



Acknowledgments:

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National Transport Authority (NTA):

- Noel Fennelly
- Joe Seymour

AECOM Team:

- Eoin O’Mahony
- Megan Airey
- Riccardo Caimano
- Mike Loughrey
- Sarah McFadden

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Table of Contents

1. Purpose of this document

- 1.1 Purpose of this document

2. Neighbourhood Traffic Calming and Road Safety

- 2.1 What is a Neighbourhood Traffic Calming and Road Safety Scheme?
- 2.2 Supporting Policy
- 2.3 Why Should We Consider Traffic Calming and Road Safety Interventions?
- 2.4 Benefits of Neighbourhood Traffic Calming and Road Safety Interventions

3. Principles and Approach

- 3.1 Scheme Pre-Conditions
- 3.2 Street Classification
- 3.3 Defining the Study Area
- 3.4 Data Collection

4. Engagement

- 4.1 What is Engagement and Why should you engage?
- 4.2 Who should you engage with?
- 4.3 How should you engage?
- 4.4 Presenting the Interventions
- 4.5 Understanding and Overcoming Status Quo Bias in Neighbourhood Traffic Calming
- 4.6 Beyond the Neighbourhood

5. Interventions

- 5.1 Traffic Reduction Measures
- 5.2 Traffic Calming Measures
- 5.3 Placemaking Interventions
- 5.4 Ancillary Measures

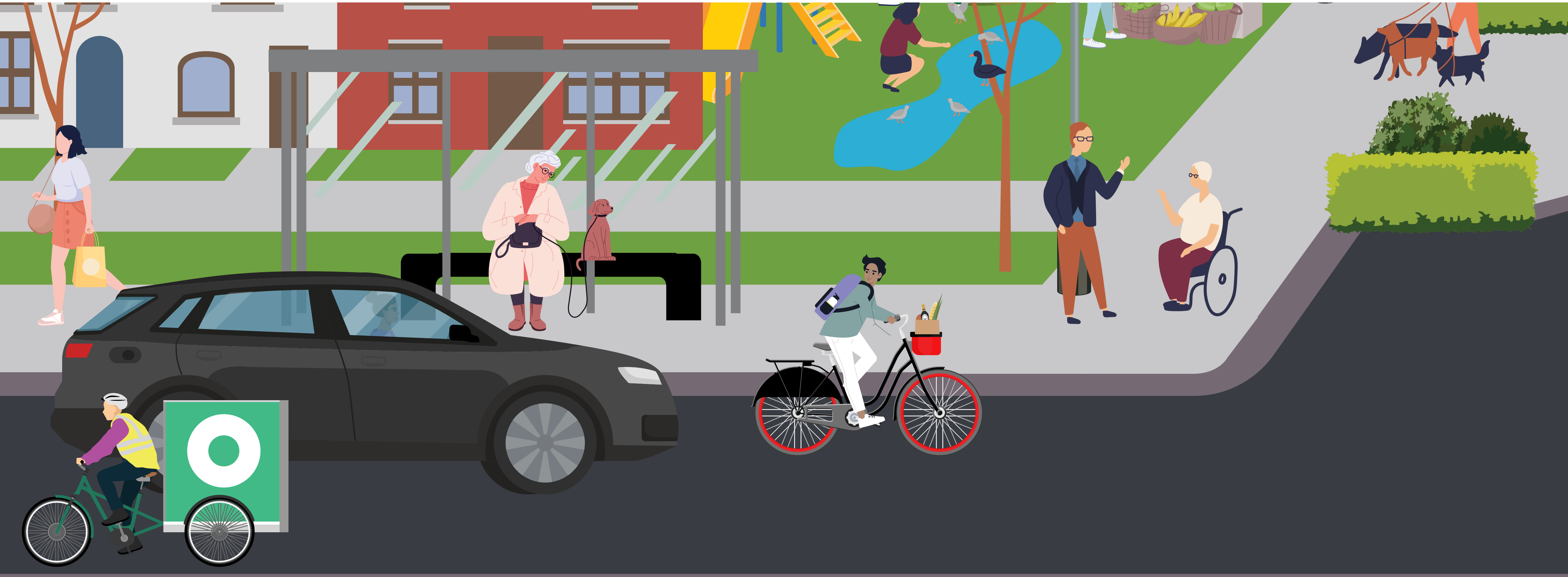
6. Data and Monitoring

- 6.1 Importance of Data and Monitoring
- 6.2 Key Evaluation Questions
- 6.3 Methodology
- 6.4 Data Collection Themes





1. Purpose of this document





1.1. Purpose of this document

This document is intended for local authorities, designers, engineers and planners to use as a guide to understand how neighbourhood traffic calming and road safety interventions can be implemented.

This document provides an overview of how to identify a potential area for traffic calming measures, the key principles and approaches for its development, and how to meaningfully engage with the local community to successfully deliver safer, more accessible neighbourhoods. The guide focuses on retrofitting existing neighbourhood roads and streets to enhance safety, accessibility, and quality of life for residents. With the number of licensed vehicles in Ireland having tripled since the 1990s to around 3 million vehicles, and the increasing use of navigation apps directing traffic onto smaller streets, many neighbourhoods now require thoughtful modifications to address the challenges posed by increased traffic volume and speed.

This document provides a toolkit of key interventions designed to support local authorities in transforming existing neighbourhoods into more liveable, community-focused spaces. While it is acknowledged that some local authorities have established traffic calming policies, this toolkit serves as an enhancement rather than a replacement. It presents a holistic view of improving road safety in residential neighbourhoods, detailing a suite of strategies that extend beyond conventional traffic calming. These expanded strategies include placemaking, active mobility enhancements, and community engagement efforts, all designed to foster a shift towards safer, more inclusive road use. These interventions aim to encourage a shift in driver behaviour and perception, reminding road users that residential areas are spaces that extend beyond mere conduits for motor vehicles.

Whilst this document does provide details on traffic calming and road safety interventions, it is a toolkit that does not override existing national standards or guidance such the Design Manual for Urban Roads and Streets 2019 (DMURS), the Traffic Management Guidelines 2003 (especially Chapter 6 on Traffic Calming for Existing Roads) and the Cycle Design Manual. It should be utilised as a supplementary resource to these foundational documents, ensuring that the design and implementation of neighbourhood improvements align with national guidelines.

Click on the images to access the full documents

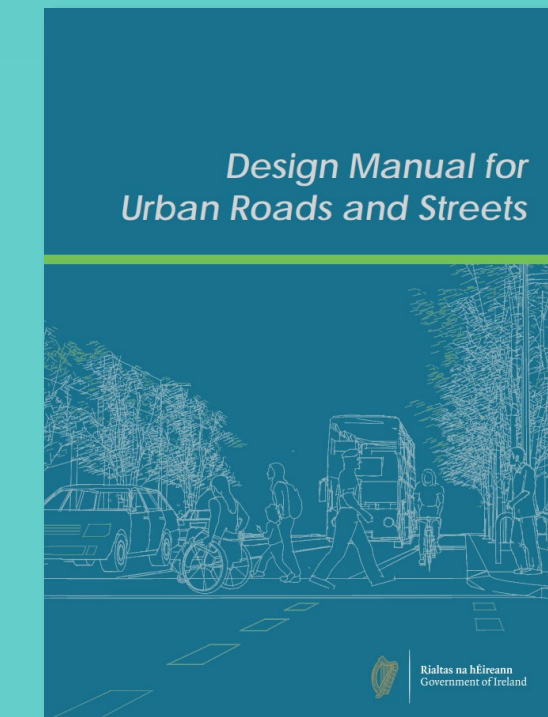


Figure 1: Design Manual for Urban Roads and Streets 2019 document cover
Source: DMURS

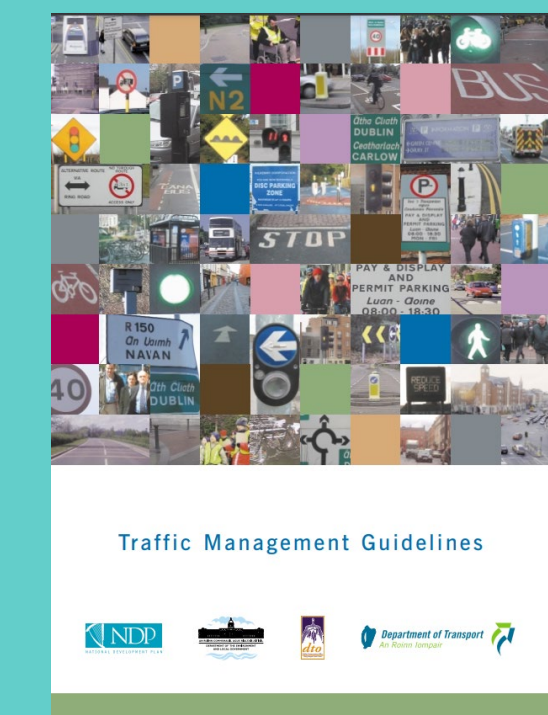


Figure 2: Traffic Management Guidelines 2003 document cover
Source: TMG



Figure 3: Cycle Design Manual document cover
Source: CDM



1. Purpose of this Document

2. Neighbourhood Traffic Calming and Road Safety

3. Principles and Approach

4. Engagement

5. Interventions

6. Data and Monitoring

2. Neighbourhood Traffic Calming and Road Safety





2.1. What is a Neighbourhood Traffic Calming and Road Safety Scheme?

In the context of this document a neighbourhood comprises groups of residential streets, bordered by distributor roads. These streets are characterised by their pedestrian-friendly streetscapes, prioritisation of non-vehicular traffic, and spaces that encourage social interaction, promoting both physical and mental well-being.

A neighbourhood traffic calming and road safety scheme aims to create places where people can safely walk, wheel (a term that encompasses all forms of wheeled personal mobility, such as wheelchairs, mobility scooters, and prams), and cycle. These schemes aim to make people feel safe and relaxed, improving the quality of life for all users by enhancing accessibility and reducing vehicular dominance. The schemes are designed to improve air quality and reduce noise pollution produced by vehicles on the streets. Key components include safe places to cross, provisions for shade and rest, and spaces that encourage more people to make more of their journeys by walking, wheeling, or cycling.

At the heart of these schemes is the principle that streets and public spaces are not merely conduits for cars but vital community assets. These spaces belong to everyone, ensuring accessibility by motor vehicles while adapting routes to emphasise priority for those who walk, wheel, and cycle. This approach encourages more sustainable, community-focused use of streets without removing vehicular access, maintaining connectivity while fostering an inclusive environment.

These schemes can be achieved through a combination of measures, summarised below.

- Implement traffic reduction measures like modal filters to deprioritise through-traffic, thereby creating quieter, safer streets. This shift elevates the experience of walking, wheeling, and cycling, ensuring these modes of transport are not only safer but also more efficient than driving.
- Employ a suite of traffic calming strategies, from speed bumps to narrowed lanes, to systematically lower vehicle speeds. This creates a tranquil street environment, enhancing safety and liveability for all residents and visitors.
- Making it easier, safer and more enjoyable for people to complete more journeys by walking, wheeling and cycling by improving crossing points, repairing footways, improving the cycling environment and providing more secure cycle storage.
- Cultivate community spirit and bolster local commerce by integrating placemaking elements—like seating, rain gardens, and street trees—into the urban fabric. These not only beautify the neighbourhood but also contribute to ecological resilience, mitigating the effects of climate change and promoting biodiversity.

By implementing these strategies, residential areas transform into vibrant, dynamic spaces that prioritise the well-being and happiness of their inhabitants, enhancing safety for all road users.



2.2. Supporting Policy

The need for safer, more sustainable neighbourhoods that prioritise walking, cycling, and public transport is strongly supported by various Irish national policies. These policies set clear objectives to guide sustainable development, improve road safety, and promote active travel options across the country. Some of the most relevant policies and guidelines include:

- **National Planning Framework (NPF):** The NPF outlines a vision for sustainable, liveable urban areas that are well-designed, accessible, and attractive to a diverse range of users. It emphasises the creation of places that support both residential quality of life and the needs of local businesses through effective transport planning and urban design.
- **National Sustainable Mobility Policy:** This policy sets out a strategic framework to reduce carbon emissions and promote sustainable modes of transport. It advocates for infrastructure that supports walking, cycling, and public transport, in order to create vibrant, healthy communities and reduce the reliance on private vehicles.
- **Climate Action Plan:** The plan emphasises the importance of reducing carbon emissions from the transport sector. It supports active travel measures, such as improving pedestrian and cycling infrastructure, as a key part of achieving Ireland's environmental goals.
- **Road Safety Strategy 2021-2030:** The Road Safety Strategy underlines the importance of reducing road fatalities and injuries, especially for vulnerable road users like pedestrians and cyclists. It highlights the need for traffic calming measures, reduced vehicle speeds, and safer infrastructure to improve safety in neighbourhoods.
- **NTA 2024-2030 Sustainability Strategy:** The NTA's Sustainability Strategy outlines specific objectives to reduce motorised traffic and promote active travel. A key part of the strategy is the implementation of filtered permeability and low-traffic zones in collaboration with local authorities. The goal is to direct motorised traffic onto more appropriate roads, improving the environment in residential and town or village centres. This also includes targets for implementing 30 km/h speed limits in urban areas and reallocating road space for walking, cycling, and public transport, contributing to safer and more sustainable neighbourhoods.

Together, these policies provide a robust framework that supports the development of neighbourhoods designed around safety, sustainability, and community well-being. These national guidelines emphasise reducing traffic speeds, prioritising active travel, and improving the quality of urban environments.



2.3. Why Should We Consider Traffic Calming and Road Safety Interventions?

Most streets were not originally designed to accommodate the increasing number of motor vehicles we see today, resulting in limited safe crossing places and insufficient space for vehicles and vulnerable road users to coexist safely. While not all residential streets experience high volumes of fast-moving traffic, many areas have witnessed a noticeable increase in traffic, contributing to noise pollution and reduced safety for people walking, wheeling, and cycling.

This issue is further exacerbated by the rise of navigation technology, which often redirects traffic onto local roads, inadvertently increasing congestion and road safety risks in these areas. Consequently, local authorities are encouraged to explore traffic calming solutions, such as modal filters (bollards or planters), that prevent motor traffic from passing through residential streets while still allowing access for people walking, wheeling, and cycling.

Traditional traffic management measures that address issues on individual streets may simply shift the problem to neighbouring roads. To avoid this, a more comprehensive, area-wide approach is necessary—one that reduces through traffic and manages vehicle speeds across entire residential neighbourhoods, while maintaining accessibility for all, including homes and businesses.

Crucially, these interventions can help restore streets to how they used to be—places where children could safely play and neighbours could socialise outdoors. By reducing motor vehicle volumes and speeds, traffic calming measures can help bring back the social function of streets, making them welcoming, safe, and lively spaces for local communities.

Research has shown that traffic has a direct impact on the social interactions and well-being of communities. Higher volumes of traffic are linked to fewer social connections between neighbours, while streets with less traffic see more frequent social interactions, fostering a stronger sense of community and belonging.

While changes to road layouts or traffic management measures may initially cause concerns about congestion, experience shows that as people adjust, they begin to recognise the benefits, such as safer streets, reduced noise, and improved air quality. Over time, these interventions not only enhance safety and sustainability but also help rebuild the street as a shared community space, fostering greater support and understanding of the long-term value of traffic calming and road safety measures.



Figure 4: Streets can be vibrant spaces for play
Source: South Dublin County Council



2.4. Benefits of Neighbourhood Traffic Calming and Road Safety Interventions

The benefits of reducing and calming traffic within an area go far beyond simply cutting down on congestion. National policies, such as the National Planning Framework, National Sustainable Mobility Policy, and the NTA's 2024-2030 Sustainability Strategy, highlight the importance of creating safer, more sustainable urban environments. Traffic calming and road safety interventions are key tools in implementing these policies at a local level. By rethinking how we design and manage streets, we can create safer and healthier neighbourhoods.

These intervention help to realise the broader objectives set out in national, regional, and local policies. They not only improve road safety but also support active travel, enhance air quality, and foster stronger community connections. Below are some of the key benefits these interventions can bring to communities.

