Report
July 2023

Traffic Filters Monitoring and Evaluation Plan

Oxfordshire County Council
Our ref: 24194201
Client ref: OCC/SW

steer

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1 Introduction and Overview

Traffic filter proposals

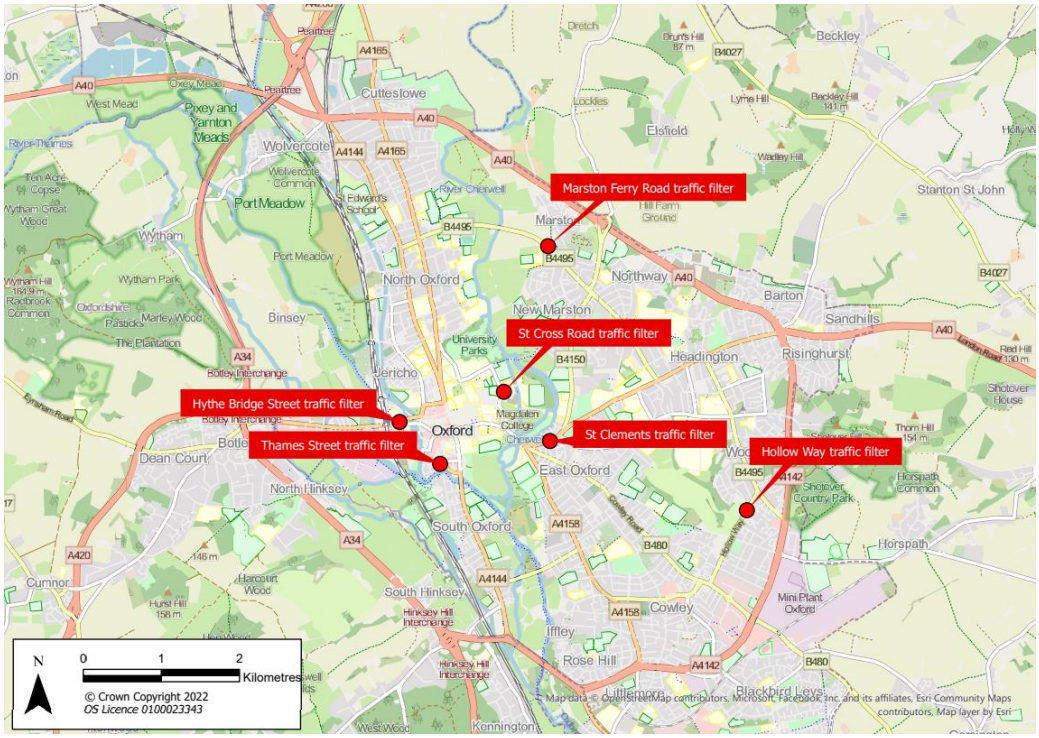
1.1 Traffic filters are designed to reduce traffic, make bus journeys faster, and make walking and cycling more convenient and safer. When they are operating, drivers of private cars will not be allowed to drive through the traffic filters without a permit. All other vehicles including buses, taxis, motorbikes, vans, HGVs and emergency services, hearses and cars used as goods vehicles by businesses based in the Oxford permit area, will always be allowed. Traffic signs identify the location of each traffic filter, including operational hours and vehicles that are exempt to travel through.

1.2 Automatic number plate recognition (ANPR) cameras will be installed to monitor vehicles going through the traffic filters. Any driver of a vehicle that goes through the traffic filter and is not exempt or using a permit, will be charged a penalty (currently £70). The traffic filters will operate 7 days a week from 7am to 7pm, apart from traffic filters on Marston Ferry Road and Hollow Way which will operate Monday to Saturday 7am to 9am and 3pm to 6pm (although if monitoring suggests operating hours on Marston Ferry Road and Hollow Way need to be extended to 7am to 7pm, this change can be made).

1.3 The scheme includes six traffic filters. Three of these will be located in the city centre on St Cross Road, Thames Street and Hythe Bridge Street. The remaining three filters will be located on St Clements, Marston Ferry Road and Hollow Way.

1.4 The filter locations are shown in Figure 1-1.

Figure 1-1: Traffic filter locations



Exemptions

For the trial, the following vehicles will be exempt from the traffic filters. This means they can travel freely, at all times and without applying for a permit.

- Buses
- Coaches
- Mopeds
- Motorbikes
- Vans (excluding people carriers)
- Heavy goods vehicles (HGVs)

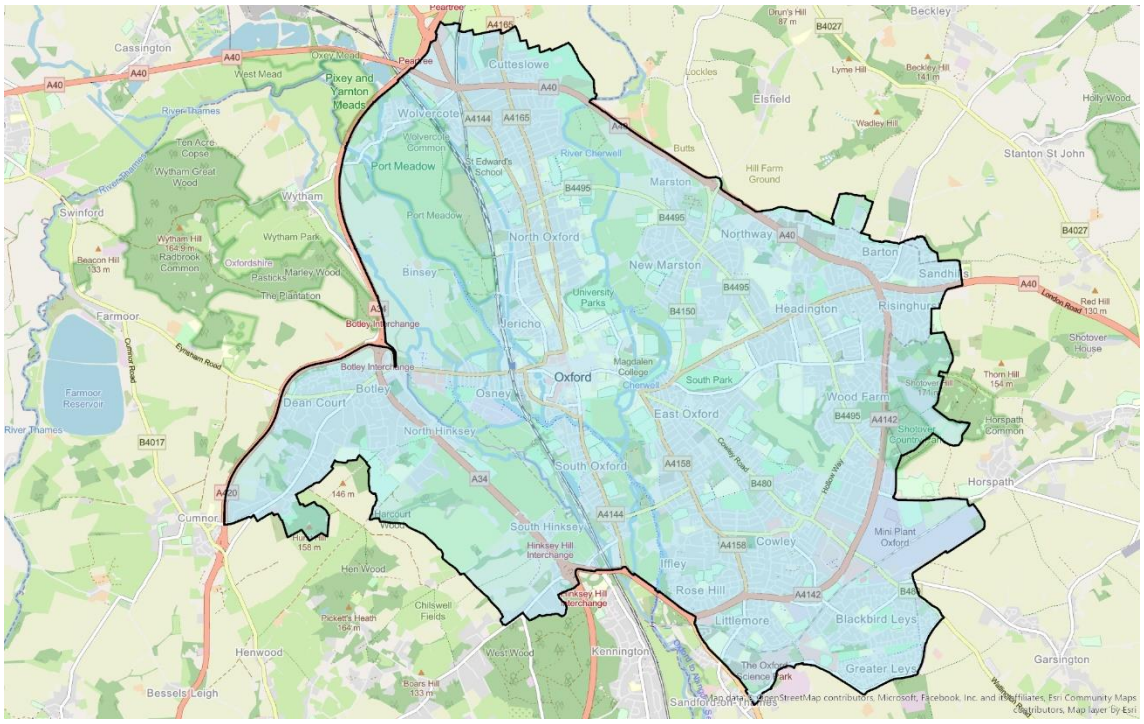
Permits

1.5 Permits for private cars will be available for the following groups.

- Residents living in Oxford and the wider county (see details below)
- 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

1.6 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 area includes Oxford City Council's administrative area, North Hinksey Parish, South Hinksey Parish, Cumnor Parish east of the A420, including Botley, Dean Court, Cumnor Hill, Chawley and parts of Cumnor. The Oxford permit area is shown in Figure 1-2.

Figure 1-2: Oxford Traffic Filter permit area



1.7 Oxfordshire residents outside of the Oxford permit area will also be eligible for 25 day permits per calendar 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. The permits will allow users to travel through any of the six traffic filters at any time during that day.

Purpose of Monitoring and Evaluation (M&E) Plan

1.8 The traffic filters are being put into effect as a trial under an experimental traffic regulation order (ETRO). Following the ETRO trial (minimum of 6 months including a public consultation), a decision will need to be taken on whether, and in what form, the traffic filter scheme should be made permanent. This decision needs to be taken within 18 months of the start of the ETRO.

1.9

1.10 This decision partly 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, more walking and cycling , increased public transport usage, better air quality (AQ) and reduced exposure to air pollution.

1.11 There have been concerns from the public and stakeholders about some of the potential impacts of traffic filters, for example increased traffic and air pollution in other areas and negative impacts on businesses. The monitoring will also help to identify whether any changes are

required to the traffic filters, including to the scheme design and/or further supporting measures, to ensure scheme benefits are realised and/or to mitigate any negative impacts.

1.12 For the Oxfordshire County Council (OCC) Cabinet meeting in November 2022 (at which the decision to proceed with the traffic filters under an ETRO was made), a Monitoring Framework was published which proposed a broad range of monitoring and data collection activities. This document develops that Monitoring Framework into a M&E Plan, setting out the proposed approach to monitoring end evaluation.

Consultation and engagement

1.13 OCC will lead a public consultation on the traffic filters and will continue to communicate with the public and stakeholders before and throughout the ETRO period. This consultation and engagement is separate from M&E – the findings of the public consultation will be reported separately.

Structure of Monitoring and Evaluation Plan

- The traffic filters have been developed to contribute across a range of objectives. These objectives are set out in **Chapter 2**, along with the strategic assessment of the traffic filters against these objectives, based on the predicted impacts of the scheme.
- The overall evaluation approach is set out in **Chapter 3**. This sets out the key evaluation questions, and the overall approach to the evaluation, which is based on a 'theory of change' approach based on Government evaluation guidance.
- **Chapter 4** to **Chapter 7** sets out how, within the evaluation, 'predicted' impacts (informing the traffic filter ETRO decision) will be compared with actual impacts (post-implementation):
  - Transport outputs (**Chapter 4**): Have traffic filters been implemented 'on the ground' as per the scheme definition at ETRO?
  - Transport outcomes (**Chapter 5**): Has the scheme delivered the predicted changes in transport metrics, including traffic reductions/changes, journey times and demand for non-car modes?
  - Wider policy outcomes (**Chapter 6**): Has the scheme delivered the intended benefits across wider policy outcomes such as health, the environment and inclusion?
  - Impacts (**Chapter 7**): What is the overall impact of the traffic filter scheme in delivering its intended objectives and, hence, its overall impact in supporting policy?
- **Chapter 8** summarises the monitoring data that will be collected and analysed to support the overall evaluation. **Appendix A** provides further detail on the monitoring data.
- The proposed M&E Reporting is set out in **Chapter 9**.
- **Appendix B** provides a **Corrective Action Plan** outlining potential mitigations during the ETRO and the governance arrangements for implementation.

2 Policy Context, Traffic Filter Objectives and Expected Impacts

Introduction

2.1 The traffic filters are a key intervention among a range of policies and interventions within the Oxfordshire Local Transport and Connectivity Plan (LTCP) and Central Oxfordshire Travel Plan (COTP). The LTCP and COTP provide the policy and objective-led rationale for traffic filters, and set out key policy outcomes, metrics and targets that the Plans aim to deliver against. The objectives for the traffic filter scheme have been framed by the LCTP and COTP, and the assessment of filters based on the contributions of filters in meeting LCTP objectives and targets.

Policy context - Local Transport and Connectivity Plan

2.2 In July 2022 Oxfordshire adopted its new Local Transport Plan, setting out its long-term county-wide transport strategy. The Local Transport and Connectivity Plan sets out the County's long-term vision for transport in the county and the policies required to deliver this. The LTCP reaffirms the centrality of traffic filters as a key policy in delivering the transport and wider objectives of Oxfordshire.

Vision, key themes and targets of LTCP

Vision

2.3 The vision outlines a clear long-term ambition for transport in the county and underpins the policies in the LTCP.

*"Our Local Transport and Connectivity Plan vision is for an **inclusive and safe net-zero Oxfordshire transport system that enables all parts of the county to thrive**.*

*It will **tackle inequality, be better for health, wellbeing and social inclusivity and have zero road fatalities or life-changing injuries**. It will also **enhance our natural and historic environment** and enable the county to be one of the world's leading innovation economies.*

*Our plan sets out to achieve this by **reducing the need to travel and private car use through making walking, cycling, public and shared transport the natural first choice**."*

Key themes

2.4 In support of the draft vision, six key themes have been identified. These are the specific areas OCC is seeking to transform through implementation of the vision, and describes the outcomes that OCC hopes to deliver for each key theme.

- **Environment** - Outcome: Sustainable communities that are resilient to climate change, enhance the natural and historic environment, improve biodiversity, reduce greenhouse gas emissions and are supported by our net-zero transport network.

- **Health** - Outcome: Improved health and wellbeing and reduced health inequalities, enabled through active and healthy lifestyles, improved road safety and inclusive communities.
- **Healthy place shaping** - Outcome: Sustainable, well designed, thriving communities where healthy behaviours are the norm and which provide a sense of belonging, identity and community.
- **Productivity -** Outcome: A world leading business base that is sustainable, has created new jobs, products and careers for all communities and is supported by an effective, net-zero transport network.
- **Connectivity** - Outcome: Communities are digitally connected, innovative technologies are supported and there is improved connectivity and mobility across the county, enabling greater choice and seamless interchange between sustainable modes.
- **Inclusivity** - Outcome: Barriers to access are removed and all communities are supported by our inclusive transport system to play a full role in society and have independence, choice and control.

Challenges

2.5 The key themes respond to key challenges identified within the LTCP, as summarised in Table 2-1.

Table 2-1: LTCP challenges

LTCP challenge	Description
Decarbonisation	Decarbonisation is a key overriding challenge that the LTCP seeks to address. In order to limit global warming to well below 2°C and pursue efforts to limit warming to 1.5°C, the UK government has made a legal commitment to deliver net-zero emissions by 2050. Transport is responsible for the largest proportion of greenhouse gas emissions in the county (36%). **Therefore, there is an urgent need to decarbonise all forms of transport in the county. LTCP states: "we must increase the share of trips taken by walking, cycling, public and shared transport and support uptake of zero-emission vehicles."**
The private car	There has been a huge rise in car use across the UK since 1952. This trend is reflected within Oxfordshire with a 36% increase in vehicle miles since 1993. In 2019, total vehicle miles driven in Oxfordshire passed 4 billion for the first time. This is having negative impacts for example, congestion is disrupting journeys and accommodating and managing vehicles in Oxfordshire's towns and villages has created environments that have become less welcoming places for people. **Encouraging a change in behaviour to tackle private car use will be a significant challenge.**
Future growth	Current forecasts are for over 85,000 new jobs and 100,000 new homes in the county between 2011 and 2031. Such growth will have a significant impact on the county's transport network, with more people and goods needing to use it. **Given the scale of growth, more radical solutions are needed to transform transport in Oxfordshire.**
Connectivity	Current forecasts are for over 85,000 new jobs and 100,000 new homes in the county between 2011 and 2031. Such growth will have a significant impact on the transport network, with more people and goods needing to use it. **Given the scale of growth, more radical solutions are needed to transform transport in Oxfordshire.**

LTCP challenge	Description
	Another key area is the **need to improve walking and cycling connectivity** to enable more journeys by these modes. There is also a **need to better manage movement of freight and goods**, both in rural and more urban areas. There is also a **need to improve other forms of connectivity such as digital connectivity**. This will help reduce the need to travel and provide residents with the ability to work, shop and access services such as GP appointments from home.
Inclusivity	Different communities experience transport differently and some communities are excluded from transport because of affordability, accessibility or geography. **It is important to recognise and remove these barriers to create an accessible and fair transport system for all residents.** The accessibility of the transport system is a particularly key issue for disabled people. There are estimated to be 131,400 people with a disability in Oxfordshire, 19% of the population. LTCP notes that it is important to address the barriers faced by disabled people and use inclusive design to ensure the transport system is accessible to all. The cost of transport is also a key determining factor affecting its use. The cost of living has been increasing across the UK since early 2021 and in April 2022, inflation reached its highest recorded level. This is affecting the affordability of goods and services, including transport, for households. There is a need for us to support measures to address these issues and improve the affordability of transport.
Wider challenges	Transport is also critical to addressing wider challenges, notably public health, inequalities, AQ, and safety.

