 transhipment 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 transhipment 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.

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.

Procurement

SCC has negotiated an extension to 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. This is critical as the nature of the Clean Air Zone adopted in Southampton will impact the response of the market to the tender. 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.

3.4.5.2. Delivery Service Planning

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.

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.

3.4.5.3. Fleet Accreditation Scheme

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. 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 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 reviewing operators' 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.

<u>Procurement</u>
An open OJEU tender process will be followed to secure a specialist supplier for the delivery of a DSP and fleet recognition scheme.

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.

3.4.6. Communications

Communications plan is provided in the appendices. This will be delivered by the CAZ Communications Officer. The procurement route is via the council's strategic partner Capita.

3.4.7. A3024 MyJourney Support

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.

3.4.8. Monitoring and Evaluation

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. This option would not involve any direct asset procurement or maintenance. It would be implemented by the Highways service partner BBLP.

Diffusion tubes for monitoring air quality will be included as an extension to an existing contract with Gradko Environmental.

4. Financial Case

4.1. Background

The UK Government has committed to funding feasibility studies for plans to bring about compliance with legal NO_2 objectives in the shortest possible time. These feasibilities 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 current 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 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 available to support Council priorities. 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 the 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/documents/s37524/report.pdf

4.3. Background

The purpose of this financial case is to support the application for grant funding from the JAQU Implementation Fund and the Clean Air Fund (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.

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. Taxi Incentive Package

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 11% 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.
- 11% 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.

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.

Non-SCC Bus Lane Restriction

Altering the existing bus lanes in Southampton to restrict non-SCC licensed vehicles to incentivise drivers to remain licensed in Southampton. Costs are based on professional judgment for TRO amendment and approximate number of signs.

Low Emission Taxi Incentive Scheme Expansion			
Requirement	**Year**	**Note**	**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
ULEV Taxi Trial	1	Scheme	£12,000
	2	Scheme	£12,000
	3	Scheme	£12,000
Non-SCC Bus Lane Restriction	1	TRO amendment	£8,000
Signage	1	70 signs @ £500	£35,000
		TOTAL	£243,250

4.4.2. EV Charge Points

Delivery of EV charge points will encourage the uptake of EVs under the low emission incentive scheme. The current cost estimates on EV charge points are based on initial market engagement.

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

4.4.3. 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.

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

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

These costs are based on quotation following a desk study on Southampton's CAZ found in the appendices – DSP, FA and DSP Accreditation Support. 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 bear minimum required in order to maintain the existing level of use of the SDC for a short period of time 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.

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
			TOTAL	£450,000

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.

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
			TOTAL	£885,000

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.

Freight measures (Option 3)				
	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
Supporting measures				
Delivery and Servicing Plans (DSPs)	1-3	10 DSPs per year	Cost of £15k per DSP	£450,000
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	£1,600,000

4.4.5. A3024 MyJourney Support

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

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	Supplementary budget for schools and communities officer for additional tools and resources.	£10,000
	TOTAL	£100,000

4.4.6. Communications

A breakdown of communications costs is provided in the appendices.

Communications

Requirement	Year	Note	Cost
Communications	1-3		£53,250

4.4.7. 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.

Monitoring and Evaluation			
Requirement	**Year**	**Note**	**Cost**
5 diffusion tubes	1		£200
	2		£200
	3		£200
ANPR Data Processing/ Survey	1		£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
		TOTAL	£402,600

4.5. Resource

Costs are estimated based on SCC's 2018/19 pay scales accounting for inflation and relevant on costs in subsequent years. The grades listed are subject to SCC's job evaluation process, but are currently based on similar active roles.

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) 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) 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) 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 provide support for a 6 month period to the implementation of the CAZ.	9-11	Existing resource over 6 months	£24,000
Total Year 1			£179,800
Total Year 2			£158,800
Total Year 3			£46,750
Total			£385,350

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.

4.7. Assurance of Cost Estimate

A full determination of assurances will be undertaken as part of the Full Business Case. This will include 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 the appendices.

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

- £ 243,250 to extend the taxi Incentive scheme
- £ 100,000 for taxi EV charging points
- £ 8,000 for Bus Traffic Regulation Condition
- £ 100,000 for MyJourney A3024 Scheme
- £ 53,250 for communications
- £ £385,350 for Officer Support to mitigating measures.
- £ 402,600 for monitoring and evaluation

The following is requested for option 3 for Freight measures:

- £ 900,000 a Sustainable Delivery Centre from the Clean Air Fund.
- £ 450,000 for Delivery Support plans from the Clean Air Fund
- £ 170,000 for a Fleet Accreditation scheme from the Clean Air Fund.
- £ 80,000 for additional business support

Our total funding bid is for £2,892,450

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 the LA 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.