	Increased health from physical activity through more walking and cycling	• Where excessive through traffic and anti-social driving is common, people are less inclined to walk, wheel or cycle. More people choose to walk, wheel or cycle their short journeys if routes are safe, clean and well-maintained. • Regular physical activity can help prevent and manage conditions including heart disease, type 2 diabetes and depression.
	Improved safety	• Reduced motor vehicle traffic volumes and speeds reduces the likelihood and severity of collisions. • An increase in people spending time on streets increases passive surveillance and therefore increases perceived safety.
	Boost Social Capital with the creation of new public spaces	• By reducing traffic volumes and speeds in the area, street space can be reallocated to create wider footpaths as well as improved crossings and opportunities for pocket parks and places for play. • Attractive places to sit, rest and meet others, bringing communities together and improving social cohesion.
	Improved air quality	• Fewer vehicles can improve air quality, which benefits everyone but particularly younger children, those with asthma and other lung conditions.
	Increased sustainability	• Space can be reallocated to include street trees, rain gardens and other green infrastructure, which can help cool streets, provide shade and shelter, and support biodiversity. • SuDS can intercept surface water run-off. SuDS interventions help to drain water into the ground, as opposed to being channelled into drainage network that are already under pressure.
	Improved accessibility	• Rethinking street space offers an opportunity to designate mobility impaired parking, provide car club bays and additional EV charging points. This can increase access to facilities which may otherwise be lacking.



3. Principles and Approach

4. Engagement

5. Interventions

6. Data and Monitoring

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3.1. Scheme Identification

To prioritise areas for traffic calming and road safety interventions, it is important to assess project needs and objectives. Local authorities may receive requests for interventions due to incidents like traffic collisions or ongoing safety concerns (e.g. from Fingal County Council's Quiet Streets Programme in Figure 5). Authorities should evaluate these requests using clear, practical criteria to prioritise proposals. Key pre-conditions to consider include:

- **Areas of concern:** Prioritise areas with significant road safety issues or poor air quality. These are ideal candidates for traffic calming measures that improve safety and reduce pollution.
- **Community support:** Robust community backing is vital. In regions where there is a clear desire for change among residents, the likelihood of successful implementation and positive outcomes of the scheme increases, as community engagement tends to be higher from the outset.
- **Strategic fit:** Ensure traffic calming aligns with broader transport schemes to complement and augment existing or planned transport projects, delivering mutual benefits while minimising disruption.
- **Network impact:** Monitor potential impacts on surrounding areas, especially during trial phases, to avoid significant effects on the broader network.
- **Location considerations:** Target mixed-use or residential areas, particularly those outside dense urban centres. Schemes should include a mix of road types, using arterial or boundary roads to prevent through traffic while maintaining overall network connectivity.

FINGAL QUIET STREETS PROGRAMME
NOMINATIONS OPEN!

Name of applicant *

Contact email *

Contact phone *

Address of street *

If you would like to provide a google maps link for the street please add it here

Does your street have a residents association? *

☐ Yes
☐ No
☐ Don't know

If yes, please provide contact details for the residents association

Does my street fit the criteria? *

☐ Street is in a town or village in Fingal
☐ It is a fully residential street
☐ It is currently affected by rat-running or other road safety issues
☐ It is not a main thoroughfare
☐ The majority of neighbours are interested in participating in the programme
☐ I am interested in a minimum commitment of 6 months to trial solutions

I would like to nominate my street for participation in the quiet streets programme *

☐ I confirm.

What are 'quiet streets'?

Quiet streets are streets that have been enhanced to improve the atmosphere and the safety of residential areas. Streets chosen for the programme will receive tailored solutions that aim to reduce the impact of through vehicular traffic on residents while enhancing air quality and making the street a more attractive and pleasant place to spend time or play.

Solutions might include planters or bollards to stop through motor traffic using the street and prevent cars from taking 'shortcuts' through residential areas, a practice often called 'rat-running' or 'cut-through' traffic. Quiet streets are delivered using 'filtered permeability'. This means people walking, wheeling and cycling can take the most direct route, but cars that are just passing through are diverted away to reduce through traffic.

Quiet street will maintain vehicle access for residents living on a street, while preventing through traffic.

The quiet streets programme aims to enhance safety on the street and create a more vibrant and enjoyable living environment for residents.

Why is the quiet streets programme needed?

Not long ago it was common for people to walk, linger or play in residential streets. Most homes had fewer cars and there was less traffic near to where people lived. With higher car ownership and more people living at home into adulthood, as well as more multi-generational family homes, this has changed. Our cars also tend to be larger and more powerful than they used to be.

As a result, fewer people feel safe walking or cycling near their home, and fewer children feel safe playing in the streets where they live. We'd like to reverse

Click on the image to access the full document.

Figure 5: Nomination form for Fingal's Quiet Streets Programme
Source: Fingal County Council



3.1. Scheme Identification (continued)

After confirming the need for the project, it is important to ensure that a sensible area size is established, and the existing traffic conditions are assessed to effectively proceed with the development of the scheme.

Size

Getting the size of a the study area right is critical, as it affects the number of streets that can be made safer and more attractive for active travel, while also influencing the impact on traffic flow and potential modal shifts.

An ideal area should be designed so that people can easily walk or wheel across it within 15 minutes. This ensures that local trips can be completed without the need to drive, supporting active travel and reducing vehicle use. The mix of street types within the neighbourhood is also key, as discussed in [Section 3.2](#), since different types of streets will require different traffic management measures to accommodate both residential access and through-traffic.

Rather than focusing strictly on area size, the priority is ensuring the neighbourhood feels accessible and cohesive for all users, enabling safe and convenient travel on foot, by bicycle, or with mobility aids

Traffic

Areas with traffic speeds and volumes exceeding those recommended for cycling in Mixed Traffic (see [Figure 7](#)) may be prime candidates for traffic calming interventions. Streets with speeds above 20-30 km/h and traffic flows exceeding 200-400 peak hour PCUs could benefit from reduced speeds and through-traffic restrictions. Identifying such areas can support safer, more navigable environments for cyclists and pedestrians alike, making these spaces more conducive to active travel.



Figure 6: Map showing the indicative size of a study area

Table 2.1 - Cycle facilities selection guide

Speed Limit ¹	Two-way traffic flow (peak hour PCUs) ²	Remote Cycleway/ Greenway	Standard cycle track (incl. two-way tracks)	Stepped cycle track	Protected Cycle Lane	Mandatory Cycle Lane	Mixed Traffic
20 km/h	< 200						
	200-400						
	> 400						
30 km/h	< 200						
	200-400						
	> 400						
40 km/h	< 200						
	200-400						
	> 400						
50 km/h	< 200						
	200-400						
	> 400						
60 km/h	Any						
≥ 80 km/h	Any						

Legend for Table 2.1:

- Green: Provision should be suitable for most users.
- Orange: Provision may not be suitable for all and may exclude some potential users (Departure required).
- Pink: Provision not recommended as it's unlikely to be suitable for a range of users (Departure required).
- Grey: Provision not suitable.

Notes:
1. If the 85th percentile motor traffic speed is more than 10% above the speed limit, the next highest speed limit should be applied.

Figure 7: Table 2.1 from the Cycle Design Manual, showing cycle facilities selection guide highlighting the suitable conditions for Mixed Traffic cycling
Source: Cycle Design Manual

Click on the image to access the document.



3.2. Street Classification

All streets serve both movement and place functions, but to varying degrees. Movement focused streets prioritise moving people or goods efficiently, while place focused streets prioritise social and community interactions. Streets that attempt to provide high levels of both mobility and place functions may experience higher risks of conflicts and collisions. Instead, evaluating streets on a case-by-case basis helps clarify their long-term roles, allowing for the application of appropriate traffic calming and safety measures.

Movement: streets that serve primarily as conduits for through movement, supporting efficient travel across broader distances.

Place: streets that provide local access and serve as a vibrant social hub, supporting safe and interactive community spaces for shopping, playing, and gathering.

Section 3.2 of DMURS provides further guidance on movement and place functions of streets. It separates streets into a hierarchy that helps define their primary functions within the urban fabric (see Figure 8):

Arterial Streets: These are the main routes designed for mobility into and out of an area, connecting major centres or nodes.

Link Streets: Serving as secondary conduits, these streets provide connectivity between Arterial streets, city centres, neighbourhoods, or suburbs. They primarily focus on mobility with some provisions for placemaking.

Local Streets: Primarily residential in nature, these streets focus on providing local access and placemaking within communities, linking to arterial and link streets as needed.

To ensure clarity and guide intervention planning, all streets and roads within the study area should be assigned one of the three categories above: Arterial, Link, or Local Streets. This classification will help determine the most appropriate interventions for each street and help define the boundaries of the study area.

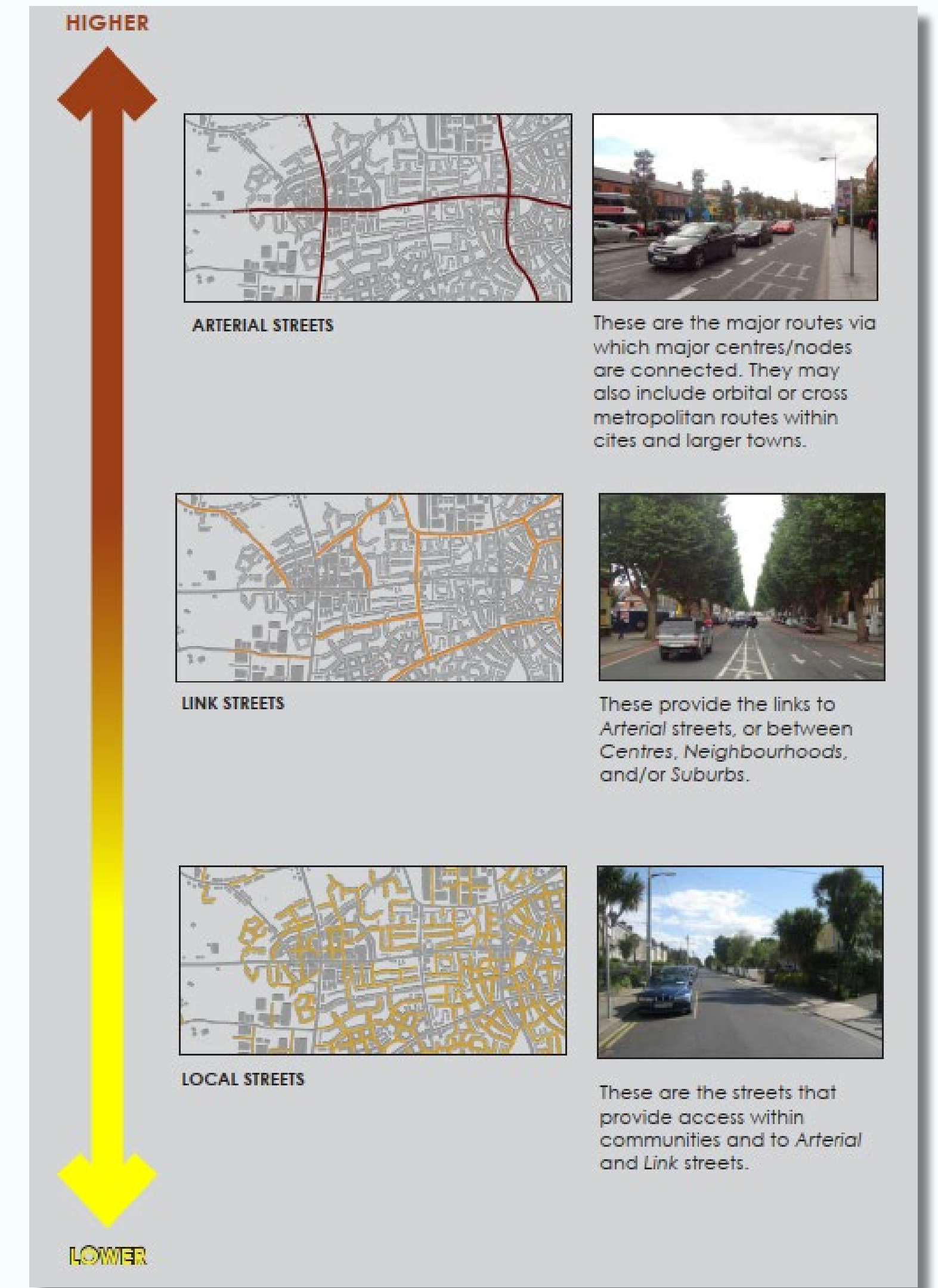


Figure 8: Street Hierarchy
Source: Design Manual for Urban Roads and Streets

Click on the image to access the document.



3.3. Defining the Study Area

The boundary roads of the study area will typically be those that are designed to handle higher traffic volumes, serving a primary movement function (**arterial** and **link** streets). An example of the street classifications on a map is shown in Figure 9. The red line indicates the **arterial** streets, the blue line indicates the **link** streets, and the white line indicates the **local** streets.

The next step in the process is to identify which arterial and link streets will form the boundary of the study area, as illustrated in Figure 10. These streets will be high movement function streets that are used to facilitate the movement of through traffic through the neighbourhood and are often important transport corridors and/or busy high streets. Design principles for these streets need to consider the high levels of movement of people using all modes of travel as well

as incorporating place making elements to create more balance and people friendly environments. Certain modes may be prioritised over others on these streets.

Inside the boundary roads, local access streets, primarily serving residential and local needs, are where journeys begin and end. The focus here is on placemaking and access, aiming to foster social interactions and community engagement. Design strategies for these local streets will strive to minimise their use as through routes, enhancing safety and community feel instead.

Engagement with local stakeholders is recommended to help understand how the streets are currently being utilised within the study area.