Headline targets

2.6 The headline targets of the LTCP are:

- By 2030
  - Replace or remove 1 out of every 4 current car trips in Oxfordshire
  - Increase the number of cycle trips in Oxfordshire from 600,000 to 1 million cycle trips per week
  - Reduce road fatalities or life changing injuries by 50%
- By 2040
  - Deliver a net-zero transport network
  - Replace or remove an additional 1 out of 3 car trips in Oxfordshire
- By 2050
  - Deliver a transport network that contributes to a climate positive future
  - Have zero, or as close as possible, road fatalities or life-changing injuries

2.7 These targets focus on two key inter-related areas. First, to deliver the vision of a zero-carbon transport network and second, to substantially reduce the number of car trips in Oxfordshire that is necessary to support the transition to a zero-carbon network and to address the key challenges identified in the LTCP. To deliver the LTCP vision requires the key transport challenges (summarised in Table 2-1:) to be addressed.

2.8 The traffic filter proposals have been developed as one of a number of interventions within the LTCP to deliver long-term LTCP policy priorities.

Central Oxfordshire Travel Plan (COTP)

2.9 The Central Oxfordshire Travel Plan (COTP) has been developed as part of the LTCP. The key challenges for Central Oxfordshire are:

- **Climate and emissions:** Exceedance of legal emission levels and the need to rapidly reduce carbon emissions from all transport related activities.
- **Housing, jobs, and regeneration**: Over the period 2011 to 2031, 100,000 new homes will be built in Oxfordshire, with at least 15,000 required to meet Oxford City's unmet housing need.
- **Attractive sustainable travel**: Levels of congestion across the area cause unreliable journey times for many people. Based on current trends, increased demand for movement in the area will exacerbate congestion in future years. Space efficient travel options, like public transport and active travel, can help address this challenge. At present, sustainable travel options in the area have issues including:
  - Time and reliability - Average bus speeds in Oxford have been declining on key routes to and from the city centre and employment sites, with only 8mph achieved between the John Radcliffe hospital and city centre via Cowley Centre during weekday peaks.
  - Safety – The Oxfordshire Cycle Survey 2019 identified 'Traffic Safety' as the single biggest issue for people cycling in Oxford.
- **Equality**: The area includes some of the most deprived areas in the county.
- **Health**: Physical inactivity and obesity remains one of the area's most significant and growing health issues.

Implementation of traffic filters is one of three major transport proposals (alongside a workplace parking levy and zero emission zone) for Oxford City within the COTP, which aims to achieve:

- A flagship comprehensive zero-emission bus network, able to travel at the speed limit 24 hours a day, 7 days a week.
- A comprehensive, safe cycle network, to rival the best in Europe.
- Beautifully designed streets and public spaces, with clean air.
- A reduced impact of private vehicles where roads are congestion-free for residents, visitors, and businesses to make essential journeys in zero-emission vehicles.
- Carbon neutral transport for a carbon neutral city. Prioritising measures and approaches that utilise minimal resources.
- A travel hierarchy prioritising sustainable travel and promoting 20-minute neighbourhoods where everything people need for their daily lives can be found within a 20-minute walk.
- Improved safety realised through a Vision Zero approach to transport safety across the area.
- An inclusive transport network that improves accessibility for all of our residents.

Traffic filter objectives

Objectives and assessment against objectives

2.10 The LTCP provides the current policy context for the traffic filters. Specific traffic filter objectives have been developed that are based on and 'nested' under the key outcome-related themes of environment, health, place-shaping, productivity (economy), connectivity and inclusivity. These

objectives were set out in a Strategic Assessment[1] that informed the November 2022 Cabinet decision.

2.11 The traffic filter objectives are summarised in Table 2-2, along with the assessment against objectives.

Evidence of predicted impacts

2.12 The assessment against objectives was supported by an evidence base which included traffic modelling, air quality modelling, a road safety assessment, a qualities impact report and a business impact assessment report.

2.13 These assessments were also published alongside the Cabinet paper and are available on the OCC website[2].

2.14 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 the 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.
- 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 (PCGs) 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.

[1] Traffic Filters – Strategic Assessment, November 2022 available at: **https://www.oxfordshire.gov.uk/sites/default/files/file/roads-and-transport-connecting-oxfordshire/Strategic_Assessment_traffic_filter.pdf**

[2] **https://www.oxfordshire.gov.uk/residents/roads-and-transport/connecting-oxfordshire/traffic-filters#paragraph-14153**

2.15 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.

2.16 An increase in traffic on certain roads at certain times was predicted by the traffic modelling assessment, including on the Ring Road, Botley Road and Woodstock Road. These predicted impacts also inform the overall assessment summarised in Table 2-2.

Table 2-2 Traffic filters scheme objectives and performance (predicted) against objectives (from Strategic Assessment Report, November 2022)

Theme (impact)	LTP outcome	Traffic filters objective	Performance against objective	How traffic filters contribute
Productivity	A world leading business base	Support sustainable housing and jobs through effective use of all available transport capacity through innovative management of the network.	Strong positive	✓ Reduce traffic within the city. ✓ Support reallocation of road space to other modes. ✓ Improve bus journey times.
Productivity	A world leading business base	Support transition to low carbon economic growth through accelerating the transition to a zero-carbon transport network.	Moderate positive	✓ Enable mode shift from car to more sustainable modes. ✓ Enable investment in 159 zero emission buses. ✓ Facilitate place shaping enabling design of streets prioritising people over vehicles.
Productivity	A world leading business base	Tackle post-COVID decline in bus network and support investment in strategic public transport networks.	Strong positive	✓ Improve bus journey times, increasing the productivity of bus services which will make them more viable. ✓ Reduce journey times making buses more attractive, increasing bus demand, increasing viability of services.
Productivity	A world leading business base	Support economic growth and vitality across the county.	Moderate positive	✓ Support desired outcomes of improved quality of life, health and place that are key to making Oxford a more attractive place to live, work and invest. ✓ Support the overall vision to deliver economic success in a way that is low-carbon, inclusive and sustainable. × Filters would increase flows on the ring road and A34, affecting journey times for business and freight.
Health	Improved health and wellbeing	Improve local AQ through the reduction of transport emissions.	Strong positive	✓ Reduce traffic flows in areas where AQ is poor and there are high volumes of

Theme (impact)	LTP outcome	Traffic filters objective	Performance against objective	How traffic filters contribute
				vulnerable users whose health is adversely affected. ✓ Air quality modelling assessment estimates significant reductions in Nitrogen Oxide, PM10 and PM2. The modelling forecasts that the scheme will not result in any exceedances of national AQ objectives.
Health	Improved health and wellbeing	Improve public health and wellbeing by increasing levels of walking and cycling.	Strong positive	✓ Remove traffic, creating a more attractive environment for walking and cycling. ✓ Removing traffic creates space for further improvements in walking and cycling infrastructure.
Health	Improved health and wellbeing	Improve road safety for all users, and in particular vulnerable users.	Strong positive	✓ Reduce traffic, resulting in fewer collisions. ✓ Estimated to reduce total collisions and casualties by around 13%.
Environment	Sustainable communities that are resilient to climate change	Reduce carbon and tackle climate change.	Strong positive	✓ Enable investment in 159 zero emission buses, saving 7,500 tonnes of carbon per year. ✓ Support mode shift to more sustainable modes of transport with lower carbon emissions.
Environment	Sustainable communities that are resilient to climate change	Mitigate and wherever possible enhance the impacts of transport on the local built, historic and natural environment.	Moderate positive	✓ Reduced traffic in historic city centre streets is expected to have a positive impact on the heritage assets and associated public engagement. × Increased traffic on the ring road will affect some heritage assets and increase NOx emissions close to the Oxford Meadows Special Area of Conservation.

Theme (impact)	LTP outcome	Traffic filters objective	Performance against objective	How traffic filters contribute
Healthy place-shaping	Sustainable, well designed, thriving communities.	Support healthy place-shaping by creating opportunities for pedestrianisation and improving public spaces.	Strong positive	✓ Reduce traffic, creating opportunities for pedestrianisation and improving public spaces. ✓ Support 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.
Connectivity	Communities are digitally connected, and there is improved connectivity and mobility.	Enhance connectivity by: • Improving walking and cycling connectivity to enable more journeys by these modes; • Enabling better management of freight and goods movement; and • Improving other forms of connectivity such as digital / full fibre connectivity.	Strong positive	✓ Increase walking and cycling connectivity by reducing traffic in areas of high pedestrian and cycle movement. ✓ Make local goods and freight movements to and within the city more efficient, through filter exemption for goods vehicles. ✓ No direct impact on digital connectivity.
Inclusivity	Barriers to access are removed.	• To improve local journeys for people in PCGs. • Create economic opportunities for all, through enabling inclusive access to jobs, education, training and services.	Positive	✓ Improved journeys for Blue Badge holders and support/care workers through filter exemptions. ✓ 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.

3 Evaluation Approach

Introduction

3.1 The decision to introduce the traffic filter ETRO was based on the evidence presented and the balance of evidence which showed both the beneficial and potentially adverse predicted impacts of the scheme. The inherent uncertainty in predicting what are complex behavioural responses underpinned the Council's decision to introduce filters as an experimental (temporary) scheme under an ETRO.

3.2 The purpose of the M&E Plan is to assess whether, and the extent to which:

- Predicted traffic reductions in the city have been realised and whether these translate into expected improvements in bus, cycle and pedestrian provision and usage, and wider improvements in road safety and AQ and place.
- Potential adverse impacts, mainly through traffic displacement and re-routing effects, have an adverse impact on network performance and resultant effects on AQ 'hot spots', road safety and impacts of local centres.
- The scheme results in predicted impacts on specific PCGs.
- The distribution of impacts on businesses is as predicted.
- Any unintended and unpredicted effects have occurred.

3.3 Evaluation of the traffic filters will take the form of "Impact Evaluation" which is focused on determining what difference the intervention made. It seeks to establish[3]:

- Whether the intervention achieved the expected outcome and to what extent:
  - The '**key evaluation questions**' (Table 3-1) in the M&E Plan have been developed to support this assessment.
- How the intervention caused the observed impact:
  - This is articulated in the M&E Plan through the **theory of change**.
- To what extent the difference can be attributed to the intervention.
- What would have happened anyway (without the intervention).
- What unintended consequences the intervention had (positive or negative).

Key evaluation questions

3.4 For traffic filters there are a number of 'themes' and related questions that the M&E Plan must seek to address, in order to assess whether, and the extent to which, **expected outcomes** have been achieved. These themes seek to understand how the traffic filter scheme performs in terms of:

- The administration of the permit scheme;
- The impacts at traffic filter locations (compliance, and traffic reduction);

[3] From Transport Analysis Guidance TAG Unit E1, Evaluation, November 2022, Department for Transport

- Wider impacts on traffic levels (volumes and flows);
- Impacts of network attractiveness (quality) and performance (journey times, congestion) for all mode users;
- Impacts on travel behaviour and demand, by mode;
- Impacts on key intended outcomes including AQ, health, collisions;
- Impacts on businesses and the economy;
- Impacts on equalities; and
- How have the enforcement and permit management systems performed?

3.5 These key questions are set out in Table 3-1.

Table 3-1 Key evaluation questions (outcome)

Themes	Questions
Traffic filter awareness and application process?	**Information and awareness** • Was the traffic filter scheme and the requirement for permits understood by residents (in each of the 'day pass' areas)? • What was the level of awareness and understanding of exemptions (for patients, professional and non-professional carers etc)? • What was the level of awareness and understanding of enforcement? **Permit applications** • What was the level of permit applications from within the '100-day pass' area and within the '25-day pass' area? • How many businesses applied for a permit to allow a car to be used as a goods vehicle? • What proportion of eligible applicants applied for permits? **User experience** • What was the average time taken between permit application and issue? (How does this compare with target time?) • What was the perception of the 'ease of use' and understanding of the permit application process? **Changes through ETRO period** • How did the above change over the course of the trial and pre-trial? • Were any changes made to the process?
What was the impact on users and traffic at the traffic filter locations? How does this compare with predicted impacts?	**Effect on traffic levels** • What was the impact on traffic levels at traffic filter locations? • How did this compare with the forecast level of impact? • How do these impacts vary by mode / traffic filter location? **Compliance** • What was the level of compliance (i.e. what number/proportion of trips passed the filter without having a permit/exemption)? • How many Penalty Charge Notices (PCNs) were issued, how many were paid and what income was generated? **Changes through ETRO period** • Were any changes made to the traffic filters during the process?

Themes	Questions
	• Did compliance rates change over time (i.e. during the course of the trial)? If so, what effect did changes in compliance rates have on traffic levels at filter locations and on the number of PCNs issued?
What impact have traffic filters had on traffic flows? How does this compare with predicted impacts?	**What has been the overall impact across areas / key locations?** • City centre, inner city and outer city cordons; • Impact on the A34 and ring road; • Impact on specific links e.g. Woodstock Road and Botley Road; and • Impact on residential, more minor roads. **How do impacts vary by filter location?** • Are the traffic flow impacts as a result of the Marston Ferry Road and Hollow Way filters (which will operate part-time initially) different from the traffic flow impacts at other filter locations? **How do impacts vary by vehicle type?** • Disaggregate by all vehicle classes **How do impacts vary by day and time period?** • Peak, inter-peak and PM peak • Weekdays vs weekends • Hours of traffic filter operation (7am to 7pm) versus other periods – is there an increase in traffic pre-7am and post-7pm? • How do the day and time impacts differ between the filter locations? **Changes through ETRO period** • Were any changes made to the traffic filters during the process? • Did traffic flows change during the course of the trial?
What impact have traffic filters had on road-user journey times? How does this compare with predicted impacts?	**Impact on road-user journey times?** • By area / key location; • Specific routes/roads; • By time period e.g. peak, inter-peak, all day average; and • By mode, vehicle type.
What impact have traffic filters had on bus journey times? How does this compare with predicted impacts?	**Impact on bus journey times?** • By area / key location; • By routes; and • By time period.
What impact have traffic filters had on bus service provision? How does this compare with predicted impacts?	**Impact on bus services and frequencies?** • Routes (has the bus network developed in line with the Bus Service Improvement Plan?); and • Service frequencies.