The LA 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. Southampton City Council and New Forest District Council Joint Work

The exceedance identified by the PCM and reported in the 2017 national plan for NO_2 extends beyond Southampton's boundary to that of New Forest District Council. As a result, a Memorandum of Understanding was signed by both authorities that outlined the intent for Southampton City Council and New Forest District Council to work in partnership to produce a joint preferred option for compliance with the legal NO_2 objective within the shortest possible time. Modelling has shown that NFDC will itself be compliant by the start of 2020 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.

5.3. Timeline for Preferred Option Implementation

A timeline for implementation of the measures to improve NO_2 concentrations can be found in the appendices.

The CAZ 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.

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

5.4. Project Management

The project methodology utilised on this project by SCC is an adaptation of APM, 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.

5.5. 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.

5.5.1. 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.

Table 14 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 not encouraged to upgrade quickly	Regular status updates on progress 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.

5.5.2. 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. 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.

5.5.3. 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 tat 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.

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.

5.5.4. 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 15 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, 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.

5.5.5. 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.

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 NOx and PM
- Reduce CO_2 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 16 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.

5.5.6. 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 Zone[14].

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 Trust[15].

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.

[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

Table 17 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.
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.

5.5.7. Freight Consolidation/DSP/Fleet Accreditation

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 outline in the economics section of this document.

Table 18 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 organisations to sustainable fleet management behaviours	M	Initial changes to fleet is short lived and costly. Longer terms benefits are not realised	Provision of ECOSTARS fleet recognition scheme to provide specialist 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 demand as a standalone service	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 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

5.5.8. 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.

5.5.9. 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 the appendices.

5.6. Additional Resource Requirement

Table 19 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.

5.7. Reporting

Once the submission of the business case for the preferred option has taken place, a reporting process will begin, this document will be populated by the project team. The reporting format will consist of a dashboard report for each work stream which will feed into an overall project dashboard report. Please see appendices for template of reporting dashboard. 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. These highlight reports will be produced on a fortnightly basis due to the small period of project implementation required for a Non-Charging Clean Air Zone.

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 a means by which they wish to monitor the projects implementation and spend.

5.8. 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 engagement with JAQU.
Scope*	Minor changes which do not alter the outcome specified within the bid.	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 engagement with JAQU.

The appendices contains the Change Request Form, once this is raised each request will be documented in the Change Request log which is attached in the appendices. 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.

5.9. 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 20 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 the appendices.

