



Car Free _____ School Streets Audit

September 2023

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Executive summary

Birmingham City Council (BCC) regularly receives complaints regarding congestion and parking problems generated from school related journeys. Drivers parking illegally or dangerously around school gates results in road safety issues for children walking, cycling or scooting to and from schools in Birmingham. These challenges also contribute to dangerous levels of air and noise pollution around many schools in the city. A study by Asthma & Lung UK (2022) identified that approximately 25% of all British schools and colleges are exposed to dangerously high levels of air pollution and in Birmingham up to 900 deaths per year can be attributed to the effects of air pollution (Public Health Birmingham, May 2017).

In 2019, BCC launched their Car Free School Streets (CFSS) programme. Delivery to date has demonstrated that street closures at suitable locations, alongside active engagement in other travel behaviour change initiatives, can contribute to a reduction in car travel to school and increased use of sustainable transport such as walking, cycling and scooting.

Over 70% of people surveyed as part of this first phase stated that the schemes should continue, with significant changes seen

outside Alston Primary School as a result of CFSS delivery (a 10% increase in walking rates and a reduction of approximately 16% car usage).

Following on from the success of this pilot, six new schools were selected for inclusion in a second CFSS phase. Again schemes were well received with over 70% of survey respondents supporting continuation of this at all six schools. In April 2022, a further 5 schools were added to the programme. This third phase is currently under review and a decision will be made later in 2023 as to whether they become permanent.

BCC are now looking to further expand the CFSS programme across the city, allowing more schools to benefit from becoming a CFSS. The School Streets: Reducing Children's Exposure to Toxic Air and Road Danger report published in January 2021 estimated that around 40% of all schools in Birmingham could be potentially feasible for CFSS intervention based on their geographical location without assessing other factors.

WSP on behalf of BCC are undertaking a detailed auditing process to assess the suitability and feasibility of CFSS at all schools (**Figure 1**) across the city, identifying

how and where future CFSS delivery should be prioritised to help transform road safety, air quality and congestion outside schools in Birmingham.

Figure 1: Audited schools in Birmingham



Chapter 1 _____

Study overview

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Introduction

What are car free school streets?

CFSS are a pioneering initiative to help transform road safety and air quality outside schools, whereby streets are closed to traffic at the start and end of the school day. CFSS also support a reduction in congestion and improved air quality at the school gates as well as making it easier and safer for pupils to walk, cycle or scoot to school.

Context

To date, CFSS have been implemented outside of 17 schools in Birmingham, 12 of which have since been made permanent. CFSS aims to:

- ❖ Reduce congestion and parking pressures outside schools
- ❖ Improve air quality and create a more pleasant and attractive environment
- ❖ Discourage car journeys and encourage walking, wheeling, cycling or scooting to school
- ❖ Make the streets outside schools safer at the start and end of the school day

CFSS in Birmingham have been delivered as part of wider engagement through Modeshift STARS which supports schools

to develop travel plans that promote active and sustainable travel and monitor the effectiveness of implementation.

Schemes that have been implemented so far have been highly successful, particularly when measures have involved a form of temporary barrier (e.g. traffic cones) and personnel restricting vehicular access along the street.

BCC are open to considering alternative measures, which will be explored further in this report.

Report purpose

BCC are now looking to further develop and expand the CFSS programme across the city. To determine the potential suitability of each school in Birmingham (445 schools) to be a CFSS, WSP have been appointed to conduct an auditing process to assess feasibility for CFSS at all schools. The audit will also investigate the feasibility of other traffic measures which could be implemented alongside a CFSS scheme. The outcomes of this audit will help BCC to identify and guide where any future funding sources for CFSS delivery should be prioritised.

This report provides a summary of the methodology which has been used to undertake the CFSS auditing process to determine the suitability of each school in Birmingham to be a CFSS. The outcomes of the audit has been provided to BCC in the form of the Car Free School Streets Live Database, which will be used in conjunction with this report.

The purpose of this report is not to portray CFSS schemes as the only traffic management measure which could be implemented outside schools in Birmingham, but rather to show how and where this intervention could be delivered to make it safer for children travelling to and from school.



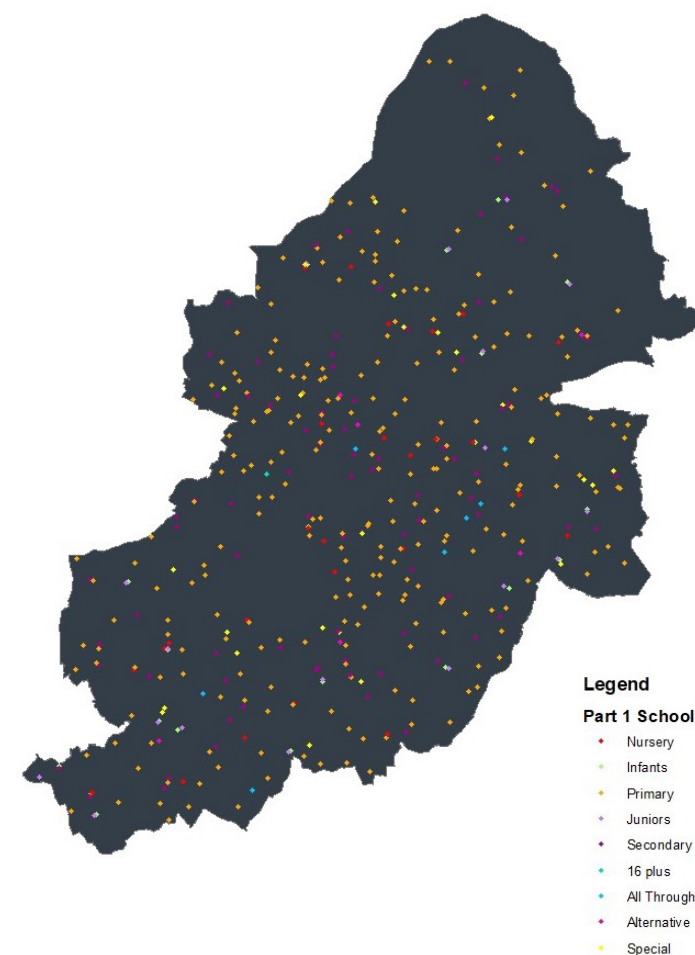
Study area

Figure 2 illustrates the study area that has been used in the CFSS auditing process. As shown in the figure, 445 schools in Birmingham have been assessed for the potential to deliver a CFSS. **Table 1** sets out the 'school type' of the 445 schools illustrated in **Figure 2**. A full list of schools which have been audited is detailed in the Car Free School Streets Live Database.

Table 1: School type categorisation

School type	Definition	Number of schools
Nursery	Education establishment for young children, aged between 3 – 5 years old.	27
Infants	Education establishment for young children, aged between 4 – 8 years old.	18
Juniors	Education establishment for young children, aged 7 – 11 years old.	18
Primary	Education establishment for young children made up of both infant and junior schools , aged between 5 – 11 years old.	259
Secondary	Education establishment for older children aged 11-16 years old.	83
All-through	Education establishment which provides both primary and secondary levels of education.	7
Alternative	Education establishment with a non-traditional curriculum, accommodating educational, behavioural and medical needs of children which can not be adequately addressed in a traditional school environment.	7
Special	Education establishment providing education for children with special educational needs or a disability.	26

Figure 2: Schools categorised by school type



Chapter 2

Methodology

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Overview of methodology for assessment

Overview of methodology for assessment

To support BCC to make informed decisions in the future, an auditing process has been undertaken to assess suitability and prioritise locations for the delivery of CFSS in Birmingham. The following tasks have been undertaken as part of the CFSS auditing process:

- Data collection:** Collection of available datasets to identify characteristics such as school profile, highway infrastructure, public transport services and local context.
- Spatial analysis:** Desktop geographical and spatial mapping of all schools.
- Car free school streets live database:** Development of 'live' database containing baseline data of all schools.
- Sifting process (school assessment one):** Use of agreed scoring criteria to classify each school as very likely feasible, likely feasible, maybe feasible and unlikely to be feasible.

- Prioritisation process (school assessment two):** Further assessment of the schools against more detailed criteria to prioritise where CFSS could be considered.
- Ranked list of schools:** Use of the prioritisation outcomes to create a ranked list of schools.
- Scenarios and potential interventions toolkit:** A toolkit which can be used to guide future CFSS delivery in Birmingham.
- Schematic maps:** Annotated concept maps for 10 example 'maybe feasible schools' with recommendations for the delivery of CFSS at these type of locations.



Data collection

Table 2 details the datasets that were collected to undertake the CFSS audit. The datasets include categories such as type of school, existing levels of active travel engagement, road type and layout, proximity to active travel and public transport, congestion, collisions and local trip generators.

The transport, highway and local context datasets were inputted into GIS and the outcomes exported into a supporting database (Car Free School Streets Live Database). This allowed an understanding of the spatial and geographical composition of all schools in Birmingham to be developed and helped to determine each school's suitability for the delivery of CFSS. The Car Free School Streets Live Database is a live document which will continue to be updated in the future as the CFSS programme progresses and more schemes are delivered.

Table 2: Data collection and datasets

Category	Dataset	Description	Source
School Profile	Type of School	Classification of the type of school into the following categories: Nursery, Infants, Juniors, Primary, Secondary, All-through, Alternative and Special	Birmingham Schools Directory
School Profile	Age Group	Classification of school age group between Ages 2 and 19	Birmingham Schools Directory
School Profile	School Capacity	Total number of pupils attending each school	Birmingham Schools Directory
School Engagement	Modeshift STARS Accreditation	Classification of Modeshift STARS accreditation into Green, Bronze, Silver, Gold or Platinum	Birmingham City Council
School Engagement	Living Streets Walk to School	Classification of schools who are actively taking part in the Living Streets Walk to School programme	Birmingham City Council
School Engagement	Bikeability	Classifications of schools who have taken part in Bikeability during 2022 and 2023	Birmingham City Council
Transport and Highway Context	School Street Road Type	Classification of school street road type into the following categories: A Road, B Road, Local and Minor	OSM Open Roads

Data collection

Table 2: Data collection and datasets

Category	Dataset	Description	Source
Transport and Highway Context	Road Layout	Classification of school street road layout into the following categories: Through Route, One-Way and Cul-De-Sac	OSM Open Roads
Transport and Highway Context	Average Road Width	Average width of school street in metres	Agilysis Active Streets Assessment Tool
Transport and Highway Context	Speed Limit	UK speed limit of school street in mph	Agilysis Active Streets Assessment Tool
Transport and Highway Context	National Cycle Network	National Cycle Network route located within 300m of school street	National Cycle Network
Transport and Highway Context	Bus stop	Distance to the nearest bus stop was identified and considered for each school.	National Public Transport Access Modes
Transport and Highway Context	Bus services bus stops	The number of bus services serving school street	National Public Transport Data Repository
Transport and Highway Context	Bus Route Frequency	The frequency of bus services during the AM Peak (07:00 to 09:00 Monday to Friday) were identified and considered in the data analysis	National Public Transport Data Repository

Data collection

Table 2: Data collection and datasets

Category	Dataset	Description	Source
Transport and Highway Context	School Bus Service	Bus services which primarily serve individual schools and routes along school streets were considered within the data analysis	National Express and Transport for West Midlands
Transport and Highway Context	Metro Stop	Distance to the nearest metro stop was identified and considered.	National Public Transport Access Modes
Transport and Highway Context	Name of Metro Stop	The name of metro stop(s) were used in the data analysis if located within 1000m of each school street	National Public Transport Access Modes
Transport and Highway Context	Railway Station	Distance to the nearest railway station was identified and considered.	National Public Transport Access Modes
Transport and Highway Context	Name of Railway Station	The name of railway station(s) were used within the data analysis if located within 1000m of school street	National Public Transport Access Modes
Transport and Highway Context	Taxi Rank	Taxi ranks were identified and considered within the data analysis if located within 300m of each school street	BCC Taxi Rank Survey

Data collection

Table 2: Data collection and datasets

Category	Dataset	Description	Source
Transport and Highway Context	Total number of collisions within 100m of School Street (2017-2022)	The total number of traffic collisions inclusive of slight, serious and fatal severity were identified and considered within the data analysis if located within 100m of each school street	TfWM Road Traffic Collision Application
Transport and Highway Context	Modelled Annual Daily Traffic Flows (ADDF) on School Street	The average daily traffic flows recorded along each school street across the year	Agilysis Active Streets Assessment Tool
Transport and Highway Context	Average Speed	Average traffic speed on school street	Agilysis Active Streets Assessment Tool
Local Context	Trip Generators on each school street	Trip generators were identified and considered within the data analysis if located within 200m of each school street	OSM Open Roads

School allocation

Overview

Criteria was established and agreed with BCC to classify and assess the suitability of each school in Birmingham for a CFSS scheme. In School Assessment One, the scoring criteria followed a series of questions which determined the classification of each school as either Unlikely to be Feasible, Maybe Feasible, Likely Feasible or Very Likely Feasible. These questions explored factors such as road category, points of closure, trip generators, traffic flows and public transport accessibility of the school. An overview of the sifting process is presented in **Figure 3** overleaf and descriptions of the categories are defined in **Table 3**.

Table 3: Scoring criteria classification

Classification	Description
Unlikely to be feasible	Schools classified as 'unlikely to be feasible' for a CFSS scheme would be difficult and in some cases unsuitable to be delivered within the constraints of the existing highway network. However, 'unlikely' does not mean impossible. Other measures instead of CFSS could be considered to create a safer and more pleasant environment for these schools.
Maybe feasible	Schools classified as 'maybe feasible' would be less straightforward to deliver a CFSS scheme due to factors such as high traffic flows or an infrequent bus service. Delivering CFSS at some schools in this category might not be feasible when a more detailed assessment is carried out.
Likely feasible	Schools classified as 'likely feasible' for a CFSS scheme are generally situated on a quiet street with no public transport services. In these locations, a CFSS scheme is likely to be achievable and will offer improvements to current walking and cycling conditions.
Very likely feasible	Schools classified as 'very likely feasible' for a CFSS are situated on a cul-de-sac. In these locations, a CFSS is easily achievable and will offer improvements to current walking and cycling conditions.

The results of this sifting process are presented in a dynamic database (Car Free School Streets Live Database). If the scoring of any school changes in the future as schemes start to be developed, the overall scoring in the database can be easily amended to reflect these changes.

Sifting process

Assessment stages and questions

The sifting process followed three key stages as shown in **Figure 3**. Each stage contained a series of questions used to understand the local context and wider environment of each school to determine its suitability for CFSS intervention.

The stages of the sifting process and associated questions are outlined below:

◆ Stage 1 – Road Type

- Question 1 - What is the road category of the school street?
- Question 2 – How many potential points of closure are there?

