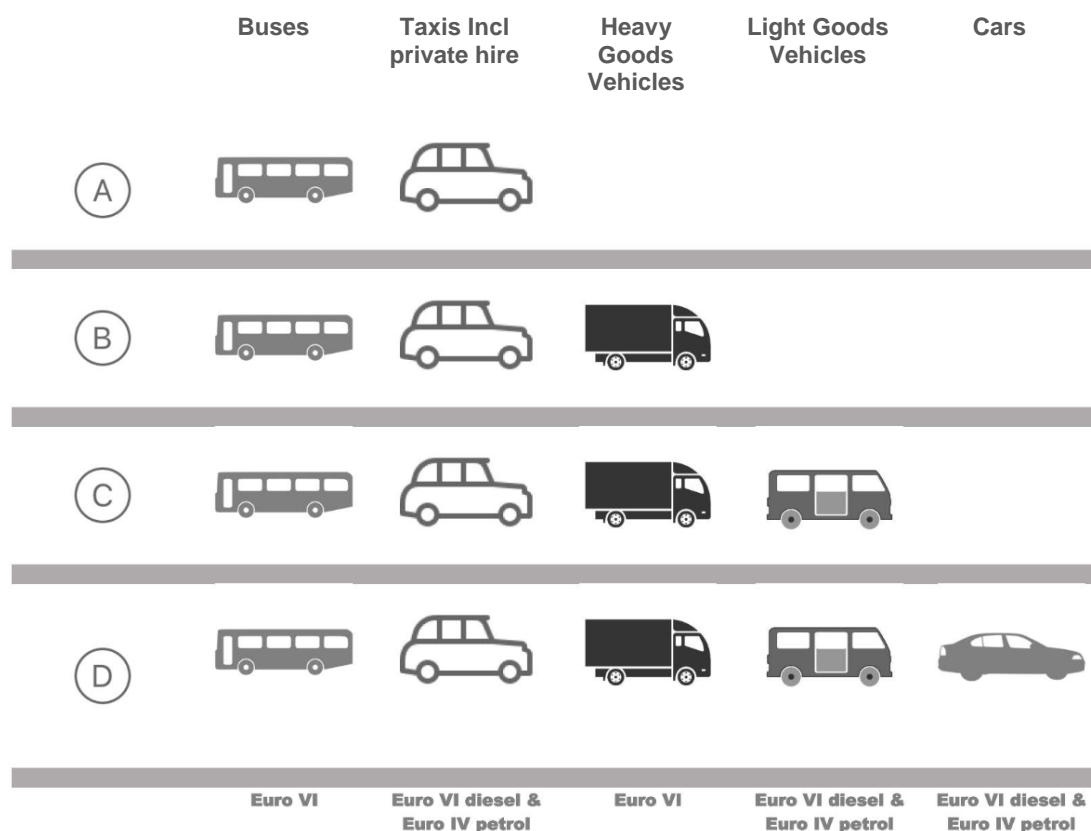


**North Staffordshire Local Air Quality Plan (NSLAQP) –  
Summary of feasibility study**

**1 Background and legislative requirements**

- 1.1 The current statutory limit for nitrogen dioxide (NO<sub>2</sub>) concentrations related to air pollution was originally specified in the [2008 EU Ambient Air Quality Directive](#), which, amongst other requirements, set the assumed safe annual average limit for NO<sub>2</sub> concentrations at 40 micrograms per cubic metre (µg/m<sup>3</sup>) of air.
- 1.2 The UK Government's National Air Quality Plan was published in [2015](#) and updated in [2017](#), and this Plan embraced the requirements of the EU Directive. In progressing the delivery of the Plan, the Government identified around 60 local authority areas where these limits are likely to be exceeded as a result of pollution from traffic on local road networks.
- 1.3 In October 2018, a further [supplement](#) to the National Air Quality Plan required a number of local authorities across the UK to work to tackle predicted exceedances. Newcastle-under-Lyme Borough and Stoke-on-Trent City Councils were issued with a [Ministerial Direction](#), under the requirements of the Environment Act 1995. The Direction requires the authorities to tackle air quality issues at specific locations in the North Staffordshire area where nitrogen dioxide (NO<sub>2</sub>) concentrations are predicted to exceed statutory limits set by the EU in 2008. Specifically, the Direction requires the authorities to undertake:
- "... a Feasibility Study ... to identify the option which will deliver compliance with legal limits for nitrogen dioxide in the area for which the authority is responsible, in the shortest possible time."
- 1.4 In summary, the Ministerial Direction legally obliges the local authorities to identify and deliver a plan that results in:
- **all local road links in the study area having annual average NO<sub>2</sub> concentrations of 40µg/m<sup>3</sup> or less, in the shortest possible time and by the start of 2022.**
- This is the "**primary aim**". The time period has since been amended by Government to 2023, to reflect the impacts of the coronavirus pandemic. This is explained further in Section 6.
- 1.5 The Ministerial Direction also includes the requirement for the local authorities to assess the viability of a "Clean Air Zone", (CAZ) which is a defined area related to the identified exceedance location(s), that imposes a daily charge on motor vehicles in some or all classes (with the exception of motor cycles), if they are of an age that does not meet the latest emissions standards.
- 1.6 The benchmark option (against which other options will need to be measured) is required to be a charging CAZ of a high enough classification to bring about compliance in the shortest possible time. There are four classes of CAZ identified within the "[UK Plan for tackling roadside nitrogen dioxide concentrations 2017](#)", and