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

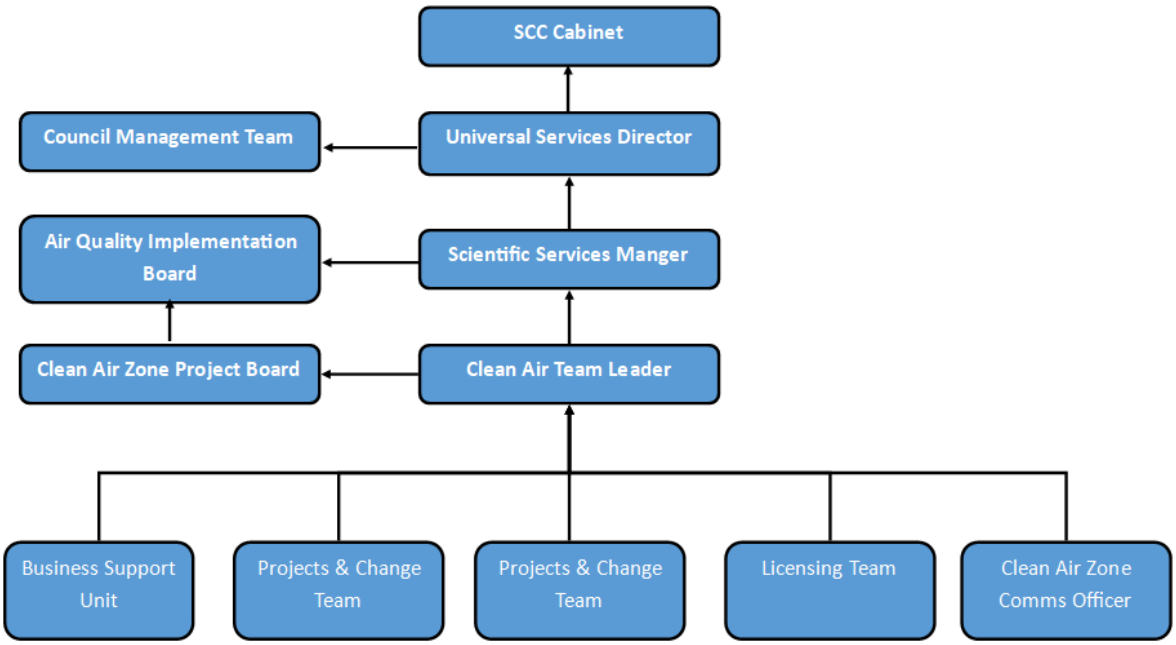


Figure xx Project Governance process

5.10. 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. 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 the appendices. Individual work stream risks are outlined in section 5.5.

5.11. 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 will be outlined within the Outline Business Case, a draft is found in the appendices.

The full CAZ consultation report is found in the appendices.

5.12. 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 21 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.

Table 22 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	Number of grants issued
EV charge points	Use of charge points	Quantified use of charge points
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.	Number of vkms saved Number of vehicles off the road Emissions reductions
Delivery and Service Planning	Accelerated uptake of CAZ compliant vehicles, reduce vehicles undertaking deliveries, increase efficiencies, increased uptake of freight consolidation.	Number of vkms saved Number of vehicles off the road Emissions reductions
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.

Table 23 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
Bus retrofit programme (CBTF)	Number of grants issued	Real time	Up to 145	Local/ Industry (Bus operators)
Low Emission Taxi Upgrades	Low emission taxi incentive grants	Real time	n/a	Local