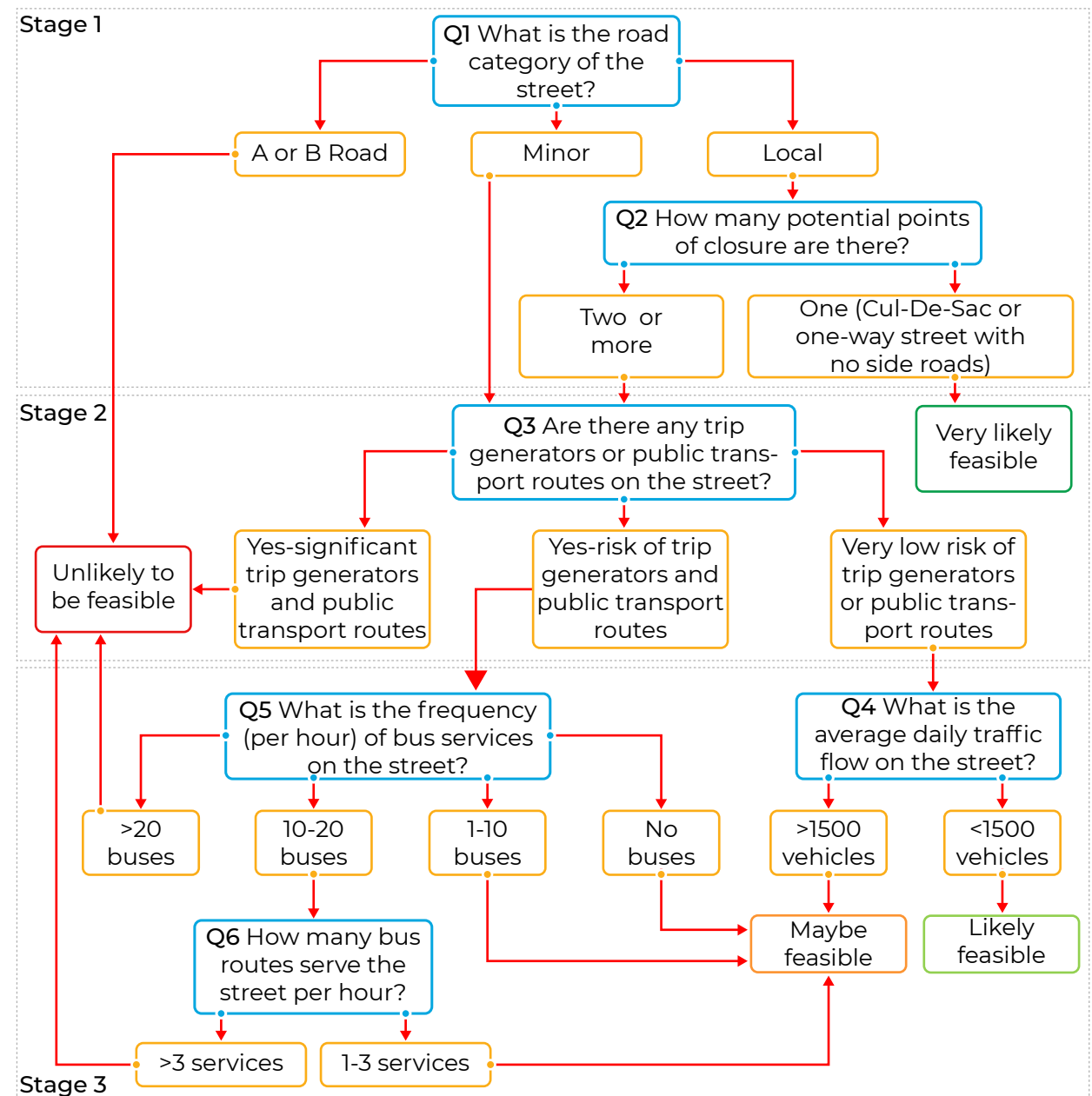
◆ Stage 2 – Trip Generators

- Question 3 – Are there any trip generators or public transport routes on the street?

◆ Stage 3 – Daily Traffic Flows & Public Transport

- Question 4 – What is the average daily traffic flow on the street?
- Question 5 – What is the frequency (per hour) of bus services on the street?
- Question 6 – How many bus routes serve the street per hour?

Figure 3: Stage 1 to 3 Sifting Process



Sifting process

Stage 1: Road category

Question 1 - What is the road category of the street?

To undertake an initial sift of the schools, the road type of each street was assessed to ensure that a CFSS scheme was appropriate and likely to be successful within the existing highway network. Road type classifications used within Stage 1 of this assessment are defined in **Table 4**. Examples of some of the road types are presented in **Figures 4, 5** and **6**.

Table 4: Road type classification

Road category	Road function
A road	A major road intended to provide large-scale transport links within or between areas.
B road	A road intended to connect different areas, and to feed traffic between A roads and smaller roads on the network.
Minor Road	A public road that provides interconnectivity to higher classified roads or leads to a point of interest.
Local road	A public road that provides access to land and/or houses, usually named with addresses. Generally, not intended for through traffic

Reference - <https://www.ordnancesurvey.co.uk/documents/os-open-roads-user-guide.pdf>

Under 'Question 1 – What is the road category of the street?', schools were categorised into 'A or B road', 'Minor Road' or 'Local Road'. A total of 68 schools were identified to be located on A or B roads and therefore categorised as 'Unlikely to be Feasible' for a CFSS scheme. Implementing a CFSS scheme on a major strategic road, which is generally subject to high vehicle volumes, would probably be unsuitable due to the impact it would have on the efficiency of the highway network.

A total of 133 schools which were identified to be located on a Minor road were then tested against 'Question 3 – Are there any trip generators or public transport on the street?', and 244 schools located on a Local road were tested against 'Question 2 – How many potential points of closure are there?'

Figure 4: B Road of Heartlands Academy, B7 4QR



Figure 5: Minor Road of Eden Boys' Leadership Academy, B8 3DT



Figure 6: Local Road of Ark Tindal Primary Academy, B12 9QS



Sifting process

Stage 1: Points of closure

Question 2 – How many potential points of closure are there?

For ‘Question 2 – How many potential points of closure are there?’, a total of 244 schools which were identified to be located on a Local road were assessed to understand the number of entry points of the street.

Points of Closure classifications used within Stage 1 of this assessment are defined in **Table 5**.

Table 5: Points of closure classification

Number of points of closure	Classification
One	Cul-de-Sac or one-way street with no side roads
Two or more	Streets with two or more side roads and potential points of closure

Schools identified with one entry point in the form of a Cul-de-Sac or one-way street with no sideroads were determined to be ‘Very Likely Feasible’ for CFSS delivery. With only one entry and exit point, CFSS’s located on a Cul-de-Sac would be easier to enforce and steward, with limited disruption to the local highway network. A total of 58 schools were categorised to be ‘Very Likely Feasible’.

Schools with two or more points of closure, most likely to be situated on a ‘Through-route’ or ‘One-Way’ street were assessed against ‘Question 3 – Are there any trip generators or public transport routes on the street?’.

Figure 7: Cul-de-Sac of Brookvale Primary School, B23 7YB



Figure 8: One-way street of Boldmere Junior School, B73 5SD



Figure 9: Through-route of Anglesey Primary School, B19 1RA



Sifting process

Stage 1: Road category and points of closure

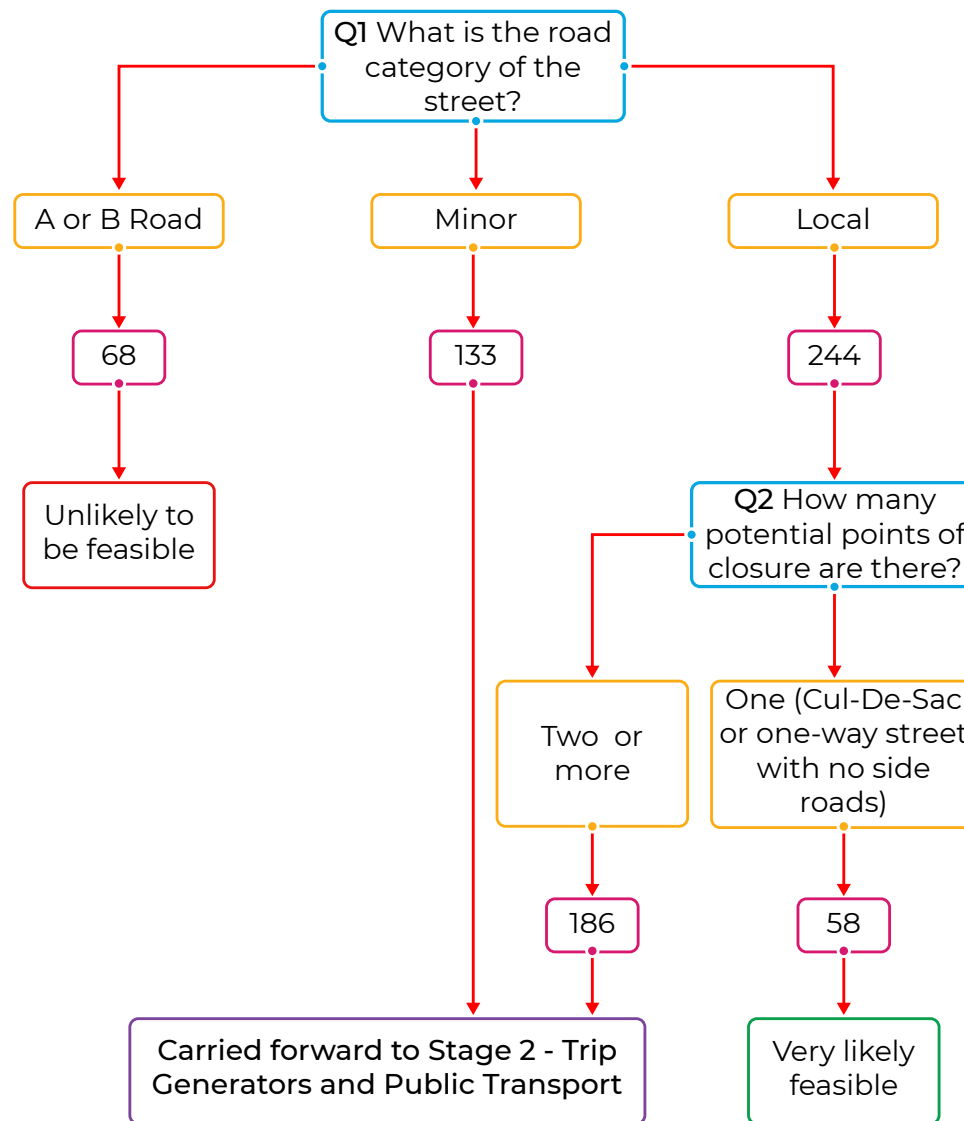
Stage 1 Results

Stage 1 assessed all schools based on road category and potential points of closure. **Table 6** and **Figure 10** presents the results of the Stage 1 audit.

Table 6: Stage 1 results

Classification	Number of schools
Unlikely to be Feasible	68
Maybe Feasible	0
Likely Feasible	0
Very Likely Feasible	58
Carried forward to Stage 2 - Trip generators & public transport	319

Figure 10: Stage 1 Results



Sifting process

Stage 2 : Trip generators & public transport services

Question 3 – Are there any trip generators or public transport routes on the street?

Schools carried forward to 'Question 3 – Are there any trip generators or public transport routes on the street?' were assessed against the presence of trip generators and public transport available along each street. The methodology and reasoning underpinning this question have been described in the two sections below.

Trip generators

For schools which were not categorised in Stage 1, further assessment was needed to understand the number of trip generators on the street. The number and type of trip generators provided a closer understanding of the road characteristics and purpose of vehicle trips on streets directly outside the school and on the wider local network. This was used to examine the potential impact a CFSS scheme would have on local businesses or services.

For the purpose of this audit, trip generators are defined as “amenities and services that encourage vehicle journeys along local roads”. Trip generator data was obtained from a number of datasets to provide a broad overview of amenities across the study area.

Table 7 sets out the categories of trip generators used within the assessment.

Table 7: Trip generator categories

Category	Example
Retail	Supermarket, clothes shop, newsagent, commercial shop
Employment	Office, industrial site
Healthcare	Hospital, dentist, GP, pharmacy, optician, veterinary
Hospitality / Leisure	Community centre, café, pub, museum, swimming pool, entertainment
Key Services	Library, bank, laundrette, post office, car dealership
Places of Worship	Church, mosque, temple, abbey, vicarage
Public Services	Fire station, police station, prison
Car Parking	Car park

The trip generator data was uploaded to QGIS to provide a spatial understanding of the available amenities with the same street name as the school. This ensured the analysis only incorporated localised trip generators most likely to impact the school directly. Trip generators outside of this buffer were identified as unlikely to impact the street. However, a high level review of their size, location and importance was undertaken for some schools. In future more detailed analysis, trip generators will be considered on a case by case basis.

Sifting process

Stage 2: Trip generators & public transport services

Public transport

Alongside Trip Generators, it was necessary to examine the presence of public transport services along each street. Public transport services in this analysis is inclusive of bus, rail and metro. It was important to understand the presence of public transport services for two reasons.

Firstly, to identify if there are public transport services which route along any of the streets, such as a bus or metro. Streets with public transport services may not be able to benefit from a CFSS scheme, especially if the closing of the road overlaps with scheduled services. This would also be likely to cause disruption to services and reduce public transport accessibility for users in the wider area.

Secondly, to identify accessibility to sustainable transport modes from each school. This could assist in the reduction of school journeys made by private vehicles and subsequently reduce congestion on the street and wider road network. This aligns with further initiatives to improve the air quality and local environment outside of schools.

Public transport was assessed using data obtained from the National Public Transport Data Repository, as described in **Table 2**. The data analysed the routing of all bus services and operators in Birmingham and the daily frequency of each service as well as proximity of metro and railway stations.

Within Stage 2, the assessment of public transport services focused solely on the presence of a public transport route. The number and frequency of bus services were further explored in Stage 3 of the audit.



Sifting process

Stage 2: Trip generators & public transport

Question 3 – Are there any trip generators or public transport routes on the street?

For 'Question 3 – Are there any trip generators or public transport routes on the street?', schools were audited by the presence and quantity of trip generators and public transport services. The categorisation of Question 3 is summarised in **Table 8**.

Table 8: Trip generator and public transport category

Category	Description	Allocation
Very low risk of Trip Generators and Public Transport Routes	No trip generators or public transport services within 200m of the school	Carried to Stage 3 – Average Daily Traffic Flows
Risk of Trip Generators and Public Transport Routes	1 to 10 trip generators or at least 1 public transport service within 200m of the school	Carried to Stage 3 - Bus Frequency and Services
Significant Trip Generators and Public Transport Routes	More than 10 trip generators and many public transport services within 200m of the school	Unlikely to be Feasible

A total of 99 schools were categorised to have 'Very low risk of Trip Generators and Public Transport Routes' and were carried forward to Stage 3 to be tested against 'Question 4 – What is the average daily flow on the street?'

A total of 210 school were categorised to have 'Risk of Trip Generators and Public Transport Routes' and were carried forward to Stage 3 to be tested against 'Question 5 – How many bus routes serve the street per hour?'. The analysis takes into consideration the varying risk by type of amenity. This includes, but is not limited to, clusters of multiple amenities which may generate a small volume of traffic, singular amenities which may generate a large volume of traffic and the location of amenities in relation to the street. Additionally, it is probable that a scheduled public transport route along these streets will conflict with the timings of closure from a CFSS scheme. The variation in risk identified in these locations may make it difficult to determine the suitability of a CFSS scheme and therefore schools with a 'Risk of Trip Generators and Public Transport Routes' are likely to require more detailed assessment.

A total of 10 schools were categorised to have 'Significant Trip Generators and Public Transport Routes' and were identified as 'Unlikely to be Feasible' for a CFSS scheme. These schools have a concentration of local amenities which are likely to generate a number of journeys by car. Although it is not certain what volume of trips these locations produce, it is likely access to the street will be required at all times, rendering a CFSS scheme difficult to introduce and operate. Additionally, it is probable a scheduled routing of public transport will conflict with the timings of closure from a CFSS scheme.

Sifting process

Stage 2: Trip generators & public transport services

Figures 11 and **12** present an example of the trip generator analysis undertaken for all schools. St Thomas More Catholic Primary School presented in **Figure 11** is a school located on a local road subject to only one trip generator - a local church. Places of worship are unlikely to generate large volumes of traffic during weekdays with most occurring on weekends. At this stage, St Thomas More Catholic Primary School was carried down to Stage 3 to understand Annual Average Daily Flows (AADFs) and bus routing and frequency. In contrast, St Saviour's Church of England Primary School presented in **Figure 12** is located on a minor road surrounded by multiple local amenities. It is estimated the vehicle trips to this area are significant and therefore the road is unlikely to be feasible for a CFSS scheme.