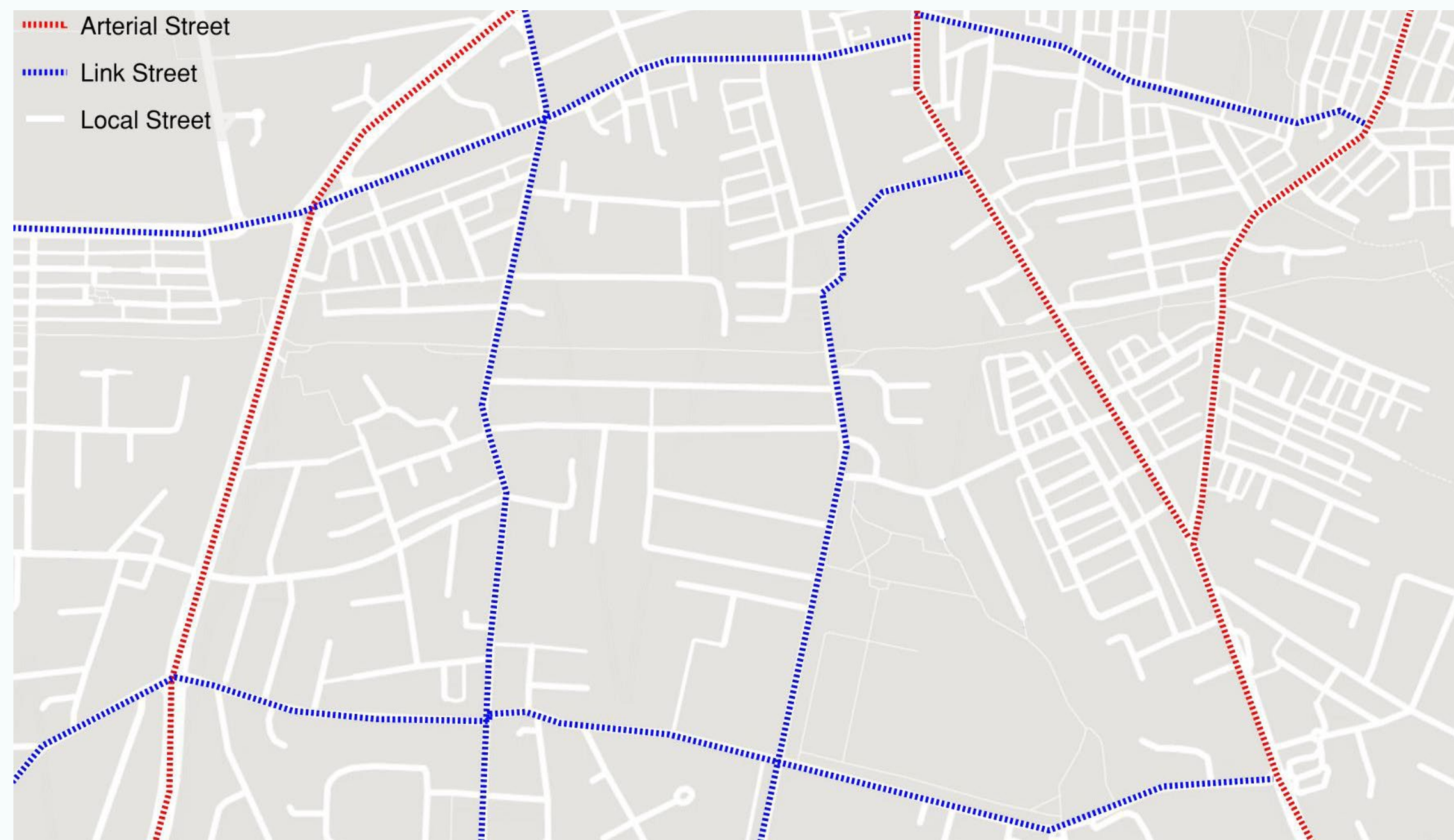


Figure 9: Map showing the three street categories

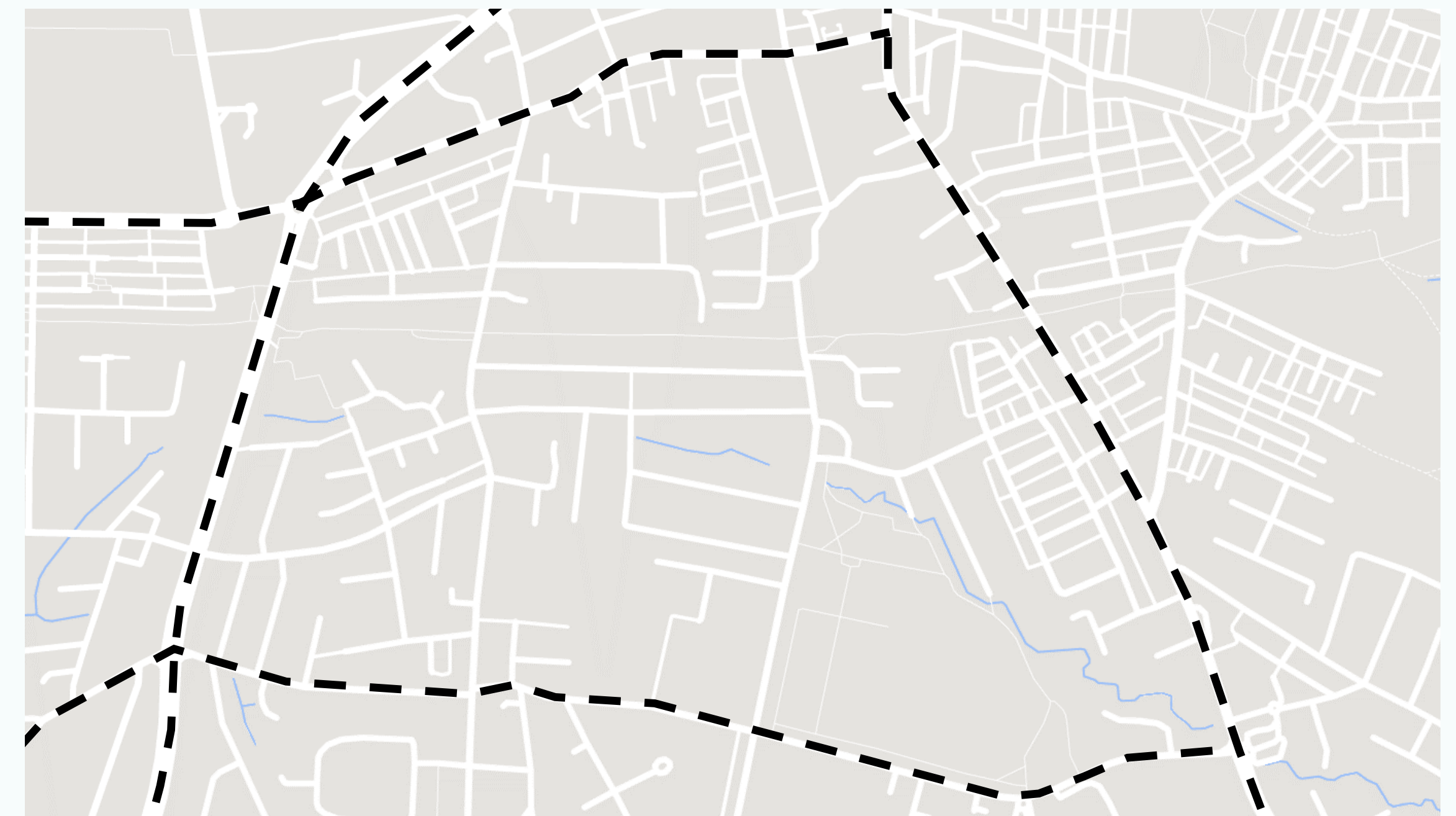


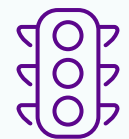
Figure 10: Map showing the boundary, made up of arterial and link streets



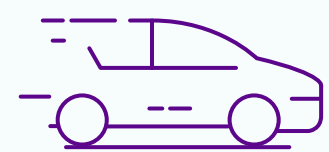
3.4. Data Collection

Once the boundaries are set, traffic data within the area should be collected and analysed to gain a baseline understanding of key traffic concerns. This can help pinpoint current issues, inform necessary interventions, and provide a metric against which post-intervention changes can be measured. The analysis can be shared and validated with the community during the engagement process to ensure the work is rooted in a shared understanding of on the ground conditions. Data analysis is especially valuable for trial schemes to help evaluate temporary interventions and guide decisions on their permanence.

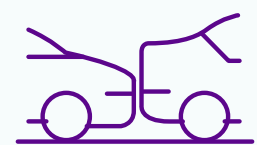
Data that can be collected for the assessment can include:



Traffic Volume: Measurements of how many vehicles use specific routes and junctions, identifying peak times and persistent congestion.



Vehicle Speeds: Collection of average speeds and 85th percentile speeds to assess the safety and flow of traffic.



Collision Data: Analysis of incident reports, focusing on those involving vulnerable road users such as pedestrians and cyclists.



Active Travel Patterns: Counts of pedestrians and cyclists to understand non-vehicle travel behaviour and needs.



Road Characteristics: Survey of road features, including footways, proximity to schools and parks, pedestrian-heavy areas, existing cycle routes, and bus routes.



Public Transport: Evaluation of public transport patterns and frequencies within and around the neighbourhood.



Environmental Quality: Noise and air pollution measurements to gauge the neighbourhood's liveability.



Socio-economic Data: Information on car ownership, travel mode split, and other relevant demographic data.



Planned Developments: Details of significant approved or proposed developments that could impact traffic patterns.



Community Perceptions: Survey data to gather information on the community's perception of safety within the neighbourhood prior to any interventions.



1. Purpose of this Document

2. Neighbourhood Traffic Calming and Road Safety

3. Principles and Approach

4. Engagement

5. Interventions

6. Data and Monitoring

4. Engagement





4.1. What is Engagement and why should you engage?

As part of the development of a Traffic Calming and Road Safety Scheme, it is important to ensure that any measures proposed meet the needs of the people who live there. In order to understand the localised issues, local authorities need to talk and engage with key stakeholders and the community to understand the main concerns and, where possible, to help address these. Ineffective engagement creates a real risk to project delivery.

Engagement should occur throughout the project lifecycle, and it should be flexible to allow for input throughout the project, whilst recognising that there are processes in place to ensure the delivery of the project. Initial engagement raises awareness about the project, clarifies its objectives, and helps locals understand the project process and their potential gains from participating. This early interaction also provides a preliminary insight into community issues, shaping subsequent engagement strategies based on received feedback. Before the design phase, community suggestions for specific interventions—ranging from traffic reduction to placemaking—are particularly valuable.

Effective communication is integral to successful engagement. This encompasses all aspects of communication, including the use of clear terminology, visual aids, imagery, and social media platforms. Even well-planned projects can falter without the community's support, which hinges on clear and effective communication.

4.2. Who should you engage with?

The first stage of engagement involves identifying and mapping all stakeholders relevant to the area, both on a strategic and local level. Prior to launching the project to the public, it is beneficial to engage with the key stakeholder groups identified to understand their key concerns and to gain feedback on the best methods to engage with the community. This includes holding meetings with groups such as Disabled Persons Organisations (DPO) in accordance with the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD), resident's associations, business associations, schools, mobility groups and campaigners. It is important that the expectation of key stakeholders are managed carefully. This can be achieved by setting realistic timelines for project milestones and consultation phases.

It is also vital to communicate that Traffic Calming and Road Safety initiatives must balance diverse interests and are subject to the constraints of local authority budgets and resources.

Community engagement offers residents the opportunity to actively participate in shaping their neighbourhood. This not only ensures that the proposals are well-understood across the community but also garners broader support, enhancing the likelihood of a successful implementation.



4.3. How should you engage?

Effective engagement requires a flexible approach that adapts to different groups, stages, and locations. By employing a variety of engagement methods, it's possible to address the diverse needs and preferences of the community. Some examples of types of engagement are listed below.

Drop-in Information Sessions

These sessions offer community members a casual environment to learn about the project. They can engage directly with the project team, ask questions, and view visual presentations that explain the project's objectives and plans (see Figure 11). Scheduling these sessions after work hours can enhance participation, ensuring a broader cross-section of the community can attend.

Focus Groups

This type of engagement is more formal and will follow a structure that is decided by the project team in order to guide conversations through specific topics or questions. Focus groups tend to be with key stakeholder groups or in the later stages of engagement with members of the public who may be invited back to attend a focus group.

Online Surveys

Online surveys offer a quick and efficient way to gather feedback from a large audience. This method allows for rapid collection and analysis of data. To ensure inclusivity, it's crucial to provide surveys in multiple formats, including easy-read and audio versions, to accommodate all community members. For those less likely to use digital tools, such as the elderly, printed surveys should be available in accessible locations like libraries or delivered directly to homes.



Figure 11: Public exhibitions such as drop-in information sessions serve as useful engagement tools to inform residents and stakeholders about planned schemes in their neighbourhoods.



4.3. How should you engage? (continued)

Co-design

Co-design is an iterative and collaborative approach to engagement whereby stakeholders are involved in the design process early on (see co-design process Figure 13 below). This approach shares the power in planning and designing with those who are closest to the solutions. This process is built on strong relationships and trust, and the stronger this is, the better the co-design outputs. It encourages engagement to be viewed as an opportunity to value professional and lived experiences equally and listening and connecting with communities as opposed to rushing to solutions. Co-design can also be a great way to engage children,

involving them in shaping their neighbourhoods and providing valuable insights from their perspective.

During co-design engagement, it is important to understand the different ways which people express themselves e.g. through visual, kinaesthetic and oral approaches to encourage people to become active partners rather than meeting participants. See Figures 13-16 overleaf.

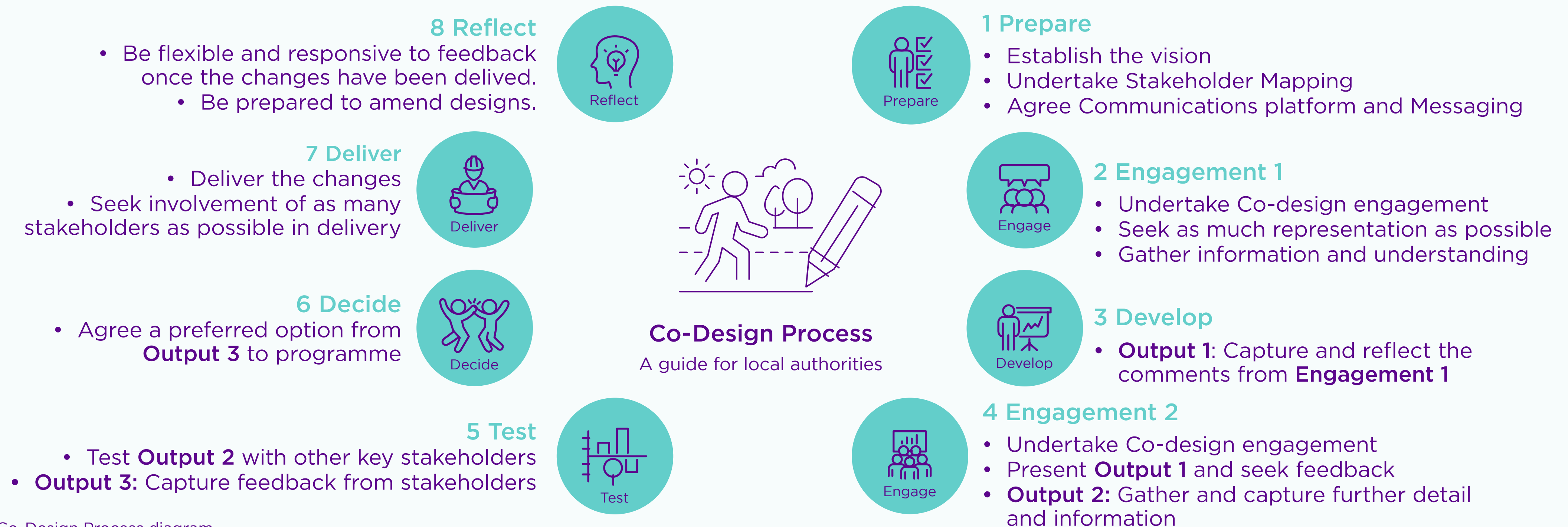


Figure 12: Co-Design Process diagram.

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4.3. How should you engage? (continued)

Webinars

This format is particularly effective for reaching a broad audience as it is easily advertised and shared through social media platforms. Participants can ask questions directly to the project team, making it a highly interactive and informative session.

Website

A website provides a hub for people to view information about the project all in one place. A website, or sub-section of an existing website, could be set up to latest news, engagement schedules, and detailed project descriptions. The website could feature interactive elements such as maps and forums to enhance user interaction and feedback collection, for example, see Figure 17.

Interactive maps

Interactive maps (Figure 18) provide a platform for residents to drop a pin in a specific locations where they face issues or particularly enjoy the environment. This tool helps gather precise locational feedback on problems or valued spaces, aiding in more targeted and effective planning.

Community outreach

Community outreach is a type of one-way communication that tells community members about an issue, problem, opportunity or decision. This can be in the form of postcards sent to homeowners, fliers, website postings and meeting announcements. This type of engagement can help raise awareness and encourage broader community participation, drawing in those who may not typically engage with online platforms or attend meetings.