these are summarised in Figure A1 below, including vehicle type and minimum euro engine classification allowed to enter a CAZ without payment of a charge.



**Figure A1 – CAZ types as identified in “UK Plan for tackling nitrogen dioxide concentrations 2017”**

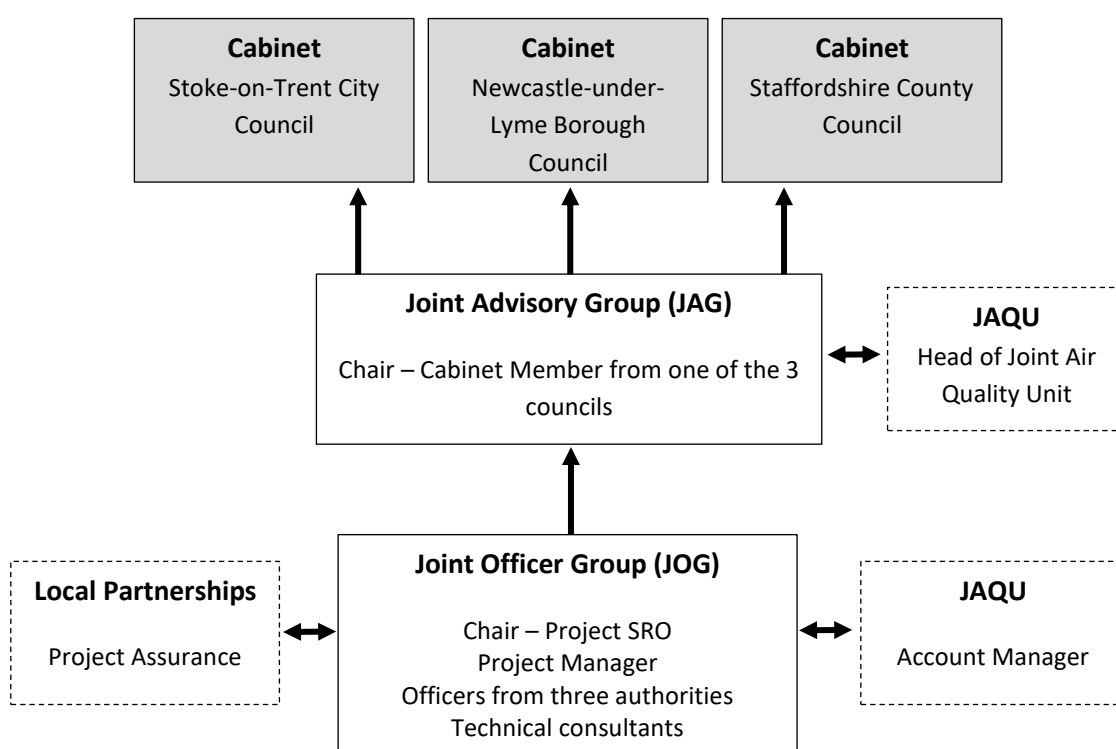
- 1.7 The 2018 Ministerial Direction required Newcastle-under-Lyme Borough and Stoke-on-Trent City Councils to work together on a joint plan, and Staffordshire County Council has also supported the work, as it is the highway and transport authority for the Newcastle-under-Lyme part of the study area.
- 1.8 This requirement to assess a CAZ solution enables the authorities to “benchmark” their preferred option against the CAZ for its ability to deliver compliance with the statutory limit in the shortest possible time and more quickly than a CAZ.
- 1.9 In the case of cars and light goods vehicles, the vehicle ages that would be liable to payment of the CAZ charge would be those vehicles registered before September 2015 for diesel vehicles (i.e. not a Euro 6 engine), or before January 2006 for petrol vehicles (i.e. not a Euro 4 engine).

