

Annex 2 – CAZ

What is a Clean Air Zone (CAZ)?

1. Like a LEZ the proposed CAZ will control the types of vehicles able to be used in certain areas of the city based on emissions. However, unlike a LEZ, the entry criteria will not be a blanket Euro emission standard for all vehicles. The CAZ will set different entry standards for vehicles based on the frequency at which they enter the CAZ. The entry criteria will be set in a way that requires the most frequent (and hence the most polluting) vehicles to upgrade to operate on ultra low emission technology, whilst vehicles that enter the city less frequently will work towards meeting achievable minimum Euro emission standards.
2. Only local service buses and tour buses are expected to be subject to the CAZ requirements; there is scope to extend the principle to other vehicles such as HGVs, coaches and taxis at a later date. Other vehicles have not been included at this stage due to the complexity of the administration that would be associated with tracking and approving all types of vehicle for entry into the CAZ. This is particularly the case for coaches and HGVs that do not form part of easily identifiable and relatively static local fleets.

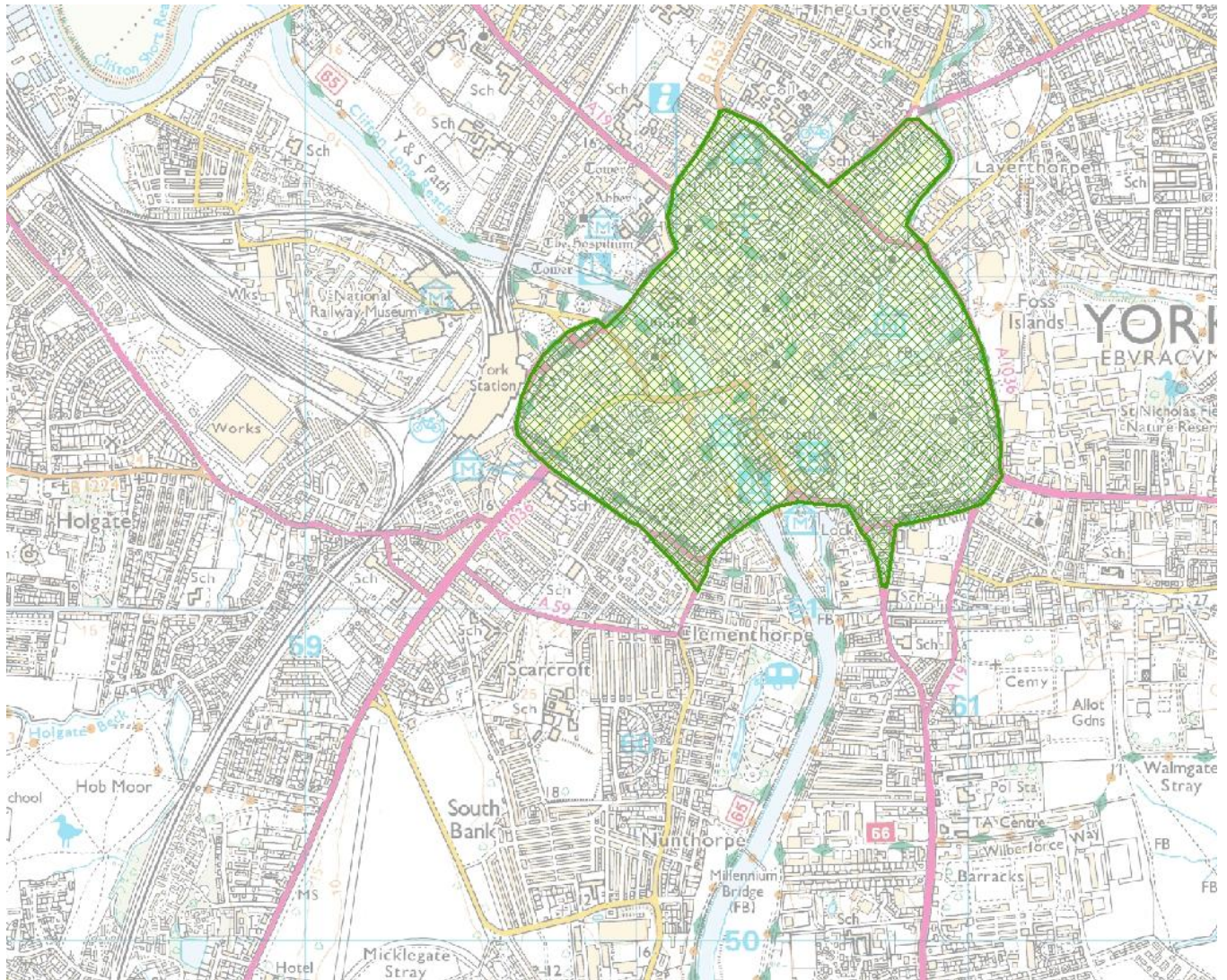
Why has this approach been suggested?