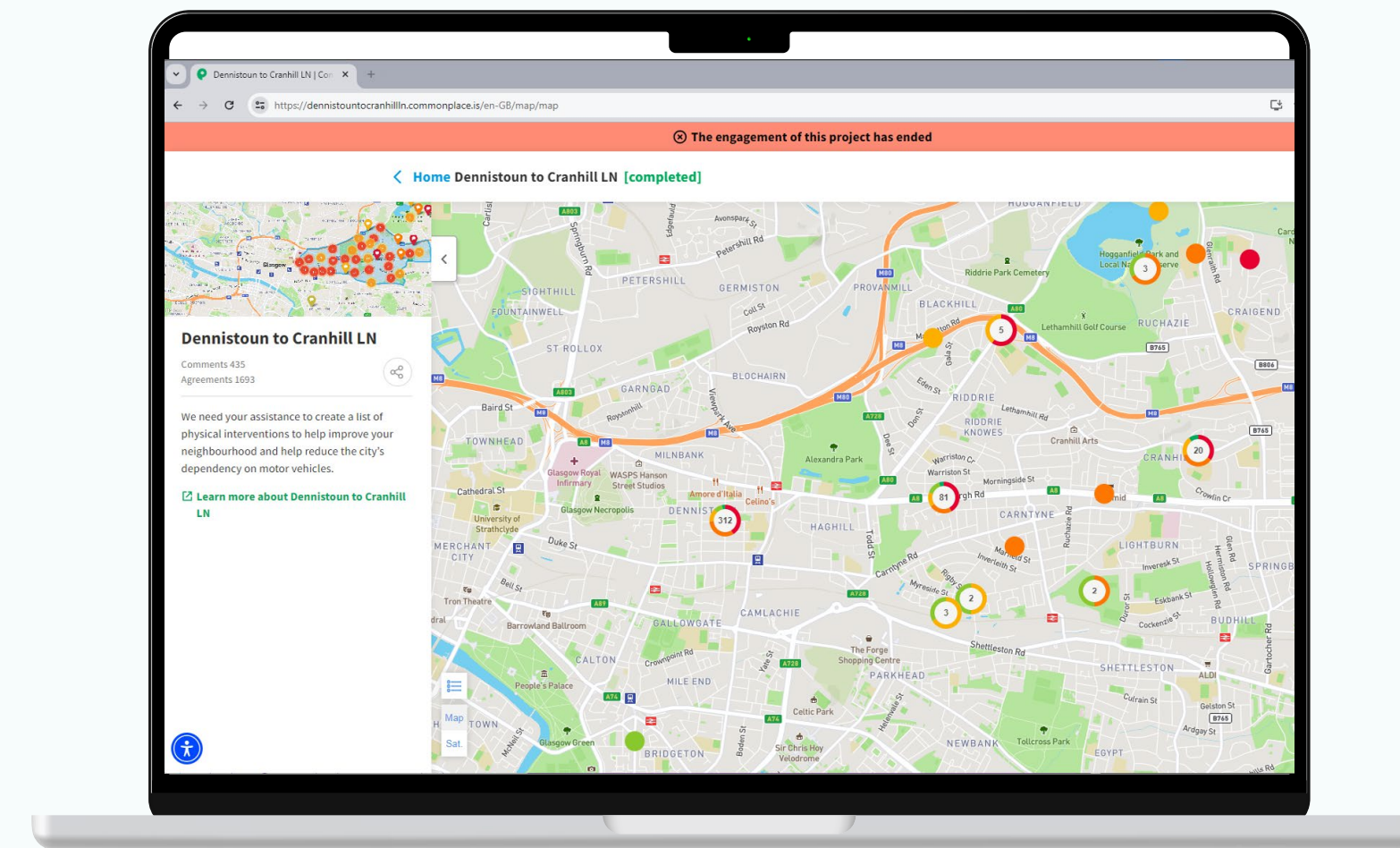


Figure 17: Engagement Maps can be used to gather location specific information from the community
Source: Dennistoun Community Council

Click on the image to access the source

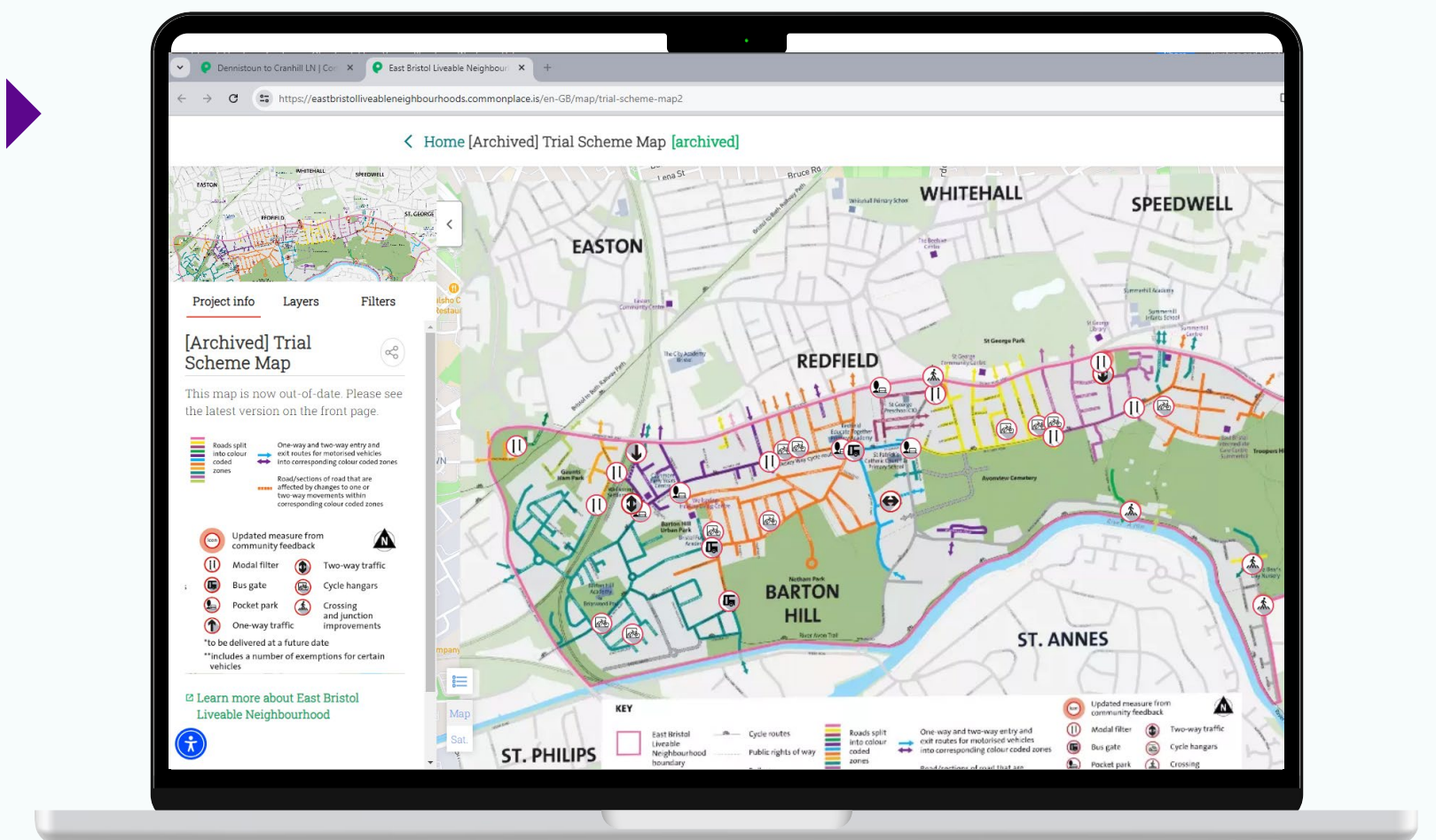


Figure 18: Interactive maps can be used to share information about proposed interventions
Source: East Bristol Liveable Neighbourhoods



4.4. Presenting the Interventions

Material presented during engagement with stakeholders and the community should be clear and easily understood. This includes ensuring the community understands the evolution of interventions and are brought along the journey of short, medium and long-term plans for interventions. For example, if temporary measures will be used initially for a trial period, how those will progress into a permanent scheme and mature in the long-term.

Information regarding the interventions should be accessible and informative. Non-technical plans and drawings will provide easily digestible information and allow for all users to understand the scheme. Engagement documents will inform people of the projects being introduced, the scope, cost and history to the scheme.

Visual aids, such as access maps, are particularly valuable. These maps can illustrate the proposed changes in the neighbourhood layout, clearly showing how traffic flow adjustments and new measures will affect daily routes while ensuring continued access to properties. These visual tools help to demonstrate the potential benefits of the project and identify any potential access issues in the neighbourhood design.

Tools such as before and after 'sliders' provide a realistic impression of what the different interventions will look like on the ground and how users will interact and navigate them (see Figures 19 - 20). It also provides a visual tool to mimic real-life scenarios as best as possible to let people really understand how these interventions will look and work on the ground.

Click on the images to access the source

Before

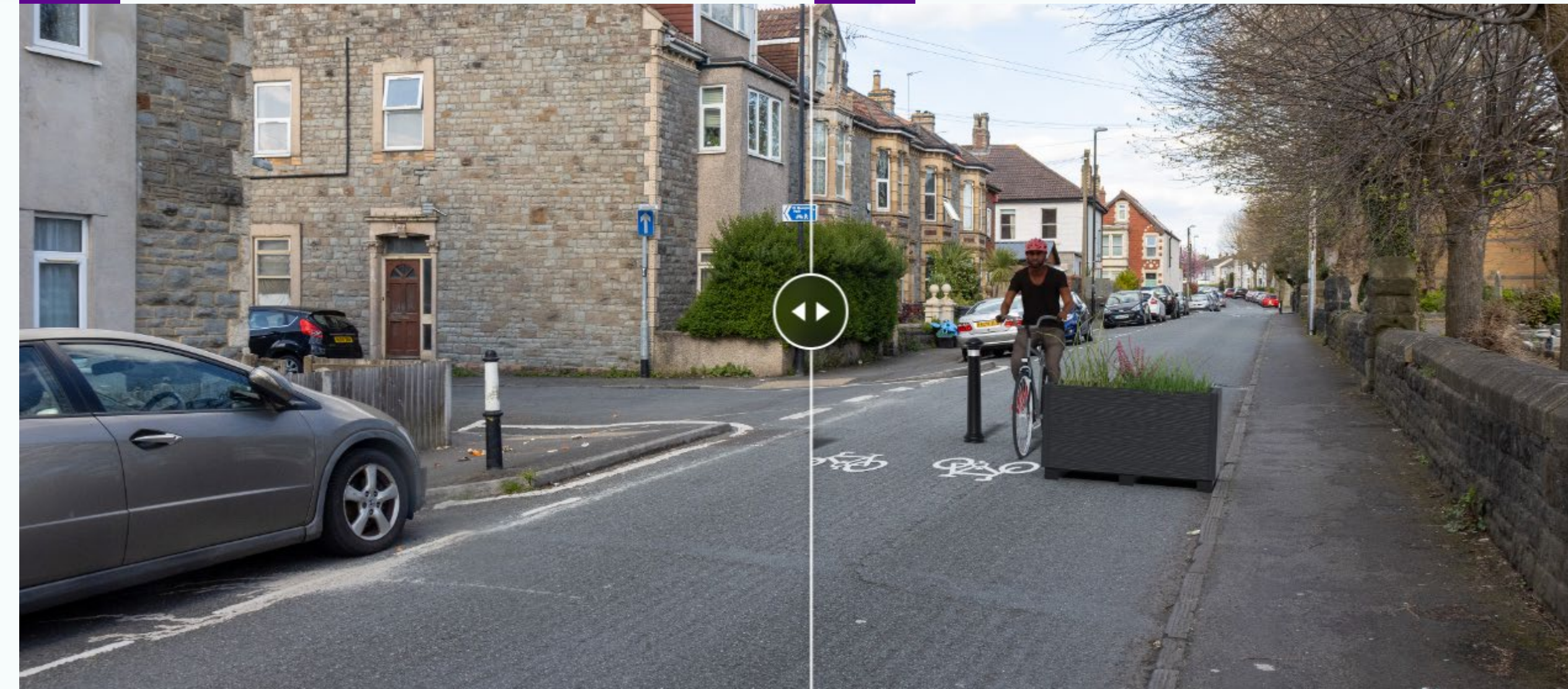


Figure 19: Interactive slider
Source: East Bristol Liveable Neighbourhoods

Before



Figure 20: Interactive slider
Source: East Bristol Liveable Neighbourhoods



4.5. Understanding and Overcoming Status Quo Bias in Neighbourhood Traffic Calming

Status quo bias is a significant psychological barrier that can impede the acceptance and success of neighbourhood traffic calming schemes and other road safety initiatives. This bias leads individuals to prefer maintaining the current situation, making them disproportionately sensitive to the potential downsides of any proposed changes, rather than the benefits.

Research shows that people often favour existing infrastructure over new proposals, even when both options present similar advantages. To address this challenge, the following strategies can be implemented:

- **Emphasising Restoration:** Highlighting how changes restore or enhance aspects of community life that existed before street design began to predominantly cater to motor vehicle traffic. This approach helps reframe changes not as loss but as improvements or returns to a more community-focused environment.
- **Provide Clear Information:** Reassure the public by providing detailed, visual information about the benefits, showing how the changes will improve safety, accessibility, and quality of life.
- **Focus on Long-Term Benefits:** People often dwell on the inconveniences of change. Emphasise the lasting improvements—safer streets, better air quality—while downplaying temporary disruptions like construction.
- **Engage the Community:** Early and ongoing community involvement helps reduce resistance, as people are more likely to support changes they helped shape.
- **Use Temporary Trials:** Implement trial schemes to let residents experience the benefits before committing to permanent changes. This lowers the perceived risk and encourages openness to new ideas.

By incorporating these strategies into the data collection and community engagement processes, local authorities can help shift public perception from apprehension to appreciation of the improvements that neighbourhood traffic calming and road safety interventions can bring.

What is Status Quo Bias?

The concept of “Status Quo Bias” refers to the psychological tendency of individuals to prefer things to remain the same or to maintain their current or previous decisions. This bias is particularly significant when making policy or personal decisions, where changes from the existing situation (or “status quo”) are often perceived as a loss, leading people to resist change even if it could lead to better outcomes. This bias can create challenges in implementing new policies or strategies, as it may cause hesitation or resistance among those who are comfortable with the known conditions, regardless of the potential benefits of new alternatives.



Figure 21: Streets once supported multiple modes and encouraged social interaction and play. Tallaght, Dublin (1980s) Photo Credit: Jim Cranley



4.6. Beyond the Neighbourhood

The successful implementation of a Neighbourhood Traffic Calming and Road Safety scheme requires careful consideration of how it integrates with adjacent areas. The boundaries of the scheme should not isolate the area but instead connect seamlessly with surrounding neighbourhoods and the broader urban fabric. To achieve this, it is essential to assess strategic movement functions outside the scheme area, ensuring that both local and regional connectivity are maintained and enhanced.

Key steps for integrating the neighbourhood with its surroundings include:

- **Understand Movement In and Out of the Area:** Map out how people move into, through, and out of the study area. This will help identify key entry points, crossings, and transit routes that need to be preserved or enhanced.
- **Permeability and Boundary Access:** Ensure that there is appropriate permeability along the boundaries of the neighbourhood. This includes making sure that boundary streets are accessible and easy to cross, particularly for people walking, wheeling, and cycling. Robust and accessible crossings at boundary streets are critical for facilitating smooth transitions between neighbourhoods and enhancing overall connectivity.
- **Mitigating Traffic Displacement:** One common concern among residents in adjacent areas is the potential displacement of traffic, such as shifts in loading zones, parking, or increased congestion outside the neighbourhood. Practical strategies should be developed to monitor and mitigate these impacts, ensuring that changes within the neighbourhood do not lead to significant disruptions for those living nearby. Trial periods and data collection can help assess these impacts early and guide adjustments.

- **Coordination with Surrounding Transport Networks:** The success of the neighbourhood's traffic calming measures should align with the broader transport strategy of the area. This includes promoting sustainable transport options beyond the scheme's boundaries, such as improving bus priority routes, enhancing cycling infrastructure, and ensuring walking routes connect efficiently with adjacent neighbourhoods and transit hubs. These steps encourage a shift from private vehicle use to more sustainable modes of transport.
- **Collaboration with Neighbouring Communities:** Engagement should extend beyond the immediate project area to include residents, businesses, and key stakeholders from neighbouring areas. Their input can help identify potential issues or opportunities for improving access and connectivity between communities.

By taking these practical steps and maintaining a network-wide approach, the benefits of traffic calming measures can extend beyond the neighbourhood itself, contributing to improved safety, mobility, and quality of life in the wider urban area. This holistic approach not only enhances the local environment but also supports long-term goals for reducing vehicular traffic and promoting more sustainable transport options.