Figure 11: St Thomas More Catholic Primary School, with few trip generators

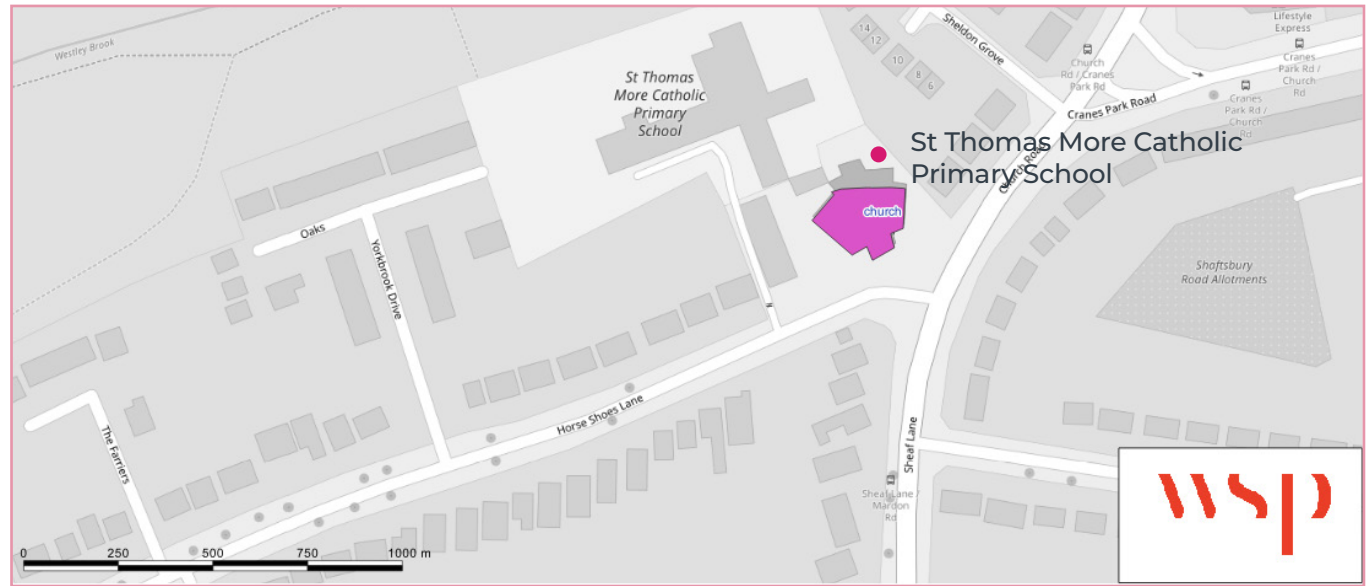


Figure 12: St Saviour's Church of England Primary School, with many trip generators



Sifting process

Stage 2: Trip generators & public transport services

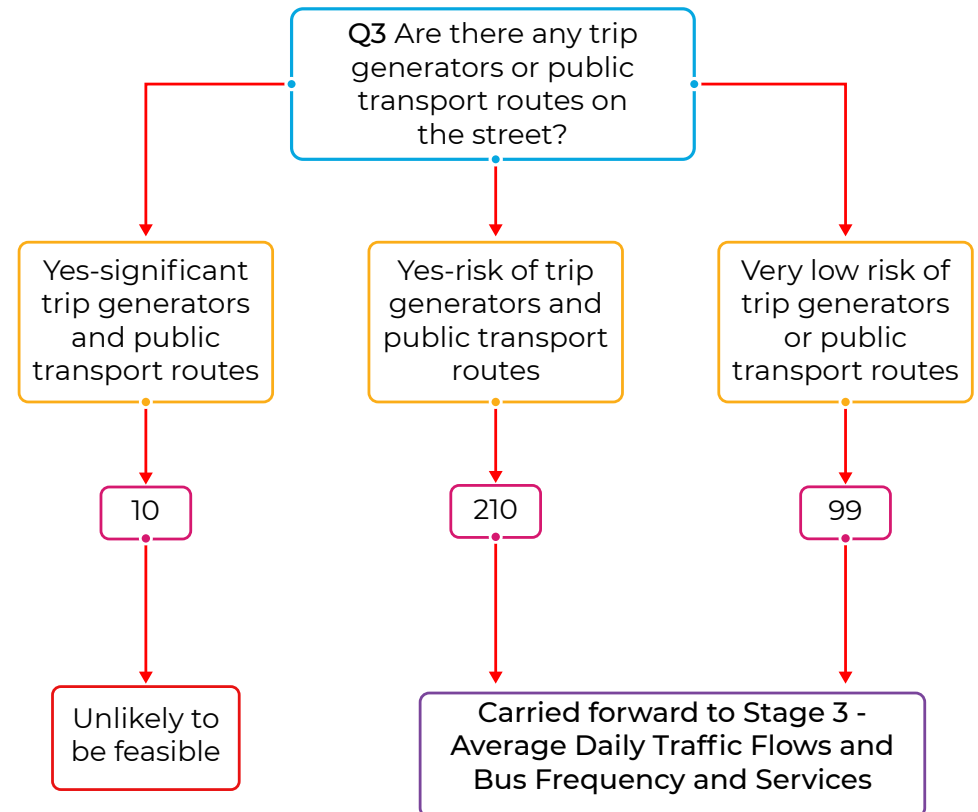
Stage 2 results

Stage 2 assessed schools based on trip generators and public transport services. **Table 9** and **Figure 13** presents the results of the Stage 2 audit.

Table 9: Stage 2 results

Classification	Number of schools
Unlikely to be Feasible	10
Maybe Feasible	0
Likely Feasible	0
Very Likely Feasible	0
Carried forward to Stage 3 - Average Daily Traffic Flows	99
Carried forward to Stage 3 – Bus Frequency and Services	210

Figure 13: Stage 2 Results



Sifting process

Stage 3: Annual average daily traffic flows & bus routing and frequency

Stage 3 of this audit uses both Annual Average Daily Traffic Flows (AADTs) and Bus Routing and Frequency to determine the allocation of the remaining schools. Schools carried down from Stage 2 have been identified to be low risk from trip generators within a 200m vicinity of the school and/or public transport routes on the school street.

Annual average daily traffic flows (AADTs)

AADT is a measurement of the average vehicle trips taken over a 24 hour period. The data is collected from vehicles passing a specific point on a road over a 24 hour period and averaged across a year. This measurement was used to understand traffic flows and volumes on each street over a typical 24 hour period. AADT data was obtained from the Active Streets Assessment Tool provided by Agilysis, as described in **Table 2**.

A baseline of 1,500 vehicles/hr was used as a high level indicator to differentiate traffic flows across 'quiet' streets and 'busy' streets. Streets with over 1,500 vehicles/hr are considered to be main roads where closure during the AM or PM peak would disrupt traffic. Streets with less than 1,500 vehicles/hr are likely to be local roads, and more likely to be suitable for a CFSS scheme. Therefore, it is possible that a CFSS scheme would not be appropriate for streets with over 1,500 AADT and these locations would require further assessment and consideration.

Question 4 – What is the average daily traffic flow on the school street?

For 'Question 4 – What is the average daily traffic flow on the school street?', the schools were assessed by the AADTs recorded along each street.

Streets that recorded less than 1,500 AADTs were identified as 'Likely to be Feasible' for a CFSS scheme. Schools in this allocation are not exposed to large volumes of traffic and therefore should be appropriate for a CFSS scheme.

Streets that recorded more than 1,500 AADTs were identified as 'Maybe Feasible' for a CFSS scheme. Schools in this allocation would require further qualitative analysis and observation to understand the local context and suitability of the street for a CFSS scheme.

Sifting process

Stage 3: Annual average daily traffic flows

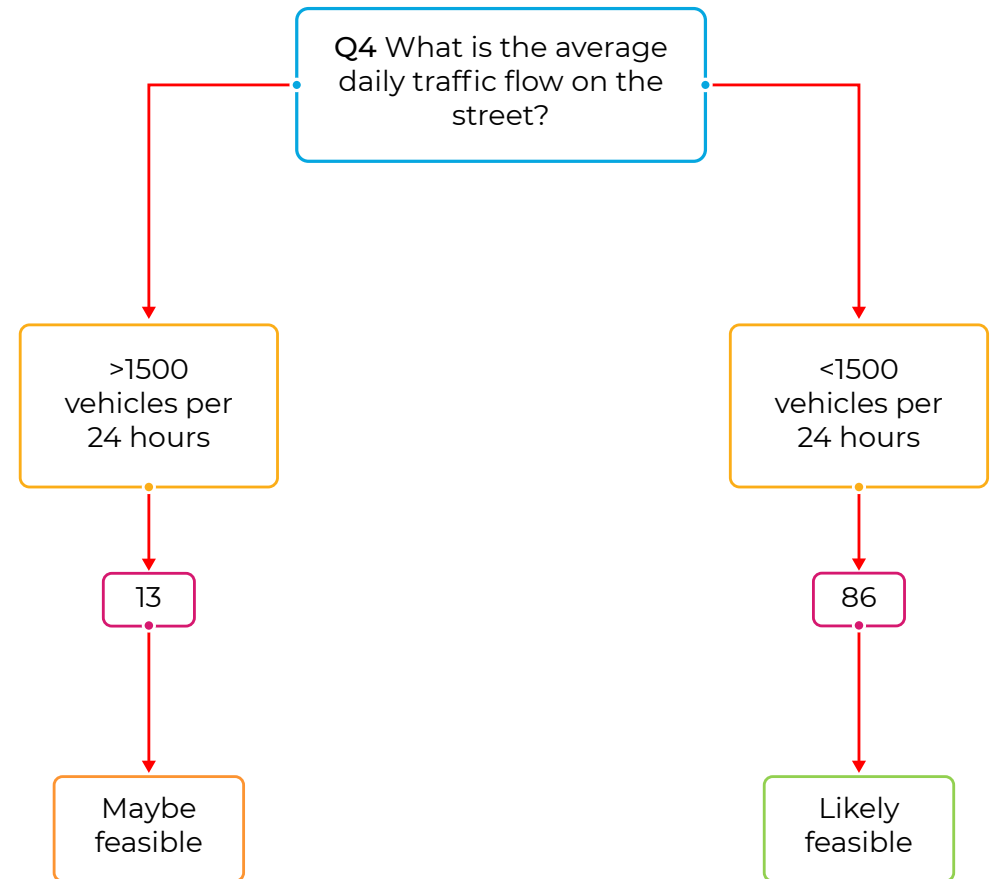
Stage 3 results

Stage 3 assessed schools based on AADT data. **Table 10** and **Figure 14** presents the results of the Stage 3 audit of AADT.

Table 10: Stage 3 results

Classification	Number of schools
Unlikely to be Feasible	0
Maybe Feasible	13
Likely Feasible	86
Very Likely Feasible	0

Figure 14: Stage 3 Results



Sifting process

Stage 3: Bus frequency

Stage 3 – Bus Routing and Frequency examines public transport in more detail. Using the data provided by National Public Transport Data Repository, as described in **Table 2**, this stage of the audit considers the number of bus services operating along each street per day and their associated frequency. ‘Question 5 – What is the frequency (per hour) of bus services on the street?’ observes the frequency of buses per hour and ‘Question 6 – How many bus routes serve the street per hour?’ considers the number of bus services routing along the street.

Question 5 – What is the frequency (per hour) of bus services on the street?

For ‘Question 5 – What is the frequency (per hour) of bus services on the street?’, streets served by public transport were carried forward from Stage 2 – Trip Generators and Public Transport Services to assess the number of bus services operating on the street per hour. The data provided a detailed visual of the bus routing across Birmingham and daily frequency across the AM and PM periods. The categorisation and appropriate allocation for Question 5 is summarised in **Table 11**.

Table 11: Frequency of bus services categorisation

Frequency of buses serving the street	Description	Allocation
>20 buses / hour	20 or more buses operate on the street per hour. This is the highest weighting for bus frequency assessment.	Unlikely to be Feasible
10-20 buses / hour	10 to 20 buses operate on the street per hour. This is the medium weighting for the bus frequency assessment.	Carried forward to Question 6 – How many bus routes serve the street?
1-10 buses / hour	1-10 buses operate on the street per hour. This is the lowest weighting for the bus frequency assessment.	Maybe Feasible
No buses	No bus services route along this street. However, this allocation still accounted for the presence of trip generators as determined from Stage 2 – Trip Generators and Public Transport Services.	Maybe Feasible

A total of 14 schools were identified to have 20 or more buses per hour routing along the street and therefore were identified to be ‘Unlikely to be Feasible’ for a CFSS scheme. A CFSS enforced along such streets may require bus service schedules and routing to be amended, and potentially cause disruption on the local and wider transport network.

A total of 160 schools were identified as ‘Maybe Feasible’ for a CFSS scheme if they had a low frequency services operating on the street (1-10 buses per hour), or no bus services at all. Further analysis is required at these locations to understand if a CFSS scheme would be appropriate within the current schedules and timings of these services, or whether the services could be easily adapted.

A total of 36 schools with 10-20 buses per hour on the street were taken forward and audited against ‘Question 6 – How many bus routes serve the street?’. This identified the number of bus services routing along the street, in particular the number of bus services which would be effected by the delivery of a CFSS scheme.

Sifting process

Stage 3: Bus frequency

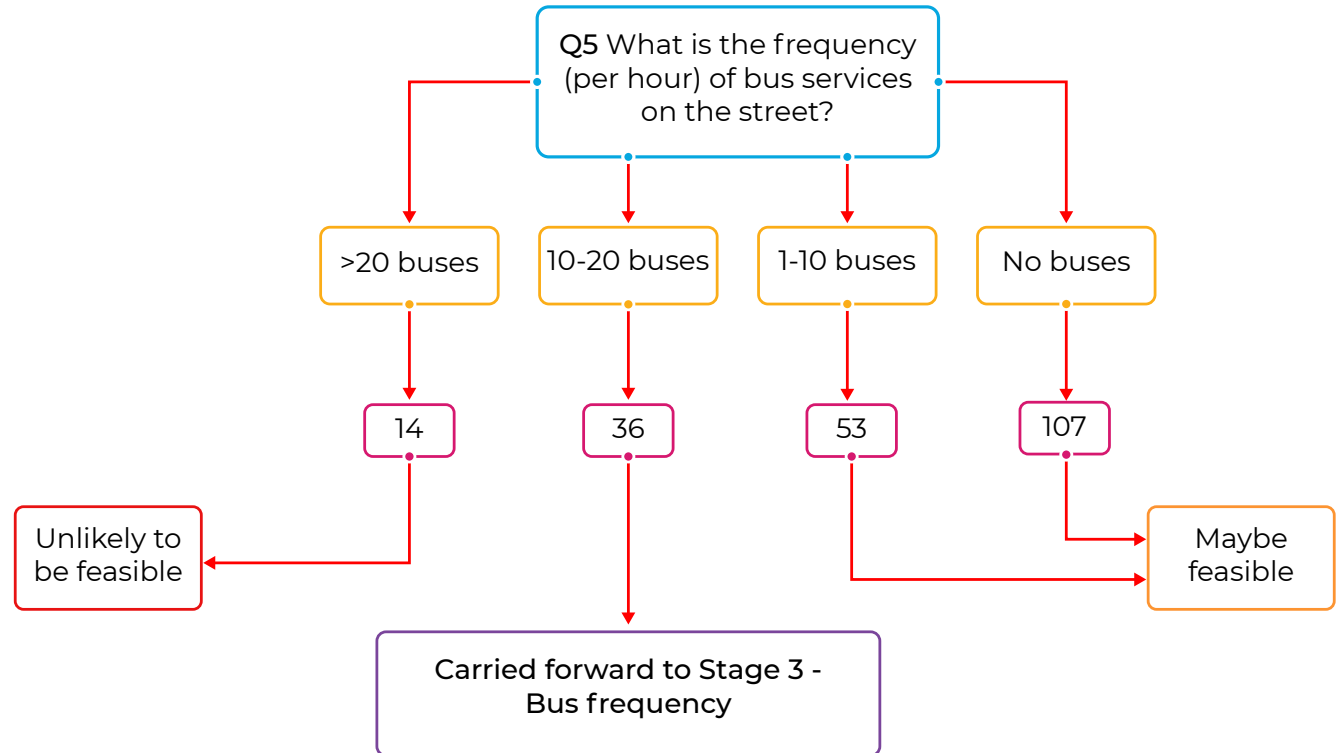
Stage 3 results

Stage 3 assessed schools based on bus frequency. **Table 12** and **Figure 15** presents the results of the Stage 3 audit of bus frequency.

Table 12: Stage 3 results

Classification	Number of schools
Unlikely to be Feasible	14
Maybe Feasible	160
Likely Feasible	0
Very Likely Feasible	0

Figure 15: Stage 3 Results



Sifting process

Stage 3: Bus routing

Question 6 – How many bus routes serve the street?