Themes	Questions
What is the impact on bus and rail demand? How does this compare with predicted impacts?	**Impact on bus demand?** • By area / key location; and • By routes. • By time period; • For the bus network, excluding and including Park & Ride; and • For Park & Ride alone. **Impact on rail demand?** • At Oxford Station.
What is the impact on walking and cycling demand? How does this compare with predicted impacts?	**Impact on cycle demand/ flows?** • Overall demand; and • Cycle flows by area/route. **Impact on walking demand?** • Overall demand; and • Demand by area/route.
What is the impact on overall mode share? How does this compare with predicted impacts?	**What are the mode share impacts based on:** • Trips to/from city centre/inner area? • Overall trips and mode share?
What is the impact of traffic filters on air quality? How does this compare with predicted impacts?	**What are the AQ impacts of traffic filters based on:** • Change in AQ at specific monitoring sites? • Change across areas e.g. inner/city centre, ring road inner area? • Do changes in AQ result in potential exceedances of AQ thresholds at any locations?
What is the impact of traffic filters on collisions? How does this compare with predicted impacts?	**What are the impacts of traffic filters on collisions:** • Overall (city-wide)? • By area / location? • By user (pedestrian, cyclist, motorised)?
What is the impact of traffic filters on carbon emissions? How does this compare with predicted impacts?	**What are the impacts of traffic filters on carbon emissions:** • City-wide, based on transport emissions?
What is the impact of traffic filters on physical activity? How does this compare with predicted impacts?	**What are the impacts of traffic filters on encouraging increased levels of physical activity:** • By walking and/or cycling ?
What is the impact of traffic filters businesses and the economy? How does this compare with predicted impacts?	**What are the economic effects on traffic filters:** • In terms of supporting sustainable and inclusive growth? • At key locations e.g. city centre, district centres, other key locations such as Cowley Road, Jericho, St Clements? • On businesses by type, location, size? • On footfall and spend in city centre and other district centres in Oxford?
What is the impact of traffic filters on PCGs?	**What is the impact of traffic filters on PCGs?** • E.g. What are the impacts on disabled people who do not have a Blue Badge?

Themes	Questions
How does this compare with predicted impacts?	• How are different PCGs affected; how does this compare with predicted impacts?

Theory of change and logic mapping

The theory of change approach

3.6 In the development of a scheme it is important that there is a clear understanding of the theory of change driving the need for the scheme and how the planned intervention will lead to the expected transport, social, environmental and economic outcomes and impacts.

3.7 Traffic filters have been developed to meet a range of transport and wider objectives and outcomes as set out in Chapter 2. The evaluation approach is guided by an understanding of how traffic filters are, at a conceptual or theoretical level, intended to meet these objective and outcomes.

3.8 This conceptual thinking is articulated through a 'theory of change'. DfT evaluation guidance[4] asserts that:

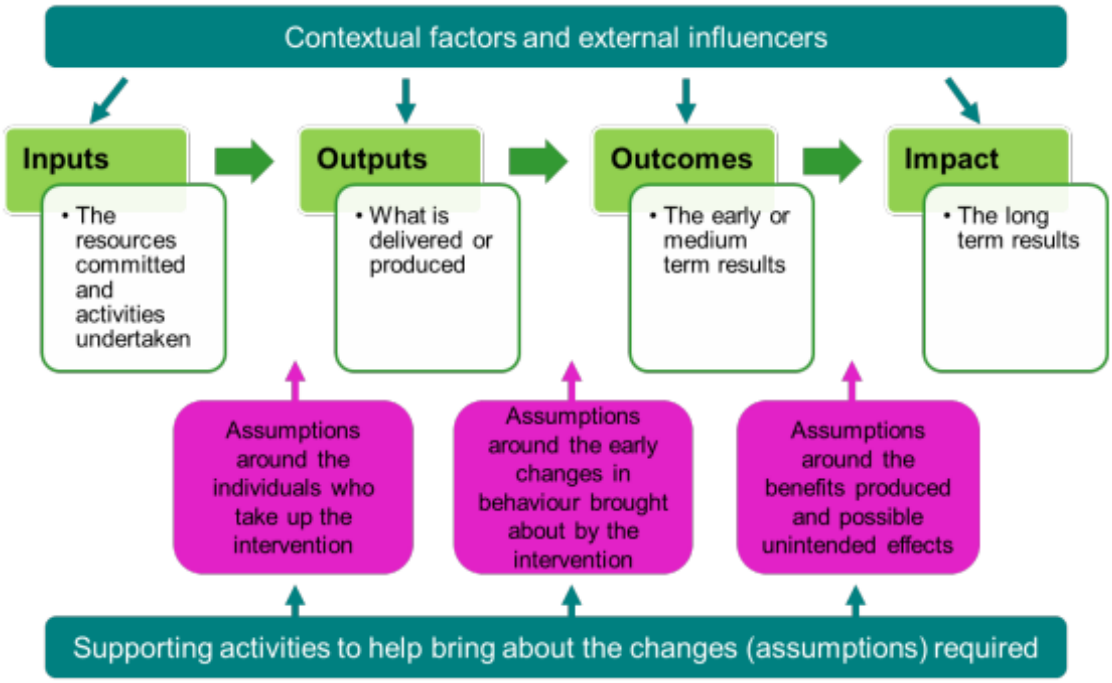
*"Evaluation planning requires a thorough understanding of the intervention, the outcomes it is expected to achieve and exactly **how** it is expected to produce these results. This may be referred to as the **theory of change** of the intervention."*

3.9 A 'logic mapping' approach is a way of representing, diagrammatically, the causal linkages between outputs, outcomes and impacts. An example logic map (from HM Treasury Magenta Book[5]) is shown in Figure 3-1.

[4] Transport Analysis Guidance TAG Unit E1, Evaluation, November 2022, Department for Transport

[5] The Magenta Book, HM Treasury, available at: **https://www.gov.uk/government/publications/the-magenta-book**

Figure 3-1 Example of a linear theory of change



Traffic filters logic map

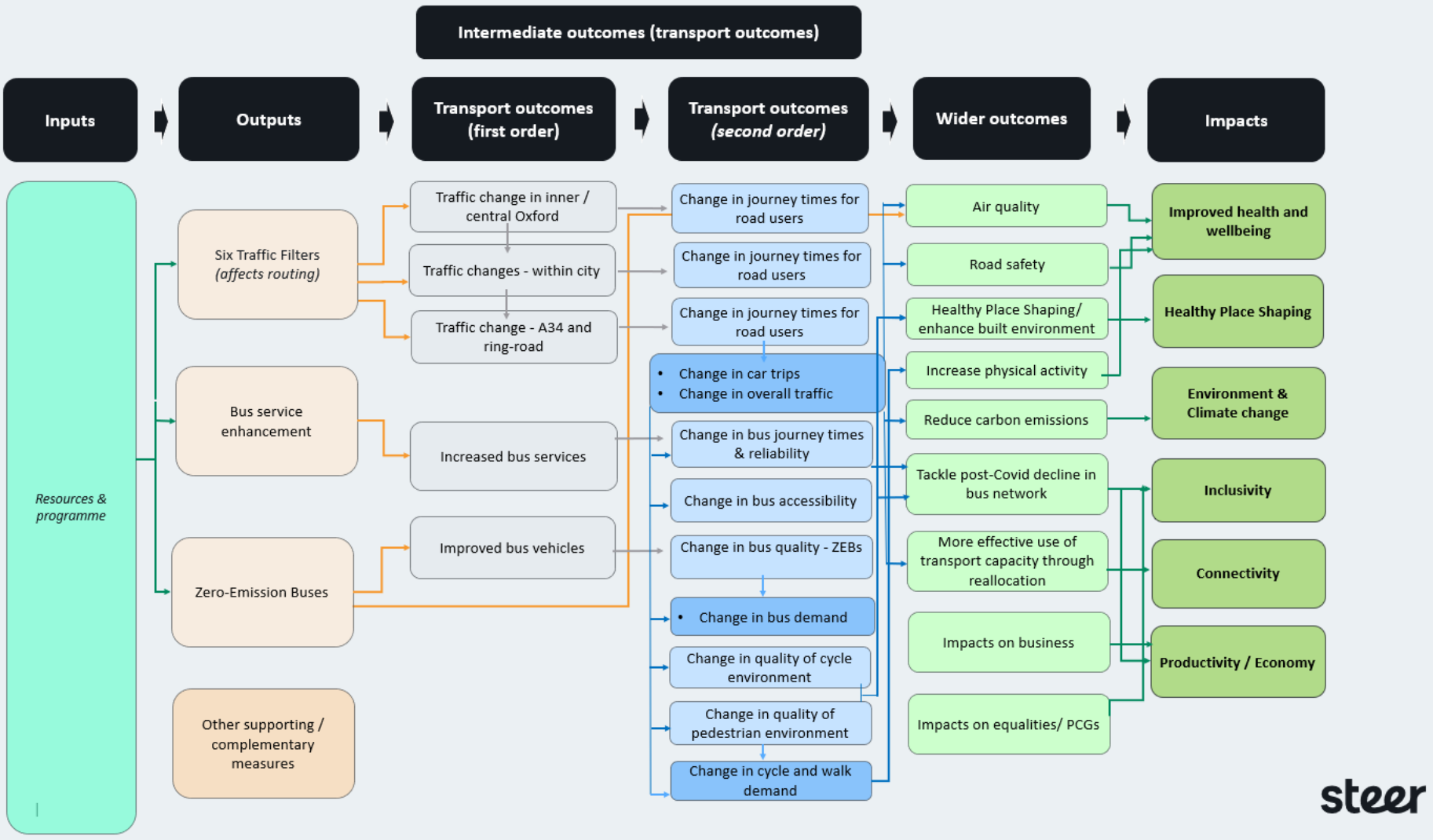
3.10 In terms of traffic filters, the high-level inputs, outputs, outcomes and impacts are summarised in Table 3-2. In developing the logic map for traffic filters we have split 'outcomes' into 'transport outcomes' and 'wider outcomes'. This reflects the fact that transport is a means to an end. For example, the reduction in traffic in the city is not in itself the desired outcome. Rather, it is the means by which a range of wider outcomes are achieved.

Table 3-2 Traffic filter logic map (high level linkages)

Stage of 'logic mapping process'	Description	Example
Contextual factors	• Wider local and national policy context • Identified challenges to address in meeting policy aims	• Desired policy outcomes – health, productivity, carbon, inclusion etc. • Barriers to achievement of policy outcomes e.g. high traffic levels in Oxford
Inputs	The resources, equipment and skills which are being invested and activities being undertaken to deliver the scheme in the first instance.	Design, development and implementation resources and activities in delivering: • Traffic filters at 6 locations; • The 'back office' system to administer the scheme; and • Associated enhancements e.g. bus enhancements.
Outputs	The physical infrastructure, systems, services delivered by the scheme.	The outputs delivered 'on the ground' e.g.: • Traffic filters and supporting systems; and • Bus services.
Transport outcomes	Outcomes are defined as the likely short and medium-term effects of a scheme's outputs.	The transport outcomes which reflect • the 'first order' behavioural responses to filters; and • the 'second order' effects on modal usage and network performance.
Wider outcomes	The changes in wider outcomes that result from the changes in transport outcomes.	Examples include: • Changes in AQ and collisions, which relate directly to changes in traffic levels; and • Changes in physical activity levels and bus network viability as a result of changes in modal demand.
Impacts	How the changes in 'outcomes' result in long-term changes.	For traffic filters these intended long-term changes reflect the policy priorities and societal outcomes set out in the LTCP.

3.11 A more detailed 'logic map' for traffic filters is shown in Figure 3-2.

Figure 3-2 Traffic filter 'logic map'



Causality and attribution of impacts

Transport outcomes

3.12 A central issue for evaluation of schemes that take place in a dynamic 'real world' context, with potentially numerous conflating and compounding factors, is the extent to which observed changes to, for example, traffic levels can be attributed to the traffic filter scheme and the underlying cause.

3.13 This is an area where the 'logic map' provides a valuable framework in establishing the causal linkages between the intervention and the outcome. For example, a reduction in car traffic through the traffic filter locations (post-ETRO implementation) would logically be attributed to the filters as the intervention and any resultant change is locationally specific, the expected change is material in scale and is directly measurable. In this instance, we can be confident that the traffic filters are the primary factor in reducing traffic levels at filter locations.

3.14 The changes in traffic flows beyond the city centre and inner areas are expected to be proportionately lower and hence therefore any impact from traffic filters risks being obscured by other factors affecting traffic levels. Changes in traffic would be compared to comparator data (e.g. county-wide) to assess how changes in areas affected by traffic filters compared with general traffic levels and trends. We therefore cannot be as confident about the role played by the traffic filters on changes in traffic levels beyond the city centre and inner areas.

3.15 To understand these changes requires:

- Measurement of changes in traffic flows across the wider city;
- An understanding, from the logic map and empirical evidence, of the likely scale of traffic re-routing and displacement from the traffic filters. For example, if the actual measured reduction in traffic flows across the traffic filter locations was higher than that 'expected', then it would be reasonable to assume that associated behavioural change has also occurred – such as higher than expected shift to other modes and/or higher levels of traffic displacement; and
- An understanding of other factors, unrelated to traffic filters that could also affect observed flows. These could be macro-factors or trends (the economy, general population growth) or impacts that are spatially specific and time-bound (road closures.)

3.16 The same contextual understanding is required in assessing the attribution of other changes (e.g. cycle demand, bus demand) that were 'predicted' as a result of the traffic filter scheme.

Wider outcomes

3.17 There are several outcomes where the change in outcome measure is directly linked, within the logic map, to the change in traffic flow. This is the case for both AQ and road safety (collisions) where the assessment of expected impacts is wholly based on the expected change in traffic flow as a result of the scheme.

3.18 However, in the case of air quality (e.g. NOx emissions related to transport) transport emissions only represent around half of total emissions, with other sectors accounting for the remainder. Within the transport sector there is a more general trend towards better AQ as the vehicle mix changes over time (the proportion of electric vehicles is increasing and the diesel proportion is reducing such that the overall emissions *within* any vehicle engine category will improve over time as newer vehicles with higher regulatory standards replace older vehicles). This means that AQ would be expected to improve *over time* in a location where overall traffic levels remained constant.

3.19 It is therefore important to try to delineate between the change that is attributable to the traffic filter element (i.e. from changes in traffic as a result of the scheme) from changes that would have resulted anyway (known as the counter-factual scenario).

3.20 The same principle applies to road safety, where the general trend is toward fewer collisions over time and where other policies (such as implementation of 20mph speed limits and Low Traffic Neighbourhoods) may also affect collision rates in specific locations and at the city-wide level. Again, any assessment of the potential change in collision rates from traffic filters must take account of these factors.

3.21 For other outcomes (physical activity, enhanced urban environment) it is not possible to 'measure' changes in the same way as for AQ and collisions, as direct measurable data is not available. The development of a 'logic map' approach allows for the development of proxy indicators which reflect the causal linkage between the change in transport outcome (e.g. more cycle trips and more people cycling) and the wider outcome (physical activity and health).

Impacts

3.22 Impacts refer to the longer-term effects of the intervention. For traffic filters these relate to whether, and how, the scheme supports the policy priorities within the LTCP around health, place, economy, inclusion and the environment.