1. Purpose of this Document

2. Neighbourhood Traffic Calming and Road Safety

3. Principles and Approach

4. Engagement

5. Interventions

6. Data and Monitoring

5. Interventions

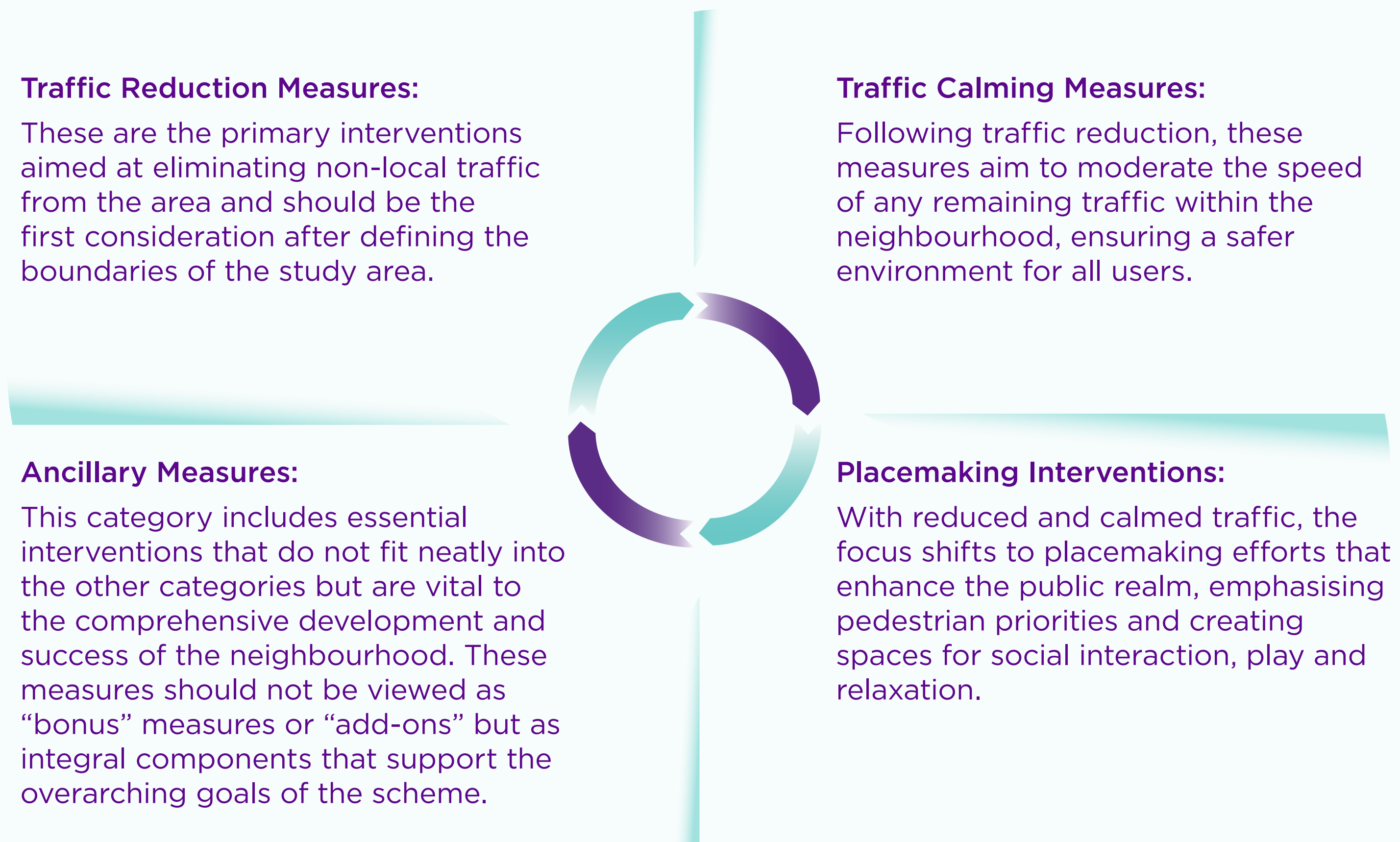




5.0. Interventions

This section outlines a comprehensive suite of traffic calming and road safety interventions. These interventions are most effective when a range of measures are implemented together rather than as standalone solutions. Based on the outcomes of community engagement sessions, the most appropriate interventions that align with the project's objectives and community needs will be selected for implementation, while others may be reserved for future opportunities.

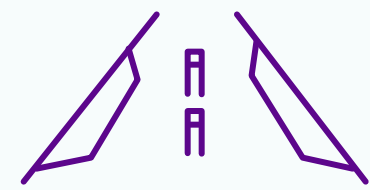
The interventions are organised into four thematic categories illustrated below, each essential to the overall success of the scheme:





5.1. Traffic Reduction Measures

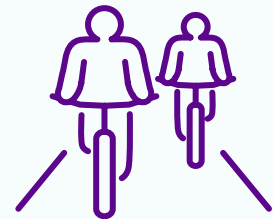
This section outlines interventions which may be used for removing through traffic from the neighbourhood. These measures will restrict vehicular traffic from using neighbourhoods as cut-through routes or where a street is currently being misused for ‘through traffic’ and there are more suitable route alternatives within the road network. The areas will still be accessible by motor vehicle, however implementing these measures may change the route vehicles take in some instances. A list of the interventions is provided below with more details on their respective page.



Modal Filters



Bus Gates



Prohibiting Vehicular Movements



School Streets



One-way Streets



Vehicular Restrictions



5.1.1 Modal Filters

Key Features

- A physical restriction used to prevent motor vehicles from accessing / passing through a point or street while access to non-motorised vehicles is retained (Figure 22).
- These can be installed using cost-effective materials like bollards or planters, which require minimal, or no carriageway works. The closures can be amended and relocated as required prior to implementing a more permanent intervention.
- When positioned in areas of high pedestrian activity, they can also enhance public spaces and support local businesses by increasing footfall.
- At crossroads, diagonal filters (Figure 23) can be used to create opposing bends which minimise the need for three-point turns or reversing, especially by larger vehicles.

Suitable Locations

- Modal filters are versatile and can be placed on any road where the goal is to reduce through traffic and create a calmer, quieter street environment.
- Strategic placement next to natural severance lines, such as rail tracks, parks, or at sites with pre-existing road closures or barriers, can maximise their efficiency and reduce implementation costs.
- When used as part of an area approach, filters placed towards the centre of the neighbourhood can minimise the inconvenience to car journeys which start or end within the neighbourhood, ensuring residents and businesses can drive to their closest boundary road.
- The best locations for modal filters are those that can deliver significant community benefits, such as near schools, parks or local shopping areas.

Other Considerations and Further Guidance

- There is a risk of increased traffic on adjacent roads; therefore, the overall traffic network should be carefully analysed when planning filter locations.
- Consideration should be given for access in respect of deliveries, refuse collection and emergency services. Collapsible / over runnable bollards can allow emergency services to pass.
- Can be combined with Build Outs to provide additional footway space.
- Where applicable, improve existing modal filters by adding features like dropped kerbs or wider gaps to facilitate easier passage for cyclists and those using mobility devices.
- For additional guidance, refer to the [NTA Permeability Best Practice Guide](#).



Figure 22: Modal filter with flexible bollards and a build out, Cork
Link: [© Google Street View 2022](#) (image shows the upgrade of existing layout on Google Maps)

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Figure 23: Diagonal modal filter, London, UK
Source: [© Google Street View 2022](#)



5.1.1 Modal Filter – Worked Example

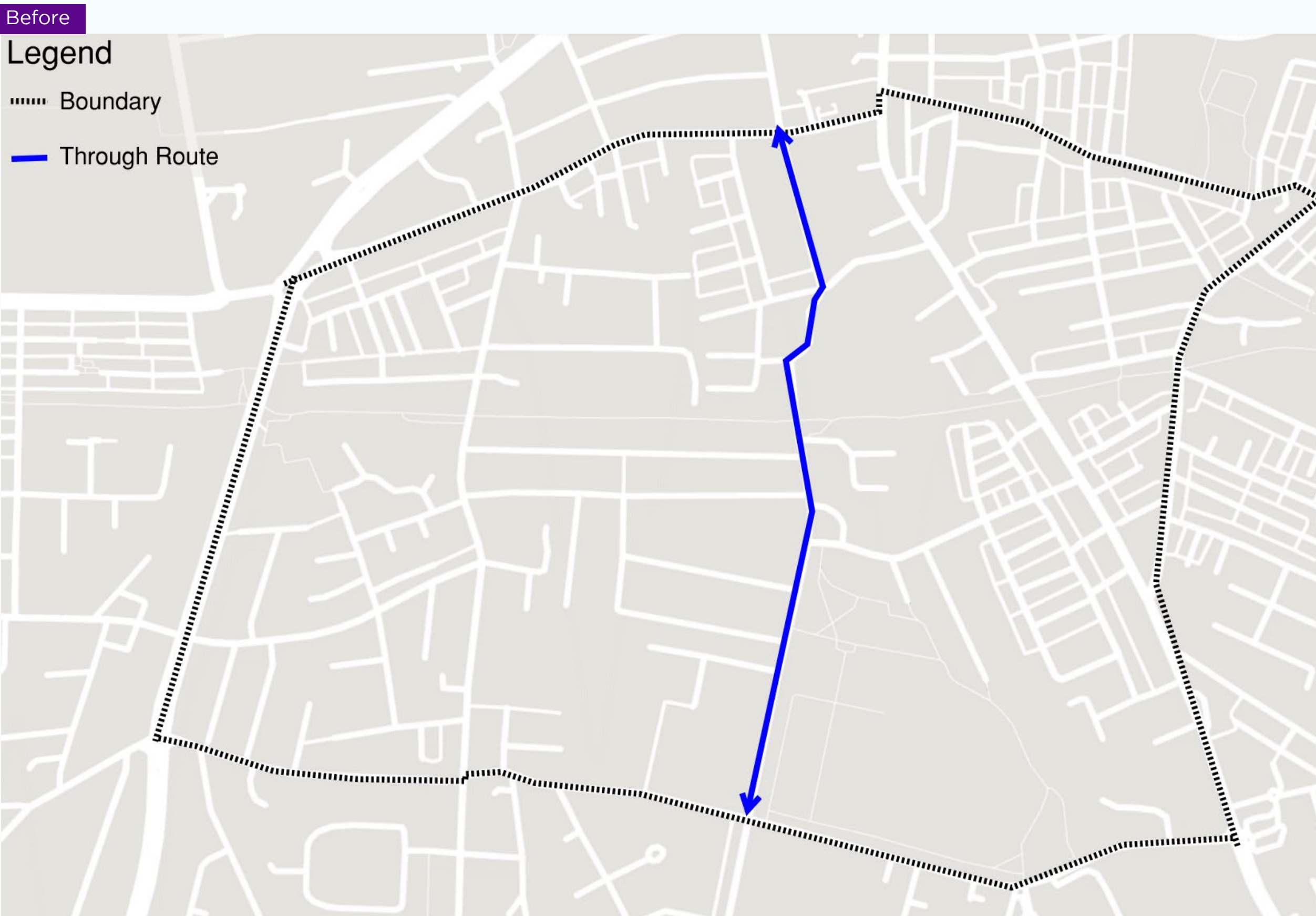


Figure 24: Before: Existing North-South through route

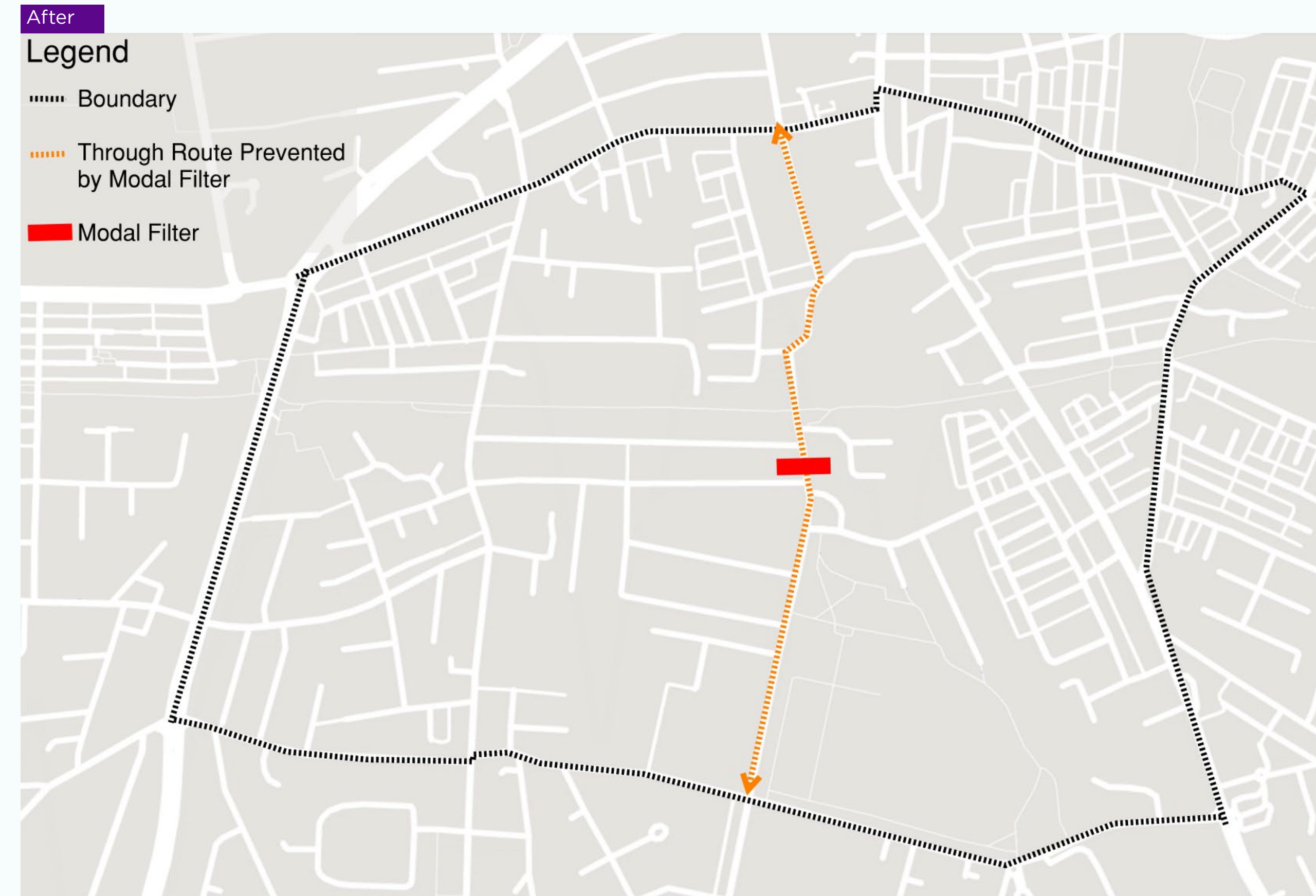


Figure 25: After: Modal filters applied to remove through route



5.1.2 Prohibiting Vehicular Movements

Key Features

- Typically indicated through clear road signage and pavement markings. Regulatory signs such as “No Left Turn,” “No Right Turn,” or “No U-Turn” provide drivers with explicit instructions about which turns are prohibited at specific locations. (Figure 26 shows an example of a left turn restriction)
- These measures are effective in reducing ‘rat-running’ and the use of residential streets to avoid signalised junctions, enhancing safety and reducing congestion.
- Build-outs can further enforce no right turn restrictions, while still allowing cyclists to proceed, promoting safer, bike-friendly routes (as shown in Figure 27).

Suitable Locations

- Typically implemented near signalised junctions or congested areas, where a designated alternative route can efficiently handle redirected traffic.
- Ideal at intersections with high safety risks, such as those with limited sightlines, heavy pedestrian traffic, or a history of vehicle conflicts.

Other Considerations and Further Guidance

- These are strategic measures that support active travel by creating safer, more direct routes for cyclists and pedestrians while managing vehicular accessibility.
- Exclusion plates on regulatory signs will be required to allow cyclists to make turns. Refer to Chapter 5 of the [Traffic Signs Manual](#) for additional guidance.