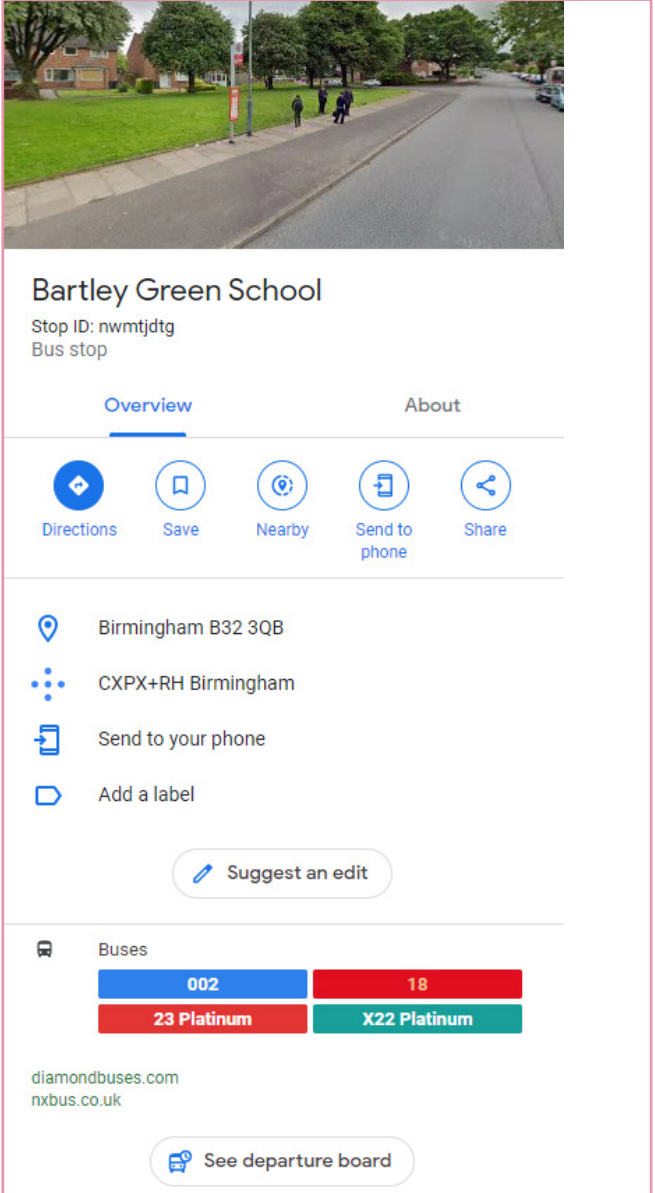
For 'Question 6 – How many bus routes serve the street?', streets with 10-20 bus services were assessed by the quantity of different bus services routing along the street. The categorisation and allocation for Question 6 is summarised in **Table 13**.

Table 13: Number of bus services categorisation

Number of Service	Description	Allocation
> 3 bus services per day	3 or more bus services operating on the street	Unlikely to be Feasible
1-3 bus services per day	1 to 3 bus services operating on the street	Maybe Feasible

A total of 4 schools were identified to have more than 3 bus services per day routing along the street and therefore were identified as Unlikely to be Feasible for a CFSS scheme. Streets with multiple bus routes are identified as key bus corridors. These corridors are likely to have significant bus patronage and strategic connections. A CFSS would not be compatible along these bus corridors due to the impact a CFSS scheme road closure period would have on bus timings and frequency.

A total of 32 schools were identified to have between 1-3 bus services per day routing along the street and therefore were identified as 'Maybe Feasible'. In these locations, further analysis would be required to understand if a CFSS scheme would be feasible to deliver alongside the current bus services and their schedules, or whether the bus services could be easily adapted or rerouted.



Bartley Green School
Stop ID: nwmtjdtg
Bus stop

Overview About

Directions Save Nearby Send to phone Share

Birmingham B32 3QB
CXPX+RH Birmingham
Send to your phone
Add a label

Suggest an edit

Buses

002	18
23 Platinum	X22 Platinum

diamondbuses.com
nxbus.co.uk

See departure board

Sifting process

Stage 3: Bus routing

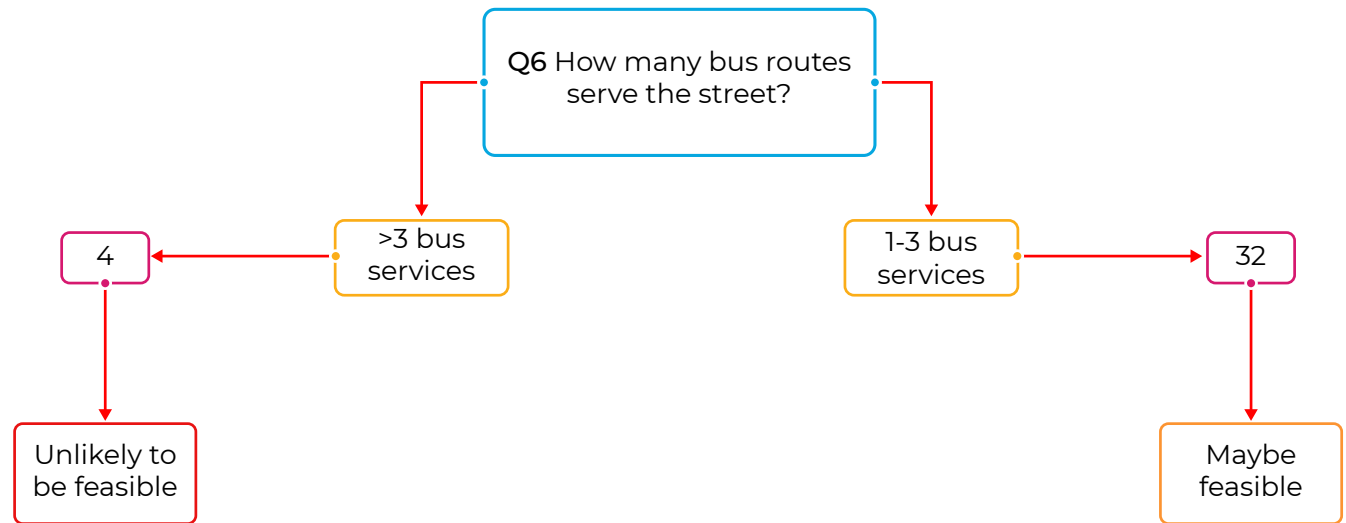
Stage 3 results

Stage 3 assessed schools based on bus routing. **Table 14** and **Figure 16** presents the results of the Stage 3 audit of bus routing.

Table 14: Stage 3 results

Classification	Number of schools
Unlikely to be Feasible	4
Maybe Feasible	32
Likely Feasible	0
Very Likely Feasible	0

Figure 16: Stage 3 Results



Sifting process

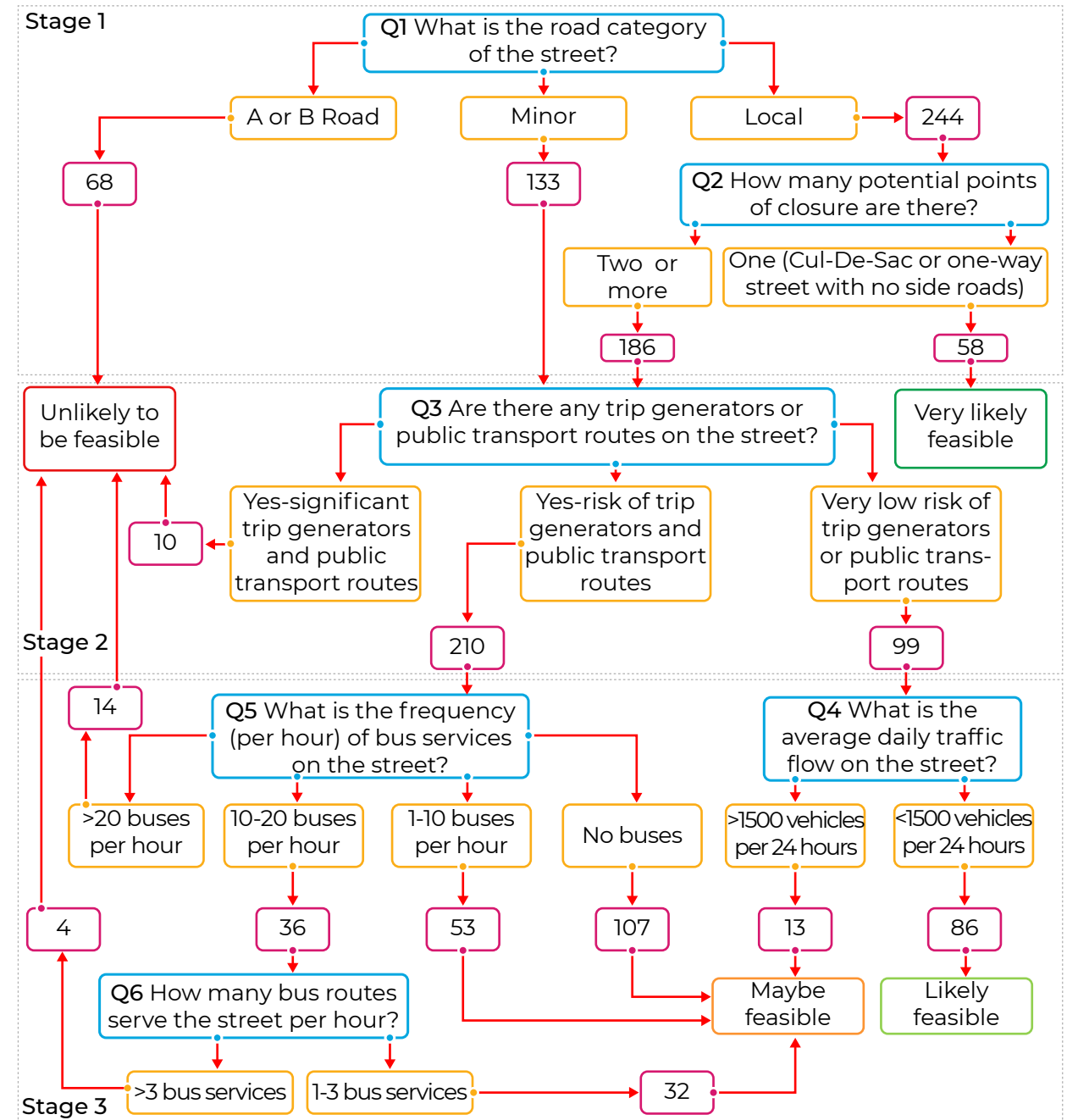
Sifting process results

Following the sifting process, **Table 15** and **Figure 17** outline the scoring classification of all 445 schools which have been audited.

Table 15: Sifting process results

Classification	Number of schools
Unlikely to be Feasible	96
Maybe Feasible	205
Likely Feasible	86
Very Likely Feasible	58

Figure 17: Sifting process Results



Chapter 3

Prioritisation Process

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Prioritisation process

Overview

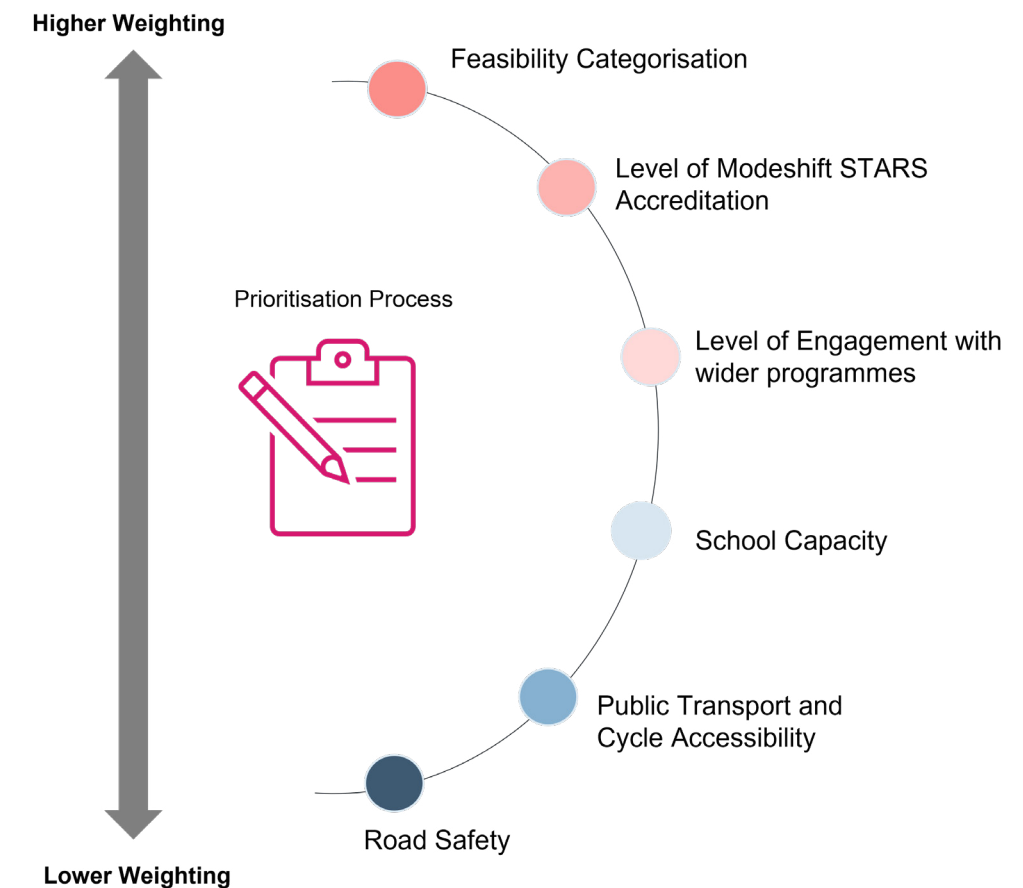
Following on from the sifting process, all schools have been further assessed and weighted against a specific set of criteria. The individual scores derived from this assessment have been used to produce a 'live' ranked list of schools where a CFSS scheme could be considered. The list will help to inform where CFSS delivery should be prioritised in future.

Following the Sifting Process, schools most suitable for a CFSS scheme have been classified as Very Likely to be Feasible and Likely to be Feasible. However, the Prioritisation Process does not disregard the schools allocated into the other classifications and instead encompasses all schools (445) included within the audit. This is to enable the prioritisation ranking to be easily updated if changes to a school's local road context occur or progress is made towards achieving Modeshift STARS accreditation. The Car Free School Streets Live Database provides further recommendations on the order in which CFSS could be delivered.

It is also important to recognise that a CFSS scheme may not be the only answer to improving the local environment outside of schools, and that other traffic management measures need to be considered in combination with CFSS. All schools have therefore been included in this assessment to show that although CFSS may not be suitable outside of all schools, particularly those classified as Unlikely to be Feasible, alternative measures can be explored which may provide similar benefits to CFSS.

The parameters used to score each of the schools are presented in **Figure 18**. The scoring analysis follows the premise that the higher the score, the more likely the scheme is to be successful.

Figure 18: Prioritisation Process



Prioritisation process

Criteria

The following pages set out in detail how each criteria was used during the prioritisation process. However, the prioritisation of schools is not limited to the criteria described in this chapter. Wider support from local residents and councillors will also be captured and taken into consideration during engagement and future application stages for individual schemes.

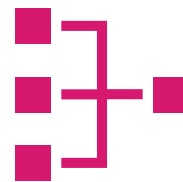


Modeshift STARS

Schools which have a Travel Plan in place were further scored and weighted by their Modeshift STARS accreditation (**Table 16**). The higher the level of accreditation, the higher the score.

Table 16: Modeshift STARS accreditation scoring

Modeshift STARS Accreditation
Platinum
Gold
Silver
Bronze
Green
None



Feasibility categorisation

Schools were categorised in the Sifting Process based on their geographical and transport context. The outcome of the Sifting Process was used to score and weight the schools based on their categorisation. As shown in **Table 17**, schools which were categorised as 'very likely feasible' for a CFSS scheme were scored higher than those categorised to be 'unlikely to be feasible'.

Table 17: Feasibility categorisation

Feasibility Categorisation
Very Likely Feasible
Likely Feasible
Maybe Feasible
Unlikely to be Feasible



Level of engagement

Schools were scored against their engagement with wider activities and initiatives available to them. Programmes considered within this parameter cover the Living Streets Walk to School Outreach Programme, which aims to encourage walking to school as the natural choice for children, and Bikeability cycle training available to all schools in Birmingham through The Active Wellbeing Society.

Table 18: Bikeability and living streets scoring

Bikeability	Living Streets
Yes	Yes
No	No

Prioritisation process

Criteria



School capacity - parameter

A school's capacity was identified as an important indicator to the number of students a CFSS scheme would benefit. Typically, introducing a scheme at a larger school may bring benefits to a larger proportion of children and be a beneficial investment in terms of 'value for money'.