3.23 The longer-term nature of impacts and the complex dynamics at play (where traffic filters will be one driver of change, among many) mean it is not possible or reasonable to attribute an overall change in a given impact (e.g. economic performance as measured by GVA (Gross Value Added) for Oxford or Oxfordshire, or overall change in health indices) to traffic filters.

3.24 The purpose of the logic map is therefore to help identify the linkage and mechanisms by which, for example, increased physical activity (from the expected increase in cycle usage) can result in improved health and wellbeing.

3.25 The logic map essentially sets out the causal mechanisms by which transport outcomes (which are more easily measured and, as a more direct impact of the scheme, easier to attribute) result in wider outcomes and impacts. For wider outcomes and impacts, the measured impacts are affected by many drivers, of which traffic filters might be relatively minor, and therefore direct attribution is not possible. The logic map allows for the reasonable inference of what the likely effects of the intervention will be at each 'level' of the logic map (outputs, outcomes and impacts).

Use of evidence to assess causality and attribution

3.26 It is necessary to consider ways of assessing the extent to which an intervention has made a difference in practice. To demonstrate this requires gathering of robust evidence that any improvements (or otherwise) can be reliably linked to the intervention itself and would not have been expected to occur without it.

3.27 The traffic filter M&E assessment will employ a combination of 'before and after' and 'comparative' approaches to inform an assessment of the causal effects and level of attribution of the traffic filter scheme:

- **Before and after assessment.** This will measure key indicators and report the change in the measure (e.g. change in traffic levels, cycle usage etc.) between the period before the introduction of traffic filters with the period after the introduction. This will provide the measure of observed change after the introduction of traffic filters.

- **Comparative assessment.** Comparative assessment will look at 'comparator' indicators unaffected by traffic filters to help assess how much of the observed change is attributable to traffic filters. For example, if traffic levels reduced (or increased) at a national and county-wide level between the 'before' and 'after' periods, then this would need to be taken into account in assessing how much at any observed reduction in central Oxford (from the filters) was attributable to the scheme, and how much from more general trends.

Discussion

3.28 Whilst the attribution of impacts is complex, the nature of the traffic filter scheme and the scale of its intended transport benefits outcomes should allow for key observed impacts (e.g. traffic reduction in the inner area, and resultant effects on bus journey times), and their contribution to stated objectives to be largely attributable to the scheme.

3.29 For example, the reduction in traffic at and within the traffic filter area should be largely attributable to the scheme. Several transport outcomes relate to the change in traffic levels, including improved bus journey times/reliability and enhanced cycle and pedestrian environment. Similarly, several 'wider outcomes' of the scheme are directly related to the change in traffic levels (AQ, collisions) or indirectly affected (enhanced place and physical activity).

3.30 Expected impacts on traffic beyond the traffic filter area are generally predicted to be smaller in scale, and less certain. For these locations the use of comparative data (e.g. traffic levels in areas unaffected by traffic filters) will help understand whether changes are likely to be attributable, along with other qualitative data (e.g. resident surveys) proposed as part of the M&E Plan.

3.31 Economic and business impacts are the hardest to directly attribute to traffic filters, due to the myriad influences on economic performance at the city, local and business level and broader economic factors such as inflation, interest rates and wages. However, the logic map provides clear conceptual linkages between traffic filters and potential economic outcomes and the business impact report is based on similar linkages applied to businesses by type and location.

3.32 These linkages are explored, within the M&E Plan, through a combination of monitoring data covering transport outputs and outcomes, to economic outcomes measured through qualitative and quantified data.

4 Evaluation of Outputs: Has the Traffic Filter Scheme Been Delivered as Intended?

Introduction

4.1 The predicted impacts and benefits of the scheme are based on the traffic filter scheme being delivered as planned at the point of approval. These comprise broadly three elements:

- The traffic filters – location and design;
- The operating regime - hours of operation, permits and exemptions; and,
- The associated measures delivered alongside, and as part of, the traffic filter proposals.

4.2 The second element of the 'outputs' is whether the scheme has been operated as planned i.e. whether the associated system infrastructure supports the efficient operation of the scheme (enforcement, permits, exemptions) in the way envisaged at the point of approval.

Has the scheme been delivered as planned?

The outputs are summarised in Table 4-1. The evaluation of whether outputs have been delivered will be based on the traffic filter designs, operating regime and associated measures at the point of implementation, and whether these change over the course of the ETRO trial period.

Table 4-1 Traffic filter planned outputs and evaluation of actual

Planned output	Planned output (source information)
Physical outputs	
Location of traffic filters	As per Figure 1-1.
Design of traffic filters	Scheme drawings supplied as background reports to the November 2022 Cabinet decision[6].
Operational outputs	
Exemptions	As described in Chapter 1 (detailed in Background Reports).
Permits	As above
Hours of operation	As above
Associated measures, including[7]	
New bus routes	New bus routes in the east of the city as outlined in traffic filter consultation brochure[8].
Woodstock Road bus lane	Woodstock Road bus lane reversal (from southbound to northbound).
ZEBRA 159 zero-emission buses	Buses ordered in January 2023[9] following approval of traffic filter ETRO. Implementation of traffic filters was a core element of the funding bid for the new buses, so the new buses are an output of the filters scheme.

Has the scheme operated as planned?

4.3 The traffic filter decision was based on an agreed scheme definition as above. The assumption was that the supporting infrastructure (ANPR, permit application system, usage of permits) and the 'back-office' systems to support the system operation would facilitate the operation of the traffic filter scheme as planned.

The operation of the permit application and permit use systems will be monitored as part of the evaluation. The evaluation themes and key questions on how data from the traffic filter administration system will be used to evaluate impact are set out in Table 4-2.

[6] **https://www.oxfordshire.gov.uk/residents/roads-and-transport/connecting-oxfordshire/traffic-filters#paragraph-12853**

[7] Full list of complementary measures outlined in Table 1 of the November 2022 **Cabinet report**

[8] Traffic filter brochure.pdf, **https://letstalk.oxfordshire.gov.uk/traffic-filters-2022**

[9] **https://news.oxfordshire.gov.uk/deal-signed-to-bring-159-electric-buses-to-oxfordshire/**

Table 4-2: Evaluation themes and questions

Questions	Where addressed in M&E
Information and awareness • Was the traffic filter scheme and the requirement for permits understood by residents (in each of the 'day pass' areas)? • What was the perception of the 'ease of use' and understanding of the permit application process? • What was the level of understanding of signage and enforcement?	User experience/ resident surveys (attitudinal)
Permit applications • What was the level of permit applications from within the '100- day pass' area and within the '25-day pass' area? • What proportion of eligible applicants applied for permits? • What was the average time taken between permit application and issue? (How does this compare with target time?) • How did applicants rate the website and process?	Application data (quantitative) Post application questionnaire
Permit usage • How many permits used per day from within the '100- day pass' area and within the '25-day pass' area (split by postcode sector and first vehicle, second vehicle, third vehicle) • Compliance rate • PCNs issued	Usage data (quantitative)
Enforcement and compliance • Have enforcement systems operated as intended? • Compliance rate • PCNs issued • PCN appeal success rate	
Changes through ETRO period • How did the above change over the course of the trial and pre-trial? • Were any changes made to the process?	M&E reporting

4.4 The evaluation will assess whether the operation of the filters was understood, efficient and easy to use from a user-perspective.

5 Evaluation of Transport Outcomes

Introduction

5.1 Traffic filters are intended to deliver a range of key transport outcomes that, in turn, will support wider outcomes. This chapter sets out:

- The predicted transport outcomes at the time of the November 2022 Cabinet decision; and,
- A summary of the approach, within the evaluation, that will be used to assess whether, and the extent to which, transport outcomes have been achieved.

5.2 More detail on the monitoring data that will support the evaluation is provided in Appendix A.

Predicted outcomes – traffic reductions and changes in flow

Traffic reduction and redistribution

5.3 Traffic filters are specifically focused on trying to reduce the traffic volumes within the city centre and inner sections of the city. These sections of the city are those where nearly all bus services operate and where there is the highest volume of cyclists and pedestrians. The impact of vehicular traffic is that these areas suffer from serious congestion, poor AQ and high collision rates.

Changes across cordons

5.4 The estimated reduction in traffic across the city centre cordon and inner cordon boundary is large, with peak reductions of over 40% across the city centre and around 35% for inner cordons (shown in Table 5-1). The reduction in the inter-peak is slightly lower but remains large (38% and 26% reductions respectively).

5.5 The expected reductions in all traffic are driven by an even greater reduction in car traffic (as all other vehicles are exempt from the filters). The expected peak reduction in car traffic is around 50% across the city centre cordon and 40% in the inner cordon.

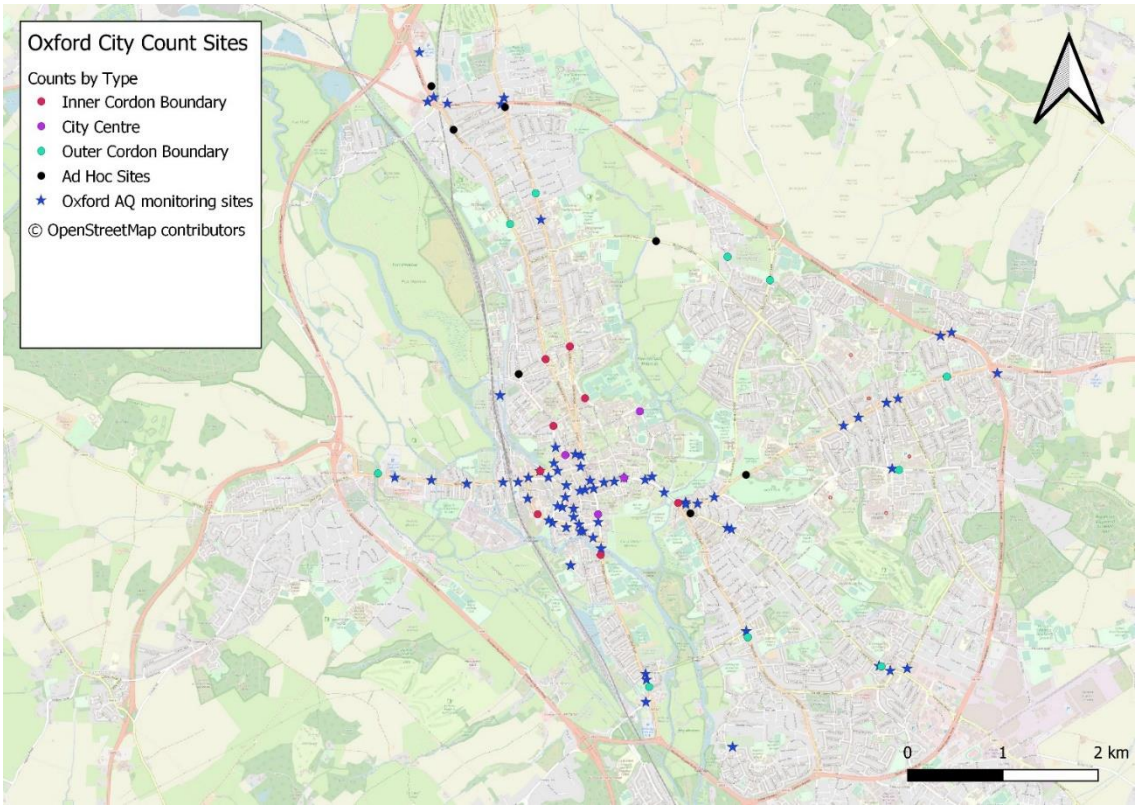
Table 5-1 Change in vehicular demand by location and time period

All vehicle trips (Car, LGV and HGV)	AM Peak	Inter-Peak	PM Peak
City Centre cordon – traffic flows	-41%	-38%	-44%
Inner cordon boundary – traffic flows	-35%	-26%	-36%
Outer cordon boundary – traffic flows	-5%	-1%	0%
Car trips only	**AM Peak**	**Inter-Peak**	**PM Peak**
City Centre cordon – traffic flows	-51%	-54%	-50%
Inner cordon boundary – traffic flows	-43%	-37%	-40%
Outer cordon boundary – traffic flows	-5%	-1%	-1%

5.6 The changes in traffic flow on the outer cordon boundary are modest, with a 5% reduction in the AM peak and a broadly neutral impact in other time periods.

5.7 The areas defined by the city centre, inner and outer cordon are shown in Figure 5-1.

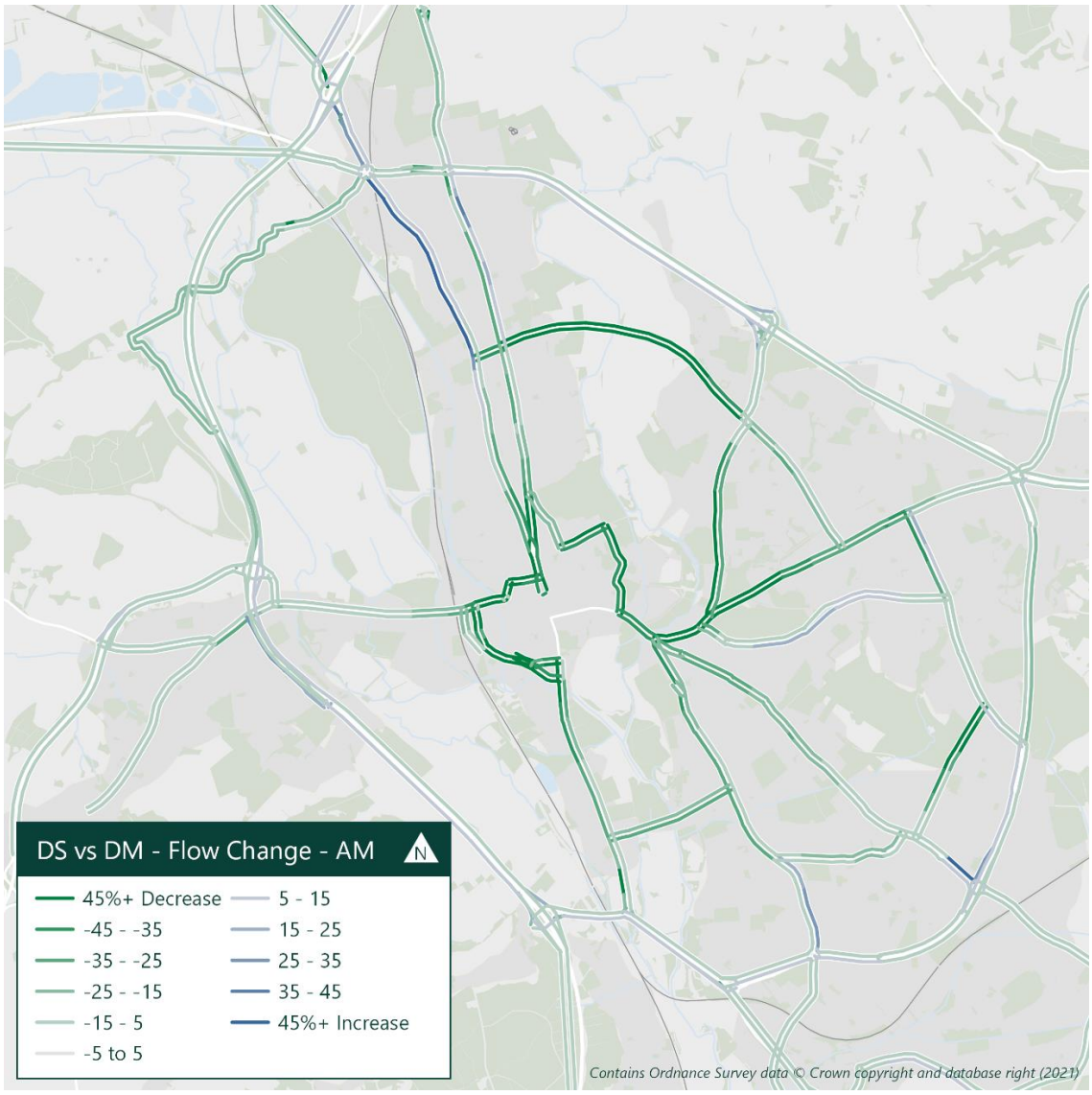
Figure 5-1 Cordon map



Changes on the network

5.8 The percentage change in traffic flows in the morning peak is shown in Figure 5-2.

Figure 5-2 Percentage change in AM Peak hour traffic flows - with traffic filters, 2024



5.9 The figure shows that there are generally large-scale traffic reductions in the central and inner areas of the city, where traffic filters restrict car traffic (without permits). For roads outside of this 'inner' area there are a number of links where traffic increases and some decreases are expected. The scale of these changes (increase or decrease) is generally lower than the large-scale decreases in the central area, and at the aggregate level, broadly neutral.