## 2 Governance arrangements

- 2.1 Early in the feasibility study process, Newcastle-under-Lyme Borough, Stoke-on-Trent City and Staffordshire County Councils agreed a governance structure to manage the study process and to work jointly to develop the NSLAQP in line with government requirements. Central to managing the process is the existence of the Joint Advisory Group (JAG) which is chaired by a Cabinet Member from one of the

authorities and is responsible for overseeing the work of the project team – the Joint Officer Group (JOG). The JAG meets as required and at least quarterly to ensure timely progress and to make decisions on what proposals should be progressed for inclusion within the Outline Business Case (OBC) and Full Business Case (FBC) and to coordinate the decision making process via the Cabinets of the three local authorities.

- 2.2 This work is undertaken in conjunction with dialogue with the Government’s Joint Air Quality Unit (JAQU). JAQU also employs the services of Local Partnerships to provide a project assurance role, in particular ensuring that the Commercial and Management Cases for the proposals are robust and provide value for money.
- 2.3 Figure A2 provides a summary of the governance structure and working arrangements.

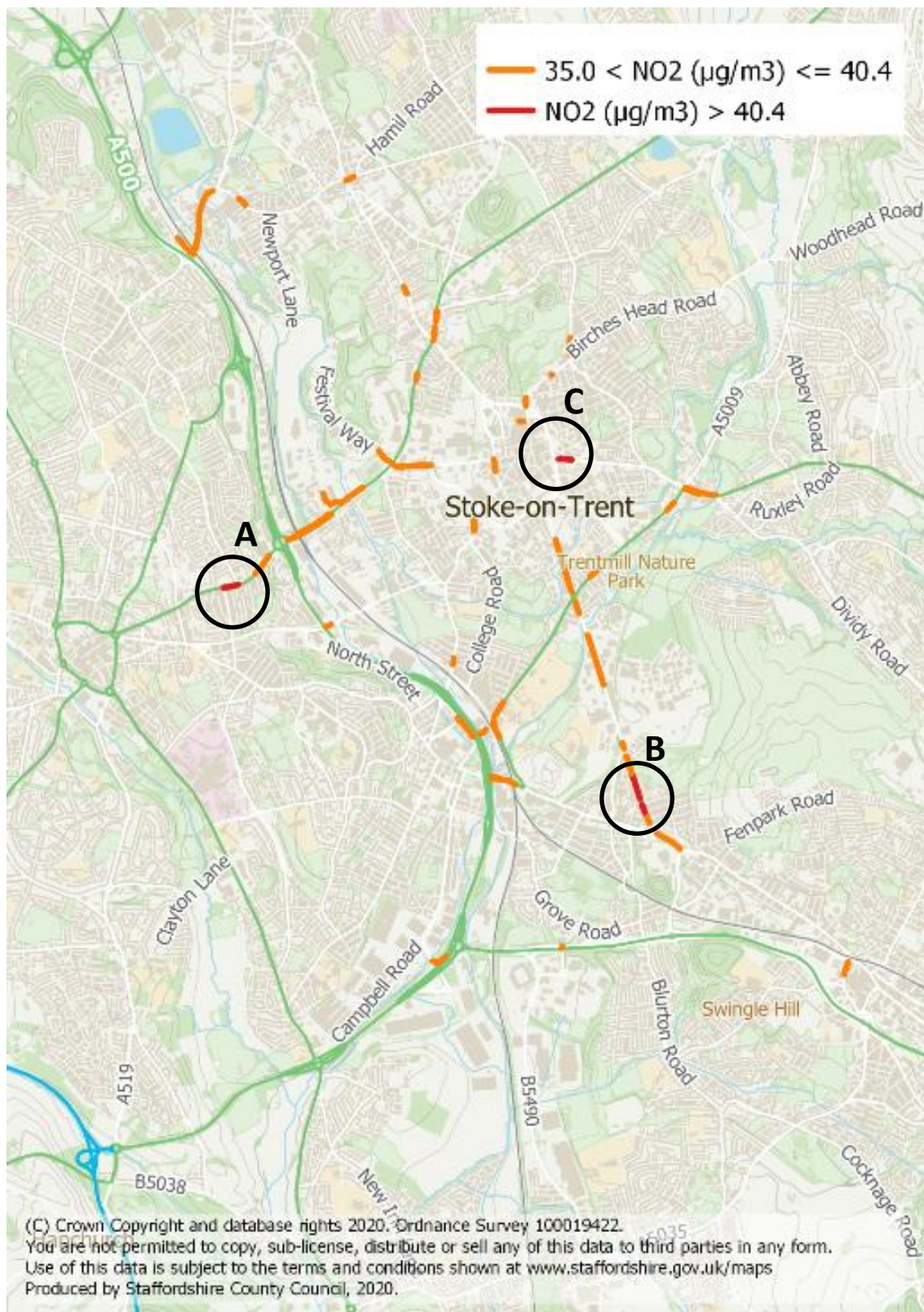


**Figure A2 – NSLAQP Governance structure**

### 3 Initial Evidence

- 3.1 The initial evidence phase of the study involved the gathering of traffic and air quality data and its analysis, using transport and air quality modelling techniques, to determine the scale of the problem in relation to identifying those locations on the local road network where NO<sub>2</sub> concentrations were predicted to exceed the statutory limit by the prescribed date. This identified three locations in the study area where NO<sub>2</sub> concentrations are predicted to exceed the statutory limit and hence action needs to be taken to bring them into compliance in the shortest possible time.
- 3.2 The locations are:

- A. The A53 (Etruria Road) between Victoria Street and Basford Park Road.
  - B. The section of the A50 (Victoria Road) in Fenton, between Maud Street and Hitchman Street.
  - C. The A5008 (Bucknall New Road) between Potteries Way and Lindop Street.
- 3.3 Figure A3 shows the above locations highlighted in red. Those road links highlighted in orange are the ones where the modelling predicted NO<sub>2</sub> concentrations within 5µg/m<sup>3</sup> of the statutory limit and hence a need to focus on ensuring that any plans to tackle the exceedance locations does not result in other increases in NO<sub>2</sub> concentrations to or above the statutory limit.



**Figure A3 – NO<sub>2</sub> exceedance locations on local road network in 2022 from local modelling**

#### 4 Options appraisal and the preferred option

- 4.1 A range of options were identified through the transport and air quality modelling process and assessment of their outputs, stakeholder workshops and through dialogue with Government and these were appraised against their ability to deliver the primary aim.
- 4.2 These options included the consideration of charging clean air zones (CAZs). As explained in section 1.6, a CAZ is an area where targeted action is taken to improve air quality, potentially including charging vehicles a daily fee, to drive in the area if they fail to meet specified emissions standards. For example, Birmingham is planning to introduce a charging CAZ in its central area which will require drivers of specific vehicles to pay a charge (£8 for cars, more for other vehicle classes) if they do not meet the latest “Euro” emissions standards.
- 4.3 A summary of the shortlisted options considered is provided in Table A1 below. The summary of the assessment of the options’ ability to deliver the primary aim is summarised by the predicted NO<sub>2</sub> concentrations in 2022. The timescales to achieve the primary aim of compliance are those that were assessed “pre-Covid”, and as explained in Section 6, the post-Covid timescales are one year later.

