

Appendix B: Traffic Filters - Corrective Action Framework



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Prepared by:

Steer
14-21 Rushworth Street
London SE1 0RB

+44 20 7910 5000
www.steergroup.com

Prepared for:

Oxfordshire County Council
County Hall, New Road
Oxford OX1 1ND

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1 Introduction

- 1.1 This document sets out a Corrective Action Framework (CAF) containing actions to mitigate any likely unforeseen issues that may arise during the Oxford traffic filters Experimental Traffic Order (ETRO). It forms part of the wider traffic filters Monitoring and Evaluation (M&E) Plan. While the M&E Plan sets out a framework for evaluating impacts of the traffic filters over the whole of the trial period, the focus of the CAF is on providing a framework for implementation of short-term actions that could be undertaken within the ETRO period to address unforeseen issues that are deemed as requiring ameliorative action.

Summary of the traffic filters proposals

- 1.2 Traffic filters are designed to reduce traffic, make bus journeys faster, and make walking and cycling more convenient and safer. When they are operating, car drivers will not be allowed to drive through the traffic filters without a permit. Permits for private cars will be available for the following groups:
- Residents living in Oxford and the wider county
 - Blue Badge holders
 - Professional health and care workers
 - Non-professional carers
 - Patients receiving frequent hospital treatments
 - People with short-term mobility problems
 - Car club vehicles
 - Taxis and private hire vehicles
 - Emergency service and qualifying health service cars
 - Cars used as goods vehicles by businesses based in Oxford permit zone
 - Disabled tax class vehicles
 - Hearses
- 1.3 All other vehicles including buses, motorbikes, vans, HGVs and emergency services, will always be allowed. Traffic signs identify the location of each traffic filter, including operational hours and vehicles that are exempt to travel through. The proposed filter locations are shown in Figure 1-1.
- 1.4 Residents living in the Oxford permit area will be able to apply for a permit to drive through the traffic filters for up to 100 days per year, with a maximum of three permits per household and one permit per person. The proposed permit area is shown in Figure 1-2.
- 1.5 Oxfordshire residents outside of the Oxford permit area will also be able to apply for 25 day permits per year per vehicle. These permits will be made available for one vehicle per person (who must be the registered keeper of the vehicle) up to a maximum of two vehicles per household.