Figure 26: Left Turn Restriction implemented with build-out, cycle bypass for left turning cyclists, Dublin
Source: © Google Street View 2022

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Figure 27: Vehicle restriction with an active travel modal filter, Cork
Source: © Google Street View 2019



5.1.2 Prohibiting Vehicular Movements – Worked Example

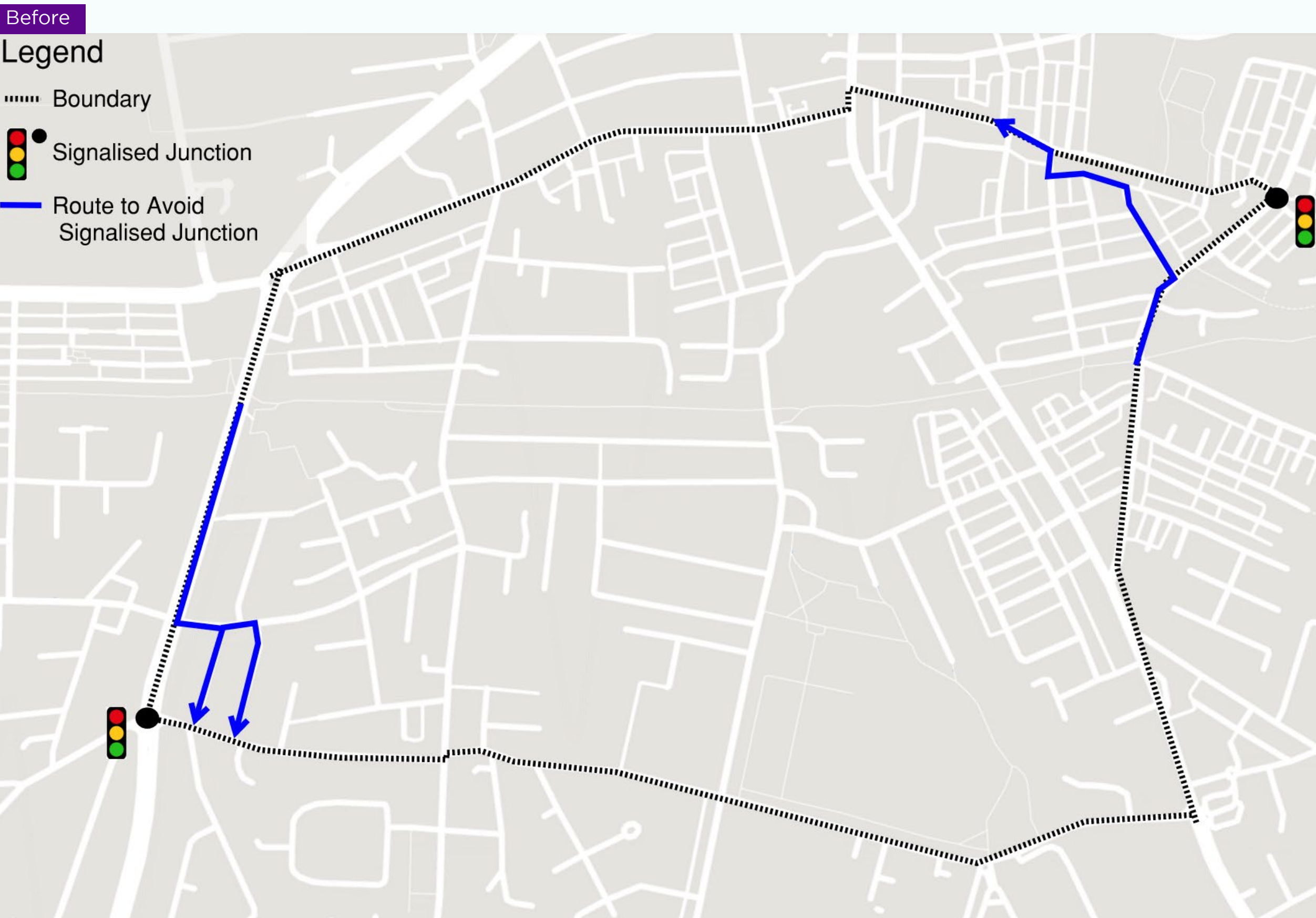


Figure 28: Before: Opportunity to 'rat-run' at signalised intersections

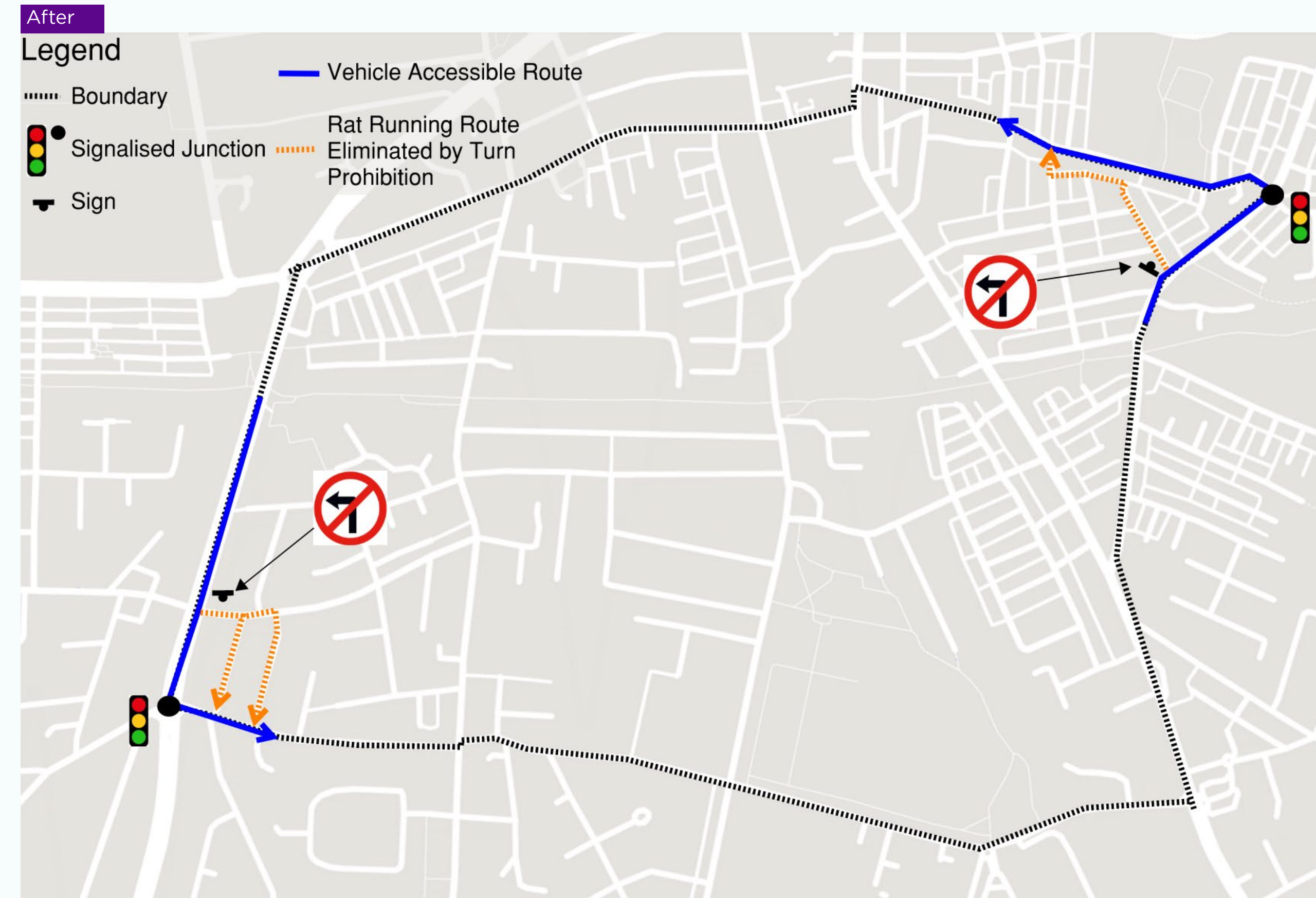


Figure 29: After: Left-turn restrictions prevent rat running



5.1.3 One-Way Streets

Key Features

- Implements a single direction of flow for vehicular traffic, simplifying movement and potentially reducing conflict points.
- Typically indicated by 'No-entry' signs to deter entry from the wrong direction and supported by arrows marking the correct flow of traffic (as shown in Figure 30).
- Opposing one-ways can prevent vehicles from passing the whole way through an area (as shown in Figure 33).

Suitable Locations

- Particularly effective on narrow, constrained residential streets.
- Beneficial for areas where the reversal of traffic direction can effectively discourage through traffic.

Other Considerations and Further Guidance

- If a street is currently a narrow two-way street where motor vehicles need to slow down to pass each other, changing the street to a one-way street may result in increased motor vehicle speeds. Drivers may also be tempted to drive faster because they do not expect any oncoming vehicles. In these scenarios, additional traffic calming measures should be considered such as build-outs or carriageway narrowing.
- Exemptions for cyclists are common, allowing them to travel in both directions on one-way streets where safety allows. Where a dedicated contra-flow cycle lane or track cannot be provided, contra-flow cycling may be accommodated within the carriageway and shall be signed in accordance with Section 5.19 of the [Traffic Signs Manual](#), including the use of RUS 059A and RUS 059B. Where there is enough space in the carriageway, consider installing a contraflow cycle lane or track adjacent to the motor vehicle lane (as shown in Figure 31). For additional guidance on contraflow cycling, refer to Section 4.2.10 of the [Cycle Design Manual](#).
- This intervention can create more street space for car and cycle parking, or other local amenities.



Figure 30: One way street marked by "No-Entry" signs with contraflow cycling permitted, Dublin
Source: © Google Street View 2023

Click on the images to access the source



Figure 31: One way street with an adjacent contraflow cycle lane, Dublin
Source: © Google Street View 2019



5.1.3 One-Way Streets – Worked Example

Before

Legend

- Boundary
- Through Route

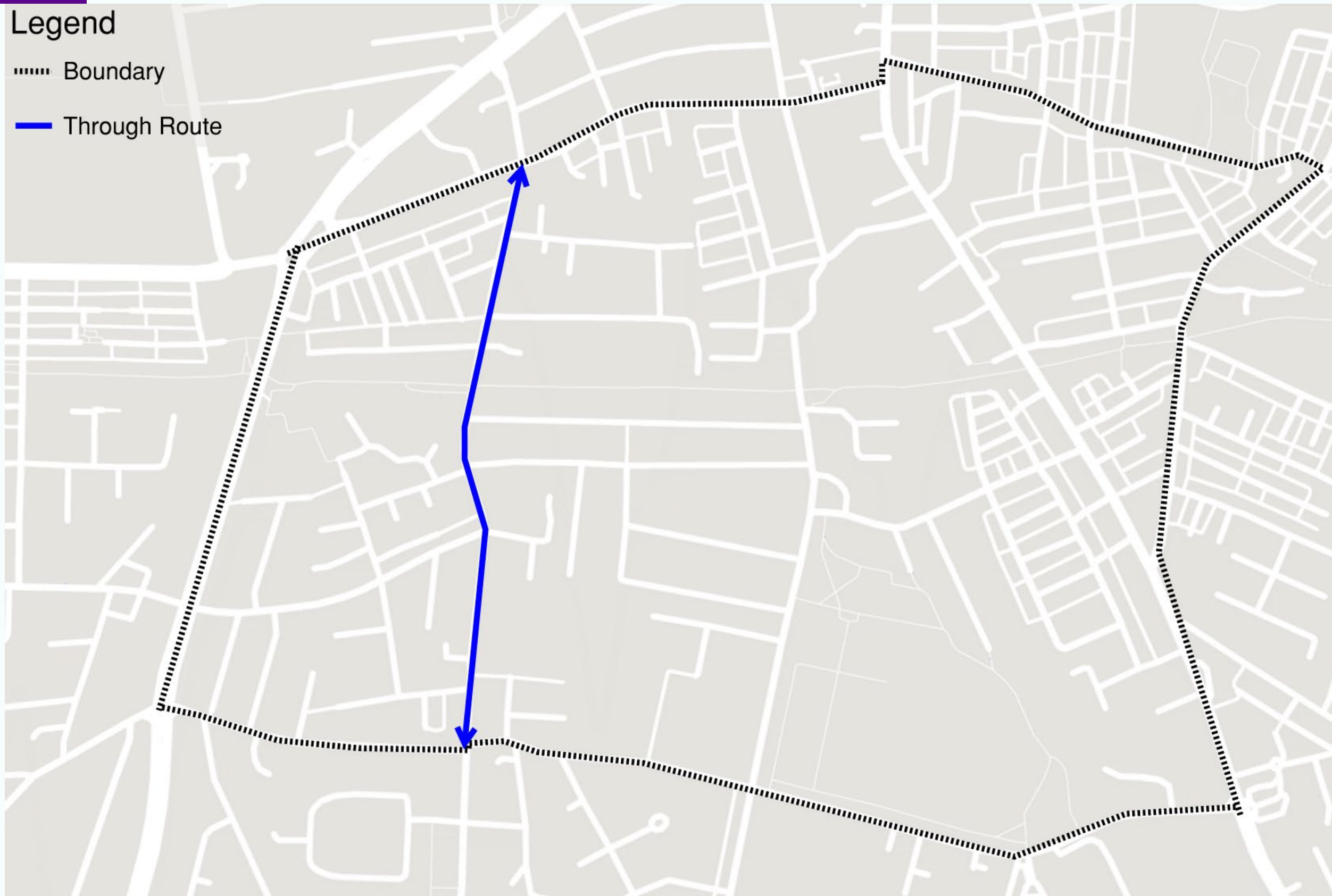


Figure 32: Before: Existing North-South through route

After

Legend

- Boundary
- Sign
- Opposing One-Way Routes

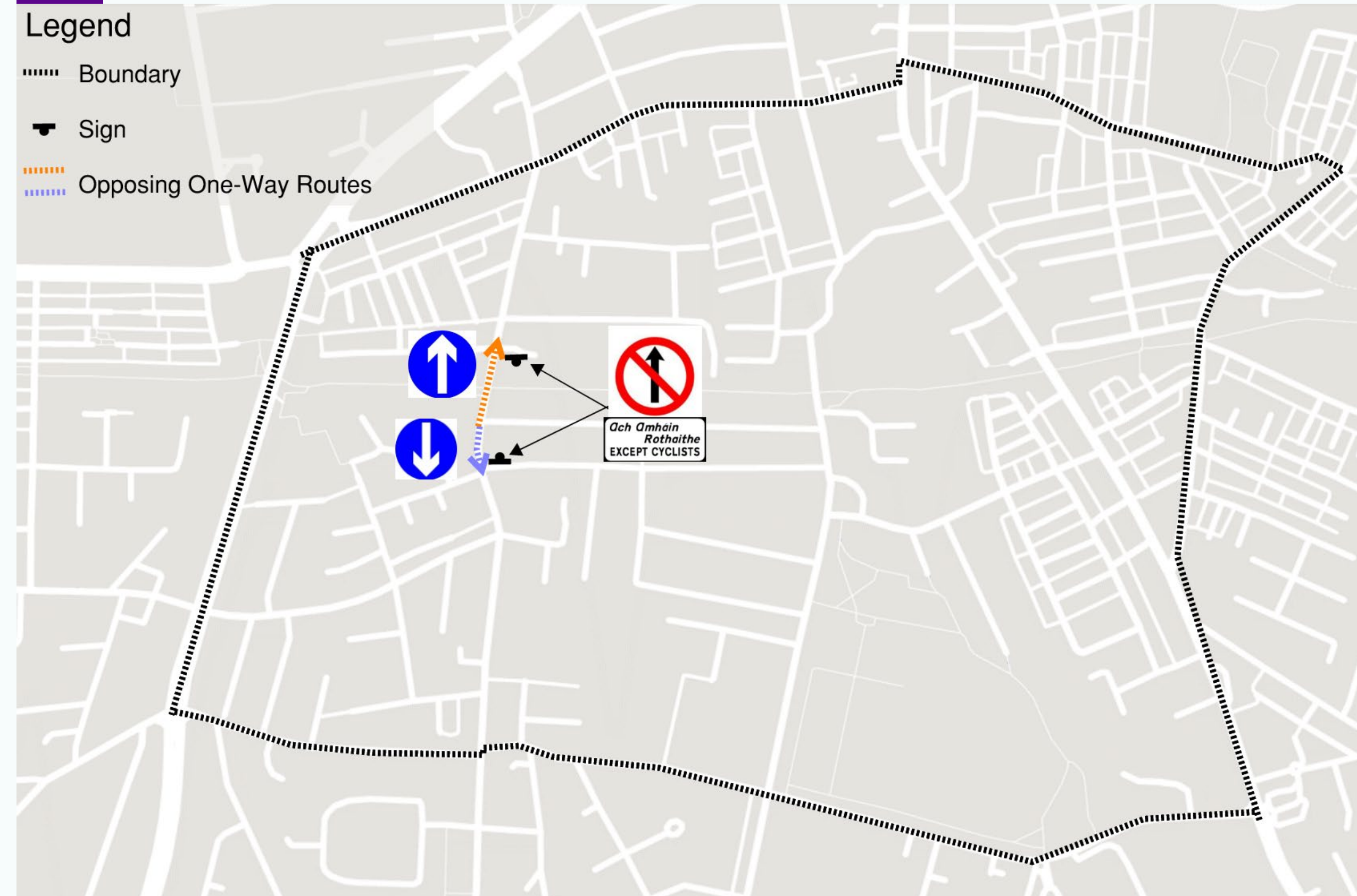


Figure 33: After: Opposing one-ways applied to remove through route



5.1.4 Vehicle Restrictions

Key Features

- Restrictions on certain types of vehicles to improve safety and environmental conditions, using standardised signage for indicators such as Gross Vehicle Weight (Figure 34) or Prohibited Number of Axles (Figure 35).
- Area-wide tonne or axle restrictions are often implemented to prevent unsuitable through-traffic, particularly in residential areas near ports, industrial estates, or large warehousing hubs that generate significant HGV volumes. These measures help reduce noise, emissions, and road safety risks associated with heavy vehicles in areas not designed to accommodate them, while still allowing necessary access for services such as refuse collection, deliveries, and emergency vehicles.
- Vehicle restrictions signs must adhere to standardised symbols, colours, and shapes noted in the [Traffic Signs Manual](#), making them universally recognizable.