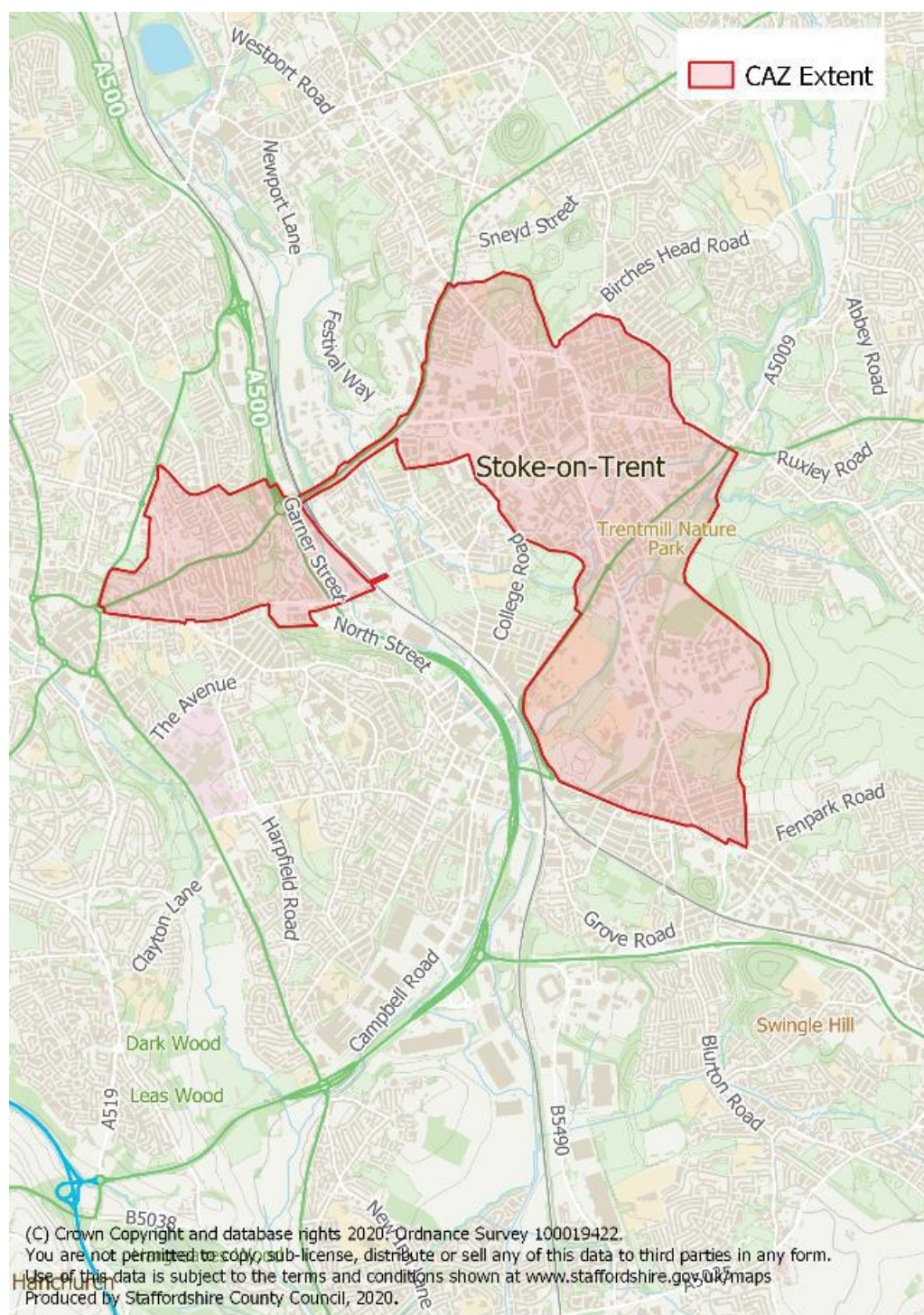
Option	Description	Predicted NO <sub>2</sub> concentrations in 2022 (µg/m <sup>3</sup> )
A53 = Etruria Road, BNR = Bucknall New Road, VR = Victoria Road		
Reference case	<b>Do nothing</b>	<ul style="list-style-type: none"> <li>• A53 42.7</li> <li>• BNR 42.2</li> <li>• VR 45.6</li> </ul> <b>NO<sub>2</sub> compliance not achieved</b>
1	<b>Benchmark CAZ D</b> <ul style="list-style-type: none"> <li>• A benchmark charging CAZ covering the area of the three exceedances and imposing daily charges (cars/taxis £5, LGVs £9, HGVs/buses £35) on non-compliant vehicles (all categories) entering or driving within the area. See Figure A4 for proposed CAZ D area.</li> </ul>	<ul style="list-style-type: none"> <li>• A53 33.4</li> <li>• BNR 30.9</li> <li>• VR 36.1</li> </ul> <b>NO<sub>2</sub> compliance achieved</b> <b>Timescale to deliver – slow (est. 2023)</b>
2	<b>Low impact traffic management scheme</b> <ul style="list-style-type: none"> <li>• A53 Etruria Road - Basford Park Road right turn ban</li> <li>• Bucknall New Road - 50% bus retrofit</li> <li>• Victoria Road - Bus gate plus 100% bus retrofit</li> </ul>	<ul style="list-style-type: none"> <li>• A53 41.7</li> <li>• BNR 40.8</li> <li>• VR 40.1</li> </ul> <b>NO<sub>2</sub> compliance not achieved</b> Also created new exceedances <b>Timescale to deliver – fast (est. late 2021)</b>
3	<b>High impact traffic management plus Victoria Road mini-CAZ</b> <ul style="list-style-type: none"> <li>• A53 Etruria Road – Westbound peak period bus gate</li> </ul>	<ul style="list-style-type: none"> <li>• A53 39.9</li> <li>• BNR 37.0</li> <li>• VR 34.8</li> </ul> <b>NO<sub>2</sub> compliance achieved</b>