Figure 1-1: Proposed traffic filter locations

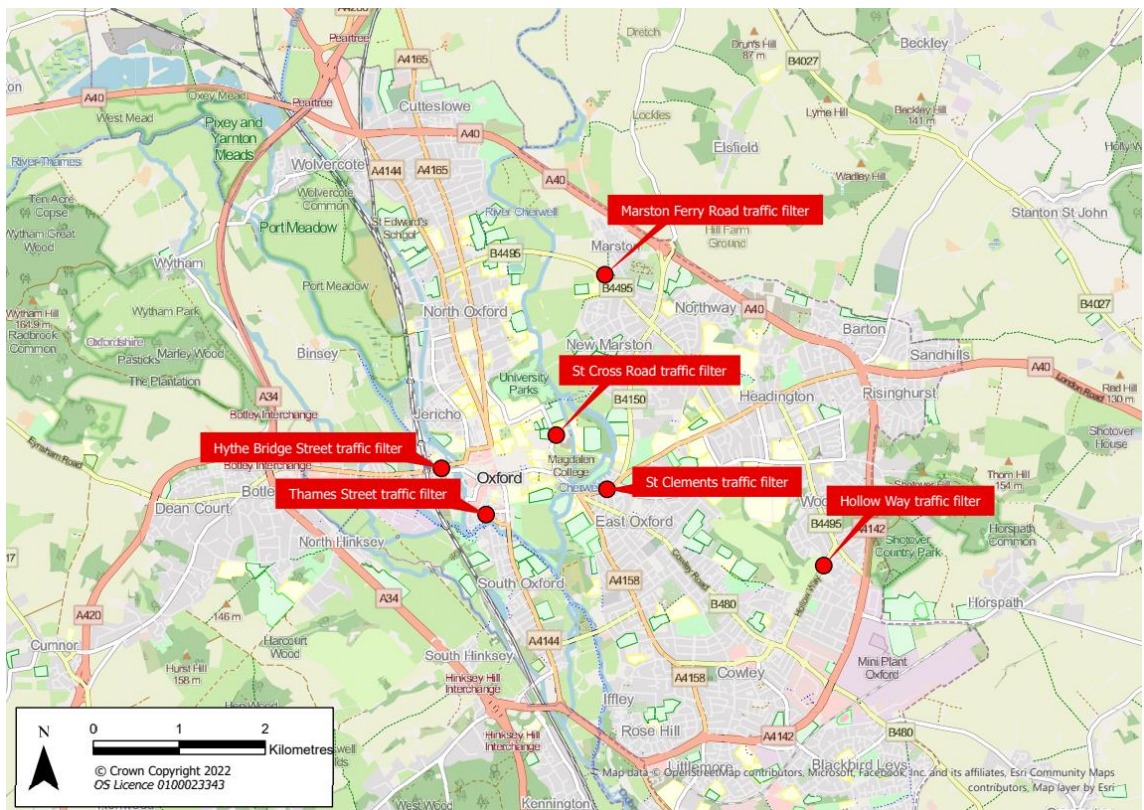
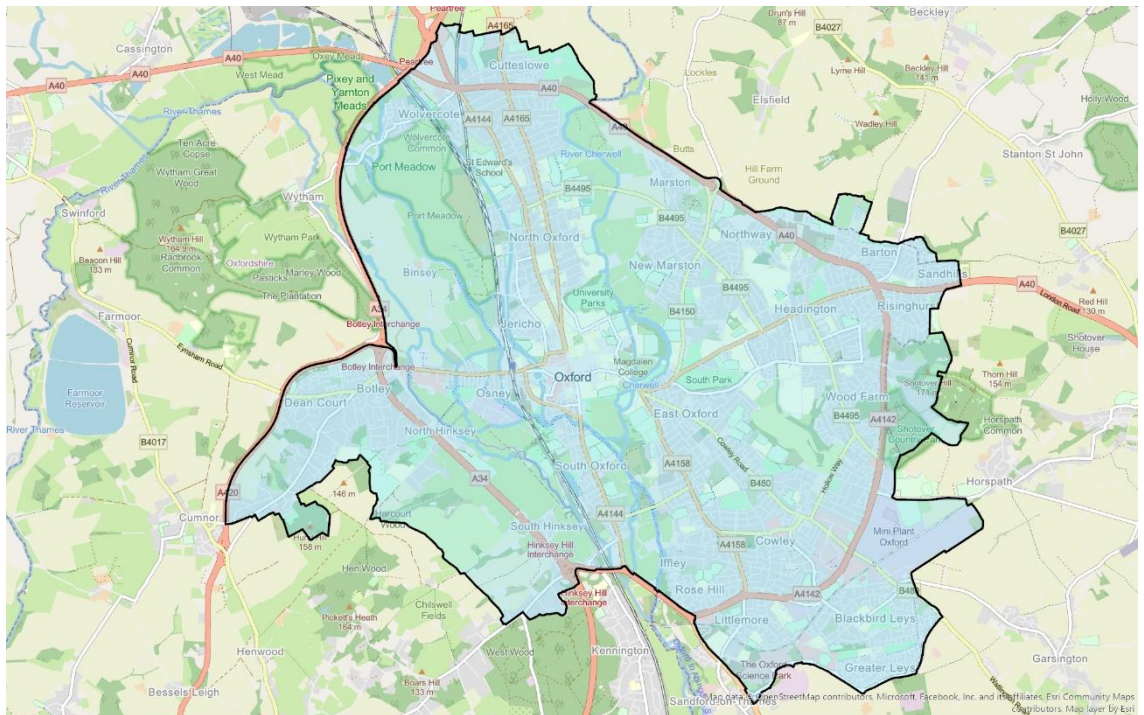


Figure 1-2: Proposed permit area



Structure of this document

1.6 Following this introduction:

- Section two outlines the predicted impacts and stakeholder concerns that have informed the scoping of the CAF;
- Section three defines the scope of the CAF;
- Section four provides the framework for corrective action; and
- Section five contains the governance arrangements for the CAF.