Public transport and cycle accessibility

Accessibility to Public Transport and Active Travel Infrastructure including the National Cycle Network were important considerations for the Prioritisation Process. Schools which are located in areas with good public transport connectivity and high quality active travel infrastructure are less likely to rely on a private car for school journeys. A CFSS scheme is likely to be successful in these areas and would further encourage the use of sustainable modes of travel to school.



The following criteria were assessed under this parameter, with the associated responses for each criteria presented in **Table 19**.

- ✦ Dedicated school bus
- ✦ National Cycle Network within 300m
- ✦ Distance to the nearest bus stop
- ✦ Distance to the nearest metro stop
- ✦ Distance to the nearest train station

Table 19: Public transport and cycle accessibility scoring

Criteria	Response
Dedicated school bus provided?	Yes
Dedicated school bus provided?	No
Is there NCN within 300m?	Yes
Is there NCN within 300m?	No
Public Transport:	<100m
▪ Distance to a bus stop	100-250m
▪ Distance to a metro stop	250-500
▪ Distance to a train station	500-750m
(Each to be scored separately)	750-1000
	>1,000 m

Prioritisation process

Criteria



Bus services

A high number of bus services routing along a street where a school is located is a significant factor impacting the suitability of a street for a CFSS scheme. The more buses routing along a street highlights greater demand and likely disruption to services if a CFSS was implemented.



Road safety

The final parameter used with the Prioritisation Process was road safety. Streets with recorded fatal, serious and slight collisions within 100m of the school were assigned further points to their score. A CFSS scheme in locations with a high collision rate could reduce the possibility of collisions occurring during scheme operational hours, improving the overall safety of the street.



Summary

Using the information and outcomes of the prioritisation process, a ranked list of schools can be developed. This ranked list forms part of the Car Free School Streets Live Database, which has been provided to BCC. This ranked list will act as a dynamic and live tool which BCC can regularly update to make informed decisions on where future CFSS delivery should be prioritised in the city. Any changes to the datasets or school information can be inputted into the Car Free School Streets Live Database and the priority list will automatically update.

Chapter 4

Scenarios and potential interventions toolkit

Scenarios and potential interventions toolkit

Overview

A 'Scenarios and Potential Interventions' Toolkit has been developed to help guide BCC to identify the most appropriate interventions for each school based on factors such as location, highway context and public transport accessibility. **Table 20** illustrates interventions which are suitable for each scenario. As shown, these interventions are split into two categories:

- 1. CFSS Interventions:** These interventions focus on CFSS schemes and potential variations in how they are operated and/or are supported by complementary traffic management measures.
- 2. Supporting or Alternative Measures:** These include complementary and alternative measures which may be suitable in different scenarios and circumstances.

Table 20: Scenarios and Potential Interventions

Scenario	CFSS with Bus Gate	CFSS with Traffic Filter	CFSS with one-ways	CFSS with bespoke exemption policy	CFSS with no stopping restrictions	Road Space reallocation	Parking enforcement	Junction treatments	Placemaking (e.g. greening)	Area wide filtering	Safer crossing points	Behaviour change	Park & stride
1. Streets with Multiple points of Closure	Unsuitable	Suitable	Suitable	Unsuitable	Unsuitable	Unsuitable	Suitable	Suitable	Unsuitable	Suitable	Unsuitable	Suitable	Suitable
2. Large volumes of through-traffic	Suitable	Suitable	Unsuitable	Unsuitable	Unsuitable	Unsuitable	Unsuitable	Suitable	Suitable	Suitable	Unsuitable	Suitable	Suitable
3. Multiple bus services	Suitable	Unsuitable	Unsuitable	Suitable	Unsuitable	Unsuitable	Unsuitable	Unsuitable	Suitable	Unsuitable	Suitable	Suitable	Suitable
4. Multiple trip generators	Unsuitable	Unsuitable	Unsuitable	Suitable	Suitable	Suitable	Suitable	Suitable	Suitable	Unsuitable	Suitable	Suitable	Suitable
5. More than one school entrance	Unsuitable	Suitable	Unsuitable	Unsuitable	Unsuitable	Unsuitable	Suitable	Suitable	Suitable	Unsuitable	Suitable	Suitable	Suitable
6. Special educational needs (SEN) school	Unsuitable	Unsuitable	Unsuitable	Suitable	Unsuitable	Suitable	Unsuitable	Unsuitable	Suitable	Unsuitable	Suitable	Unsuitable	Unsuitable
7. Substantial on-street parking	Unsuitable	Unsuitable	Unsuitable	Unsuitable	Suitable	Suitable	Suitable	Suitable	Suitable	Unsuitable	Unsuitable	Suitable	Suitable
8. Connection to major roads	Unsuitable	Suitable	Unsuitable	Unsuitable	Suitable	Unsuitable	Unsuitable	Suitable	Unsuitable	Suitable	Unsuitable	Suitable	Suitable
9. Long Road Layout	Unsuitable	Unsuitable	Suitable	Unsuitable	Unsuitable	Unsuitable	Unsuitable	Suitable	Suitable	Suitable	Unsuitable	Suitable	Suitable
10. Two or more schools in close proximity	Unsuitable	Suitable	Suitable	Unsuitable	Unsuitable	Suitable	Suitable	Suitable	Suitable	Suitable	Suitable	Suitable	Suitable

The following pages set out best practice examples of CFSS Interventions and Supporting or Alternative Measures which could be implemented in Birmingham.

Scenarios and potential interventions toolkit

CFSS interventions

Hybrid scheme – CFSS with bus gate

Description: Where the main school entrance(s) are located on bus routes, a hybrid CFSS and Bus Gate scheme could be considered to remove through traffic, whilst still allowing access for buses at all times.

Key considerations:

- Restriction location:** The location of the Bus Gate will need to be considered to avoid drivers approaching the gate and having to perform three point turns to avoid the restrictions, posing a road safety concern.
- Advance warning:** If a busy through route, advance warning notices will need to be issued and displayed to ensure drivers are aware of the changes and can therefore re-route their journey.

- Communications:** The school and local community should be notified of the hybrid scheme to ensure they are aware of the variation from a traditional CFSS scheme.
- Potential displacement:** Consideration will need to be given to any potential displacement of through traffic on the surrounding network, including any road safety or congestion impacts. This can be established through monitoring during a trial period.

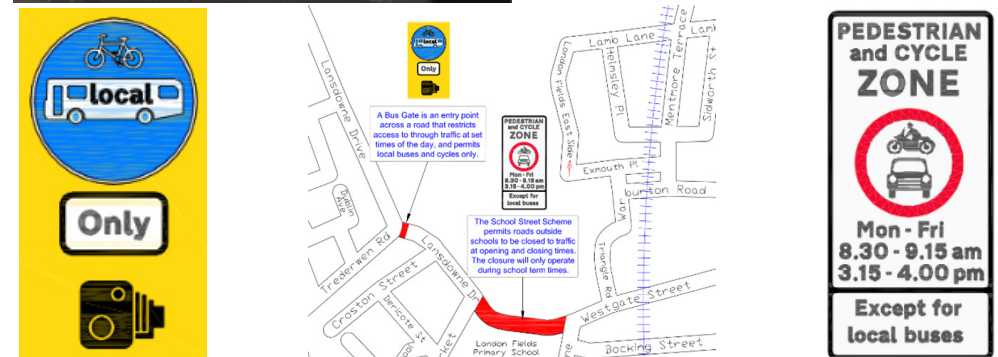
Best practice examples:

- London Fields Primary School – Hackney, London (see example)
- Springfield Primary School – Hackney, London

Case study: London Fields Primary School – Hackney, London

This scheme serves London Fields Primary School in Hackney, London, and has been operating since 2018. The scheme consists of two key elements, a timed School Street scheme outside the school gates on Westgate Street, operating between 8:30am-9:15am and 3:15pm-4:00pm on school days only, combined with a Bus Gate on Landsdowne Drive, operating between 7am to 10am and 3pm to 7pm Monday to Saturday.

Both measures help to disperse drop off and pick up behaviour from outside the school gates, creating a safer, more pleasant environment for active travel, whilst enabling bus access and reducing through traffic during peak times.



Scenarios and potential interventions toolkit

CFSS interventions

Hybrid scheme – CFSS with traffic filter

Description: Combining a CFSS with traffic filters helps to tackle drop off and pick up activity outside a school whilst also removing through traffic from the surrounding area.

Key considerations:

- **Traffic filter type:**

Consideration will need to be given to the type of filter used. Examples include gates, bollards and road narrowing with planters.

- **Area wide filtering:** The option of introducing area wide filtering could be considered if the location is suitable i.e. is through traffic an area wide issue and could this be removed from quieter, residential streets?

- **Advance warning:** If a busy route, advance warning notices will need to be issued and displayed to ensure drivers

are aware of the changes and can re-time or re-route their journey.

- **Communications:** Key stakeholders should be notified of the hybrid scheme to ensure they are aware of the variation from a traditional CFSS scheme.
- **Potential displacement:** Consideration will need to be given to any potential displacement of through traffic on the surrounding network, including any road safety or congestion impacts. This can be established through monitoring during a trial period.

Best practice examples:

- Benthall Primary School and St Scholastica's Primary School – Hackney, London (see example)
- Harrington Hill Primary School – Hackney, London
- Camden School for Girls – Camden, London

Case study: Benthall Primary School and St Scholastica's RC Primary School – Hackney, London

This scheme covers both Benthall Primary School and St Scholastica's RC Primary School in Hackney, London, and has been operating since 2020. The School Streets are complemented by the wider Hackney Downs LTN scheme which aims to reduce through traffic in the surrounding area. Two traffic filters are in place at the Eversing Road junctions with the School Streets zones, enabling access to properties where needed whilst reducing through traffic and creating just one entry point.



Scenarios and potential interventions toolkit

CFSS interventions

Hybrid scheme – CFSS with one-way street(s)

Description: Introducing a CFSS combined with a one-way street(s) can reduce the number of entry and exit points involved in a scheme, making it easier to steward. One-way streets can be introduced for an entire section of street or just a short section near a junction. One-way streets can be particularly helpful on narrow residential streets where on-street parking is present

Key considerations:

- Impact on wider network:** If a one-way street(s) is being implemented as part of a CFSS scheme, the impact on the wider network will need to be considered i.e. does the one-way complement the existing network or could it cause access issues/congestion?
- Engaging with stakeholders:** Emergency vehicles are not permitted to enter no-entry streets or travel in the opposite direction to one-ways. If a one-way street is being introduced

as part of a CFSS scheme, any potential impact on emergency services will need to be understood through early engagement.

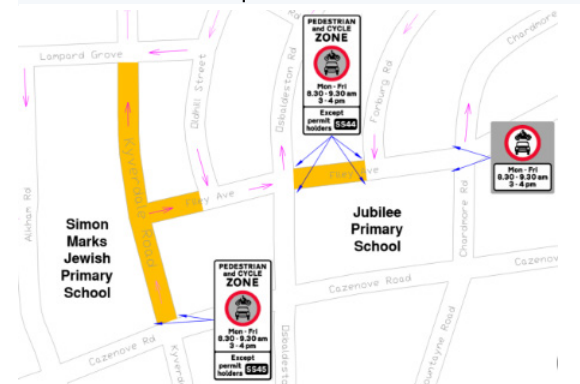
- Increased speeds:** One-way streets can lead to increased speeds posing a road safety concern. Ongoing monitoring should be considered to identify any issues.
- Contraflow cycling:** Depending on the carriageway width, contraflow cycling can be considered to enable cycle access and travel in both directions. Appropriate signage and protection at junctions will also need to be considered (see Local Transport Note 1/20 for more information).

Best practice examples:

- Jubilee Primary School and Simon Marks Jewish Primary School – Hackney, London
- Brecknock Primary School – Camden, London

Case Study: Jubilee Primary School and Simon Marks Jewish Primary School – Hackney, London

This scheme covers both Jubilee Primary School and Simon Marks Jewish Primary School in Hackney, London, and has been operating since 2020. The School Streets are complemented by the existing one-ways, which aim to improve traffic flow within the area. As shown in the drawing above, the one-ways on Kyverdale Road form part of a wider network in the surrounding area. One-ways are usually enforced using no-entry restrictions, therefore reducing the number of entry points to a School Street zone and subsequently the number of stewards required.



Kyverdale Road junction with Cazenove Road



Filey Avenue one-way

Scenarios and potential interventions toolkit

CFSS interventions

CFSS with bespoke exemption policy

Description: Generally, an overarching School Street exemption policy is implemented across all schemes in an area. Typically, this exempts residents, emergency vehicles and Blue Badge holders. However, bespoke exemption policies can be designed if specific access requirements are needed for a particular scheme.

Key considerations:

- **Trip generators:** Some schools are located on streets with a number of different trip generators which may require vehicle access during the operating times. If this is the case, early engagement with the trip generators is required to understand their access requirements and, if necessary, establish an exemption policy which works for the trip

generator whilst also ensuring it doesn't undermine the objectives of the School Street scheme.

- **SEN schools:** SEN schools are likely to have a higher number of pupils being transported to school, therefore engagement with home to school transport providers will be required to ensure access is enabled during the School Street operating times.
- **Operation:** How School Street schemes are enforced will inform how exemptions are implemented. For example, barrier enforcement usually requires the exempt vehicle to display a physical permit on the car whereas any future camera enforcement will require creating and maintaining a 'whitelist'. Both approaches can be resource intensive so establishing an effective application and assessment process is important.



Scenarios and potential interventions toolkit

CFSS interventions

CFSS with no stopping restrictions

Description: For schools located on streets with extensive on-street parking and/or multiple trip generators, implementing a School Street scheme combined with no stopping restrictions, including double yellow lines or School Keep Clear (SKC) linings, can help to create a 'clearway' on the street, addressing illegal parking and improving visibility outside the school gates.

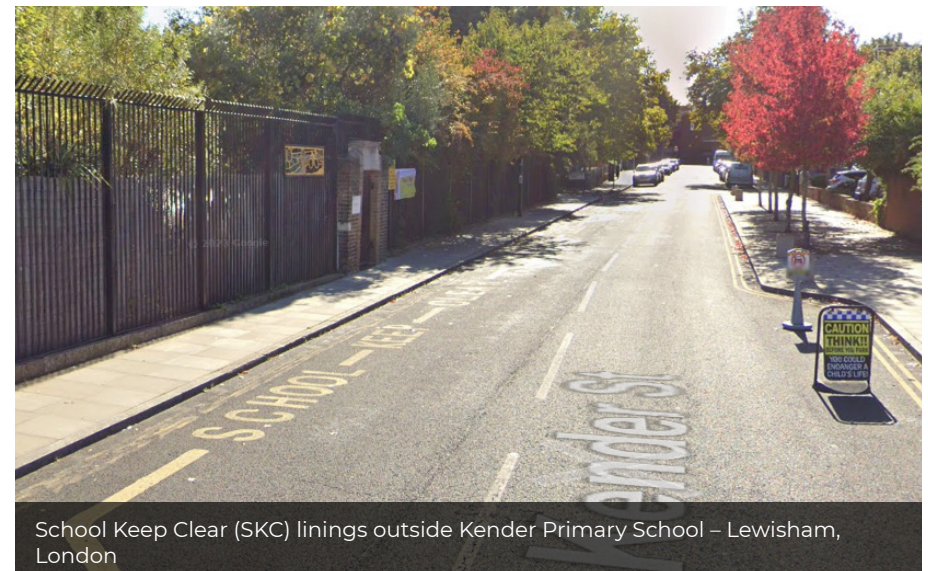
Key considerations:

- Type of road:** Consideration will need to be given to the type of street the school is located on. If the majority of the addresses are residential and car ownership in the area is high, the impact on residents should be taken into account. Any change to parking restrictions will need to align with Birmingham City Council's wider parking policy.

- Potential displacement:** Consideration will need to be given to any potential parking displacement on the surrounding network if no waiting restrictions are introduced.
- Enforcement:** Deploying parking enforcement officers when the parking restrictions are initially introduced can help with achieving compliance in the long term.