	<ul style="list-style-type: none"> <li>• Bucknall New Road – 100% bus retrofit</li> <li>• Victoria Road – Mini-CAZ around immediate vicinity of Victoria Road</li> </ul>	<p><b>Timescale to deliver – slow (est. 2023)</b></p>
4	<p><b>High impact traffic management scheme</b> (Core schemes of the preferred option)</p> <ul style="list-style-type: none"> <li>• A53 Etruria Road – Westbound peak period bus gate plus alterations to nearby signals</li> <li>• Bucknall New Road – 75% bus retrofit</li> <li>• Victoria Road – Northbound peak period bus gate plus upgraded traffic calming / management on adjacent residential streets. 100% bus retrofit</li> </ul>	<ul style="list-style-type: none"> <li>• A53 38.9</li> <li>• BNR 39.4</li> <li>• VR 39.3</li> </ul> <p><b>NO<sub>2</sub> compliance achieved</b></p> <p><b>Timescale to deliver – fast (est. late 2021)</b></p>
5	<p><b>Alternative Benchmark CAZ C</b></p> <ul style="list-style-type: none"> <li>• A benchmark charging CAZ covering the area of the three exceedances and imposing daily charges on non-compliant vehicles (all categories EXCEPT cars) entering or driving within the area. See Figure A4 for proposed CAZ C area.</li> </ul>	<ul style="list-style-type: none"> <li>• A53 39.7</li> <li>• BNR 35.4</li> <li>• VR 41.4</li> </ul> <p><b>NO<sub>2</sub> compliance not achieved</b></p> <p><b>Timescale to deliver – slow (est. 2023)</b></p>
6	<p><b>High impact traffic management scheme plus complementary measures</b></p> <ul style="list-style-type: none"> <li>• As option 4 plus other measures including travel planning, bus route enhancements, electric vehicle charging, vegetation removal on A53 Etruria Road.</li> </ul>	<ul style="list-style-type: none"> <li>• A53 38.6</li> <li>• BNR 39.3</li> <li>• VR 39.2</li> </ul> <p><b>NO<sub>2</sub> compliance achieved</b></p> <p><b>Timescale to deliver – fast (est. late 2021)</b></p>

**Table A1 – summary of options tested and their ability to achieve compliance with the primary aim**

NOTE – “post-Covid” dates to achieve compliance are as indicated in the Table, plus one year.



**Figure A4 – Benchmark CAZ C and D areas for appraisal of Options 1 and 5**

- 4.4 The options appraisal demonstrated that a non-charging option was capable of delivering the primary aim of compliance with the statutory limit for NO<sub>2</sub> concentrations in the shortest possible time. This option was progressed and discussed with Members and local MPs resulting in its submission within the unapproved OBC in May 2020 as the “preferred option”.
- 4.5 The dialogue between local MPs and the Air Quality Minister in March 2020 resulted in additional proposals being appraised for inclusion within the preferred option or as alternatives. These proposals were appraised through transport and air quality



modelling for their ability to support delivery of the primary aim and are listed in Table A2 along with a summary (in *italics*) of the conclusions from the analysis and/or response from JAQU for each.

<b>Option A</b>	Hybrids of option 4, which could add:
<b>A1</b>	<ul style="list-style-type: none"> <li>• A permit scheme, which for an annual fee would allow motorists to exempt themselves from the proposed two bus gates</li> </ul> <p><i>The assessment demonstrated that the demand for permits would result in an increase in use of the bus gates by non-compliant vehicles and due to the closeness of the predicted NO<sub>2</sub> concentrations to the statutory limit this would result in a high risk of future exceedances of the statutory limit.</i></p>
<b>A2</b>	<ul style="list-style-type: none"> <li>• An Ultra-Low Emission Vehicle (ULEV) exemption, allowing ultra-low emission vehicles to drive through the two bus gates</li> </ul> <p><i>JAQU and the Department for Transport have identified issues with approval for signing that would allow ULEV exemptions. Discussions continue with JAQU given the fact that Nottingham has trialled such a scheme in a bus lane.</i></p>
<b>A3</b>	<ul style="list-style-type: none"> <li>• A restriction on taxi use of the bus gates to those only licensed within Stoke-on-Trent or Newcastle-under-Lyme to support policy objectives to maintain service quality</li> </ul> <p><i>JAQU and the Department for Transport have indicated that they would not support the installation of the required signing, citing enforcement challenges.</i></p>
<b>A4</b>	<ul style="list-style-type: none"> <li>• Permits for small businesses within Victoria Road and A53 areas.</li> </ul> <p><i>The assessment demonstrated that the demand for permits would result in an increase in use of the bus gates by non-compliant vehicles, and due to the closeness of the predicted NO<sub>2</sub> concentrations to the statutory limit this would result in a high risk of future exceedances of the statutory limit.</i></p>
<b>Option B</b>	<p>One or two “mini-CAZs” – one related to Victoria Road (as in option 3) and one around the A53 exceedance site.</p> <p><i>The timescale required to deliver any CAZ solutions is significantly longer than that for option 4 and therefore this solution does not comply with the shortest possible time component of the primary aim.</i></p>
<b>Option C</b>	<p>Relocation of the proposed Victoria Road bus gate to a point just north of Dewsbury Road.</p> <p><i>Relocation of the bus gate would still restrict through traffic along the whole of Victoria Road (i.e. City Road to Joiners Square) but was</i></p>