2 Predicted Impacts and Stakeholder Concerns

2.1 Development of the CAF was informed by consideration of:

- the predicted impacts of the filters, as established by modelling and impact assessments undertaken to inform the Cabinet decision to proceed with the ETRO in November 2022; and
- the concerns of the public and stakeholders about potential impacts of the filters, as established by the public consultation and stakeholder engagement prior to the Cabinet decision.

2.2 Those predicted impacts and public/stakeholder concerns are summarised in this section.

Predicted impacts

2.3 The assessment of the impacts of traffic filters against objectives was supported by an evidence base which included traffic modelling, air quality (AQ) modelling, a road safety assessment, a qualities impact report and a business impact assessment report. These assessments were also published alongside the cabinet paper and are available on the Oxfordshire County Council website¹.

2.4 The predicted scheme impacts and benefits which underpin the assessment of scheme performance are, in large part, based on the traffic reduction effects within the city of Oxford, which support:

- **Productivity** by reducing traffic which improves bus journey times and enables reallocation of road space to other modes. It supports overall vision to deliver economic success in a way that is low-carbon, inclusive and sustainable.
- **Improved health and wellbeing** from reduced traffic flows in areas where AQ is poor and there are high volumes of vulnerable users whose health is adversely affected. Less traffic means a more attractive environment for healthy, active modes (walking and cycling) and creates space for further improvements in walking and cycling infrastructure.
- **Healthy place-shaping** through reducing traffic, creating opportunities for pedestrianisation and improving public spaces. Supporting achievement of “healthy streets” indicators relating to clean air, making roads easier to cross, improving safety, enabling walking and cycling and creating places where everyone is welcome and people feel relaxed.

¹ <https://www.oxfordshire.gov.uk/residents/roads-and-transport/connecting-oxfordshire/traffic-filters#paragraph-14153>

- Improvements to the **environment** by enabling people to shift to more sustainable modes of transport with lower carbon emissions and supporting investment in 159 zero emission buses, saving 7,500 tonnes of carbon per year.
- Increased walking and cycling **connectivity** by reducing traffic in areas of high pedestrian and cycle movement. Local goods and freight movements to and within the city will be more efficient, through the exemption for goods vehicles from filters.
- **Inclusivity** through improved local journeys for people in Protected Characteristic Groups including for Blue Badge holders and support/care workers through filter exemptions. Traffic filters will benefit those who currently use buses, including some disabled people, women (who are more likely to use public transport than men), and 'Black/African/Caribbean/Black British' residents who have the highest public transport mode share by ethnic group in Oxford.

2.5 The traffic filter scheme will result in some re-routing of car trips (without a permit or exemption) to avoid the traffic filters, and these re-routed trips would typically be and take longer than the equivalent pre-scheme trip. There is also predicted to be an increase in traffic on certain roads at certain times, including on the Ring Road, Botley Road and Woodstock Road.

Public and stakeholder concerns

2.6 There are concerns from the public and stakeholders about some of the potential impacts of traffic filters, for example traffic displacement effects, impacts on businesses generally and a number of localised issues.

2.7 Some of these concerns are based on the evidence, such as where traffic is predicted to increase, and that journey times will increase for some (re-routed) tips, whereas other concerns are more general in nature.

2.8 The traffic filters consultation report identified the key concerns expressed by respondents in their responses to the consultation. These have been grouped by theme as follows:

Access by car

- General concerns about reduced access for car drivers;
- Concerns for access to the hospital and schools; and
- Concerns regarding access to the ice rink.

