

Appendix 6: CAZ Options Summary

CAZ Option Summary										
Option	Air Quality Impact	Exceedance Locations	Impact			Health/ Environmental	Costs		Summary	
			Congestion / Travel Time / Operating Costs	Users - Welfare	Users - Charges		Vehicle Upgrade	Implementation	+ves:	-ves
CAZ C Inside the Ring Road (A4540) (Higher price band)	Improvement in emissions does not achieve sufficient reductions in order to meet compliance in 2020 Predicted concentrations are still above the NO2 limit on the A38 and ring road. Additional reductions of up to 11-31% are required (outside and inside the CAZ, respectively).	A4540 Lawley Middleway - Garrison Circus (Outside CAZ) = 41.8 ug/m3 A4100 Digbeth = 41.5 ug/m3 A38 between Children's Hospital and Dartmouth Circus = 42.6 ug/m3 Suffolk St Queensway (nr Beak St) = 45 ug/m3	Negative but small impact:	no welfare impacts as cars not impacted	Negative impacts on taxi, LGV, HGV owners	CAZ C delivers lower benefits in terms of emissions of NOx and PM10 although the differences are not very large when measured in gross emissions (i.e. tonnes rather than concentrations).	Both CAZ C & D share similar costs across vehicle types - CAZ C is slightly better as it does not include cars:	£34m across 10 years Costs for both CAZ scenarios are similar	Affects fewer vehicles (resulting in lower upgrade costs); Less significant economic impacts	Delivers compliance later ~ 2022 Reduced wider health benefits Does not achieve compliance in 2020

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<p>CAZ C + Additional Measures Inside the Ring Road (A4540) (Higher price band) City Centre Network Changes + Signing & Rerouting Further retrofits/upgrades - Taxis, LGVs Parking Measures</p>	<p>Improves air quality with reductions in the number of exceedance locations to 17 exceedance locations remaining</p>	<p>A4540 Lawley Middleway - Garrison Circus (Outside CAZ) = 42.0 ug/m3 A4100 Digbeth = 39.9 ug/m3 A38 between Children's Hospital and Dartmouth Circus = 42.3 ug/m3 Suffolk St Queensway (nr Beak St) = 45.1 ug/m3</p>	<p>Negative impact on journey times.</p>	<p>Welfare impacts from cancelled trips due to parking charges</p>	<p>Negative impacts on taxi, LGV, HGV owners</p>	<p>The CAZ D plus additional measures represents £36m in total benefits over the 10-year period - additional improvements of £12m compared the CAZ C alone.</p>	<p>Both CAZ C & D share similar costs across vehicle types - CAZ C is slightly better as it does not include cars:</p>	<p>£37m across 10 years + ongoing costs of Additional Measures (being calculated)</p>	<p>Affects fewer vehicles (resulting in lower upgrade costs); Less significant economic impacts</p>	<p>Reduced wider health benefits. Delivers compliance later,</p>

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<p>CAZ D Inside the Ring Road (A4540) (Higher price band)</p>	<p>Improves air quality further by reducing emissions from cars but predicted concentrations would still be above NO2 limit on the A38 and ring road in 2020.</p>	<p>A4540 Lawley Middleway - Garrison Circus (Outside CAZ) = 41.5 ug/m3 A4100 Digbeth = 40.3 ug/m3 A38 between Children's Hospital and Dartmouth Circus = 40.6 ug/m3 Suffolk St Queensway (nr Beak St) = 42.7 ug/m3</p>	<p>Shows benefits in terms of transport user travel time and vehicle operating cost savings:</p>	<p>Welfare impacts from cancelled trips due to CAZ charges</p>	<p>Negative impacts on taxi, LGV, HGV, and cars Greater impact on population</p>	<p>CAZ D delivers additional benefits in terms of emissions of NOx and PM10 although the differences are not very large when measured in gross emissions (i.e. tonnes rather than concentrations).</p>	<p>Would result in cars upgrading as well as other vehicles upgrade costs</p>	<p>£34m across 10 years Costs for both CAZ scenarios are similar</p>	<p>Delivers compliance faster ~ 2021 Greater health benefits More upgrades under CAZ D delivers greater CO2 emission savings and other secondary benefits</p>	<p>Affects more vehicles (hence greater upgrade costs); Does not achieve compliance in 2020</p>

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<p>CAZ D + Additional Measures Inside the Ring Road (A4540) (Higher price band) City Centre Network Changes + Signing & Rerouting Further retrofits/upgrades - Taxis, LGVs Parking Measures</p>	<p>Significant reductions in the number of exceedance locations from 12 with a CAZ D alone, to 6 exceedances in 2020 with additional measures</p>	<p>A4540 Lawley Middleway - Garrison Circus (Outside CAZ) = 41.5 ug/m3 A4100 Digbeth = 38.8 ug/m3 A38 between Children's Hospital and Dartmouth Circus = 40.3 ug/m3 Suffolk St Queensway (nr Beak St) = 42.7 ug/m3</p>	<p>Shows benefits in terms of transport user travel time and vehicle operating cost savings, though less than CAZ D alone</p>	<p>welfare impacts from cancelled trips due to parking and CAZ charges</p>	<p>Negative impacts on taxi, LGV, HGV, and cars Greater impact on population</p>	<p>The CAZ D plus additional measures represents £38m in total benefits over the 10-year period - additional improvements of £12m compared the CAZ D alone.</p>	<p>Cost of compliance for users who upgrade their vehicle is estimated to be lower than the CAZ D This is because some users face an additional parking charge in the city centre and will thus choose to change mode or avoid the CAZ zone.</p>	<p>£37m across 10 years + ongoing costs of Additional Measures (being calculated)</p>	<p>Further reductions and delivers compliance faster ~ 2021 (but could be 2020 depending on impact of upgrade to petrol and Euro6d) CAZ D plus additional measures represents £38m in total benefits over the 10-year period - additional improvements of £12m compared the CAZ D alone.</p>	<p>Additional welfare impacts due to cancelled trips due to parking charges.</p>