Suitable Locations

- Ideal for residential areas or high streets aiming to reduce heavy vehicle traffic and enhance pedestrian priority.
- The positioning of signage is critical; signs must be visible and provide drivers with enough notice to take alternative routes, especially before hazards or restricted areas.
- Areas with physical constraints, such as low or narrow bridges, often require vehicle restrictions.

Other Considerations and Further Guidance

- May be used in conjunction with other traffic calming measures such as build-outs and carriageway narrowing to warn oncoming traffic.
- Overuse of road signs can lead to street clutter and a suitable signage strategy should be developed.
- In the future, enforcement can be supported by technological measures like cameras, which help to monitor and manage restricted zones.
- For detailed specifications and guidance, refer to the [Traffic Signs Manual](#).



Figure 34: Gross vehicle weight restriction at the entrance of neighbourhood, Waterford
Source: © Google Street View 2022

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Figure 35: Prohibited Number of Axles by time of day, Dublin
Source: © Google Street View 2022



5.1.4 Vehicle Restrictions – Worked Example

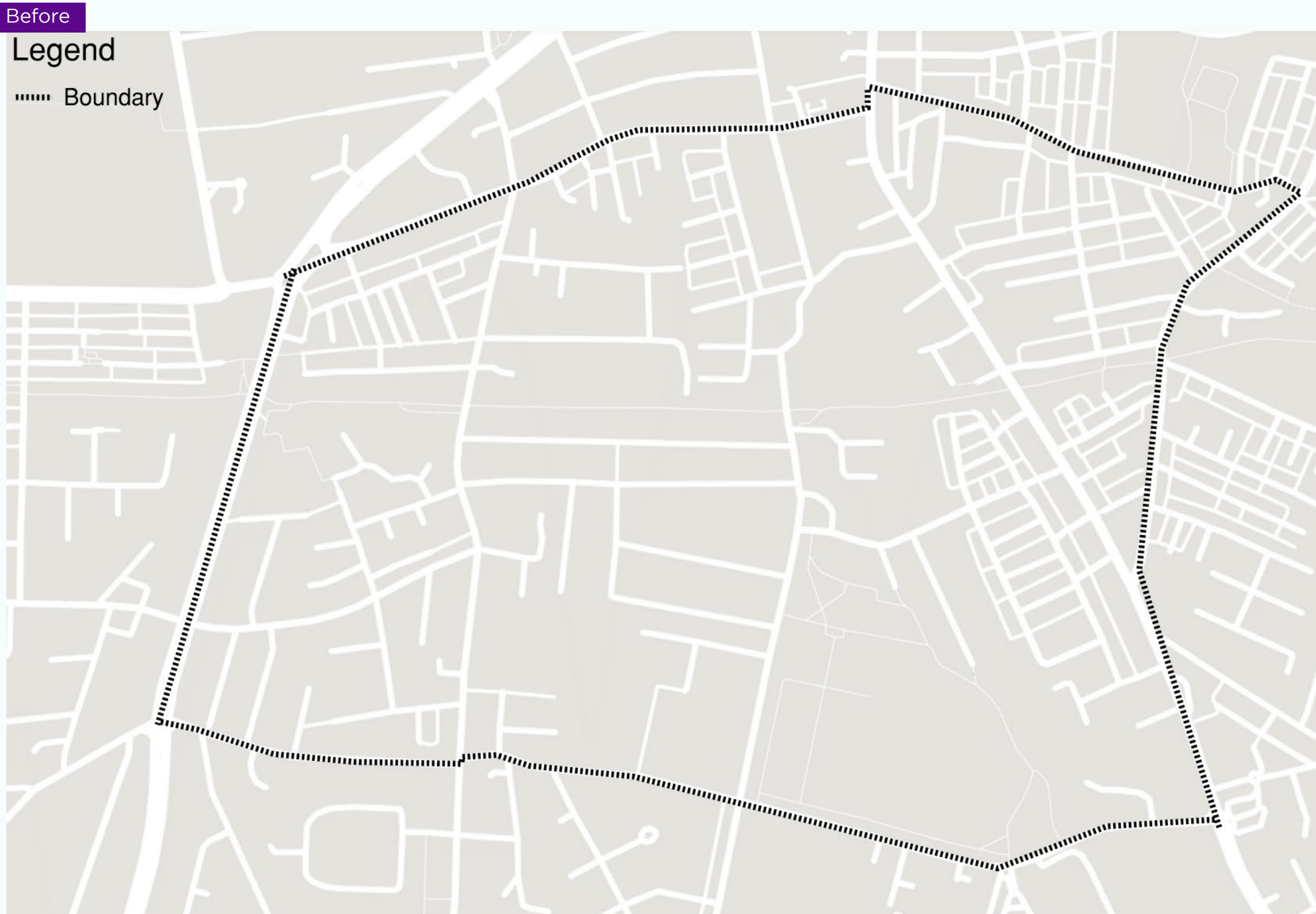


Figure 36: Before: Residential neighbourhood

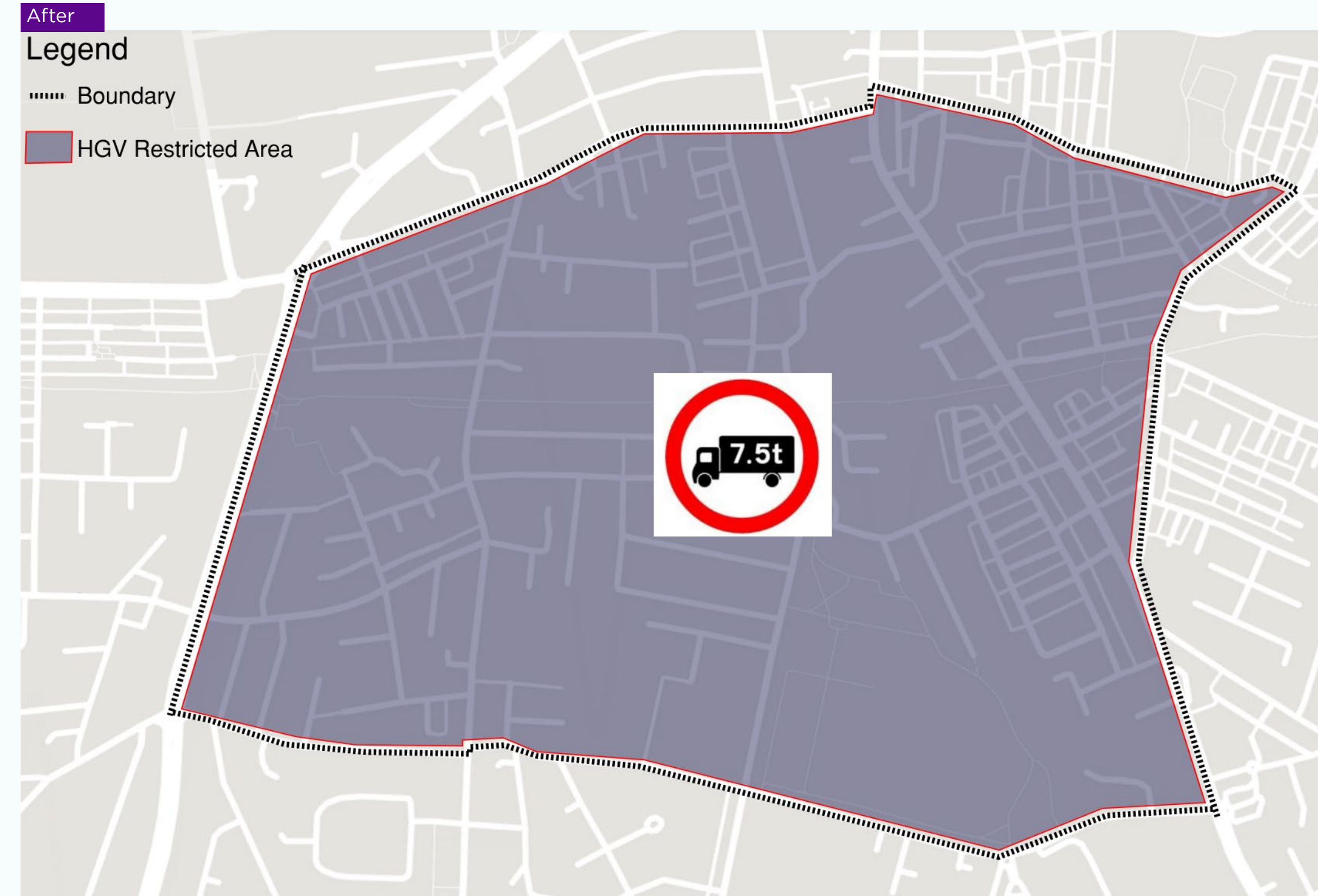


Figure 37: After: HGVs restricted from entering residential area



5.1.5 Bus Gates

Key Features

- Bus gates function as selective permeability points that prioritise buses and certain authorised vehicles, such as emergency vehicles, to expedite bus services and improve overall transit reliability (Figure 38).
- The integration of bus traffic signals that detect cyclists ensures multimodal efficiency, with provisions such as cycle bypasses to accommodate bicycle traffic.

Suitable Locations

- Bus gates are most effective on bus routes experiencing high volumes of traffic, where the objective is to prioritise bus movement and enhance transit operations.
- Their placement should be be thoughtfully considered within transport networks to manage overall traffic flow and enhance connectivity in and around centers of activity.

Other Considerations and Further Guidance

- Filtered permeability through bus gates requires careful planning to ensure they contribute positively to the network and do not inadvertently shift traffic problems to adjacent areas.
- Clear and advanced signage is critical to inform drivers about the presence of bus gates and to provide necessary rerouting information.
- In the future, camera enforcement can play an integral role in maintaining the integrity of bus gates as legislative frameworks evolve.
- May be trialled for a set period before permanent scheme is introduced. See Guidelines on Traffic Works Procedures, Section 38 of the [Road Traffic Act \(1994\)](#) for more guidance on the trials procedure.



Figure 38: Two-way single lane bus gate on Main Street, Tallaght, Dublin
Source: © Google Street View 2022

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Figure 39: One way bus gate, Dublin
Source: © Google Street View 2022



5.1.5 Bus Gates – Worked Example

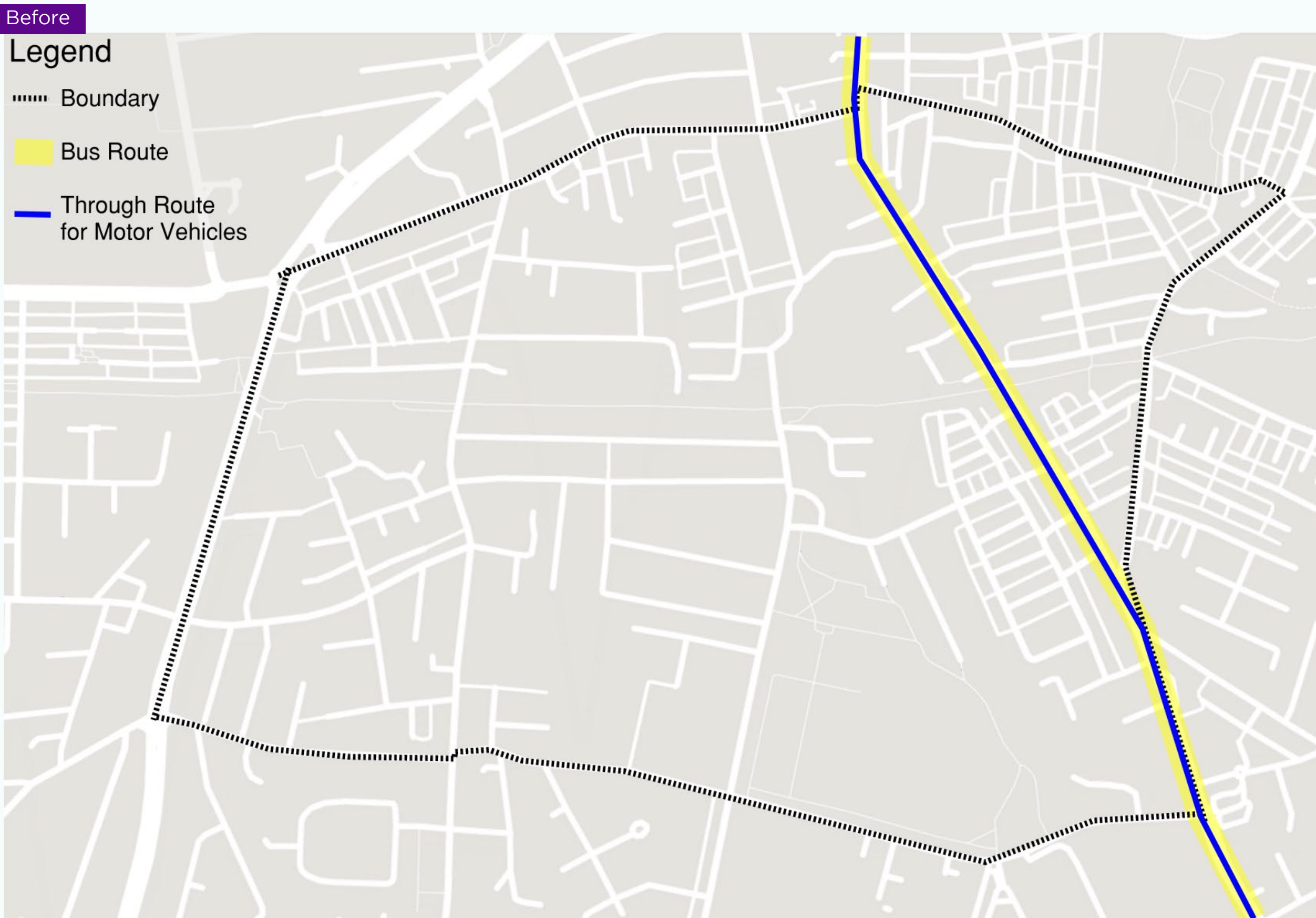


Figure 40: Before: Existing North-South through route with bus route highlighted in yellow



Figure 41: After: Bus gate provided to remove through route, local and boundary roads can serve as alternative routes for motor vehicles



5.1.6 School Streets

Key Features

- School Streets are sections outside schools closed to traffic temporarily during drop-off and pick-up times to enhance safety and reduce pollution.
- Can be implemented using movable barriers or temporary signs to control vehicle access at critical times. These restrictions can become permanent if they prove effective during a trial period.
- Specific traffic restriction strategies include:
 - Timed Road Closures:** Complete or partial road closures during school start and end times to ensure child safety.
 - No Set Down Areas:** Prohibiting vehicle stopping or parking directly in front of school gates to keep the area clear for pedestrians.
 - Time-Plated Speed Limits:** Implementing reduced speed limits during specific times to slow down traffic near school zones.
 - Park and Stride Schemes:** Encouraging parents to park at designated locations slightly away from the school and walk with their children, promoting physical activity and reducing congestion directly around the school.
- These measures aim to encourage walking, cycling, or scooting to school, reduce unsafe parking, and—most importantly—make the school frontage safer for children.

Suitable Locations

- On link streets or local streets (refer to [Section 3.2](#)) adjacent to a school where congestion from school drop off and pick up increases the risk of collisions (as shown in Figure 42).

Other Considerations and Further Guidance

- Front of School Treatments such as those discussed in [Section 5.2.6 School Zones](#), can improve safety without removing traffic and should be considered first followed by school street closures.
- Success heavily relies on the engagement and support of the school community, including staff, students, and parents.
- Informing and involving parents and local residents early can foster support and advocacy for the project, especially during public consultations.
- Enforcement of closures may require involvement from parents or school staff, particularly in managing the barriers during operation times.
- Regulatory signage shall be provided in accordance with [Section 5.22 of the Traffic Signs Manual](#), including the use of the School Street sign RUS 032A with an associated plate indicating periods of operation.
- Refer to the [NTA Safe Routes to School Design Guide](#) and the [Fingal School Streets Pilot Review](#) for further guidance and case study examples.