Scope of the scheme

- The Marston Ferry Road and/or Hollow Way traffic filters being unnecessary.

Exemptions and resident permits

- Specific concerns about access for non-professional carers and people with mobility problems that do not qualify them for a blue badge;
- Exemptions being excessive and potentially undermining the scheme's benefits; and
- Queries around the areas included in the residential permit scheme, for example why is Kennington not included?;
- Concerns about permit cost;
- Concerns around the specifics of the exemptions/suggestions for changes (concerns about three vehicles per household and potential abuse of the system plus 100 day passes being too many/too few and the suggestion for electric car users to be allowed through; and
- Queries regarding exempting HGVs and vans.

Impacts of traffic displacement

- Displaced traffic - particularly concerns about additional traffic on Botley Road and the ring road;
- Feeling that it may create more pollution by diverting traffic; and
- Concerns for longer journey times.

Suitability of alternative travel options

- Public transport does not provide an adequate alternative for some journeys, there needs to be general improvement before the filters are implemented; and
- Current infrastructure concerns - views that the surrounding infrastructure will not support the changes.

Equity

- Concerns for certain sections of society (for example, elderly less likely to cycle).

Business impact

- Impact on businesses - these plans will impact the local economy and may cause businesses to close due to lack of passing trade; and
- Concerns regarding enforcing the scheme - will some try to abuse the system?

Consultation approach

- Insufficient evidence provided in the consultation; and
- Concern that peoples' views will be ignored after the consultation period.

Stakeholder concerns

Impacts of traffic displacement

- Large forecast increases in traffic on links materialise, for example Woodstock Road, Botley Road;
- Marginal increases in traffic forecast on links unexpectedly see larger increases such as the ring road and A34; and
- Changes in traffic flows differ from forecast to an extent which prevents the scheme objectives from being achieved.

Air quality impacts

- Air quality 'hot spots' increase more than expected i.e. greater than 40µg/m³ e.g. Botley AQMA, north Oxford.

Realisation of benefits

- Forecast improvements in bus journey time and journey time reliability not materialising.

3 Defining the Scope of the CAF

Monitoring and Evaluation Plan

- 3.1 The traffic filters are being implemented as a trial under an ETRO. Following the ETRO trial a decision will need to be taken on whether, and in what form, the traffic filter scheme should be made permanent.
- 3.2 This decision relies on evidence of the scheme's efficacy and impacts to support informed decision-making. The M&E Plan will provide an opportunity to determine how effective the traffic filters are in reducing traffic levels in Oxford, as well as delivering other benefits resulting from this such as quicker and more reliable bus journeys, modal shift from private car to walking, cycling and public transport use, better AQ and reduced exposure to air pollution.
- 3.3 A Monitoring Framework was published in November 2022 for the Cabinet meeting, which proposed a broad range of monitoring and data collection activities.
- 3.4 Following the Cabinet decision to proceed with the traffic filter ETRO the Monitoring Framework was developed into a M&E Plan detailing the proposed approach to monitoring and evaluation².

Corrective Action Framework (CAF)

Principles

- 3.5 The framework for the CAF is based on discussions between Steer and OCC officers during January 2023. In those discussions the following principles for the CAF were agreed:
- CAF should be a framework setting out a menu of potential corrective actions.
 - Specific, quantitative trigger points such as extent of congestion should be avoided.
 - There needs to be clear governance transparent and includes a clear mechanism for member decision making.
 - The number of changes should be minimised.

Corrective Action Framework

- 3.6 Evaluation is essentially a 'backward looking' exercise, whereby monitoring data is employed to assess whether, and the extent to which, an intervention has met its intended objectives. The evaluation of impacts of impacts is usually taken at periodic interval after the scheme has opened – typically after 1, 3 or 5 year. The evaluation of traffic filters will take place towards the end of the ETRO period, to inform the decision on whether, and in what form, to make the scheme permanent.