	<i>assessed to result in too much additional traffic leading to non-compliance in terms of NO<sub>2</sub> concentrations.</i>
<b>Option D</b>	<p>24 hour diesel ban covering the large CAZ D area.</p> <p><i>Likely to receive adverse impact from businesses and individual motorists who have invested in modern Euro 6 fleet/vehicles thinking they are compliant and meeting latest emissions standards.</i></p> <p><i>A part time diesel ban is unlikely to remove sufficient vehicles to achieve compliance in terms of NO<sub>2</sub> concentrations.</i></p>
<b>Option E</b>	<p>A part-time CAZ D for the area.</p> <p><i>The timescale required to deliver any CAZ solutions is significantly longer than that for option 4 and therefore this solution does not comply with the shortest possible time component of the primary aim.</i></p>

**Table A2 – Additional proposals appraised**

4.6 Following their dialogue with the Air Quality Minister and the above assessments, a workshop with the local MPs concluded that further consideration should also be given to:

- A diesel vehicle scrappage scheme, to support the acceleration of fleet renewal and/or modal shift to sustainable modes, across the urban area but providing demonstrable contributions to tackling NO<sub>2</sub> concentrations at the three exceedance sites.
- A re-review of the complementary measures within option 6 to promote and support public transport even further given the importance of public transport to securing the specific requirements of the Direction.
- A review in relation to the traffic management measures that are required within option 4 to mitigate against potential displaced traffic, in particular in relation to Manor Street which has been cited as a specific concern due to its proximity to Victoria Road and potential use as a “rat-run”.

4.7 JAQU subsequently dismissed the viability of a scrappage scheme linked to the preferred option stating that “The preferred option does not involve charging vehicles and therefore in comparison to CAZs in other (local authorities) the scale of impact realised by individuals and businesses are significantly less”, and that “A scrappage scheme ... cannot be justified ... based on the distributional analysis provided and the objectives of the Clean Air Fund”. In view of this feedback this option has been dismissed as it is highly unlikely to be considered favourably for funding and evidence from other authorities has shown that such area-based proposals are not supported by JAQU for funding when seeking to tackle localised exceedances in NO<sub>2</sub> concentrations.

4.8 The remaining options of the complementary measures and the traffic management measures linked to Victoria Road are under review as the detailed design of the preferred option progresses.

4.9 MPs and the three Council Leaders also agreed that no form of CAZ will be pursued as part of any preferred option.

4.10 Government agreed to a further time period of six weeks to enable these proposals to be appraised ahead of submission of the unapproved OBC by 15 May 2020.

## **5 Unapproved OBC submission**

5.1 Following the appraisal of the additional proposals outlined in section 4.5, the feasibility study culminated in the submission of an unapproved OBC to Government on 15 May 2020, as required by the Air Quality Minister, which set out the rationale for the measures that are contained within the preferred option.

5.2 The OBC was submitted as an unapproved document due to the onset of the Covid-19 pandemic which prevented debate through the three Councils' Scrutiny and Select Committees and subsequent approval by the three Cabinets. This was agreed with the Government Minister responsible for air quality.

5.3 The OBC and preferred option are based on assumptions about traffic flows and travel patterns that take no account of the impact of Covid-19 on the local economy and it was made clear to Government that the submission, including details of the preferred option, had not been consulted on or debated by Members, except for those attending JAG.

5.4 The unapproved OBC submission included the details of the preferred option for tackling the predicted NO<sub>2</sub> exceedances which is evidenced by the feasibility study to deliver the primary aim in the shortest possible time.

5.5 The preferred option avoids the need for a charging CAZ and is based on a series of traffic management measures designed to manage traffic flows at peak times and hence vehicle emissions at the predicted exceedance locations.

5.6 In summary, the preferred option comprises:

- The "retrofit" of parts of the local bus fleet with equipment to bring their emissions into line with the latest emissions standards.
- Two peak period "bus gates" which only permit buses, authorised emergency service vehicles, taxis and pedal cycles between the hours of 0700-1000 and 1600-1900, Monday to Friday, located at:
  - A53 Etruria Road, westbound (i.e. towards Newcastle-under-Lyme), immediately to the west of the roundabout with the A500.
  - A50 Victoria Road, Fenton, northbound (i.e. towards Joiners Square) just to the north of the City Road roundabout.