5.10 There are several roads that are forecast to experience an increase on certain sections and at certain times, including the A34 (Ring Road), Woodstock Road and Botley Road. There may also be impacts such as changes in traffic flow on some residential minor roads which will be monitored.

Evaluation of outcomes – traffic reductions and changes in flow

5.11 There is comprehensive traffic flow data (reported in Appendix A) which provides a strong evidential basis for comparing predicted and actual changes, and looking at differences between time periods etc. This will be used to monitor and evaluate impacts as summarised in Table 5-2.

Table 5-2 Evaluation of traffic flows

Outcome	Predicted Impact	Evaluation Approach
Change in cordon flows – all traffic	Impacts predicted for: • 3 cordons • 3 time-periods As per Table 5-1.	Observed traffic count/flow analysis will support an assessment of traffic volumes before and after the traffic filter scheme is implemented, from which the actual % change in flow can be compared with predicted impact.
Change in cordon flows – cars	As above (for cars)	Traffic counts will provide breakdown by vehicle type, so 'all traffic' can be separated from 'cars'.
Flows by road/link	Predicted changes are shown in Figure 5-2.	Data across traffic count sites will be assessed and compared 'before and after' traffic filter implementation. Changes by time period will be evaluated.

Evaluation of outcomes – highway journey times

5.12 The traffic filters will affect the volume and distribution of highway trips which will, in turn, have resultant impacts on highway journey times. Current (or baseline) journey times reflect existing road conditions (the level of traffic flow, resultant congestion and the consequent impact on journey times), and that changes in traffic flow would therefore lead to change in journey times (which would depend on the pre-existing levels of congestion).

5.13 A data company INRIX provides data on highways journey times to OCC and this has been identified as the most suitable data source to support the on-going monitoring and evaluation of highway journey times. The proposed use of INRIX data (including its benefits and limitations) is described in Appendix A and summarised in Table 5-3.

Table 5-3 Evaluation of highway journey times

Outcome	Predicted impact	Evaluation approach
Links within city centre and inner cordons	Reduction in highway journey times on most links, reflecting large-scale predicted traffic reduction in this area.	• Mapping of journey speeds (and differences) by link. • Specification of journeys/routes to assess speeds/times for key movements.
Links within outer cordon	Variable and uncertain impacts, reflecting balance of traffic increases and reductions across a range of individual links. The overall outer cordon flow is predicted to be broadly neutral.	As above, for outer area. • Comparison of 'direct' routes (before the filter and for exempt/permitted trips) with the alternative route avoiding filters.
A34 and Ring Road	Expected modest increase in journey times, based on predicted increase in traffic on the A34 and Ring Road (varies by time period and link, but overall increase <5%).	As above, for A34 and Ring Road.

Predicted outcomes – commercial vehicles and taxis / private hire

5.14 Commercial vehicles and taxis / private hire vehicles will be exempt from the filters. For commercial vehicles the reduction in traffic levels and associated congestion should mean that journey times within the city will typically be shorter and more reliable. Changes in journey times for these vehicles on the ring road and A34 may be more mixed. All changes will be assessed through the monitoring of journey times as above.

Predicted outcomes – overall car trips and mode shift

5.15 Transport modelling and analysis estimated modal shift as a result of traffic filters. The mode share estimates were based on a comparison of a 2024 scenario without traffic filters (termed the Do Minimum) compared to a 2024 scenario that includes the proposed traffic filters and represents the proposed exemptions. The transport modelling suggested that:

- For trips within the city (the Oxford City administrative area, most of which is within the ring road), the traffic filters would result in a reduction in car trips of around 20%; and
- The equivalent reduction in car trips, taking account of trips to, from and within the city is around 9%.

5.16 This reflects the redistributive nature of the traffic filter proposals on car trips specifically and therefore reflected in change in total traffic flows. In broad terms traffic filters are estimated to lead to:

- A 20% reduction in overall *car trips*; and
- A reduction of 50% in *car traffic* (and 40% of all traffic) across the city centre cordon, and 40% on the inner cordon (35% all traffic).

5.17 The predicted change in traffic at the outer cordon is that the impact of the overall reduction in car trips is counter-balanced by re-routed car trips, such that the overall impact on traffic levels is broadly neutral across this cordon (see Table 5-1). There are corresponding increases in use of other modes, within bus, Park & Ride, rail, walking and cycling all forecast to increase.

Table 5-4 Sectorised demand by mode (12-hour period, 2024 DM vs TF1)

	Within City	To/From City	Combined	
Car demand and mode share	**Within City**	**To/From City**	**Combined**	
Change in Car trips	**-24,600**	**-1,700**	**-26,300**	
Change in car mode share	-20.0%	-1.0%	-9.1%	
Change other modes	**Within City**	**To/From City**	**Combined**	**% of former car demand to:**
Bus	1,900	500	2,400	9%
Rail	0	900	900	3%
Park & Ride	100	600	700	3%
Walk and cycle	17,300	2,700	19,900	76%
Other responses	5,400	-3,000	2,400	9%
Sub-total	**24,700**	**1,700**	**26,300**	**100%**

Note: Difference in totals due to rounding.

Evaluation of outcomes – overall car trips

5.18 There is not a straightforward way to measure the change in overall car trips, to assess whether the predicted change (a 20% reduction of car trips within the city) has been realised.

5.19 However, there are quantified measures that can help us to infer the likely change in trips, specifically:

- The change in car traffic across cordons (if the actual change is lower than predicted, the inference is that a lower percentage of car trips have been removed from the network); and
- The change in demand for other modes (again, if the actual change is lower than predicted, the inference is that fewer car trips are transferring to alternative modes).

5.20 These quantified measures will, within the overall M&E Plan, be supplemented by additional evidence to help establish the likely potential impact on car trips. This additional evidence will include resident surveys and pedestrian interview surveys which will explore changes in travel behaviour and motivations for any changes. This will provide insight on the range of behavioural responses to traffic filters including the reduction in car trips among the resident survey sample.

Predicted outcomes and evaluation - walking and cycling

5.21 The traffic filters are predicted to lead to an improvement in the pedestrian and cycle environment (through reduced traffic) and to an increase in walking and cycling trips. The predicted impacts and approach to monitoring and evaluation is summarised in Table 5-5.

Table 5-5 Walking and cycling: predicted impacts and evaluation

Metric	Predicted impact	Evaluation measures
Quality of pedestrian environment	Beneficial, based on: • Forecast reduction in traffic levels; and • Opportunities for reallocation of road space enabled by traffic filters.	• Traffic reduction: The forecast traffic reduction (and whether predicted reductions are achieved) underpins the scale of improvement in the pedestrian environment, and opportunities for reallocation. • Resident surveys will provide additional evidence of perceptions of the quality of the pedestrian environment.
Pedestrian demand	Forecast increase in combined walk and cycle trips of around 10%.	• Traffic count data (190 data points, of which 155 within the city, from Vivacity cameras capture pedestrian volumes) • Footfall data collection – Show level of overall pedestrian activity in the city centre and district centres, based on mobile phone data. • Pedestrian interview surveys – Establish mode of access for the city centre and district centres.
Quality of cycle environment	Beneficial, based on: • Forecast reduction in traffic levels; and • Opportunities for reallocation enabled by traffic filters.	• Traffic reduction. • Resident surveys / business panel. • Feedback from cycle user-groups through OCC consultation and engagement workstream.
Cycle demand	Forecast increase in combined walk and cycle trips of around 10%.	• Traffic count data (190 data points, of which 155 within the city, from Vivacity cameras, plus BlackCat count sites providing classified counts, plus 7 loop-based automatic cycle counters within the city capture cycle volumes)

Predicted outcomes and evaluation - bus and Park & Ride

5.22 The traffic filters are predicted to lead to an improvement in bus journey times, increased service levels and an increase in bus and Park & Ride trips. The predicted impacts and approach to monitoring and evaluation is summarised in Table 5-6.

5.23 For all measures evaluation would need to consider appropriate 'like for like' comparators taking account of factors such as seasonality, school / summer holiday periods and universi terms and so on.

Table 5-6 Bus and Park & Ride: predicted impacts and evaluation

Metric	Predicted impact	Evaluation measures
Journey times	Within the central and inner areas predicted impacts are: • Estimated 15% reduction in journey time in the AM and PM peak periods; • Estimated 7% reduction in inter-peak; and • Average 'all day' (7am to 7pm) reduction of 10% in journey times.	• Overall changes in journey time 'before and after' will be quantified using observed real data used to 'track' every bus operated by Stagecoach and Oxford Bus Company operating within the Oxford SmartZone. • Average journey time data will be reported by time period and geography.
Reliability	Improvement in bus reliability through reduction in 'un-needed' dwell (unquantified).	Change in reliability (reduced journey time variability) to be quantified based on agreed metric (to be defined and agreed with operators)
New bus services	As described in the transport outputs (Chapter 4).	To be reported as an output of the scheme.
New zero-emission bus vehicles	As described in the transport outputs (Chapter 4).	To be reported as an output of the scheme.
Enhanced bus accessibility	Bus accessibility analysis suggests that, as a result of the journey time and service enhancements there would be a large increase on the number of residents who can access key locations. For example, there would be an increase of: • over 28,000 residents within a half an hour journey time of Cowley; • 55,000 within half an hour of the Eastern Arc (John Radcliffe Hospital West Wing); and • 37,000 within half an hour of Botley. The equivalent increases within 45 minutes are 48,000, 49,000 and 62,000 respectively.	The predicted change in accessibility was based on: • The predicted reduction in journey times (outcome measure); and • The change in bus services alongside traffic filters (output). As such, the change in accessibility can be inferred and described based on the evaluation of the above.
Bus and Park & Ride demand	Modelled increase in passenger demand of: • around 3% for bus; and • 6% for Park & Ride. The benefits from improved bus reliability and new zero-emission buses replacing the existing fleet of services will also serve to increase bus patronage. This was not explicitly modelled, so the modelled estimate of demand is viewed as a likely under-estimate of the potential demand impact.	The change in bus and Park & Ride demand will be reported based on actual bus boarding data. The change will be reported by: • Time period; and • Area (inner/central, Oxford City, SmartZone area).

Predicted outcomes - Rail

The traffic filters are predicted to lead to an increase in rail demand, as rail provides an alternative to car trips discourages by the filters. The predicted impacts and approach to monitoring and evaluation is summarised in Table 5-7.

Table 5-7 Rail: predicted impacts and evaluation

Metric	Predicted impact	Evaluation measures
Network and services	No change due to traffic filter scheme.	n/a
Rail demand	Forecast attributable increase of c. 900 trips per day.	Propose to measure change in rail demand based on: • Annual published rail industry (ORR) station usage data; and • On-going monitoring of demand between Oxford Station and the city centre based on bus boardings (at the station) and pedestrian/cycle flows.

6 Evaluation of Wider Outcomes

Introduction

6.1 The impact of traffic filters on achieving predicted transport outcomes underpins the predicted impact on the achievement of wider outcomes.

6.2 In some cases, the linkages are direct. For example, the forecast change in traffic levels (as a result of traffic filters) directly informs the predicted changes in AQ, carbon and road safety.

6.3 For other wider outcomes (e.g. tackling the decline in the post Covid bus network) there is no single direct metric based on the transport outputs, but an assessment across several outputs can be used to infer the impact on bus network viability reasonably and logically. Essentially traffic filters are expected to reduce bus journey times (and hence costs) and increase bus demand (and revenues), which will make bus services more viable, thus tackling post-Covid decline.

6.4 These are other impacts where transport outcomes provide a proxy measure, rather than a direct relationship. Examples include physical activity (where increases in cycling and walking are the proxy measure) and healthy place-shaping (traffic reduction is the proxy measure). For these wider outcomes the nature of the relationship with transport outcomes is clear (and underpinned by the 'theory of change' and logic mapping) but the scale of impact is less direct and less measurable than for impacts that are more direct.

6.5 As such, the monitoring and evaluation of transport outcomes (Chapter 5) can be undertaken in a more direct manner, as changes (in traffic, demand, journey times etc) are both measurable and (more) attributable than 'wider outcomes'. Wider outcomes are, in some instances directly measurable (e.g. AQ) but, taking the example of AQ, traffic is only one of many causes of local air pollution, and the marginal impact of traffic filters is less likely to be discernible or attributable. So, while wider outcomes can be measured (monitored) there is greater onus within the evaluation to explain the relationship between the transport outcomes attributable to the scheme and the wider outcome.

6.6 In the remainder of the Chapter, we discuss:

- Each of the wider outcomes that traffic filters aim to support, with summary of the predicted impacts that informed the decision to approve the ETRO;
- The conceptual/theoretical linkage between the transport outcomes delivered by traffic filters, and the achievement of the respective wider outcome; and
- How the wider outcome will be monitored and evaluated as part of the M&E Plan.

6.7 This discussion is presented for each of the wider outcomes: improved AQ, reduced carbon emissions, improved road safety, healthy place-shaping, increased physical activity, tackling the post-covid decline in bus services, more effective use of transport capacity through reallocation and an inclusive transport system.

Improved air quality

6.8 The air quality modelling approach is based on a 'validated' relationship between road traffic and AQ (for a 2018/19 base year) which forecast the AQ in 2024 in a Do Minimum (reflecting changes in traffic and vehicle composition). The AQ assessment is then based on the difference in traffic levels between the 2024 'Do Minimum' (without traffic filters) and 2024 Do Something (with traffic filters). There is therefore a reasonably direct relationship between AQ forecasts (from transport sources) and changes in traffic levels, which is reflected in the logic map and the proposed evaluation.

6.9 Traffic filters were predicted to have an overall positive impact on AQ, with significant improvements in AQ across most areas (where traffic is predicted to reduce) and a minor worsening in some locations (where traffic is predicted to increase).