² Traffic Filters Monitoring and Evaluation Plan, Steer, February 2023

- 3.7 The purpose of the CAF is to use ongoing monitoring data to identify and assess potential issues that may arise during the course of the ETRO, and which may require ameliorative action.
- 3.8 The presence, scale and nature of these potential issues are, by definition, not certain or fully knowable before the ETRO is underway. However, the purpose of the CAF is to take a forward looking and pre-emptive perspective to consider ‘what if’ scenarios and consider potential actions that could be considered should these ‘what if’ issues arise.
- 3.9 While some issues can be anticipated, there may be others that occur that we have not foreseen. The purpose of the CAF is to provide a framework for the considerations of potential impacts should they arise, and also to assess unintended and/or unforeseen impacts. The CAF is not intended to set out a prescribed course of action should a specific impact occur.

Key considerations

CAF in the context of the ETRO

- 3.10 The intention of ETRO trial is to monitor impacts over a reasonable period. The purpose of the CAF is to identify issues and to consider how/whether refinements to scheme elements or associated measures can mitigate any adverse effects (e.g., predicted impacts that are more acute than predicted and/or unintended adverse impacts).
- 3.11 As such, fundamental changes (removal of filters) are not within the scope of the CAF – this is part of the ETRO purpose and decision.
- 3.12 The traffic filters scheme works as an integrated whole. It is not therefore possible to ‘mitigate’ a specific undesirable effect (e.g., traffic impact) in location X without potentially compromising overall scheme. For the same reason, the CAP should avoid defined ‘thresholds’/trigger-points and a pre-defined corrective action, as the scheme is too complex in nature for this approach to be sensible. Rather, the CAF acts a framework to consider scenarios and a menu of options. This framework should inform the specific ‘corrective’ response, not pre-determine it.

Timing of corrective actions

- 3.13 There are a range of potential measures/actions under consideration for implementation within the ETRO timeframe.
- 3.14 However, any corrective actions need to be considered not just on their own merit, but also as part of the scheme as a whole. It therefore makes sense for a ‘plan’ comprising corrective measures to be approved and implemented at or around the same time.
- 3.15 The timing of implementing corrective actions is also affected by the fact that:
- There needs to be sufficient time to observe, monitor and understand the nature of any potential issues. Many issues will be related to complex ‘cause and effect’ interactions between patterns of movement and transport network performance. There will also almost certainly be an initial period within the ETRO where issues arise during a period of adaptation, which may then settle; and
 - For some actions, there will be a ‘lag’ between problem identification and how quickly corrective ‘levers’ can be pulled to address problem.
- 3.16 This suggests that the preferred approach would be to consider proposed CAF measures together at key intervals within the ETRO period.

4 Framework for Corrective Action

4.1 This section sets out a framework for corrective action to address unintended and/or unforeseen impacts that are considered as requiring action during the ETRO period.

Areas potentially requiring corrective action

4.2 Areas potentially requiring corrective action have been identified based on:

- Predicted impacts (i.e. significant variation from the impacts predicted by the modelling and impact assessments that supported the ETRO decision); and/or
- Stakeholder / public concerns established during the public and stakeholder consultation and engagement that informed the ETRO decision.

4.3 Monitoring data will help assess the nature and scale of the specific issue including:

- Implications for achievement of specific traffic filter objectives;
- Acceptability of wider impacts of traffic displacement;
- Impact on specific impact groups (equalities, business); and
- Impact on specific locations.

4.4 Table 4-1 identifies some issues requiring potential corrective actions, grouped by the key themes arising from public and stakeholder consultation.