Parking restrictions and road narrowing outside The Cathedral School of St Saviour & St Mary Overly – Southwark, London



School Keep Clear (SKC) linings outside Kender Primary School – Lewisham, London

Scenarios and potential interventions toolkit

Supporting or alternative measures

Road space reallocation

Description: Road space reallocation involves reassigning road space currently devoted to motor vehicles to serve active modes. When looking at road space reallocation measures which benefit schools, these often include improving footway widths and introducing build outs outside school entrances to accommodate areas of higher footfall and create a more pleasant space for active travel.

Key considerations:

- **Physical constraints:** Initial feasibility studies should be used to identify any physical constraints which may impact the ability to reallocate road space to alternative modes. A balance needs to be found between enabling enough space for walking and cycling whilst ensuring carriageway widths meet minimum requirements. Potential mitigation measures include relocating or rationalising on-

street parking or changing a street to one-way working to increase footway widths and introduce potential build outs.

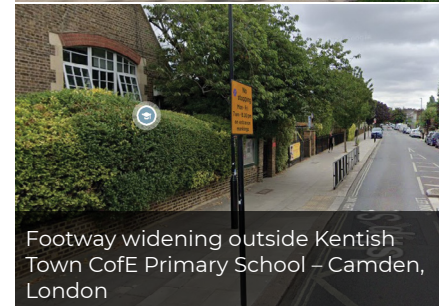
- **Engaging with stakeholders:** Road space reallocation can be a contentious topic, particularly when looking at relocating or rationalising car parking provision, therefore it is important to engage with key stakeholders early to gauge their concerns.

Key guidance on how to reallocate road space effectively includes:

- Inclusive Mobility a guide to best practice on access to pedestrian and transport infrastructure
- LTN 1/20 – Cycle Infrastructure Design



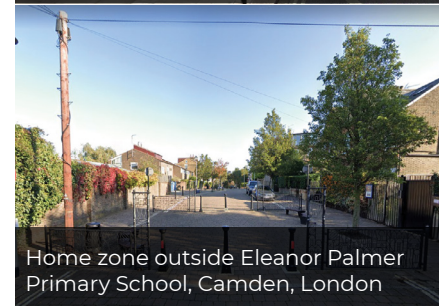
Kenmont Gardens – Hammersmith, London (located near Kenmont Primary School)



Footway widening outside Kentish Town CofE Primary School – Camden, London



Kenmont Gardens – Hammersmith, London (located near Kenmont Primary School)



Home zone outside Eleanor Palmer Primary School, Camden, London



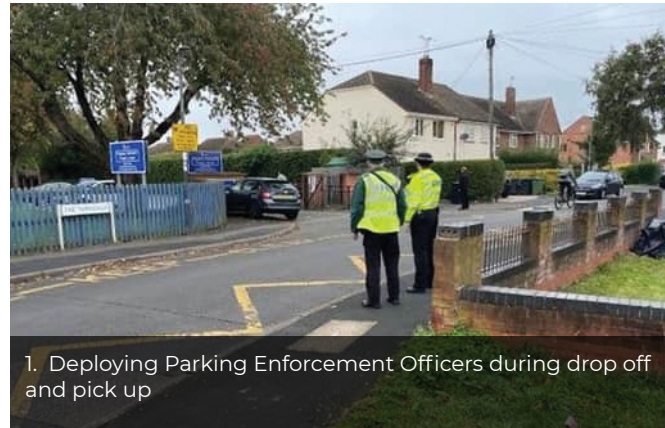
Home zone outside Eleanor Palmer Primary School, Camden, London

Scenarios and potential interventions toolkit

Supporting or alternative measures

Parking enforcement

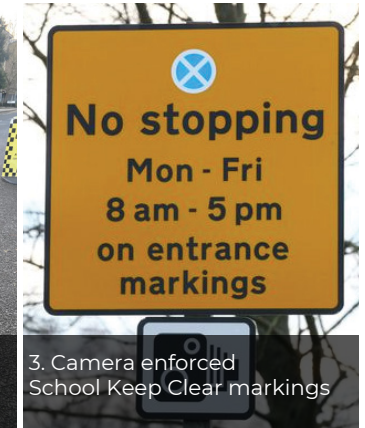
Description: If the roads surrounding a school experience high levels of parking and/or poor parking behaviour, enforcing parking restrictions can help to deter this behaviour and eventually foster behaviour change. Measures that can be considered to improve parking behaviour include:



1. Deploying Parking Enforcement Officers during drop off and pick up



2. On-street campaigns



3. Camera enforced School Keep Clear markings

Supporting or alternative measures

Junction treatments

Description: This involves careful junction design to improve the safety of all road users. Remedial amendments can be made to existing junctions. A few examples include:



1. Side raised entry treatment (can help reduce speeds of vehicles turning in and out of the junction) Coley Street, London



2. Continuous crossing (give pedestrians priority at side roads and encourage drivers to slow down on approach to the junction) Lea Bridge Road, London

Scenarios and potential interventions toolkit

Supporting or alternative measures

Placemaking

Description: Placemaking refers to measures and interventions which help to reimagine, reshape and reinvent a public space, particularly to improve the user experience of pedestrians and cyclists. Examples of key placemaking measures include:



1. Rain Gardens (Enfield, London)



2. Cycle hangars (Bristol)



3. Pocket Parks (Camden, London)



4. Planters (London)



5. Green Screen (Parliament Hill School, Camden, London)

Scenarios and potential interventions toolkit

Supporting or alternative measures

Safer crossing points

Description: Investigating the scope for improved ('formal') crossing provision at key desire lines can help to create a safer, more pedestrian friendly environment for those travelling to school by active modes.

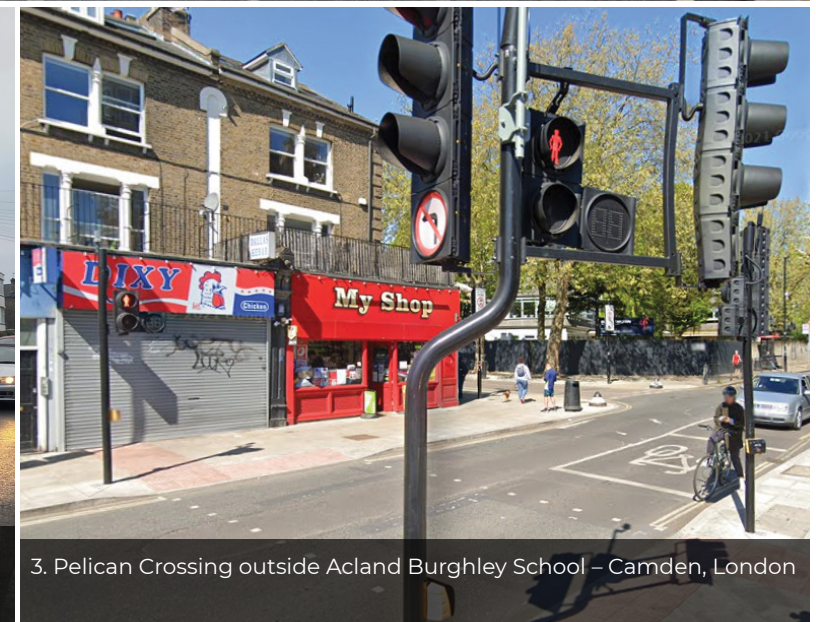
Understanding where pupils travel from and the key desire lines can help inform what type of crossing and where the crossing should be located. This information can be gauged through a pupil travel survey and through site visits at school drop off and pick up times. Examples of improved crossing points include:



1. Zebra crossing outside Brecknock Primary School – Camden, London



2. Zebra Crossing with School Crossing Patrol Officer – Lewisham, London



3. Pelican Crossing outside Acland Burghley School – Camden, London

Scenarios and potential interventions toolkit

Supporting or alternative measures

Park & stride

Description: This initiative involves encouraging parents who drive to school to park a short distance away (5-10 minutes walk) from the school gates and complete the final leg of their journey on foot. It reduces traffic, congestion and risk of road danger around the school gates whilst enabling pupils to get active before starting the school day.



Supporting or alternative measures

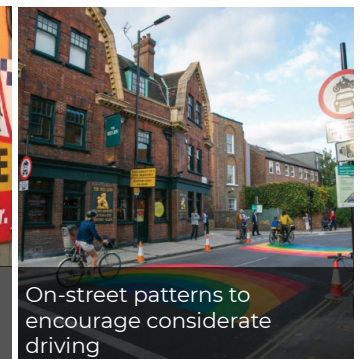
Behaviour Change

Description: This refers to any efforts, including engagement and communication, campaigns and incentives, to encourage the school community i.e. pupils, parents and staff, as well as residents and visitors, to switch to sustainable modes where feasible and drive considerately. Examples of behaviour change campaigns and initiatives include:

- Walk once a week challenge
- Banners on school gates
- On-street patterns to encourage considerate driving



Banners on School Gates



On-street patterns to encourage considerate driving

Chapter 5

Schematic Maps

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Schematic maps

Overview

The schools classified as 'Maybe Feasible' in the audit have been identified as locations where a CFSS scheme may be successful if combined with other transport measures.

Ten schematic maps have been created to be used as a toolkit to understand how CFSS could be delivered in different scenarios. Each of the scenarios are typical examples of street layouts and characteristics found outside schools across Birmingham which need to be considered more closely when assessing the feasibility of a CFSS scheme. Each of the schematic maps present a bespoke case study of how the design principles for a CFSS scheme and alternative measures can be applied outside of the type of locations in each of the scenarios. The scenarios chosen for the schematic maps are:

- ◆ **Scenario 1** – Streets with multiple points of closure
- ◆ **Scenario 2** – Large volumes of through-traffic
- ◆ **Scenario 3** – Multiple bus services
- ◆ **Scenario 4** – Multiple trip generators
- ◆ **Scenario 5** – More than one school entrance
- ◆ **Scenario 6** – Special educational needs (SEN) school
- ◆ **Scenario 7** – Substantial on-street parking
- ◆ **Scenario 8** – Connection to major roads
- ◆ **Scenario 9** – Long road layout
- ◆ **Scenario 10** – Multiple schools in close proximity

Table 20 in Chapter 4 provides an overview of the feasibility of CFSS scheme options and alternative measures across a variety of scenarios. The schematic maps use icons to summarise key information of each school used within the case study.



Type of school



Name of school street



Road type



Public transport services



Average daily traffic flows



Number of students



Cycle route



Speed limit, average speed



Number of collisions within 100 metres

Scenario 1: Streets with multiple points of closure

Oasis Academy Woodview, B15 2HU



Primary



Woodview Drive



No public transport



**Speed limit – 20mph
Average speed – 13mph**



Under 1,000 veh/24hr



420



**Through-route on a
local road**



**No cycle
infrastructure**



No collisions

Scenario 1: Street with multiple closure points

CFSS intervention

Option 1: Woodview Drive from junction with Springbank Road to Spring Road, and to Springmeadow Road

OR

Option 2: The same as Option 1, but extended along Woodview Drive to Brambling Road

Key Considerations

- Several closure points which may require multiple stewards.** Mitigation includes proposing a no entry restriction at the Spring Road junction with Woodview Drive and Springmeadow Road junction with Spring Road. This would only require one barrier and steward point on Woodview Drive (Option 1 would be at the Springbank Road junction, Option 2 would be at the Brambling Road junction). Alternatively, traffic filters could be implemented at junctions with Spring Road to remove through traffic and improve the space for those travelling by active modes, whilst reducing the number of entrance points and subsequently stewards required to operate the School Street scheme.

- Trip generators within the local vicinity.** Edgbaston Community Centre, and the associated car park is located adjacent to the school on Woodview Drive. Access and enforcement options could include an agreement with the community centre to allow visitors and staff to access the centre at all times.
- Potential drop off and pick up displacement.** Drop off and pick up activity is likely to be displaced to Woodview Drive, Springbank Road and/or Brambling Road therefore junction treatment, parking enforcement and/or Park & Stride, measures should be in place to mitigate against these.

Supporting/alternative measures

- Park & stride:** If pursued, a CFSS should be combined with Park & Stride promotion to encourage parents to park further away from the school gates, dispersing drop off and pick up activity away from the school gates, and tackling displacement.

Scenario 1: Streets with multiple points of closure

♦ Junction treatments / parking enforcement:

If filtering is not pursued, consider implementing double yellow lines outside the school on Woodview Drive, with possible parking enforcement, creating a clear space outside the gates for active travel. This measure can also be used to tackle drop off and pick up displacement.

♦ **Placemaking:** Complementary measures such as planting, cycle parking, parklets, and rain gardens can be considered to create a more pleasant space for active travel.

♦ **Area wide filtering:** If a combined School Street and filtering scheme is pursued, the merits of introducing area wide filtering could be considered to tackle through traffic and improve the environment for sustainable modes on a wider, neighbourhood scale.



Scenario 2: Large volumes of through traffic

Moor Green Primary Academy, B13 8AP



Primary



Moor Green Lane



No public transport



**Speed limit – 30 mph
Average speed – 17mph**



Under 1,000 veh/24hr



420



**Through-route on a
minor road**



**No cycle
infrastructure**



No collisions

Scenario 2: Large volumes of through traffic

CFSS intervention

Option 1: Moor Green Lane from the junction with Brockley Grove to Shutlock Lane (Elizabeth Road and Cadine Gardens would also be included)

OR

Option 2: Moor Green Lane from the junction with Dad's Lane to Shutlock Lane (Elizabeth Road and Cadine Gardens would also be included)

Key Considerations

- **Hybrid school street with traffic filter.** This would reduce through traffic from the surrounding area.
- **Advanced warning and signage** would be required to ensure drivers are aware of the changes and to support compliance. Given Moor Green Lane is a key route between the A441 and Shutlock Lane, potential traffic displacement to Dad's Lane should also be considered.

- **Several closure points which may not be suitable for barrier enforcement.** A risk assessment would be required at the Shutlock Lane and Dad's Lane junctions with Moor Green Lane to assess whether barrier enforcement is suitable.
- **Access to the school car park.** The school car park is accessed via Moor Green Lane, which is located within the closure zone.
- **Potential drop off and pick up displacement.** Promoting park and stride locations and potentially deploying parking enforcement, should be considered.
- **Trip generators within the local vicinity.** Access and enforcement options for Moor Green Medical Centre will need to be agreed to allow visitors and staff to access the centre at all times.

Supporting/alternative measures

- **Junction treatments and parking enforcement:** Consider implementing double yellow lines opposite the school on Moor Green Lane to dissuade footway parking. Consider SKC enforcement to reinstate restrictions and improve compliance.
- **Safer crossing points:** Consider the merits of introducing a controlled crossing on Moor Green Lane to improve road safety.

Scenario 2: Large volumes of through traffic

The benefits of introducing a controlled crossing should be informed by a comprehensive feasibility study and investigation into pedestrian desire lines.

- Placemaking:** Complementary measures such as planters, seating, cycle parking, and potential green screening along the school boundary, can be considered on Moor Green Lane to create a more pleasant space.
- Park & stride:** If pursued, a CFSS should be combined with Park & Stride promotion to encourage parents to park further away from the school gates, dispersing drop off and pick up activity away from the school gates. Potential locations include the Highbury Inn.



Scenario 3: Multiple bus services

King's Norton Boys' School, B30 1DY



Secondary



Northfield Road



There are 2 bus services operating 15 / hr



Speed limit – 30mph
Average speed – 15mph



Under 1,000 veh/24hr



743



Through-route on a minor road



No cycle infrastructure



2 slight collisions

Scenario 3: Multiple bus services on a relatively busy road

CFSS intervention

Option 1: Northfield Road from its junction with Hawthorne Road to the junction with Selly Oak Road (400m length)

OR

Option 2: Northfield Road from junction with Tennis Court / Wyndham Gardens to junction with Kings Garden (175m)

Key Considerations

- ◆ **Northfield Road is a bus route.** This CFSS should be complemented with a bus gate to enable bus access at all times. The location of the bus gate will need to be considered to stop motorists performing three point turns outside the school gates.
- ◆ **Each option requires two closures points with multiple stewards.** Option 1 will need two barriers and multiple stewards. Intensive stewarding may be required from residential trips out of this area during these times.

- ◆ **Potential drop off and pick up displacement.** It is likely that drop-up / pick-up activity would move to Selly Oak Road, Hawthorne Road and Northfield Road (west of Hawthorne Road). Measures such as new parking / waiting restrictions should be considered to enable access for the high number of residents living within this area. There are no obvious "Park & Stride" locations in the immediate vicinity. It may be possible to discuss options for a "Park & Stride" site with the Rowheath Pavilion, which is approximately 800m from the school.