6.10 There are over a hundred AQ monitoring locations in and around Oxford, and data from these will be monitored to evaluate whether and where improvements take place, and link these back to changes in traffic levels. The detail of the OCC air quality monitoring data is set out in Appendix A, and the approach to AQ evaluation is summarised in Table 6-1.

Table 6-1 Causal links between outputs and outcomes (air quality)

Wider outcome	Predicted impact (summary)	Related transport outcome(s)	Evaluation of wider outcome
Improved air quality (NOx)	• NO2 concentrations are predicted to decrease along 76% of the assessed road links and at 91% of existing monitoring locations as a result of the traffic filters scheme. • The maximum predicted decrease in NO2 concentration at monitoring locations (8.17µg/m3) was observed at St Clement's. The location is no longer predicted to exceed the Oxford limit value as a result of implementation of the traffic filters. • A significant decrease (7.43µg/m3) in NO2 concentration as a result of the scheme along the A420 (High Street / Headington Road). This location also showed the maximum decrease in PM10and PM2.5	• Relationship with change in traffic. • Attributable impact therefore assessed based on traffic change. • There is a close correspondence between traffic count sites and AQ monitoring stations which will support the evaluation.	Focus of outcome evaluation on NOx where transport emissions represent over half total emissions (but only a small percentage of PMs, so changes cannot easily be related to the scheme). Oxford City Council and other Oxfordshire districts prepare comprehensive annual AQ reports. Shows change across 128 AQ monitoring sites in and around Oxford. AQ changes also to be measured on A34 and immediate residential areas (Botley AQMA). The expectation is that changes in AQ levels should reflect changes in traffic levels. Actual monitoring data will be available for all monitoring sites (and a number of additional sites implemented recently). For NOx, around half of road-side emissions are attributable to traffic and we therefore expect to discern attributable

Wider outcome	Predicted impact (summary)	Related transport outcome(s)	Evaluation of wider outcome
	concentrations at roadside receptors as a result of scheme implementation. • All road links which show a predicted increase in NO2, PM10 and PM2.5 concentrations as a result of the scheme are located on road links outside of the city centre. The modelling forecasts that the scheme will not result in any exceedances of national AQ objectives.		changes at AQ monitoring sites where there is a material change in traffic levels.

Reduced carbon emissions

6.11 The approach to predicting the carbon impacts of traffic filters reflects the approach for AQ, whereby the main driver of carbon is the overall vehicle km travelled on the network (by mode).

6.12 Carbon is a global emission, and traffic filters were forecast to lead to a 6% decrease in annual CO2 emissions associated with road transport in the city following implementation, based on air quality modelling. This represents a saving 7,500 tonnes of carbon per year.

6.13 The approach to carbon evaluation is summarised in Table 6-2.

Table 6-2 Causal links between outputs and outcomes (carbon)

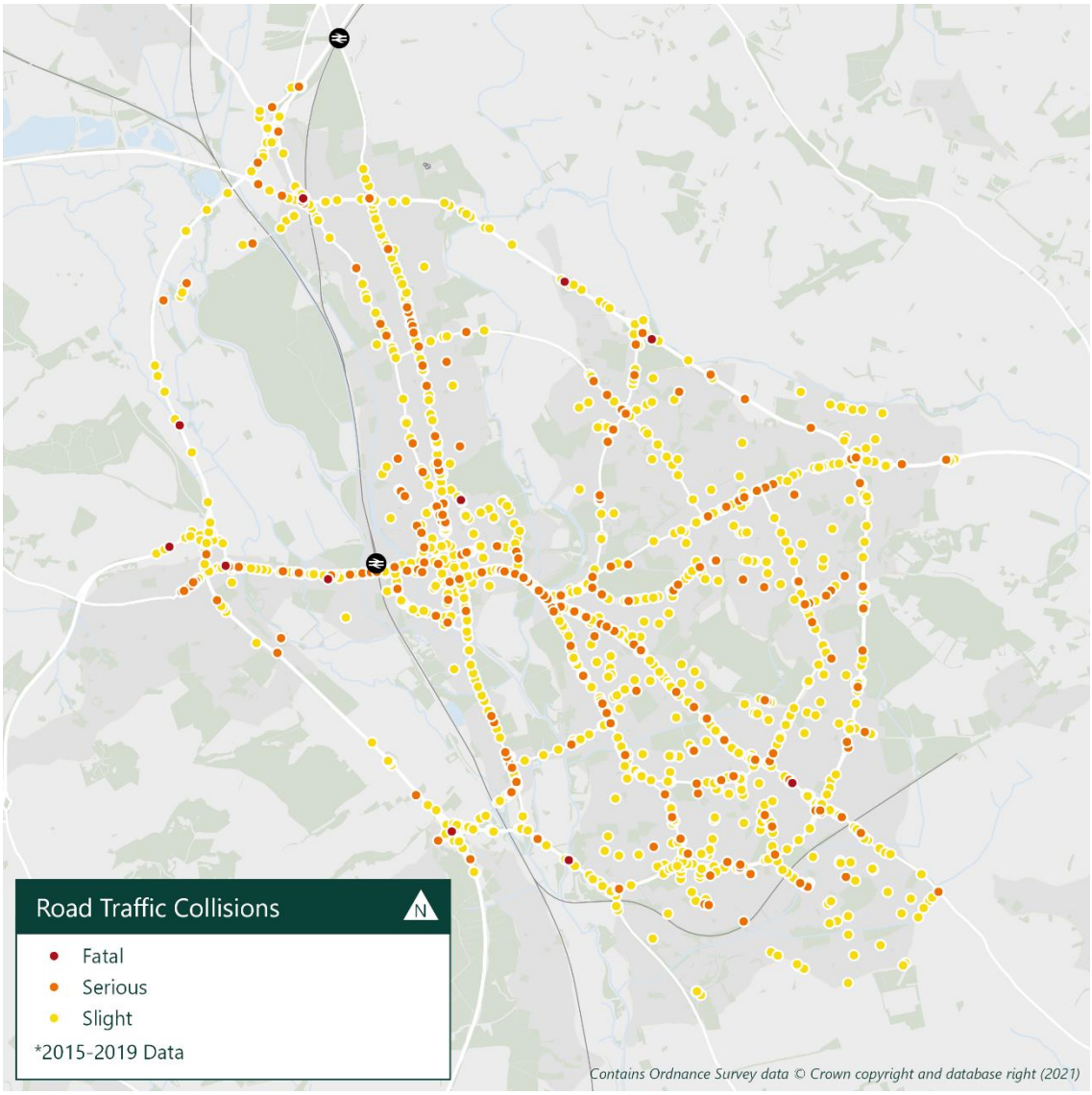
Wider outcome	Predicted impact (summary)	Related transport outcome(s)	Evaluation of wider outcome
Reduced carbon emissions	• Overall, traffic filters are forecast to lead to a 6% decrease in annual CO2 emissions associated with road transport in the city following implementation, based on air quality modelling. • Represents a saving 7,500 tonnes of carbon per year.	• The main driver of carbon is the overall vehicle km travelled on the network (by mode). • Whereas traffic can be measured at specific points on the network, there is no direct measure of overall vehicle km travelled. • The overall change in traffic km will therefore need to be inferred based on changes in traffic levels and wider	Carbon is a global emission, and transport accounts for around 40% of scope 1 and 2 carbon emissions in Oxfordshire. The impact of traffic filters will be negligible in the context of overall emissions, and any change in carbon emissions would not be attributable to traffic filters. The assessment of carbon impacts will therefore be based on

Wider outcome	Predicted impact (summary)	Related transport outcome(s)	Evaluation of wider outcome
		evaluation evidence – e.g. resident surveys as outlined in section 9 of Appendix A). • The traffic filters also enable the introduction of Zero-Emission Buses (transport output).	the evaluation of relevant transport outcomes and outputs.

Improved road safety

6.14 OCC collects road collision data which was provided for the analysis set out in the Road Safety Impacts Assessment that informed the November Cabinet decision. Analysis and mapping of data for 2015 and 2019 was undertaken to provide an understanding of collisions by area, mode and severity. Figure 6-1 shows collisions in Oxford by severity for all road users. Many collisions occurred in the city centre, but a high proportion of the collisions resulting in serious casualties occurred along arterial routes. A higher proportion of collisions resulting in fatalities occurred on the ring road itself (where average speeds are higher).

Figure 6-1 All road user collisions, by severity (2015-19)



6.15 The estimated change in collisions was based on applying change in traffic flows to the 'collision rate'. These were calculated by road link but reported at the city-wide level to show overall estimated change in collisions. The underlying assumption is that the collision rate remains constant but changes in traffic levels will mean the overall number of collisions changes.

6.16 The traffic filters were predicted to result in a 13% reduction in overall collisions, with higher reductions for pedestrian collisions (16%) and cycle (13%) than for motorised collisions (6%). This reflects the larger traffic reduction in the inner and central areas where pedestrian and cycle collisions are more concentrated.

6.17 OCC has access to all reported road safety collisions and casualties (reported to Thames Valley Police), this data will be monitored to evaluate whether and where changes take place, and link these back to changes in traffic levels. The approach to road safety evaluation is summarised in Table 6-3 and detailed in Appendix A.

Table 6-3 Causal links between outputs and outcomes (road safety)

Wider outcome	Predicted impact (summary)	Related transport outcome(s)	Evaluation of wider outcome
Improved road safety	The estimated impact of traffic filters on road collisions: • Roughly 13% fewer total collisions and casualties • Roughly 13% fewer pedestrian collisions and casualties • Roughly 16% fewer cyclist collisions and casualties • Roughly 6% fewer motorised collisions and casualties The assessment was based on the changes in traffic across the city. Change in collisions was further broken down by geographic area, reflecting: • % Changes within the City boundary • % Changes on the A34 and ring road • % Changes in other area. The forecast reduction in collisions was almost wholly attributable to the area within the city boundary, and especially in the city centre and key radials which account for most cycle and pedestrian collisions.	• Direct relationship with change in traffic. • Attributable impact therefore assessed based on traffic change. • The evaluation will use the actual reduction/change in traffic to assess the attributable change in accidents.	OCC has access to detailed data all reported collisions, based on data held by Thames Valley Police. The evaluation will therefore report the change in accidents before and after the filters, corresponding to the geographic areas used as the basis for the reporting of predicted impacts.

Healthy place-shaping

6.18 The predicted impact of traffic filters is to significantly reduce traffic in the city centre and on key roads within the city. The city centre and key locations on other roads serve not only as 'routes' to accommodate movement, but also 'places' to support activity and wellbeing. The ethos of 'healthy streets' seeks to promote the role of streets as 'places'.

6.19 Traffic filters help create opportunities for improving public spaces and pedestrianisation. Traffic filters perform a role in enabling and supporting a number of the healthy streets indicators[10], including:

- Clean air - through the reduction in traffic within the city centre and inner radials;
- Easy to cross - reducing traffic flows across areas of the city with some of the highest pedestrian activity levels;
- People choose to walk and cycle - encouraging residents and employers to switch modes by making walking and cycling more attractive and discouraging car use; and
- People feel safe - improving road safety outcomes for all users, and especially vulnerable users, through reducing traffic levels.

[10] Healthy Streets Indicators are set out in the LCTP available at https://www.oxfordshire.gov.uk/sites/default/files/file/roads-and-transport-connecting-oxfordshire/LocalTransportandConnectivityPlan.pdf

6.20 The positive impact traffic filters directly have on these indicators support the achievement of related but more indirect indicators relating to perceptions, including:

- 'everyone feels welcome'; and
- 'people feel relaxed'.

6.21 The approach to the evaluation of healthy place-shaping is summarised in Table 6-4.

Table 6-4 Causal links between outputs and outcomes (healthy place-shaping)

Wider outcome	Predicted impact (summary)	Related transport outcome(s)	Evaluation of wider outcome
Healthy place-shaping	• The main impact of traffic filters is to significantly reduce traffic in the city centre and on key roads within the city. The city centre and key locations on other roads serve not only as 'routes' to accommodate movement, but also 'places' to support activity and wellbeing. The ethos of 'healthy streets' seeks to promote the role of streets as 'places'. • Traffic filters help create opportunities for pedestrianisation and improving public spaces	The positive impacts on healthy place-shaping are based on the role of traffic filters in helping to reduce traffic. • Direct relationship with change in traffic. • Attributable impact therefore assessed based on traffic change. The evaluation will use the actual reduction/change in traffic to assess the attributable contribution to supporting healthy place shaping.	• Healthy places and healthy streets are intended to create better and more attractive 'places'. • A measure of attractiveness is the level of footfall in a location, and we therefore propose to use evaluation data on footfall and spend, for the city centre and district centres, to help assess whether the increased attractiveness of locations result in discernible differences in footfall and spend. • The evaluation will need to consider other facets of the attractiveness of a location - specifically the impact of traffic filters on making access to locations (for some movements) potentially more difficult by car, but better by bus and cycling. • Resident surveys will provide

Wider outcome	Predicted impact (summary)	Related transport outcome(s)	Evaluation of wider outcome
			additional understanding on the impact of filters on locations.

Increased physical activity

6.22 Traffic filters are intended to support increased levels of physical activity through encouraging increased levels of walking and cycling through:

- Enhancing the quality of the walking and cycling environment through the reduction in traffic levels; and
- Encouraging more walking and cycling trips as viable alternatives for many local car trips that traffic filters seek to discourage.

6.23 These effects together are predicted to increase the levels of walking and cycling by around ten percent which, in turn, will have a corresponding benefit to public health through increased levels of physical activity.

6.24 The monitoring and evaluation approach will support an assessment of the change in levels of walking and cycling on the transport network, which provides a direct proxy measure for the increase in physical activity.

6.25 The approach to the evaluation of physical activity is summarised in Table 6-5.

Table 6-5 Causal links between outputs and outcomes (physical activity)

Wider outcome	Predicted impact (summary)	Related transport outcome(s)	Evaluation of wider outcome
Increased physical activity	The promotion of physical activity is linked to the increase in walking and cycling that the traffic filters are predicted to deliver. • Traffic filters are expected to increase the mode share of walking and cycling by around 10%.	Directly linked to the change in walking and cycling levels, measured by: • The change in pedestrian and cycle flows at key sites. • Pedestrian survey / footfall data. • Resident surveys.	While OCC does measure health outcomes among the overall population, it would not be possible to identify and attribute the impact of traffic filters. The general linkages between physical activity and health are well established and compelling. It will be hard to identify the specific linkages for people who either increase levels of walking and cycling and/or are 'new' cyclist, as it will depend on many factors. The evaluation will be based on implicit assumption that observed increases in walking and cycling will have a corresponding positive impact on health.

Tackle post-Covid decline in the bus network

6.26 Prior to the Covid-19 pandemic, Oxfordshire had a successful commercial bus network with the highest per-capita usage of local services of any shire county in England, underpinned by significant use of bus for journeys to, from and within Oxford City.

6.27 A successful bus network and services fundamentally underpin the success of the overall economy, supporting each of the objectives above around sustainable growth, the transition to a low-carbon economy and tackling inequality.