A bus gate is a short section of carriageway in which traffic is restricted in one direction to buses, taxis and pedal cycles. There is no gate as such, and it is enforced using automatic number plate recognition cameras. Further exemptions may be included to enable emergency service vehicles to use the bus gates.

- The enhancement of existing traffic calming and management measures in the areas either side of Victoria Road, Fenton, to minimise and/or prevent the use of these streets by non-local traffic.
- A series of bus network enhancements to improve the attractiveness of the bus networks that use these routes.

5.7 The preferred option is described in full in Appendix B of this report.

## 6 **Covid-19 sensitivity testing**

6.1 Following the submission of the unapproved OBC, Government reasserted its commitment to tackle NO<sub>2</sub> exceedances and expects mandated authorities to deliver their air quality plans in the shortest possible time. In July 2020, Government then asked the local authorities to look at the potential impacts of the coronavirus pandemic on traffic and hence vehicle emissions through a process of sensitivity testing which considered a specified range of factors linked to:

- Higher prevalence of **home working**, including flexible working
- Lower use of **public transport**, either due to the requirements of social distancing and/or changes in the commercial bus network
- Higher use of **active transport**, in particular walking and cycling
- Fewer business trips due to **suppressed economic activity**, including the potential impacts linked to higher unemployment levels
- Delayed **vehicle fleet renewal** due to fewer new vehicle sales, resulting in more older (and more polluting) vehicles staying on the road for longer.

6.2 This testing has assessed the level of uncertainty regarding whether the current preferred option is able to deliver compliance with the statutory NO<sub>2</sub> concentration limits in the shortest possible time.

6.3 Government also extended its deadline for delivery of our air quality plan and FBC by up to four months. This extension allowed time for the requirement for the above extra work and also for the impact of the pandemic on officers' workloads, meaning the FBC must now be completed by July 2021 and the preferred option implemented by September 2022. Government also amended the required year for achieving compliance with the NO<sub>2</sub> statutory limit to 2023, although compliance is still expected to be achieved in the shortest possible time.

6.4 The parameters of the sensitivity testing were agreed with JAQU and endorsed through JAG, which took two months to complete, and in summary concluded that:

- The delay in vehicle fleet renewal has a small negative impact on emissions, in effect because older, more polluting vehicles are being kept on the road for longer.
- The impact of the pandemic on public transport use within the study area is very minimal, basically because the vast majority of public transport users are "tied" to its use and have no viable alternative.
- The increase in homeworking is having a short term but marginal beneficial impact, but the longer term impacts (at least in relation to the compliance year) are minimal.
- The increase in active travel is again marginal, for example linked to leisure travel, which is a welcome impact. However, any impacts were considered to be insufficient to justify reductions in predicted vehicle journeys.
- The negative impacts of the pandemic on the local economy are complex and potentially long-lasting, but in relation to the required compliance year for NO<sub>2</sub> concentrations the impacts are minimal.

6.5 In summary, there are small negative impacts of the pandemic on vehicle emissions and hence NO<sub>2</sub> concentrations, but these negative impacts are countered by the



additional “year to compliance” from 2022 to 2023 that Government has specified. The net impacts are therefore assumed to be nil overall in relation to the ability of the preferred option to deliver compliance in the shortest possible time.

- 6.6 The results and conclusions of the sensitivity analysis are set out in more detail in Appendix D of this report.

## **7 Full Business Case (FBC) development and submission**

- 7.1 The sensitivity testing has clearly confirmed that the current preferred option is still likely to be valid to tackle the predicted NO<sub>2</sub> exceedances in the shortest possible time.
- 7.2 Government is reviewing the unapproved OBC and has confirmed that the study should progress towards completion of the FBC by July 2021. Further JAQU funding is being sought to undertake this phase of the work. Subject to Cabinet approval of the OBC, it is planned to progress the completion and submission of the FBC by July 2021 with this being reported to Cabinets in each local authority.
- 7.3 Subject to receipt of full funding for the scheme from Government by September 2021, contractors will then be appointed to implement the preferred option. Construction of the traffic management measures, implementation of traffic orders and installation of retrofit technology on the buses will take approximately 12 months to complete meaning that the preferred option will be completed by the end of 2022. This will ensure the infrastructure is in place to deliver the required changes to travel patterns to deliver the required compliance with statutory limits for NO<sub>2</sub> concentrations by the Government’s revised specified year of 2023.
- 7.4 During the development of the FBC there will be full engagement with local communities and stakeholders as the project progresses.