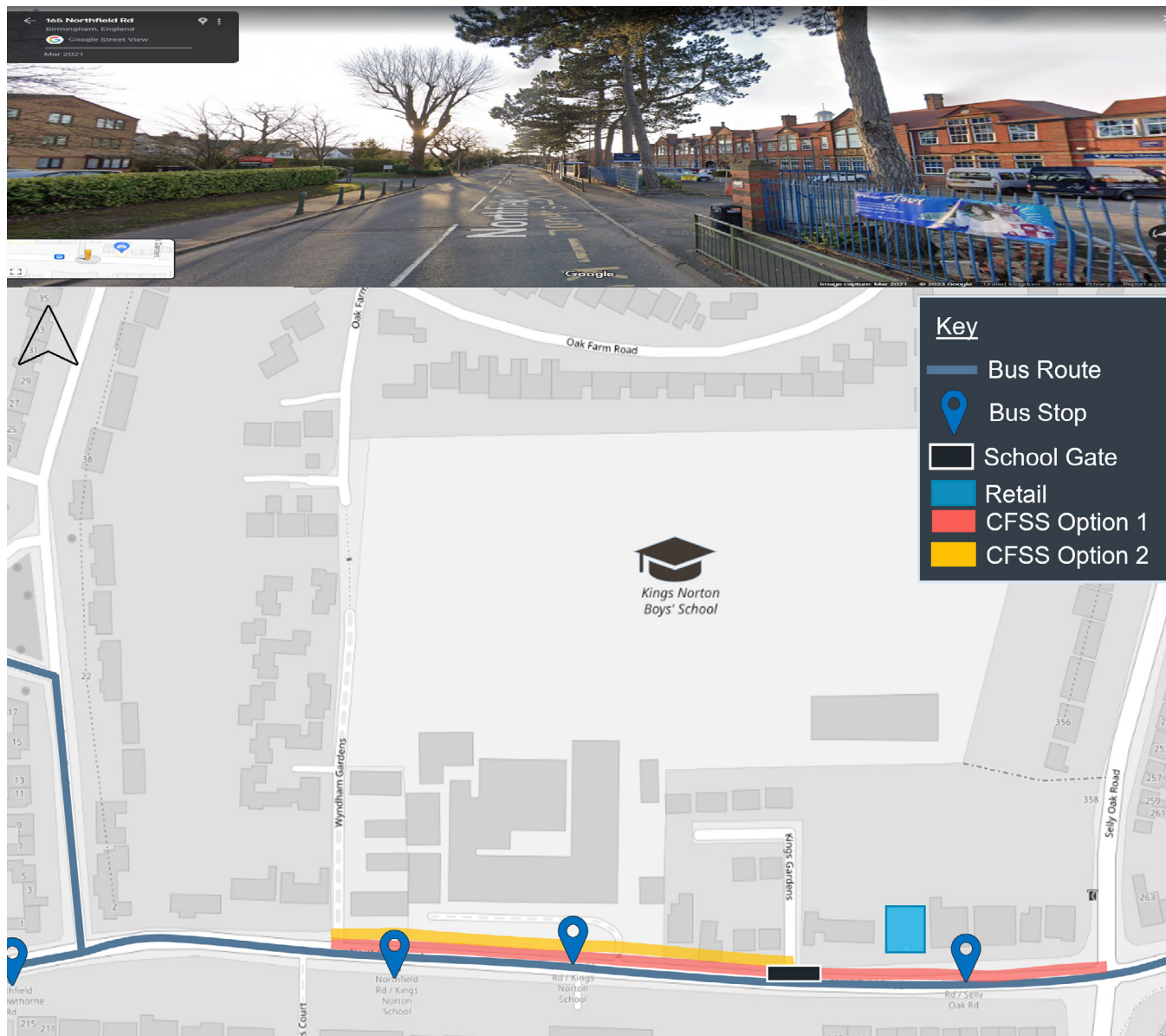
- ◆ **Access to the school car park.** The school car park is accessed via Northfield Road, which is located within the closure zone.

Supporting/alternative measures

- ◆ **Junction treatments / parking restrictions:** If a hybrid school street/bus gate scheme is not introduced, consider extending the yellow zig zags further along Northfield Road to dissuade drop-off / pick-up activity close to the school gates, with enforcement. It may also be beneficial to consider moving the bus stops from outside the school.

Scenario 3: Multiple bus services

- Safer crossing points:** Consider the merits of introducing a controlled crossing on Northfield Road to improve road safety. The benefits of introducing a controlled crossing should be informed by a comprehensive feasibility study and investigation into pedestrian desire lines.
- Placemaking:** Complementary measures such as planters, cycle parking, and potential green screening along the school boundary, can be considered on Northfield Road to create a more pleasant space for active travel and reduce the dominance of motor vehicles.
- Park & stride:** A CFSS should be combined with Park & Stride promotion to encourage parents to park further away from the school gates, dispersing drop off and pick up activity away from the school gates.



Scenario 4: Multiple trip generators

St John's & St Peter's CofE Academy, B16 8RN



Primary



St Vincent Street West



No public transport



Speed limit – 20mph
Average speed – 17mph



Under 1,000 veh/24hr



210



Through-route on a local road



National cycle route located with 300m of the school



1 slight collision

Scenario 4: Other trip generators on street which need consideration

CFSS intervention

Option 1: St Vincent Street West, from Gilby Road to Ledsam Street.

Key Considerations

- Trip generators.** Several trip generators are located within the proposed CFSS zone, therefore a bespoke exemption policy may be required to allow access where needed. It should be noted however that this proposed zone is less than 150m and the scheme will operate up to just two hours a day, on school days only. Therefore those who drive to the trip generators could be asked to re-time their journey or re-mode, or find alternative parking outside the zone during the operating times.
- Junction treatments.** How the CFSS is enforced at the St Vincent Street West junction with Ledsam Street will need to be considered. This may involve junction narrowing to reduce vehicle speeds on approach to the CFSS zone.

- Potential drop off and pick up displacement.** It is likely that drop-up / pick-up activity would move to the surrounding streets, therefore measures should be considered to mitigate against these.
- Access to the school car park.** The school car park is accessed via St Vincent Street West, which is located within the closure zone.

Supporting/alternative measures

- Parking enforcement:** Deploying parking enforcement officers on the surrounding roads during the initial bedding in period will deter parents from dropping off on Gilby Road for example, where there are double yellow lines and SKCs.
- Road space reallocation:** There are a number of parking bays located outside the trip generators on St Vincent Street West which could be relocated and the space reallocated to create a more pleasant space for people to spend time and for active travel.

Scenario 4: Multiple trip generators

- Placemaking:** Building on the road space reallocation, complementary measures such as planters, cycle parking, and potential green screening along the school boundary, can be considered on St Vincent Street West to create a more pleasant space for active travel. Potential seating areas and outdoor dining could also be considered outside the trip generators if parking bays are reallocated to footway widening.
- Safer Crossing Points:** Given the number of trip generators near the school, the merits of introducing a controlled crossing within the vicinity of the school could be considered to improve road safety and enable pedestrian priority.
- Park & Stride:** If pursued, a CFSS should be combined with Park & Stride promotion to encourage parents to park further away from the school gates, dispersing drop off and pick up activity away from the school gates.



Scenario 5: More than one school entrance

The Meadows Primary School, B31 2SW



Primary



School Close



No public transport



Speed limit – 30mph
Average speed – 29mph



Above 1,000 veh/24hr



630



A-road



National cycleway 5 located within 300m of the school



No collisions

Scenario 5: School with more than one entrance with potential for displacement

CFSS intervention

Option 1: School Close and Meadow Gate (whole length of both)

AND / OR

Option 2: Bodenham Road (whole length)

Key Considerations

- ◆ **Several closure points which may require multiple stewards.** Implementing both school streets options would require three closure points up to 300m from the school with stewards at each. The merits of introducing a traffic filter on Bodenham Road, either at the junction with Hanging Lane or Bristol Road South, could help to reduce the number of entrance points and therefore stewards needed. A filter would also help to remove through traffic on Bodenham Road whilst enabling access for residents.

- ◆ **Access to the school car park.** The school car park is accessed via School Close, which is located within the closure zone.
- ◆ **Potential drop off and pick up displacement.** Drop-off and pick-up on Bristol Road South has been an issue, hence the bollards. If a CFSS is implemented, other nearby streets (Tessall Lane, Mavis Road, Hawkesley Mill Lane) could see a rise in drop off and pick up activity, with some drivers blocking resident driveways. To avoid this, the supporting measures below, including Park and Stride and parking enforcement, should be considered. Displacement may also occur if Option 1 is pursued in isolation.

Supporting/alternative measures

- ◆ **Parking enforcement:** Deploying parking enforcement officers on the surrounding roads during the initial bedding in period will help to deter parents from inconsiderate driving.
- ◆ **Placemaking:** Given the school's proximity to the Bristol Road, measures to improve the pedestrian and cycle environment should also be considered.

Scenario 5: More than one school entrance

- Safer crossing points:** Continuous crossings could also be considered at the School Close and Bodenham Road junctions with Bristol Road.
- Park & Stride:** A CFSS should be combined with Park & Stride promotion to encourage parents to park further away from the school gates, dispersing drop off and pick up activity away from the school gates.



Scenario 6: Special educational needs (SEN) school

Calthorpe Academy, B12 0TP



Special educational needs



Darwin Street



No public transport



**Speed limit – 20mph
Average speed – 10mph**



Under 1,000 veh/24hr



430



**Through-route on a
local road**



No cycle infrastructure



1 slight collision

Scenario 6: SEN School with pupils requiring home to school transport

CFSS intervention

Option 1: Darwin Street from the junction with Leopold Street to Stanhope Street (Salop Street would also be included)

Key Considerations

- Existing pupil mode share.** Given that a high percentage of pupils are likely to be driven to school and the school has large car park with multiple entrances, the merit of introducing a School Street scheme as opposed to other interventions will need to be considered. Staff access will also need to be considered if a CFSS is pursued.
- Several closure points which may not be suitable for barrier enforcement.** A risk assessment will be required to assess whether barrier enforcement is suitable for this scheme. This is particularly important at this location given the types of trip generators within the local vicinity which are likely to attract large vehicles.
- Trip generators within the local vicinity.** The school is located opposite Falcon Engineering, a manufacturing firm, which is likely to require regular vehicle access.

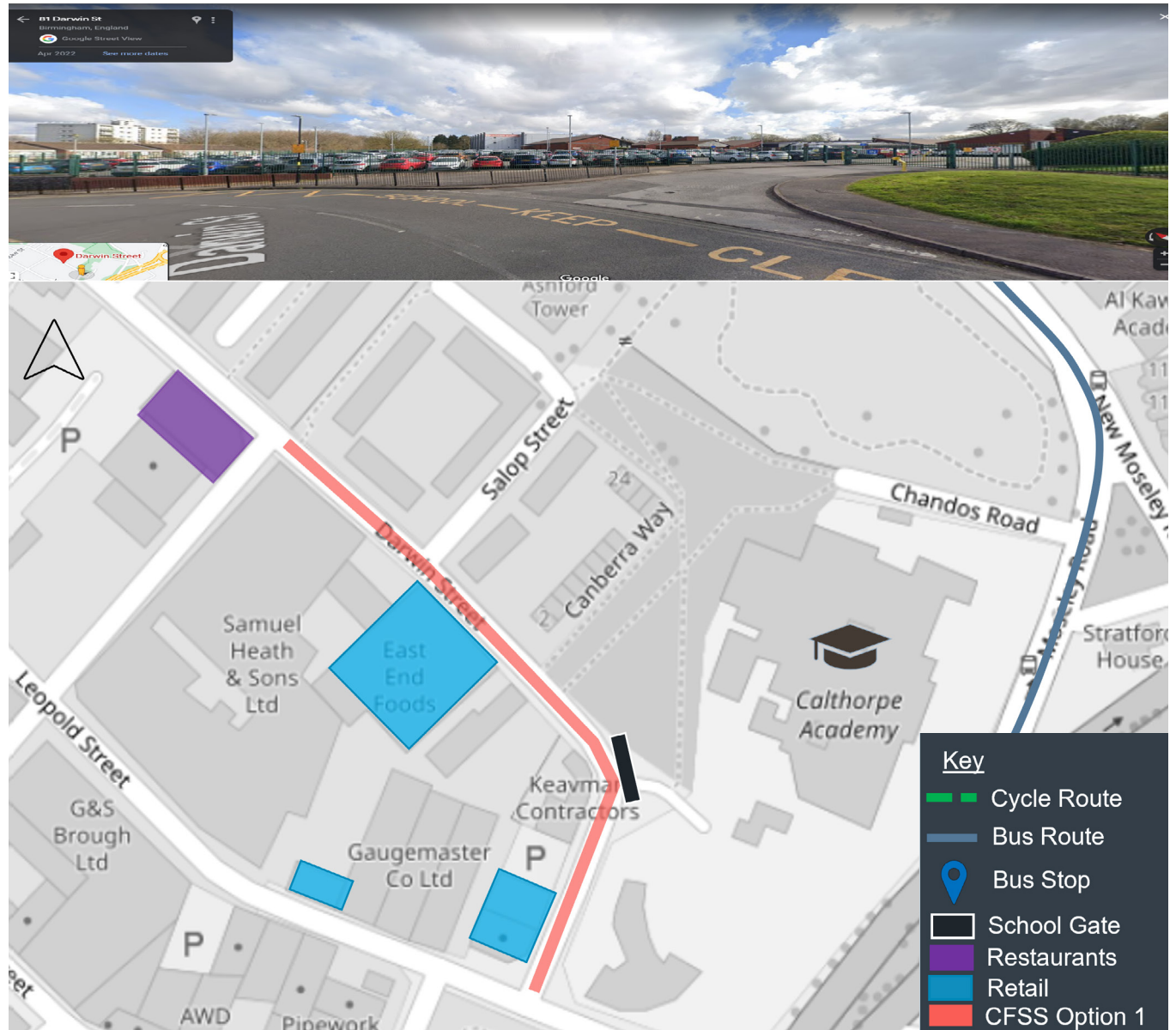
This scheme would therefore require early stakeholder engagement and a bespoke exemption policy.

Supporting/alternative measures

- Junction treatments and safer crossing points:** Consider reducing the junction radii at the Darwin Street junction with Leopold Street to reduce vehicle speeds when entering Darwin Street. This could be complemented with a continuous crossing to reinforce pedestrian priority.
- Road space reallocation:** Consider options to reduce the dominance of motor vehicles on Darwin Street and create a more pleasant environment for those travelling by sustainable modes. This could be achieved through reducing the carriageway width and introducing build outs to create a visual narrowing effect.
- Placemaking:** Complementary measures such as planters, cycle parking, and potential green screening along the school boundary, can be considered on Darwin Street to create a more pleasant space for active travel.

Scenario 6: Special educational needs (SEN) school

Note: Birmingham City Council provides travel assistance to those pupils that meet the eligibility requirements for transport, aged 5-16 and post 16+ (aged 16-18), ensuring pupils are transported to and from school safely. Independent Travel Training programmes are offered to support pupils in achieving independence as they move to becoming young adults. Children or young people with SEND may be entitled to financial or practical help with getting to their nearest suitable school. This help includes a bus pass or discounted rail card, independent travel training, providing a school bus, minibus or taxi service, providing an escort to walk children to school, school travel assistance and a personal travel budget.