6.28 However, commercial viability of the Oxfordshire bus network is threatened by two key issues:

- First, worsening traffic congestion and its impact on bus journey times and journey time reliability. This issue pre-dated the pandemic and resulted in declining bus patronage between 2013/14 and 2019, despite a backdrop of buoyant economic growth.
- Second, the impact of Covid-19 on bus demand, whereby overall levels of bus use remain below its pre-pandemic levels.

6.29 These factors combine to threaten the viability of the bus network. There is risk of a further decline of the bus network unless the fundamental issues - slow and unreliable journey times affecting bus operating costs, and lower demand affecting revenues - are not addressed.

6.30 Traffic filters are predicted to improve both operational efficiency and increase demand, and the approach to evaluating the post-Covid performance of the bus network is summarised in Table 6-6.

Table 6-6 Causal links between outputs and outcomes (tackle post-Covid decline in the bus network)

Wider outcome	Predicted impact (summary)	Related transport outcome(s)	Evaluation of wider outcome
Tackle post-Covid decline in the bus network	Traffic filters will directly address the key challenges outlined through: • Improving bus journey times and reliability. Traffic filters are predicted to deliver peak journey time reductions estimated at around 15% within the central areas of the city and around 10% across the day; and • Increasing bus demand. Traffic filters are predicted to increase bus demand. The combination of increased bus productivity (lower costs) and increased demand will support the return to a commercially viable bus network which will help ensure the maintenance of the current network and support future expansion and growth.	Assessment based on: • Change in bus journey times (proxy for costs) • Change in bus demand (proxy for revenue)	OCC and bus operators are part of an Enhanced Partnership (EP) Agreement, which sets out obligations on OCC and operators to support, develop and improve the bus network. The EP also identified a range of key outcomes linked to ensuring the success and viability of the network. The wider evaluation will provide a commentary on the Traffic filters in this wider context.

More effective use of transport capacity through reallocation

6.31 Oxfordshire's growth in jobs and housing has historically been accompanied by a significant increase in private car use. Oxfordshire has seen a 36% increase in vehicle miles since 1993, and in 2019 the total vehicle miles driven in Oxfordshire passed 4 billion for the first time[11]. The increase in car use has resulted in negative impacts on congestion, AQ and the environment – these impacts affect all transport users, residents and visitors.

6.32 Oxfordshire has plans for 100,000 new homes and 85,000 new jobs to be created across Oxfordshire by 2031 (from a 2011 base)[12]. Growth cannot be accommodated sustainably, and without adversely impacting all transport users, unless there is a fundamental shift in the way people travel.

6.33 Traffic filters aim to (and are predicted to) help re-orientate the way in which people travel within Oxford, encouraging increased travel by public transport, cycling and walking (which make efficient use of road capacity) and less travel by car.

6.34 Traffic filters are also predicted to redistribute some traffic onto the A34 and ring road by up to 5% (less on most sections) in the peak periods. This increased flow will affect journey times on some sections of the ring road at certain times.

6.35 Traffic filters are predicted to improve both operational efficiency and increase demand. The approach to the evaluation of making more effective use of transport capacity through reallocation is summarised in Table 6-7.

[11] Oxfordshire Local Transport and Connectivity Plan, 2022 (p22)

[12] Ibid

Table 6-7 Causal links between outputs and outcomes (capacity utilisation)

Wider outcome	Predicted impact (summary)	Related transport outcome(s)	Evaluation of wider outcome
More effective use of transport capacity through reallocation	Traffic filters are predicted to support sustainable capacity and growth though: • Reducing car traffic within the city by 50% in the city centre and up to 40% on key radial routes; • Supporting the re-allocation of road space towards sustainable modes – improving the quality and attractiveness of journeys by bus, cycle and walking; and • Improving public transport connectivity by improving bus journey times across the city, benefitting all bus and Park & Ride users. Increased traffic flow on the ring road will affect journey times on some sections at certain times.	Assessment should look separately at 1. The central area/inner radials where reallocation is a priority: • Change in traffic levels – which provides a measure of the capacity that can be used to reallocate to other modes; • Changes in journey times for bus and car; and • Changes in bus, cycle and walking trips – which show whether and the extent to which 'freed-up' capacity is being utilised by more sustainable modes. 2. The wider network including the A34 and ring road. Looking at change in: • Traffic levels; • Journey times; and • Bus and Park & Ride demand.	The wider outcome is the desire to accommodate planned growth in a sustainable manner. There is no single 'metric' related to this outcome, though reducing car trips and increasing the mode share of sustainable modes are key to the overall objective to ensure future growth is sustainable. The evaluation of the role of traffic filters on this objective will be informed by the assessment of transport outcomes.

An inclusive transport system

6.37 People in PCGs[13] may be significantly more affected by a change than other people. A separate Equalities Impact Assessment (EqIA) considers potential impacts of traffic filters in detail, which identifies some relevant challenges relating to PCGs and traffic filters.

6.38 The EqIA concluded that traffic filters would be expected to have a net positive impact on the city's residents, including PCGs.

- The traffic filters are likely to reduce traffic volumes and create improved conditions for buses, leading to reduced journey times by public transport. This will disproportionately 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.
- There are also likely to be benefits for those who cycle (predominantly those aged 16-24 and 25-44) due to the removal of through-traffic within the traffic filters. This will create a

[13] Protected characteristics are specific aspects of a person's identity as defined by the Equality Act 2010. The 'protection' refers to protection from discrimination. On this basis, people are grouped into nine PCGs by the Act: Age, Disability, Gender reassignment, Marriage and civil partnership, Pregnancy and maternity, Race, Religion or belief, Sex, Sexual orientation

safer and more accessible environment for people cycling and has the potential to encourage people from all backgrounds to cycle.

6.39 The EqIA acknowledged that the traffic filters may inconvenience drivers and those who rely on cars; e.g., older and/or disabled people and people from certain ethnic groups.

- Where the traffic filters increase journey times, this may have a disproportionately negative impact on non-professional carers for disabled and/or older residents who are more likely to be making regular trips by car. However, it is important to recognise that motor vehicle access to all locations has been maintained, and exemptions for Blue Badge holders, disabled tax class vehicles, taxis and private hire vehicles, and both professional and non-professional health and care workers will mitigate the worst of these potential impacts. The ability for residents to obtain day passes will also help mitigate impacts on people making fewer regular journeys for caring purposes.

6.40 The 'transport outcomes' are, in general, the measurable impacts relevant to specific modes and areas that underpin the evaluation. The evaluation of the impact on equalities/PCGs reflects the way in which these transport outcomes specifically impact on the 'wider' outcomes. The assessment of wider outcomes on PCGs is more qualitative in nature and we propose to understand these impacts through ongoing engagement with, and facilitation by the Oxford Inclusive Transport Group and through resident surveys. This is summarised on Table 6-8.

Table 6-8 Causal links between outputs and outcomes (impacts on equalities)

Wider outcome	Predicted impact (summary)	Related transport outcome(s)	Evaluation of wider outcome
Inclusivity – removal of barriers to travel to create an accessible and fair transport system	• Reduced traffic volumes creating improved conditions for buses, leading to reduced journey times by public transport. This will disproportionately 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. • Removal of through-traffic benefitting those who cycle (predominantly those aged 16-24 and 25-44) due to the removal of through-traffic within the traffic filters. This will create a safer and more accessible environment for people cycling and has the potential to encourage people from all backgrounds to cycle. • Increase in car journey times, having a potentially disproportionately negative impact on PCGs (not covered by range of traffic filter exemptions, or through 'day passes').	• Impact on bus services and journey times. • Impact on traffic reduction to create safer and more accessible environment for cycling. • Impact of traffic filters on car journey times.	Assessment of how change in transport outcomes affect PCGs. Assessment qualitative based on ongoing engagement with and facilitated by the Oxford Inclusive Transport Group. Analysis of PCG travel behaviour and perceptions through Resident Survey.

Increased productivity

6.41 A qualitative assessment of potential impacts of traffic filters on businesses, looking at type, size and location of business, was undertaken and reported in November 2022. The Business Impact Assessment provides detail on the general impacts across different businesses. The largest impacts (positive or negative) are highlighted in Table 6-9.

Table 6-9 Causal Links between Outputs and Outcomes (Impact on Businesses)

Wider outcome	Predicted impact (summary)	Related transport outcome(s)	Evaluation of wider outcome
Increased productivity – a world leading business base	Predicted impacts varied by: • Business type; • Business location; and • Business size. Key impacts: • Many businesses (businesses with fleets of vehicles, taxi/private hire operators, bus operators) will directly experience positive travel time impacts, as they will be exempt from the filters and will benefit from reduced congestion; • Impacts on consumer services businesses will vary according to location, nature of the customer base and modes of travel used for access. It is expected that there will be a positive impact on consumer services businesses in the city centre where most customers travel by non-car modes; • For consumer services businesses in district centres, the availability of resident permits and likely low levels of car use for access combine to minimise the potential impact on customer	Transport outcomes relate to: • The provision of exemptions (under transport outputs) that will enable businesses to benefit from reduced congestion; • The relative accessibility (by all modes) and attractiveness of locations in which consumer services (retail, F&B, leisure etc.) businesses operate; and • The relative accessibility (by all modes) for commuting trips to businesses, affecting labour market accessibility.	Assessment to be based on: • Assessment of key transport outputs and outcomes; • Assessment of how these have impacted different businesses, based on Business Panel research; • • Levels of footfall and spend in city centre and district centre; and • To report thematically – deliveries/servicing/business catchment, labour market etc. – as per business impact assessment.

Wider outcome	Predicted impact (summary)	Related transport outcome(s)	Evaluation of wider outcome
	demand. There is a possible negative impact on businesses who rely on customers travelling more than two days a week by car, but it can be expected that this is a small minority; and • There may be a moderate labour market impact (specifically recruitment and retention) for schools and hospitals as a result of longer journey times for car journeys which may influence the decisions of staff about work location.		

7 Evaluation of Impacts

Introduction

7.1 The evaluation of impacts provides for an assessment of whether the overall intended policy-related objectives have been met by the traffic filter scheme.

7.2 The assessment of impacts cannot, in most cases, be directly measured and attributed to traffic filters as 'impacts' are broadly defined and the overall change in a specific impact (productivity, health) will be affected by numerous transport and non-transport drivers and polices, as well broader macro-level trends or events.

7.3 The assessment of traffic filter impacts therefore draws on the preceding stages in the logic 'chain' – the assessment of transport outcomes and wider outcomes – so that the overall impact of traffic filters can be reasonably inferred.

7.4 For example, if the traffic filter scheme delivers its intended outputs, achieves its intended transport and wider outcomes (supported by the evaluation evidence) then, based on the 'logic-map' process underpinned by the Theory of Change, this supports the assessment that the resultant impact has been achieved.

7.5 If the evaluation of transport and wider outcomes suggests that intended outcomes have not been met to the extent predicted, then it would follow that the 'impact' has not been achieved to the same extent as intended. In practice, it is likely that some transport/ wider outcomes may differ in terms of the nature of impact (i.e. direction of change, for example where the evaluation suggests a predicted increase in metric X is actually a reduction), and that many will differ in scale (i.e. a predicted increase of, say, 10% will be evaluated as an increase by of a higher/lower magnitude). The role of the evaluation is to assess how these complex changes affect the overall assessment of impacts.

7.6 The remainder of this Chapter sets out the approach to evaluation under each of the key impacts, which relate back to the desired policy themes (impacts) in Table 2-2, which formed the basis of the strategic assessment of traffic filters.

7.7 In each case the 'Impact' (e.g. productivity, health) is presented in a table which shows:

- The related 'wider outcomes' that contribute to the achievement of the impact.
- The 'transport outcomes' that support the achievement of wider outcomes.
- The 'expected' or predicted impact, based on the strategic assessment undertaken to support the ETRO approval (as per Table 2-2).
- Whether there are proposed 'evaluation measures' developed as part of the M&E Plan that support the assessment of outcomes and, therefore, the overall impact.

Impact evaluation – productivity

Table 7-1 Impact evaluation – productivity

Wider outcome	Transport outcome	Expected impact	Evaluation measures/metrics as part of plan
✓ Support sustainable housing and jobs through effective use of all available transport capacity through innovative management of the network.	✓ Reduce traffic within the city ✓ Support reallocation of road space to other modes ✓ Improve bus journey times	Strong positive	✓ Yes (quantified) ✓ Yes (qualitative, informed by quantified evidence) ✓ Yes (quantified)
✓ Support transition to low carbon economic growth through accelerating the transition to a zero-carbon transport network.	✓ Enable mode shift from car to more sustainable modes ✓ Enable investment in 159 zero emission buses ✓ Facilitate place-shaping enabling design of streets prioritising people over vehicles	Moderate positive	✓ Yes (qualitative, informed by quantified evidence) ✓ Yes (quantified) ✓ Yes (qualitative, informed by quantified evidence)
✓ Tackle post-COVID decline in bus network and support investment in strategic public transport networks	✓ Improve bus journey times, increasing the productivity of bus services which will make them more viable ✓ Reduce journey times making buses more attractive, increasing bus demand, increasing viability of services	Strong positive	✓ Yes (quantified) ✓ Yes (quantified)
✓ Support economic growth and vitality across the county	✓ Support desired outcomes of improved quality of life, health and place that are key to making Oxford a more attractive place to live, work and invest ✓ Support the overall vision to deliver economic success in a way that is low-	Moderate positive	✓ Yes (qualitative, informed by quantified evidence) ✓ Yes (qualitative, informed by quantified

Wider outcome	Transport outcome	Expected impact	Evaluation measures/metrics as part of plan
	carbon, inclusive and sustainable. X Filters would increase flows on the ring road and A34, affecting journey times for business and freight.		evidence) ✓ Yes (quantified)

Impact evaluation – health

Table 7-2 Impact evaluation – health

Wider outcome	Transport outcome	Expected impact	Evaluation measures/metrics as part of plan
✓ Improve local air quality through the reduction of transport emissions	✓ Reduce traffic flows in areas where AQ is poor and there are high volumes of vulnerable users whose health is adversely affected ✓ Air quality modelling assessment estimates significant reductions in Nitrogen Oxide, PM10 and PM2. The modelling forecasts that the scheme will not result in any exceedances of national AQ objectives	Strong positive	✓ Yes (quantified) ✓ Yes (quantified – focusing on NOx)
✓ Improve public health and wellbeing by increasing levels of walking and cycling	✓ Remove traffic, creating a more attractive environment for walking and cycling ✓ Removing traffic creates space for further improvements in walking and cycling infrastructure	Strong positive	✓ Yes (quantified) ✓ Yes (qualitative, informed by quantified evidence)
✓ Improve road safety for all users, and in particular vulnerable users.	✓ Reduce traffic, resulting in fewer collisions ✓ Estimated to reduce total collisions and casualties by around 13%	Strong positive	✓ Yes (quantified) ✓ Yes (quantified)

Impact evaluation – environment

Table 7-3 Impact evaluation – environment

Wider outcome	Transport outcome	Expected impact	Evaluation measures/metrics as part of plan
✓ Reduce carbon and tackle climate change	✓ Enable investment in 159 zero emission buses, saving	Strong positive	✓ Yes (quantified)