3. The CAZ approach has been developed because:
 - (a) It requires emission improvement costs that are more proportionate to the frequency at which vehicles travel through AQMAs and the impact they have on local air quality.
 - (b) It is likely to achieve greater overall air quality benefits than a blanket Euro emission standard based LEZ applied to all buses, but will limit the financial impact on smaller operators and infrequent rural services.
 - (c) It will give operators a clear 10 year timetable from which to plan their upgrades and organise their fleets in a way that limits the number of vehicles that have to be exchanged or redirected to other cities.
 - (d) It allows expansion of similar flexible emission entry controls for other vehicle types in the future if this becomes necessary

Where will the CAZ be?

- It is recommended that as a minimum the CAZ should initially apply to the area shown in Figure 3. The area includes all roads that make up part of the inner ring road and any other roads that lie within the area shaded in green. This minimum area is suggested based on current bus routes and the need to improve air quality in all the AQMAs. An alternative approach may be to apply the CAZ requirements to the already established Better Bus Area which bus operators are already familiar with. The CAZ concept will be subject to further consultation with bus operators and the final location of the CAZ boundaries will form part of this process. The potential for future expansion of the CAZ to other vehicles also needs to be considered in determining the final location of the boundaries.

Figure 3: Proposal for minimum area to be covered by the CAZ (subject to consultation)



What are the CAZ entry requirements likely to be?

5. Based on an analysis of current bus routes and the type and age of vehicles operating on them a first draft of possible CAZ entry requirements is shown in Table 1. Like the boundaries these entry requirements are subject to wider consultation with bus operators and may change as a result of this process. They should only be considered indicative at this stage in the process.

Table 1: Indicative CAZ entry requirements (subject to consultation)

	High frequency buses (10 times per day or more)	Medium frequency buses (5 times per day or more)	Low frequency buses (under 5 times per day)
April 2016	Euro 3 (82% of bus traffic)	Euro 3 (11% of bus traffic)	No standard (7% of bus traffic)
April 2018	Ultra low emission (82% of bus traffic)	Euro 4 (11% of bus traffic)	Euro 3 (7% of bus traffic)
April 2021	Ultra low emission (85% of bus traffic)	Euro 5 (9% of bus traffic)	Euro 4 (6% of bus traffic)
April 2024	Ultra low emission (87% of bus traffic)	Euro 6 (8% of bus traffic)	Euro 5 (5% of bus traffic)

What are the implications for bus operators?

6. Table 2 shows the estimated emission standard of buses operating on current routes (based on baseline data from 2011). The accuracy of this baseline data will be further refined during the CAZ consultation work with bus operators.