Table 4-1 Issues potentially requiring corrective action

Issue	Need to corrective action if...	Potential corrective actions for specific issues
Theme: Impacts of traffic displacement		
A34 Traffic	<ul style="list-style-type: none"> • Flows increase significantly • Road performance deteriorates 'flow breakdown', congestion 	<ul style="list-style-type: none"> • Speed limit of 50mph • Signal priorities • Information / VMS / advance warnings
Key roads where modelling predicted potential increases (Botley Road/Woodstock Road)	<ul style="list-style-type: none"> • Flows increase significantly • Road performance deteriorates 'flow breakdown', congestion 	<ul style="list-style-type: none"> • Information / VMS / advance warnings • Traffic management • Demand management / travel planning (Westgate)
Theme: Scope of the scheme		
Need for, impact of, MFR/HW filter	<ul style="list-style-type: none"> • Impacts on general traffic deemed unacceptable by public/stakeholders 	<ul style="list-style-type: none"> • None - this is being assessed within the proposed ETRO.

Issue	Need to corrective action if...	Potential corrective actions for specific issues
Increases in local / minor / residential roads including those where modelling predicted increases (e.g. Old Road)	<ul style="list-style-type: none"> Re-routing causes unacceptable increases on local roads 	<ul style="list-style-type: none"> Local measures (speed restrictions / calming)
Theme: Exemptions and resident permits		
Changes to nature of traffic as result of HGV/LGV exemption	<ul style="list-style-type: none"> Significant increase in HGVs / LGVs through filters Impacts on AQ, safety, traffic reduction 	<ul style="list-style-type: none"> General LTCP initiatives to provide alternatives to motorised freight e.g. consolidation, e-cycle freight Partially mitigated by ZEZ which would restrict through trips.
Theme: Realisation of benefits		
Traffic reductions in core area do not deliver objectives of reducing bus journey times	<ul style="list-style-type: none"> Car traffic reductions less than predicted and Journey time improvements to bus marginal 	<ul style="list-style-type: none"> No action during ETRO period Post ETRO option to amend permit / exemptions.
Need for, impact of, MFR/HW filters	<ul style="list-style-type: none"> MFR does not have desired impact on objectives (e.g. bus journey time) and/or Impacts deemed unacceptable by public/stakeholders 	<ul style="list-style-type: none"> No action during ETRO period This is being assessed within the proposed ETRO.
Bus journey time improvement less than target	<ul style="list-style-type: none"> Bus journey time improvement less than predicted and Potential impact on Bus Service Plan and/or general provision, linked to EP undertakings 	<ul style="list-style-type: none"> Bring forward other measures to improve bus journey times (from those in EP and/or identified measures within WPL complementary measures) Would require additional funding.
Safety related issues	<ul style="list-style-type: none"> Safety concerns at/ around filter locations 	<ul style="list-style-type: none"> Adjustments to filter design and related signage / traffic calming
Theme: Air Quality impacts		
Air Quality exceedances	<ul style="list-style-type: none"> Significant/attribution traffic increases result in worsening of AQ potentially exceeding threshold level 	<ul style="list-style-type: none"> Area specific action plan measures, most likely delivered through AQMA process. [plus actions as per 'Key Roads']
Theme: Equity		

Issue	Need to corrective action if...	Potential corrective actions for specific issues
Disproportionate impacts on people who do not qualify for exemptions (e.g. older people)	<ul style="list-style-type: none"> • Significant health/wellbeing issue identified such as difficulty accessing healthcare/social care 	<ul style="list-style-type: none"> • Additional permits/exemptions for affected population • Impacts identified by EqIA have been mitigated by permit/exemptions, so assume any additional exemptions are for exceptional unidentified impacts on small number of people
Theme: Systems issues		
Traffic filter systems	<ul style="list-style-type: none"> • ANPR system failure 	<ul style="list-style-type: none"> • Temporary pause in enforcement while issues rectified
Permit issues	<ul style="list-style-type: none"> • Efficiency of process • Issues for specific exempted / permit holder groups e.g. non-professional carers such as delays in obtaining permits/inability to access system 	<ul style="list-style-type: none"> • Temporary pause in enforcement while issues rectified

'Toolkit' of corrective actions

4.5 From the above (specific actions), set of general interventions can be identified under broad 'themes'.

4.6 We highlight:

- Short-term actions that could be undertaken within the ETRO period.
- Longer-term mitigations that address issues identified within the ETRO period, but which are not realistically deliverable within the ETRO period. These could be identified as proposed changes to any permanent TRO order.