Scenario 7: Substantial on-street parking

Ark Tindal Primary Academy, B12 9QS



Primary



Tindal Street



No public transport services



**Speed limit – 20mph
Average speed – 10mph**



Under 1,000 veh/24hr



420



Through-route on a local road



No cycle infrastructure



1 slight collision

Scenario 7: Substantial On-Street Parking on Local Roads

CFSS intervention

Option 1: Tindall Street from Cromer Road to Homer Street

Key Considerations

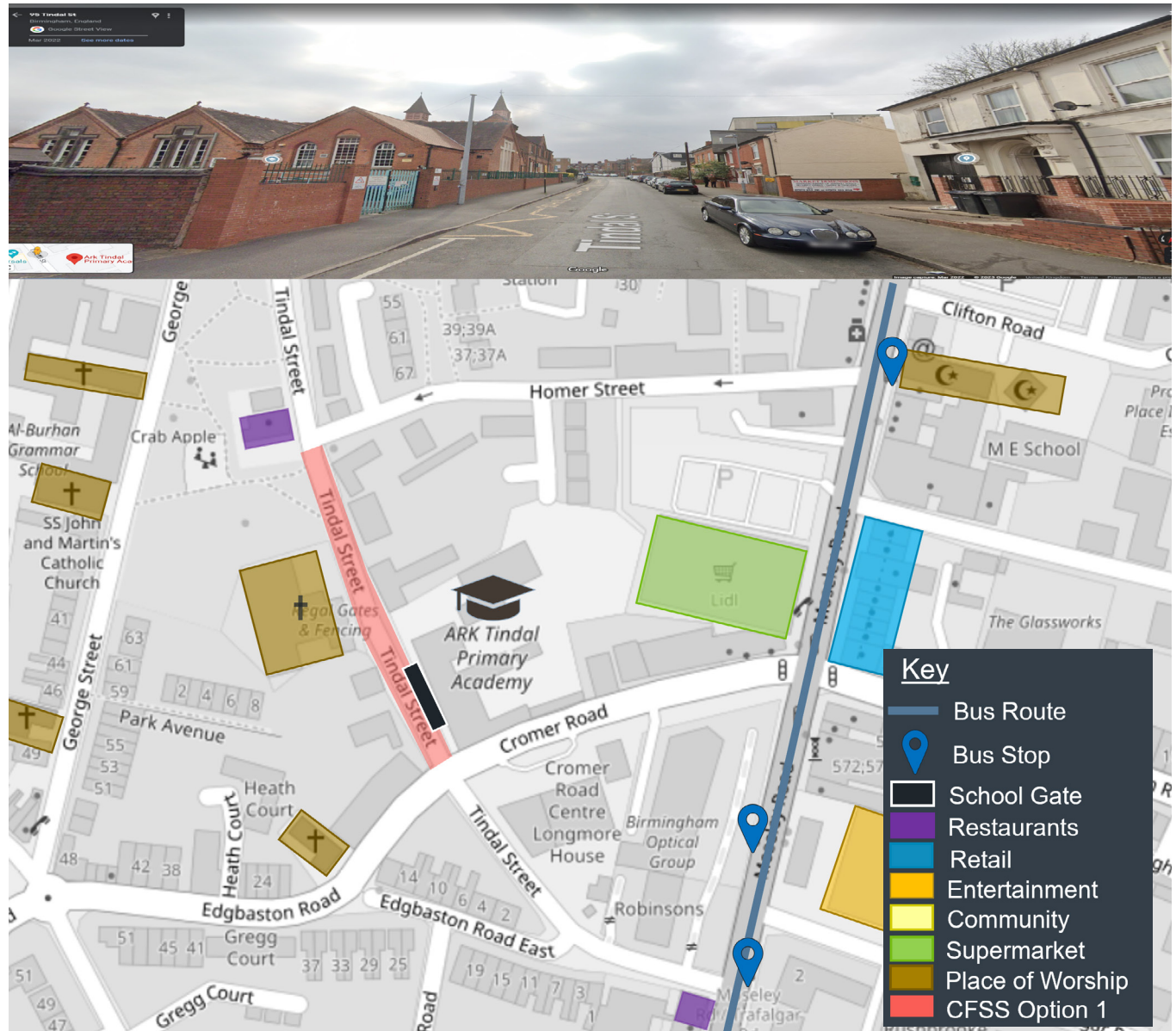
- Substantial on-street parking:** Implementing a CFSS combined with no stopping restrictions, such as introducing some sections of double yellow lines opposite the school on Tindal Street, could help to reduce congestion and prevent parents from parking on this narrow residential street. If implemented, this should be combined with enforcement, including enforcement of the SKCs, and promotion of Park & Stride locations, to dissuade inconsiderate parking and disperse drop off and pick up activity. Given Tindal Street is a predominately residential road, the impact on resident parking will need to be considered.

- Potential drop off and pick up displacement.** It is likely that drop-off / pick-up activity would move to the surrounding streets, including Homer Street, Cromer Road and Tindal Street north of Homer Street, therefore measures, such as Park & Stride sites, should be considered to mitigate against this.
- Trip generators.** Al Falah Community Mosque is located within the proposed CFSS zone, therefore a bespoke exemption policy may be required to allow access where needed. Instances where this might be necessary include when worship coincides with the CFSS operating times and elderly or disabled visitors require doorstep access to the address. For all other access requirements, it should be noted that this proposed zone is ~150m and the scheme will operate for up to just two hours a day, on school days only. Therefore those who drive could be asked to re-time their journey or re-mode, or find alternative parking outside the zone during the operating times.

Scenario 7 – Substantial on-street parking

Supporting/alternative measures

- Junction treatments:** Reinstating the raised table at the Tindal Street junction with Cromer Road could help to reduce speeds of vehicles turning in and out of the junction as they approach the school. This could be complemented with rationalising the guard railing and implementing a continuous crossing to further improve pedestrian priority and accessibility.
- Placemaking:** Tindal Street and the surrounding streets could benefit from greening including tree planting and potential planters as well as measures to invite active travel, including implementing on-street cycle hangars.
- Road space reallocation:** Building on placemaking, if feasible, footway widening or build outs could be considered outside the school gates to provide more space where pupils and parents are likely to congregate.
- Park & stride:** The school could consider the potential for park and stride. Potential sites include nearby Lidl and the former Birmingham Optical site on Moseley Road.



Scenario 8: Connection to major roads

Nelson Mandela School, B12 8EH



Primary



Colville Road



No public transport



**Speed limit – 20mph
Average speed – 11mph**



Under 1,000 veh/24hr



420



**Through-route on a
local road**



No cycle infrastructure



1 slight collision

Scenario 8: Connection to major roads CFSS intervention

Option 1: Colville Road (full length between Ladypool Road and Stoney Lane)

Key Considerations

- ◆ **Two closure points which may require multiple stewards.** Colville Road is already narrowed with build-outs at the junction, so it may be possible for one person to steward each end of the road to operate each barrier (subject to risk assessment and safety considerations). Alternatively, the merits of introducing a traffic filter on Colville Road, either at the junction with Ladypool Road or Stoney Lane, could help to reduce the number of entrance points and therefore stewards needed. A filter would also help to remove through traffic on Colville Road whilst enabling access for residents.

- ◆ **Potential drop off and pick up displacement.** Short-stay drop-off and pick-up parking may be displaced to neighbouring residential streets, including Brunswick Road (especially for access to the school's park entrance), St Paul's Road, Alfred Street or Fulham Road. Mitigations would include encouraging parents / carers not to drive to school as well as identifying Park & Stride sites to disperse drop off and pick up activity.
- ◆ **Interaction with traffic at nearby schools.** There are at least 12 other primary schools within 1 mile of Nelson Mandela School. In particular, Clifton Primary School is approximately 250m away on St Paul's Road. Close liaison with Clifton will help to ensure a joined-up approach. Levels of car ownership are relatively low in the immediate vicinity; it may be that relatively few pupils are brought to school by car, so this may not be a significant challenge.
- ◆ **Access to the school car park.** The school car park is accessed via Colville Road, within the closure zone.

Scenario 8: Connection to major roads

Supporting/alternative measures

- Road space reallocation:** Consider options to reduce the speed of motor vehicles on Colville Road and create a more pleasant environment for those travelling by sustainable modes. This could be achieved through reducing the carriageway width and introducing build outs to create a visual narrowing effect.
- Junction treatments:** Continuous crossings could be considered at the Colville Road junction with Ladypool Road and Stoney Lane to reduce vehicle speeds and enable pedestrian priority.
- Park & stride:** If pursued, a CFSS should be combined with Park & Stride promotion to encourage parents to park further away from the school gates, dispersing drop off and pick up activity away from the school gates.



Scenario 9: Long road layout

Barford Primary School, B16 0EF



Primary



Barford Road



No public transport



**Speed limit – 30mph
Average speed – 13mph**



Under 1,000 veh/24hr



420



**Through-route on a
local road**



No cycle infrastructure



3 slight collisions

Scenario 9: Long road layout

CFSS intervention

Option 1: Barford Road between junction with Coplow Street and junction with A457 Dudley Road

OR

Option 2: Barford Road between junction with Coplow Street and Barford Road cul-de-sac (opposite Bayt Ur Rahman Mosque and Community Centre)

OR

Option 3: Barford Road between junction with Coplow Street and 47 Barford Road

Key Considerations

- Two closure points which may require multiple stewards.** The southern closure point is the Coplow Street junction in all options, approximately 50m from the school. The longest closure (Option 1) has its northern closure point at the Dudley Road junction, approximately 200m away from the school. A potential mitigation measure could be to make Barford Road one-way but allowing two-way access into the northern section for the houses to the south of the school. The merits of introducing a traffic filter at the Barford Road junction with Coplow Street could also be explored.

- Trip generators within the local vicinity.** The Bayt Ur Rahmna Mosque and Community Centre is located within the proposed CFSS zone, therefore a bespoke exemption policy may be required to allow access where needed. Instances where this might be necessary include when worship coincides with the CFSS operating times and elderly or disabled visitors require doorstep access. For all other access requirements, it should be noted that the maximum proposed zone is ~300m and the scheme will operate for just two hours a day, on school days only. Therefore those who drive could be asked to re-time their journey or re-mode, or find alternative parking outside the zone during the operating times.
- Potential drop off and pick up displacement.** Parents who currently use Barford Road may revert to using Icknield Port Road. To avoid increased congestion, particularly because this is a bus route, Park & Stride locations should be identified to mitigate against this.

Scenario 9: Long road layout

Local cycle route (Harborne – city centre) crosses Barford Road along Brandon Passage. Putting a closure point on Barford Road close to the east of Barford Passage would be likely to generate three-point turns at a point of potential conflict with cyclists, as well as people walking to and from school.

Supporting/alternative measures

- Park & stride:** If pursued, a CFSS should be combined with Park & Stride promotion to encourage parents to park further away from the school gates. Potential sites include Lidl and Summerfield Community Sports Centre.
- Placemaking and road space reallocation:** Consider options to improve the space for active travel including build-outs, planters and cycle parking.












Scenario 10: Two or more schools in close proximity










This scenario considers three schools located in close proximity to one another along Turves Green.

Details on each of the schools is provided below and options on a potential CFSS scheme, plus key considerations and complementary measures, is detailed overleaf.










King Edward V1 Northfield School for Girls, B31 4BP

	Secondary
	Turves Green
	There are 2 bus services operating 13.5 / hr
	Speed limit – 30mph Average speed – 14mph
	Above 1,000 veh/24hr
	750
	Through-route on a minor road
	No cycle infrastructure
	1 slight collision

Turves Green Primary School, B31 4BP

	Primary
	Turves Green
	There are 2 bus services operating 13.5 / hr
	Speed limit – 30mph Average speed – 14mph
	Above 1,000 veh/24hr
	420
	Through-route on a minor road
	No cycle infrastructure
	1 slight collision

Turves Green Boys' School, B31 4BS

	Secondary
	Turves Green
	There is 1 bus service operating 10 / hr
	Speed limit – 30mph Average speed – 16mph
	Above 1,000 veh/24hr
	759
	Through-route on a minor road
	No cycle infrastructure
	1 slight collision

Scenario 10: Two or more schools in close proximity

King Edward V1 Northfield School for Girls, Turves Green Primary School, Turves Green Boys' School

Scenario 10: Two or more schools located in close proximity

CFSS intervention

Option 1: Turves Green from Fairfax Road to Moorpark Road, including Titterstone Road and Clunbury Road.

Key Considerations

- ◆ **Several entry points which may require multiple stewards.** Given this scheme covers three schools, the length of the zone is substantially longer (~600m) and covers multiple streets, therefore multiple stewards would be required to cover each entry point. To manage this, the merits of introducing a traffic filter on Clunbury Road could be considered to reduce the number of entrance points and therefore stewards needed. A filter would also help to remove through traffic on Clunbury Road and Titterstone Road, whilst enabling access for residents.
- ◆ **Turves Green is a bus route.** A hybrid CFSS and bus gate scheme would need to be considered to enable bus access during peak times. Buses are likely to benefit from a hybrid scheme as this would remove through traffic and improve bus service reliability. If this is pursued, the impact on the wider network would need to be considered to mitigate against displacement and subsequent congestion.
- ◆ **Trip generators within the local vicinity.** Several trip generators are located within the proposed CFSS zone, therefore a bespoke exemption policy may be required to allow access where needed. Instances where this might be necessary include when worship at the Longbridge Baptist Church coincides with the CFSS operating times and elderly or disabled visitors require doorstep access to the address. For all other visitors to the area, it should be noted the scheme will operate for up to just two hours a day, on school days only, therefore those who drive to the trip generators could be asked to re-time their journey or re-mode, or find alternative parking outside the zone during the operating times.
- ◆ **Potential drop off and pick up displacement.** Short-stay drop-off and pick-up parking may be displaced to neighbouring residential streets. Mitigations would include encouraging parents / carers not to drive to school as well as identifying Park & Stride sites to disperse drop off and pick up activity.

Supporting/alternative measures

- ◆ **Placemaking and road space reallocation:** Consider options to improve the space for active travel including rain gardens, planters and cycle parking. Each of the schools could also benefit from green screening along the school boundary which face Turves Green.
- ◆ **Parking enforcement:** Full height kerbs could be introduced outside the schools to prevent footway parking and improve road safety. Building on the above, bollards could be replaced with planters to deter inconsiderate parking.

Scenario 10: Two or more schools in close proximity

- Safer crossing points:** Consider the merits of introducing controlled crossing(s) on Turves Green to improve road safety and enable pedestrian priority. The benefits of introducing a controlled crossing should be informed by a comprehensive feasibility study and investigation into pedestrian desire lines. This would be particularly beneficial given the concentration of schools and number of pupils.
- Area wide filtering:** If through traffic and congestion is an issue within the local area, exploring the merits of area wide filtering could be considered. This would improve the experience for pupils walking and cycling on their journeys to and from school, rather than just on approach to the school.
- Park & Stride:** If pursued, a CFSS should be combined with Park & Stride promotion to encourage parents to park further away from the school gates, dispersing drop off and pick up activity away from the school gates.



Chapter 6

Conclusion and next steps

BE BOLD BE BIRMINGHAM

Conclusion and next steps

School Streets are a pioneering approach to transforming road safety and air quality outside schools, whereby streets are closed to traffic at the start and end of the school day. In Birmingham, CFSS schemes have already been delivered at 17 schools. BCC are now looking to further develop and expand the CFSS scheme across the city, allowing more schools to benefit from becoming a CFSS. WSP on behalf of BCC have undertaken a detailed auditing process to assess the suitability and feasibility for CFSS at 445 schools across the city, identifying where future delivery should be prioritised to help transform road safety, air quality and congestion outside schools in Birmingham.

The following tasks have been undertaken as part of the auditing process:

- ◆ **Data collection:** Collection of available datasets to identify characteristics such as school profile, highway and public transport context and local context
- ◆ **Spatial Analysis:** Desktop geographical and spatial mapping of all schools
- ◆ **Car Free School Streets Live Database:** Development of 'live' database containing baseline data of all schools
- ◆ **School assessment and scoring:** Use of agreed scoring criteria to classify each school as very likely feasible, likely feasible, maybe feasible and unlikely to be feasible
- ◆ **Prioritisation process:** Further assessment of schools against more detailed criteria
- ◆ **Ranked list of schools:** Use of the prioritisation process to create a ranked list of schools
- ◆ **Scenarios and Potential Interventions:** A toolkit which can be used to guide future CFSS delivery in Birmingham
- ◆ **Recommendations:** Annotated schematic maps for 10 'maybe feasible schools' with recommendations for the delivery of CFSS at these type of locations

Next Steps

The following recommendations and next steps will support the expansion of CFSS across Birmingham:

- ◆ Use the outcomes of the auditing and prioritisation process to guide future CFSS delivery at additional schools across the city
- ◆ Revisit existing CFSS sites to deliver permanent changes to the streetscape
- ◆ Explore measures to tackle issues with traffic displacement at existing and future CFSS locations
- ◆ Consider available options for CFSS enforcement via collaboration with West Midlands Police



WSP UK Limited
The Mailbox
Level 2, 100 Wharfside
Birmingham
B1 1RT

wsp.com