Table 2: Emission standard of current bus fleet (based on 2011 data)

	High frequency buses (10 times per day or more)	Medium frequency buses (5 times per day or more)	Low frequency buses (under 5 times per day)
2011	Euro 5 = 20 Euro 4 = 23 Euro 3 = 53 Euro 2 = 5 Euro 1 = 2 Euro 0 = 3 Total buses = 106	Euro 5 = 8 Euro 4 = 24 Euro 3 = 2 Euro 2 = 0 Euro 1 = 0 Euro 0 = 0 Total buses = 34	Euro 5 = 11 Euro 4 = 23 Euro 3 = 6 Euro 2 = 4 Euro 1 = 3 Euro 0 = 0 Total buses = 47

7. Table 3 shows the predicted bus fleet composition in 2016 and 2018 without the CAZ intervention, but including the addition of the electric buses for which funding has already been obtained. As with the baseline data the accuracy of these assumptions will be subject to further consultation with operators during the CAZ consultation period. The total non-compliant buses for each year represents the number of vehicles that operators would have to upgrade or replace in order to continue providing the same level of service should the CAZ be introduced.

Table 3: Comparison of bus fleet composition with CAZ entry standards in 2016 and 2018 (based on 2011 data; including recent orders of Ultra low emission buses (ULEBs))

Year	High frequency buses (10 times per day or more)	Medium frequency buses (5 times per day or more)	Low frequency buses (under 5 times per day)
April 2016	ULEB = min 16	ULEB = 0	ULEB = 0
high frequency – Euro 3	Euro 5 = 23 Euro 4 = 21 Euro 3 = 47 Euro 2 = 3 Euro 1 = 2 Euro 0 = 3	Euro 5 = 8 Euro 4 = 24 Euro 3 = 2 Euro 2 = 0 Euro 1 = 0 Euro 0 = 0	Euro 5 = 11 Euro 4 = 23 Euro 3 = 6 Euro 2 = 4 Euro 1 = 3 Euro 0 = 0
medium frequency – Euro 3	Total compliant = 107 Total non-compliant = 8	Total compliant = 34 Total non-compliant = 0	Total compliant = 47 Total non-compliant = 0
low frequency – No standard			
April 2018	ULEB = min 16	ULEB = 0	ULEB = 0
high frequency – ULEB	Euro 5 = 23 Euro 4 = 21 Euro 3 = 47 Euro 2 = 3 Euro 1 = 2	Euro 5 = 8 Euro 4 = 24 Euro 3 = 2 Euro 2 = 0 Euro 1 = 0	Euro 5 = 11 Euro 4 = 23 Euro 3 = 6 Euro 2 = 4 Euro 1 = 3

medium frequency - Euro 4	Euro 0 = 3 Total compliant = 16 Total non-compliant = 99	Euro 0 = 0 Total compliant = 32 Total non-compliant = 2	Euro 0 = 0 Total compliant = 40 Total non-compliant = 7
Low frequency - Euro 3			

The 2016 and 2018 scenarios assume no natural replacement of buses. Total non-compliant buses are likely to be less than listed due to the business-as-usual sale/disposal of older buses and addition of new buses to the fleet over the period.

How would a CAZ be enforced?

8. CYC will work in partnership with local bus operators to develop a CAZ which all operators can comply with. There are two main options available:
 - (a) Development of a voluntary agreement with local bus operators backed up by the implementation of a Traffic Regulation Condition (TRC) at an agreed date in the future. A TRC would prevent entry to certain roads for non-compliant vehicles and prevent new companies from opening up operations in the city that do not comply with the locally negotiated standards. This is the approach used in Oxford.
 - (b) Development of a Statutory Quality Bus Partnership Scheme under which suitable entry requirements would be agreed in writing with bus operators and approved by the traffic commissioner. This approach has been used in Birmingham.

The suitability of the two approaches and associated costs are currently under investigation and will be the subject of further consultation.

9. A CAZ enforced by a TRC or through a SBP agreement would be almost self enforcing, the main workload being administrative tasks associated with ensuring local buses meet the entry criteria and that any upgrading they have undergone is of the required standard. There may be requirements for occasional on street spot checks or camera observations. The need and detail of this is yet to be established.