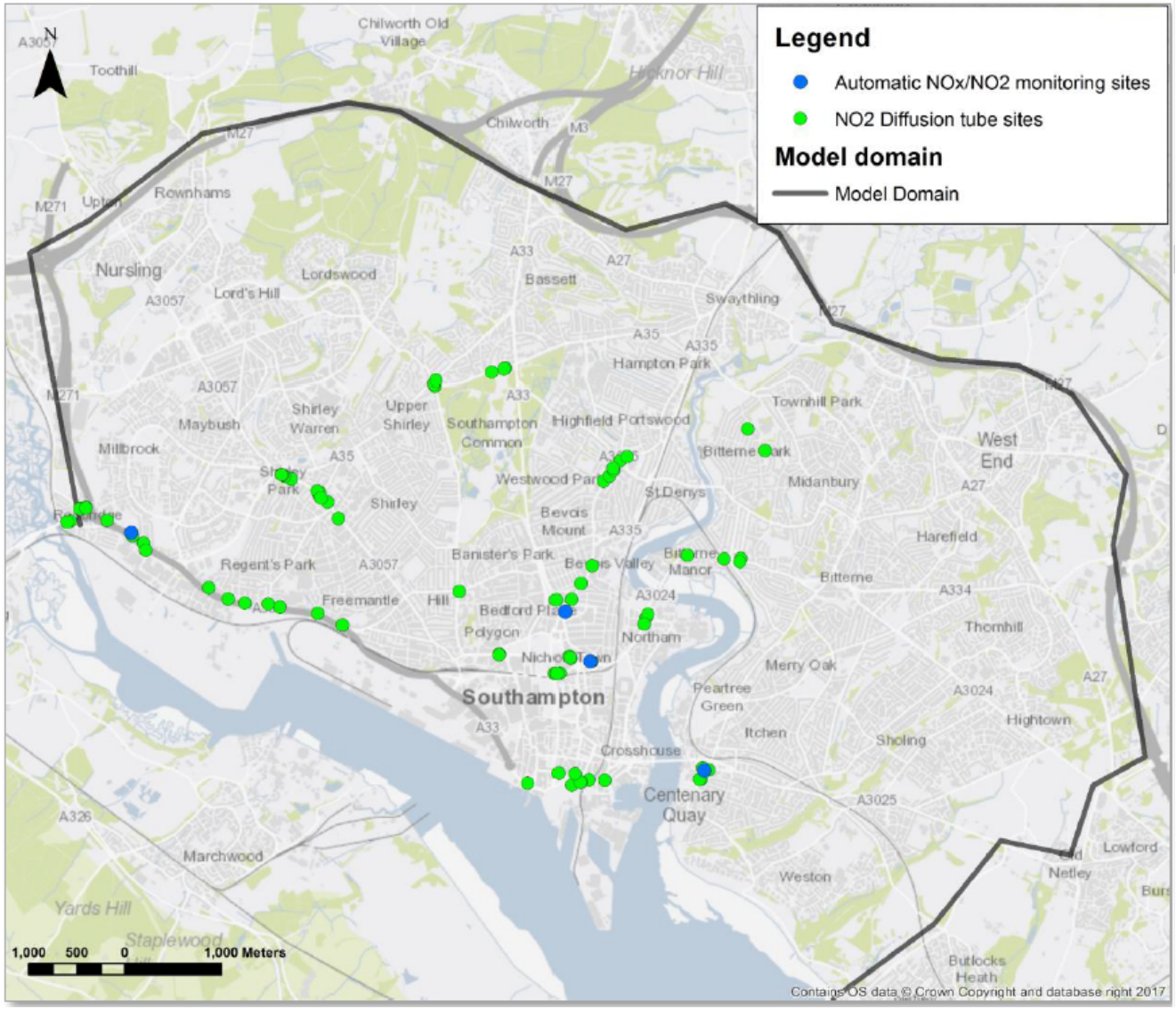


Figure 19 Locations of existing NO_2 monitoring in Southampton

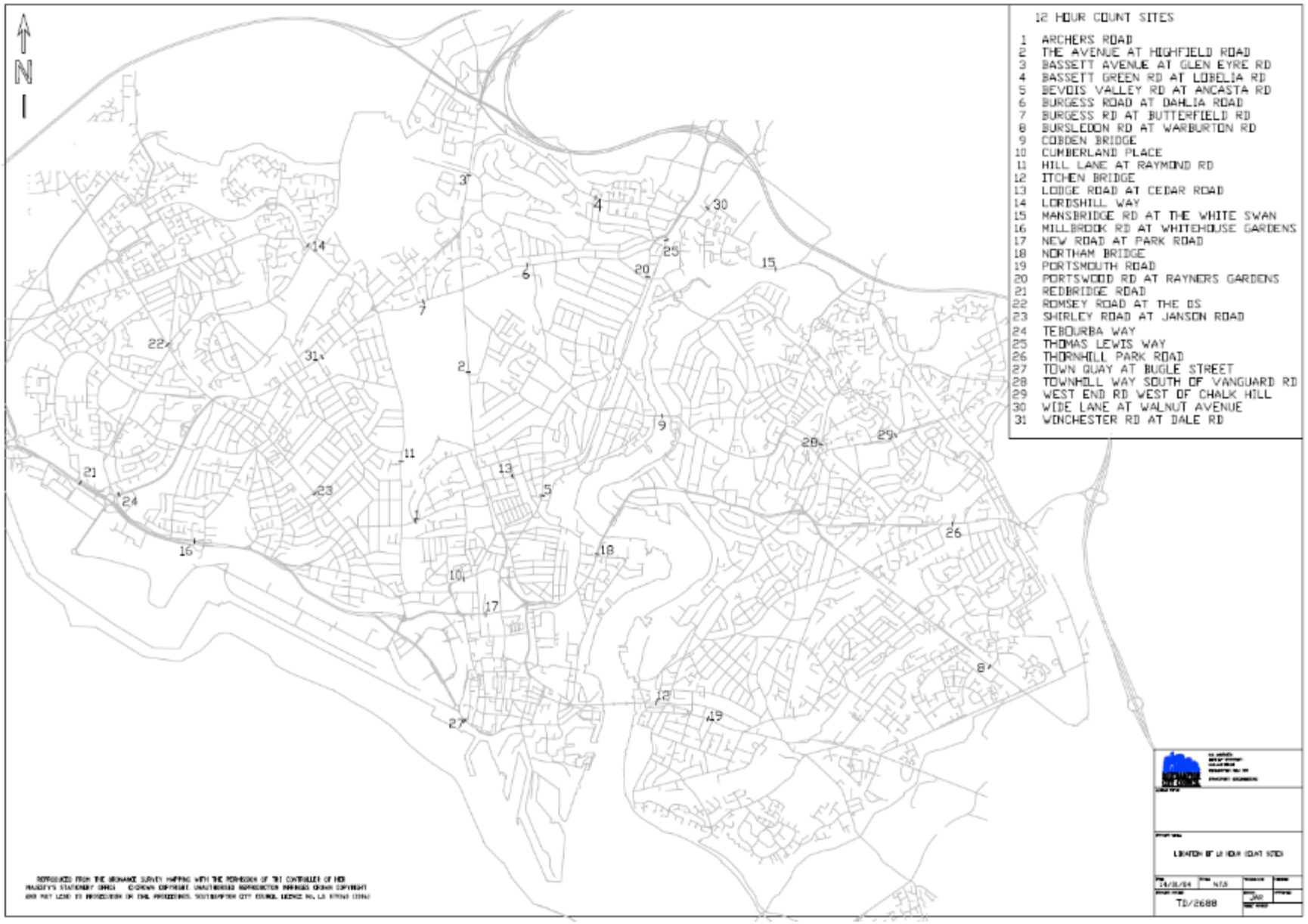


Figure 20 SCC NO_2 monitoring locations

Table 24 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 Rapid deployment cameras to carry out rolling programme of monitoring key entry points to zone.	Traffic flows, composition and emission standard	High	Key routes into city		Discounted – disproportionate cost	Implementation fund

Temporary ANPR Survey basis undertaken by 3rd 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	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 25 New diffusion tube locations to assess Census IDs above 35ugm-3