Table 4-2 Thematic actions within CAF 'Toolkit'

Corrective action themes	Examples	Addresses
Short-term mitigations (within ETRO period)		
Incident response	<ul style="list-style-type: none"> • Temporary "opening" of filters to all traffic 	<ul style="list-style-type: none"> • Major incident on highways network
Information and messaging	<ul style="list-style-type: none"> • Before journey - Information / messaging • On journey - VMS/'Real time' • Amendments to signage 	<ul style="list-style-type: none"> • Traffic-related issues • Impacts resulting from traffic e.g. AQ
Traffic management	<ul style="list-style-type: none"> • Signal re-timing • Minor junction works (lane layout) 	<ul style="list-style-type: none"> • Unforeseen localised congestion or safety issues
Safety measures	<ul style="list-style-type: none"> • Filter location/ localised design • Speed limits 	<ul style="list-style-type: none"> • Unforeseen localised safety issues
Equalities impacts	<ul style="list-style-type: none"> • Additional exemptions 	<ul style="list-style-type: none"> • Unforeseen disproportionate impacts on certain groups
ANPR system/back-office ³	<ul style="list-style-type: none"> • Temporary pause in enforcement 	<ul style="list-style-type: none"> • System failure
Longer-term mitigations (permanent scheme)		
Permit eligibility	<ul style="list-style-type: none"> • Tighten eligibility / permit criteria (reduce annual day passes) • Relax eligibility / permit criteria (reduce annual day passes) 	<ul style="list-style-type: none"> • Changes in traffic flow/bus journey times being less/ more than expected
HGV / LGV exemption	<ul style="list-style-type: none"> • Remove or alter exemption (e.g. to exempt LGV but not HGV / link exemption to emissions) 	<ul style="list-style-type: none"> • Excessive number of HGV/LGV trips through filters and associated safety/AQ/place impacts
Targeted Bus priority	<ul style="list-style-type: none"> • Additional bus priority (bus lanes/signal priority) at key sections worsened by traffic filters 	<ul style="list-style-type: none"> • Reduction in traffic bus journey times being less than expected

³ We have included this for completeness, but this is not a 'corrective action' that is based on ongoing monitoring of traffic or other impacts.

Timing of CAF

- 4.7 While corrective actions may be enacted from the commencement of the ETRO (e.g. to address public safety issues), for most of the potential unforeseen outcomes to which the CAF would apply there is a need for a longer period of monitoring before any corrective action. Additionally, some potential mitigations (such as additional bus priority for example) may not be achievable within the short-term and require additional modelling/assessment/funding that would preclude implementation during the ETRO period.
- 4.8 Indicative typical lead-in times for potential corrective actions identified are shown in Table 2.3.

Table 4-3: Indicative lead in times for corrective actions

Corrective action	<3 months	3-6 months	6-9 months	12+ months
Speed limit change				
Signal priority change				
Additional signage/information				
Traffic management/layout change				
Additional traffic calming				
LTCP initiative such as freight consolidation				
Bus priority measures				
Adjustment to layout/signage at filter locations				
Additional permits or exemptions				
Temporary pause in enforcement				

Governance and delivery of the CAF

- 4.9 OCC and its partners will develop the governance and decision-making arrangements for the traffic filter programme as a whole. This is likely to include Traffic Filter Monitoring and Evaluation working group that will be formed to implement and oversee the wider Traffic Filter M&E Plan, of which the CAF forms part of. We suggest that the Corrective Action Framework would be a standing item on the working group agenda.

Control Information

Prepared by

Steer
14-21 Rushworth Street
London SE1 0RB
+44 20 7910 5000
www.steergroup.com

Prepared for

Oxfordshire County Council
County Hall, New Road
Oxford OX1 1ND

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Author/originator

IMB

Reviewer/approver

TWH

Other contributors

TWH

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