Wider outcome	Transport outcome	Expected impact	Evaluation measures/metrics as part of plan
	7,500 tonnes of carbon per year ✓ Support mode shift to more sustainable modes of transport with lower carbon emissions		✓ Yes (qualitative, informed by quantified evidence)
✓ Mitigate and wherever possible enhance the impacts of transport on the local built, historic and natural environment	✓ Reduced traffic in historic city centre streets is expected to have a positive impact on the heritage assets and associated public engagement. X Increased traffic on the ring road will affect some heritage assets and increase NOx emissions close to the Oxford Meadows Special Area of Conservation.	Moderate positive	✓ Yes (qualitative, informed by quantified evidence) ✓ Yes (quantified)

Impact evaluation – healthy place-shaping

Table 7-4 Impact evaluation – healthy place-shaping

Wider outcome	Transport outcome	Expected impact	Evaluation measures/metrics as part of plan
✓ Support Health Place-Shaping by creating opportunities for pedestrianisation and improving public spaces	✓ Reduce traffic, creating opportunities for pedestrianisation and improving public spaces ✓ Support 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	Strong positive	✓ Yes (qualitative, informed by quantified evidence) ✓ Yes (qualitative, informed by quantified evidence)

Impact Evaluation – connectivity

Table 7-5 Impact evaluation – connectivity

Wider outcome	Transport outcome	Expected impact	Evaluation measures/metrics as part of plan
Enhance connectivity by: ✓ Improving walking and cycling connectivity to enable more	✓ Increase walking and cycling connectivity by reducing traffic in areas of high pedestrian and cycle movement	Strong positive	✓ Yes (quantified)

Wider outcome	Transport outcome	Expected impact	Evaluation measures/metrics as part of plan
journeys by these modes ✓ Enabling better management of freight and goods movement. ✓ Improving other forms of connectivity such as digital / full fibre connectivity	✓ Make local goods and freight movements to and within the city more efficient, through filter exemption for goods vehicles ✓ No direct impact on digital connectivity		✓ Yes (qualitative, informed by quantified evidence)

Impact evaluation – inclusivity

Table 7-6 Impact evaluation – inclusivity

Wider outcome	Transport outcome	Expected impact	Evaluation measures/metrics as part of plan
✓ To improve local journeys for people in PCGs ✓ Create economic opportunities for all, through enabling inclusive access to jobs, education, training and services	✓ Improved journeys for Blue Badge holders and support/care workers through filter exemptions ✓ 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	Positive	✓ Yes (qualitative, informed by quantified evidence) ✓ Yes (qualitative, informed by quantified evidence)

8 Monitoring: How Outcomes and Impacts Will Be Measured

8.1 The evaluation of traffic filters relies on the availability of quantitative monitoring data to assess that changes take place at an aggregate level (e.g. changes in traffic flow, journey times), and supporting qualitative information to provide insight to help understand and explain the behavioural responses that are driving these changes.

Monitoring data (quantitative)

8.2 There are comprehensive data that will support the assessment of traffic filters against the range of outcome measures that underpin the evaluation.

8.3 These are detailed in Appendix A and summarised in Table 8-2.

Surveys and qualitative research

8.4 The quantitative data above will be supplemented by bespoke surveys and engagement with specific users and groups, to gain further insight on attitudes to and perceptions of traffic filters, and to understand whether and how these have led to change in behaviour.

8.5 These are detailed in Appendix A and summarised in Table 8-1.

Table 8-1 Bespoke survey and qualitative research

User group	Research method	Key purpose/features
Permit applicants	User survey via permit application website (optional)	Feedback on user experience of application process.
Businesses	Business panel	Gain insight on business perceptions of traffic filters. To understand any business responses to/ impacts of traffic filters.
Residents	User experience and behavioural surveys	To understand the motivations behind the changes people make to how they travel, which groups are making changes and what modes are affected.
PCGs	• Ongoing engagement with The Oxford Inclusive Transport Focus Group. • Targeted engagement through one-to-one interviews or surveys with people with Protected Characteristics, facilitated through the disability groups represented on the forum. • Impacts on PCGs also collected through resident survey.	Understand impacts on PCGs, including those measures identified through the EqIA that were not fully mitigated through scheme design (exemptions for Blue Badge and carers).

8.6 The surveys and engagement outlined in Table 8-1 would supplement the existing and ongoing stakeholder engagement undertaken by Oxfordshire County Council and Oxford City Council with a range of key business and community stakeholders.

Table 8-2 Summary of monitoring data for M&E Plan

Indicator	Baseline(s)/ comparator years	Predicted impact	Data source/ Coverage	Method of collection	Data owner	Frequency of collation / potential reporting
Transport outcomes						
Traffic filter permits	n/a	n/a	• OCC Permit website. • Eligible to residents of Oxfordshire.	• Online application • Online user survey (optional)	OCC	• Collection ongoing • Regular reporting (dashboard)
Traffic filter flows and compliance rates	Yes (ANPR installed prior to traffic filter going 'live').	See Chapter 5	• ANPR Cameras. • Six traffic filter sites.	Traffic count data 'feed' to OCC	OCC	• Collection ongoing • Regular reporting (dashboard)
Traffic flow data (incl. cycle, walk etc.)	• Yes, some data from 2019. Better data from 2022 onwards. • Comparator periods can be user defined.	See Chapter 5	• Over 100 'live' traffic counters (BlackCat, Vivacity) with vehicle split. • City-wide coverage.	Traffic count data 'feed' to OCC	OCC	• Collection ongoing • Regular reporting (dashboard)
Traffic data on A34	Some data from 2018 / 19.	See Chapter 5	4 NH sites on A34 within area of influence	Direct from NH or (with NH agreement) download from Alchera (data-hub)	NH	• Collection ongoing • Regular reporting (dashboard)
Bus journey time performance and demand data	• Yes, from 2019 onwards. • Comparator periods can	See Chapter 5	Bus operator data Coverage of all routes / services in SmartZone (City and beyond) for 2 main bus operators.	CitySwift (data aggregator)	Operator data / shared with OCC	• Collection ongoing • Regular reporting (dashboard)

Indicator	Baseline(s)/ comparator years	Predicted impact	Data source/ Coverage	Method of collection	Data owner	Frequency of collation / potential reporting
	be user defined.					
Traffic performance data (INRIX)	Yes, from 2021 onwards Only for months available (purchased)	See Chapter 5	• INRIX observed 'real-time' data. • Provides highway Journey times for links / specified routes. • Full network coverage within and beyond city.	• In-vehicle sensors • Aggregated (anonymised) by road link	INRIX owner iHUB / OCC license for use	• 3 to 4 months of data purchased per year • Quarterly reporting (dashboard)
Wider outcomes (traffic related)						
Air quality	• 2019 onwards. • Reported for Calendar years.	See Chapter 6	• >100 AQ monitoring sites throughout city. • Comprehensive coverage within city and A34/Botley.	• Ongoing monitoring. • Data collated and validated so support annual reporting of AQ.	Oxford City Council and District Councils in Oxfordshire	• Collection ongoing. • Reporting only robust based on >1 year of data. • Traffic change better measure of 'predicted/attributable change'
Road safety / collisions	• 2015 onwards. • Comparator periods can be user defined, but only robust over longer periods.	See Chapter 6	• Reported accident statistics. • Full coverage with collision type (ped, cycle, motorised), location and severity.	All accidents reported to Thames Valley Police (TVP)	TVP / OCC	• No – data more robust over longer-period. • Traffic change better measure of 'predicted/attributable change'

Indicator	Baseline(s)/ comparator years	Predicted impact	Data source/ Coverage	Method of collection	Data owner	Frequency of collation / potential reporting
Wider outcomes (economic metrics)						
Pedestrian interview surveys (after surveys)	2022 surveys city centre & Jericho	n/a		No		No
Footfall data	Yes (from 2023)	n/a	• Footfall data provider • Oxford city centre and six district centres	No	Oxford City Council	Ongoing monitoring to be reported monthly
Spend data	Yes (from 2023)	n/a	• Spend data provider Oxford city centre and six district centres	Yes	Oxford County Council	Yes (prepared by supplier)
Shop vacancy rates (city centre only)	Yes (quarterly)	Not directly predicted, but indicator of economic vibrancy.	• Quarterly survey of shop vacancies / vacancy rates in city centre.	In-person survey of retail area.	Oxford City Council	Quarterly

9 Reporting

9.1 This Chapter sets out the proposed timing of the traffic filter evaluation.

Project timeline

Key dates (indicative)

9.2 Key project dates:

- November 2022 – Cabinet Decision;
- Summer 2022 - Publication of Monitoring and Evaluation Plan (this Report and associated appendices)
- 2024 – pre-ETRO baseline / comparator data collation;
- Dashboard reporting – monthly from traffic filter implementation;
- 2024 Potential use of monitoring data to inform any interim assessment after 3 to 6 months post ETRO implementation, to inform any potential changes *within* the ETRO period; and
- Towards end of ETRO – Evaluation Report to inform the Cabinet discussion on whether the scheme should be made permanent, and in what form.

Implications for M&E

9.3 The key issue that is apparent from the project timeline, is that there is no neat 'before and after' that is unaffected by material factors, specially:

- The temporary closure of Botley Road makes it difficult to monitor 'before' data in the period immediately prior to the traffic filter implementation.
- The potential changes to the traffic filter scheme *within the timeframe of the ETRO*, means there is potentially no singular 'after' scheme to evaluate.

9.4 There is therefore a need to understand how the effects of these changes through time, through monitoring of outputs and outcomes, and consider those that are (more) attributable to traffic filters.

Comparator scenarios for traffic filter assessment

9.5 Potential scenarios:

- 2019 pre-covid comparator;
- 2022/23 – pre-ETRO baseline (Botley Road open);
- 2023/24 – pre-ETRO baseline (Botley Road closed);
- 2023/24 – pre-ETRO baseline (Botley Road open – between the two proposed Botley Road closure periods);
- 2024/25 ETRO implementation [including part time operation at MFR and Hollow Way]; and
- 2024/25 ETRO – ETRO implementation with any amendments to the operation of the scheme made within the ETRO timeframe (should amendments be made).

9.6 On the basis of current working assumptions the scenarios used for the evaluation would be:

- A 'baseline' with Botley Road open; and
- The traffic filter scheme with F-T operation.

9.7 The Botley Road closure issue adds complexity to the analysis and reporting (evaluation of impacts), but not the data collection/monitoring. The Botley Road closure timings, at the time of writing, available via the Network Rail website[14].

9.8 The exact selection of the suitable 'baseline' can be made once there is greater certainty over the timing and sequencing of Botley Road and the Traffic Filter implementation date.

Proposed reporting – M&E reporting and dashboard summary

9.9 There are two potential reporting requirements for the M&E. First, is the requirement for a full M&E report into the traffic filters, to inform the decision on whether, and in what form, to make the scheme permanent. Second, the desire for regular 'dashboard' reporting to provide OCC and other stakeholders with a regular 'snapshot' of how the scheme is performing against a range of key M&E metrics. Each is summarised below.

Dashboard reporting

9.10 We propose that a dashboard summary is produced monthly, and its key features would be that it would:

- Be based on readily accessible data.
- Contain some, but limited, or interpretation/commentary. Factual explanation will be provided (e.g. school holidays, road closures) but there would be no broader 'evaluation' of what the data is showing or suggesting about the overall performance of traffic filters. Meaningful evaluation cannot be based on a monthly 'running commentary'.
- Include 'say what you see' bullets based on key performance metrics. Overall traffic up/down, bus journey times etc.
- Would include a bullet point summary of any factors that might materially affect the reporting of metrics in the dashboard e.g. road closures / incidents, weather events, seasonal factors (Christmas, school holidays, University term start / end etc.)

9.11 Ongoing data would be used to identify/assess specific issues as they arose. These would inform when/whether to adopt any actions be mitigate any adverse/unintended impacts through the course of the ETRO (linked to the Corrective Action Framework described in Appendix B).

9.12 As data used in the M&E is sourced from various suppliers (some of whom provide their own dashboard to display data) the M&E 'dashboard' may be formed of a central web page linking several dashboards.

M&E reporting

9.13 The M&E reporting would provide a more detailed assessment of traffic filters, based on the full range of data, research and surveys. Assumptions for reporting are:

[14] https://www.networkrail.co.uk/running-the-railway/our-routes/western/oxfordshire/botley-road-bridge-replacement/

- M&E reporting is based on monitoring data and uses this to explain and evaluate the impacts of traffic filters;
- Full M&E reporting is only really suitable towards the end of the ERTO, once sufficient data available and supported by survey data; and
- We also anticipate that there would also be an 'interim' M&E to support the decision whether to make any modifications to the scheme within the ETRO period.

Use of ongoing monitoring data for dashboard and M&E reporting

9.14 The table below summarises data that we propose would be included in a dashboard and M&E reporting.

Table 9-1 Summary of proposed 'dashboard' and M&E reporting

	Baseline(s) / comparator years	Control areas	Dashboard reporting	Reported in M&E
Transport outcomes				
Traffic filter permits and compliance	n/a	n/a	Yes OCC (systems-based reporting)	Yes
Traffic flow data (incl. cycle, walk etc.)	• 2019 • 2022/3 & 2023/4	Yes (County and national stats)	Yes M&E Plan Delivery Organisation From Alchera data-hub	Yes
Bus data	• 2019 • 2022/3 & 2023/4	Yes (national stats)	Yes CitySwift	Yes
Traffic performance data (INRIX)	• 2019 • 2022/3 & 2023/4	Yes (INRIX comparators - OCC)	No – only a/v for 3 / 4 months of year. M&E Plan Delivery Organisation From Alchera data-hub	Yes
Wider outcomes (traffic related)				
Air quality			No – data not robust for <1 year. Traffic change better measure of 'predicted/attributable change'	Yes – summarise based on annual reported data Note (calendar years)
Collisions			No – data more robust over longer-period. Traffic change better measure of 'predicted/attributable change'	Yes – summarise based on annual reported data Note – can define 'before and after' periods.

Economic Outcomes				
Pedestrian interview surveys (after surveys)	2022 surveys city centre & Jericho	No	No	Yes
Shop vacancy rates (city centre only)	Yes (quarterly)	No	No	Yes
Footfall and spend data	Yes (from 2023)	No	Yes	Yes
Resident surveys	No	No	No	Yes
PCG research	No	No	No	Yes

Monitoring & Evaluation programme and reporting

Baseline assessment and 'piloting'

9.15 The proposed M&E approach relies on the development of several 'dashboard' elements. For these we have identified the monitoring data and have developed and outline 'output specification' of what each dashboard should show and include.

9.16 There is a requirement to develop a 'baseline' assessment of key metrics based on monitoring data that will be collected as part of this Plan, which also affords an opportunity to pilot and test the proposed dashboard reporting.

9.17 We propose that this is done in mid-2023, subject to securing access to the relevant data-hubs via OCC.

Proposed M&E assessment and reporting timeframe

9.18 The proposed M&E reporting programme is summarised in Table 9-2.

Table 9-2 Proposed assessment and reporting timeframe

What	When
M&E Plan	Q2 2023
Dashboard	Monthly from implementation
2024 – Interim assessment of part-time traffic filter operation	After 3 to 6 months part time traffic filter operation
At end of ETRO – inform decision on permanence	Towards end of ETRO

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