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

5.12.1. 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 here:

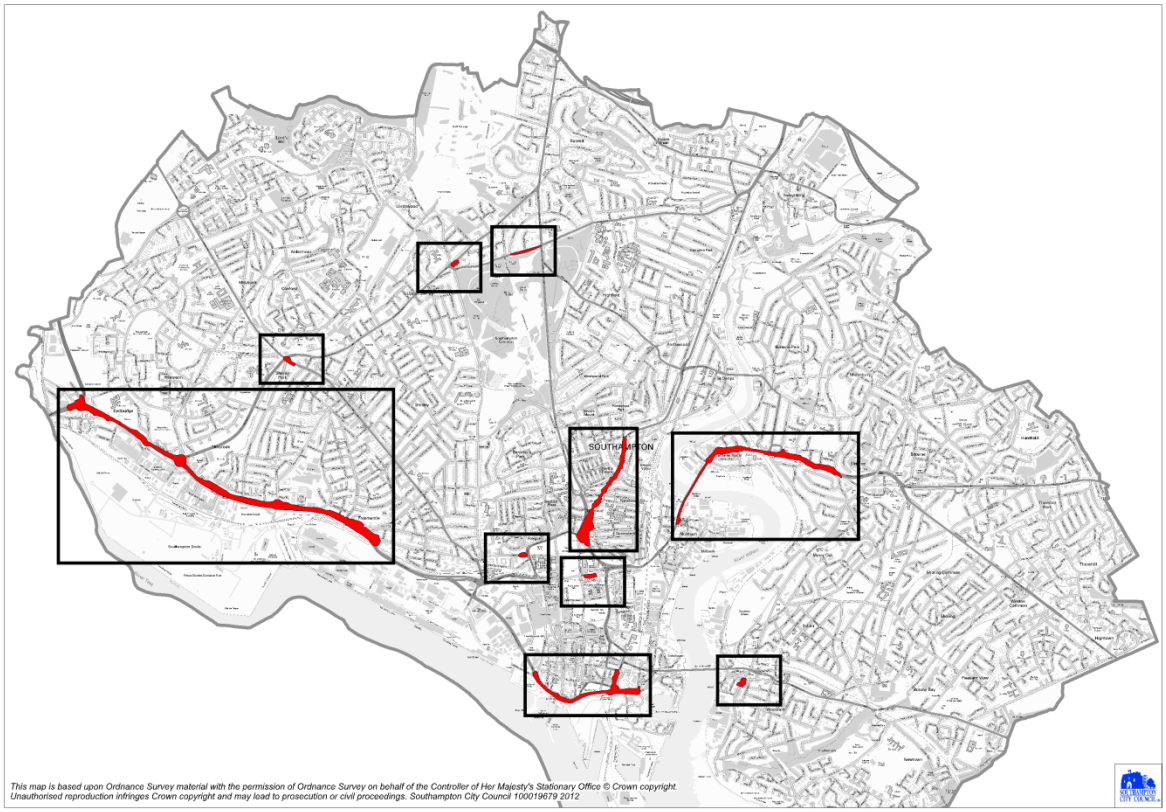
Table 26 SCC Benefits Register

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.
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.

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

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.

Southampton City Council AQMA's



PCM v Do Minimum Baseline Results

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

Air Quality Options Results

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