Figure 42: Traffic near St Oliver Plunkitt National School during pick-up / drop-off prior to school streets pilot, Malahide
Source: Fingal County Council

Click on the images to access the source



Figure 43: St Oliver Plunkitt National School Street During Operation
Source: Fingal County Council



5.1.6 School Streets – Worked Example

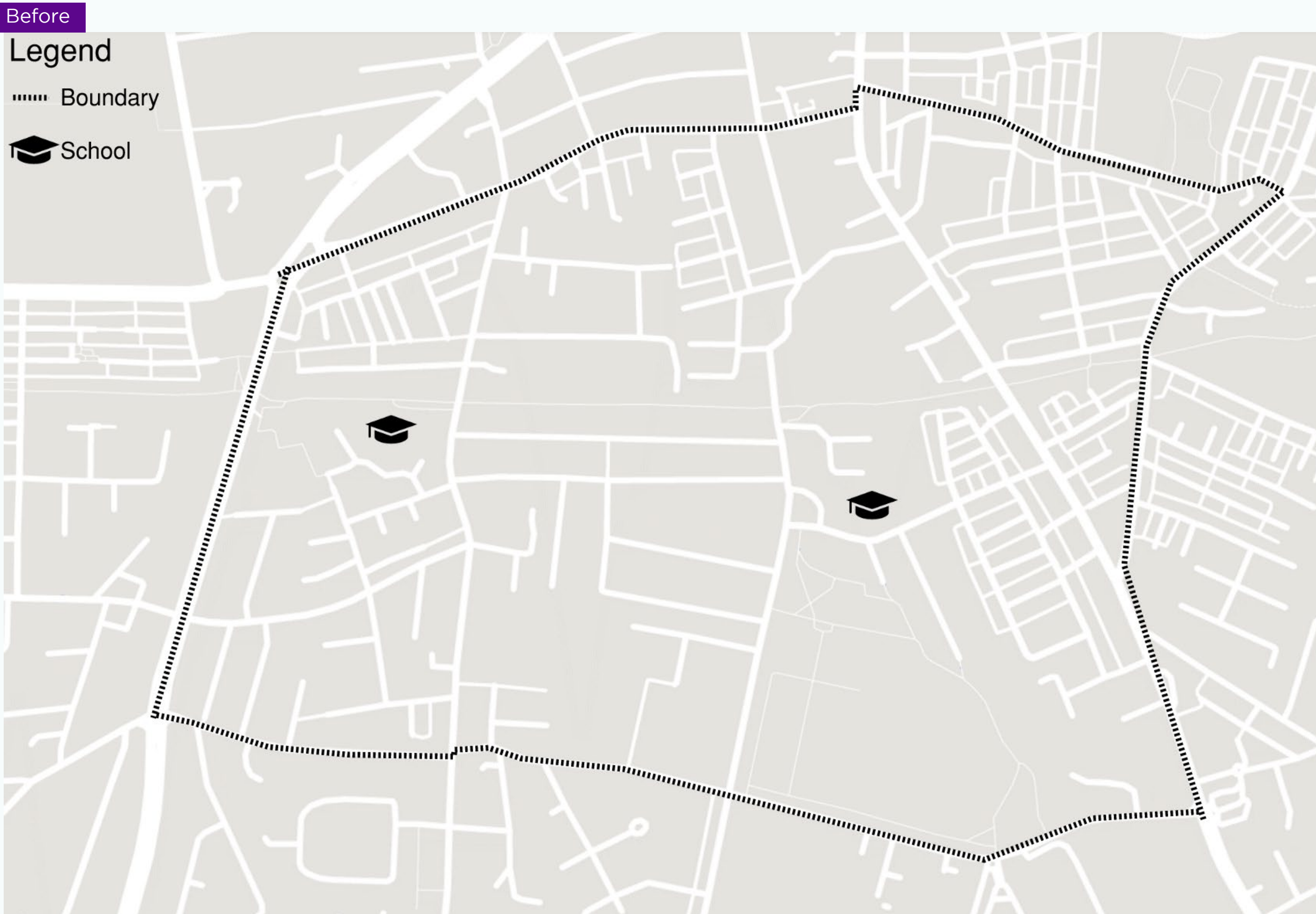


Figure 44: Before: Indicative locations of schools within a neighbourhood

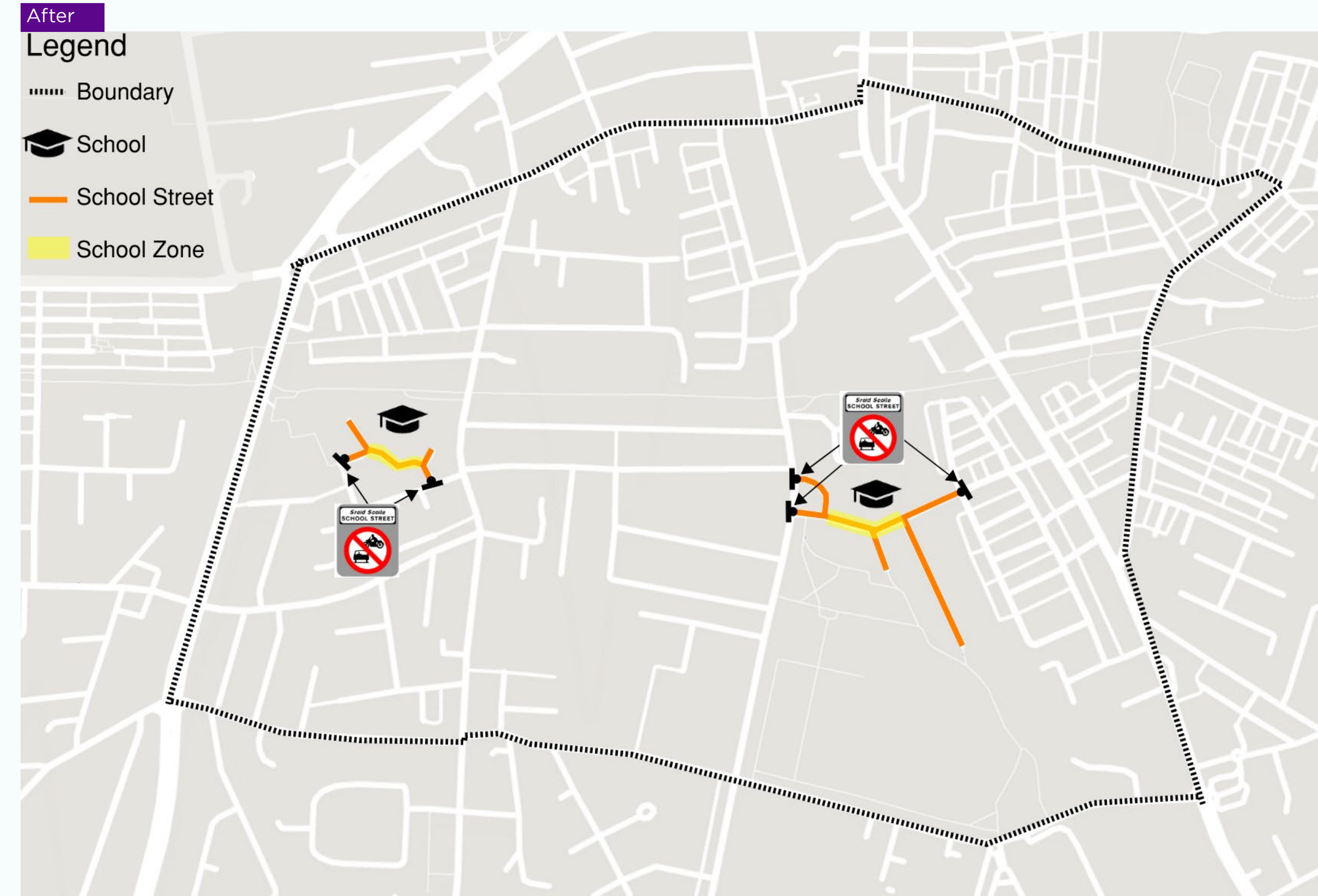


Figure 45: After: Potential School Street extents with front of school treatment areas shown



5.1.7. Example of combined Traffic Reduction Measures

Figure 46 shows an example of integrating various traffic reduction measures to reduce through traffic in a neighbourhood. The diagram is provided as an example and there are numerous ways in which the measures could be applied. The selected measures should be identified based on site specific constraints, community feedback and stakeholder support. The roads are split into colour coded zones to illustrate the various access routes available after the example interventions are applied.

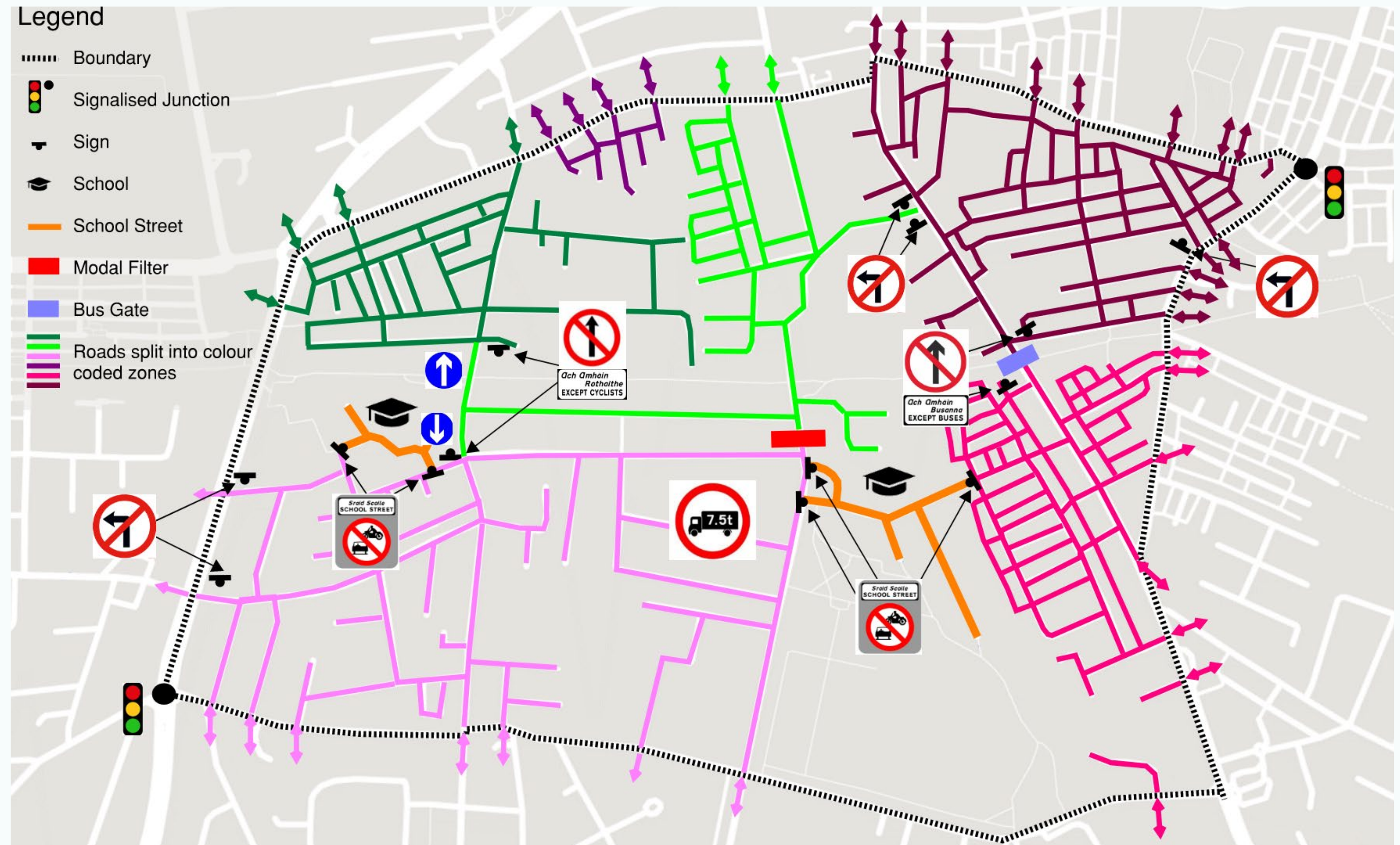


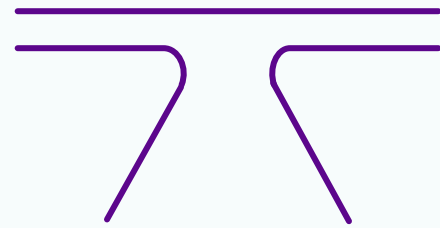
Figure 46: Map illustrating various traffic reduction measures to reduce through traffic in a neighbourhood



5.2 Traffic Calming Measures

Once the traffic reduction measures are in place, it is important to ensure that any vehicles travelling on the streets within the neighbourhood are doing so at an appropriately slow speed, with greater awareness of the environment they are in. The following pages highlight a number of tools and interventions which can be used to slow traffic speeds through street design, often referred to as ‘traffic calming’ measures.

A list of the interventions is provided below with more details on their respective page.

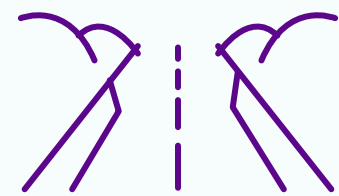


Junction Tightening Measures

Corner Radii Reductions
Continuous Footpath
Raised Crossings



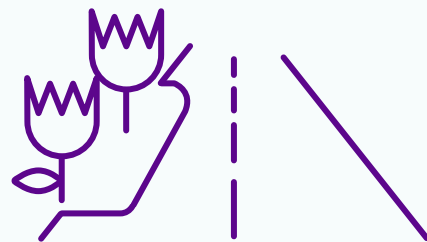
Speed Limits and Zones



Carriageway Narrowing



School Zones

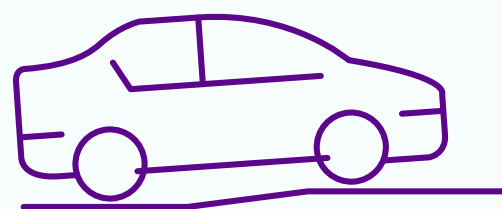


Horizontal Deflections

Build-outs
Traffic Islands
Chicanes

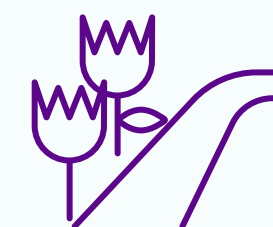


Cycle Streets



Vertical Deflections

Speed Humps
Speed Cushions
Raised Tables



Psychological Measures

Surface Treatment
Vertical Edge Elements



5.2.1 Junction Tightening

Junction tightening is a traffic management approach that involves modifying the geometry of junctions to slow down vehicular speeds, particularly at turning movements, and to enhance pedestrian safety. By altering the corner radii and elevating crossings, junction tightening techniques encourage drivers to approach and proceed through junctions more cautiously. This method is particularly effective in urban areas where pedestrian traffic is heavy and vehicle-pedestrian conflicts are a concern. [Refer to Advice Note 6 DMURS: Priority Junction Tightening Measures](#) for detailed guidance on junction tightening interventions.

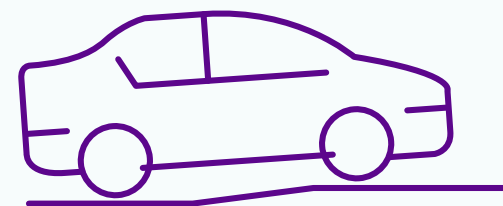
Types of junction tightening interventions include:



Corner Radii Reductions



Continuous Footpath



Raised Crossings



5.2.1.1 Corner Radii Reduction

Key Features

- Corner radii at a junction reduced to slow vehicle turning speeds and shorten pedestrian and cyclist crossing distances, improving safety for all road users.
- Reducing the radius can narrow side road approaches to a single lane which minimises the overall junction size and can improve sight lines for vehicles.
- Allows crossings to be located closer to desire lines.
- New kerb space should incorporate tactile paving and dropped kerbs on both sides of the crossing to enhance accessibility, particularly for individuals with visual impairments.
- Provides additional space behind the kerb that can be used to transform previously congested and underutilised areas into attractive public spaces. By reconfiguring the junction to prioritise pedestrians, cyclists, and greenery, these spaces can become more inviting and aesthetically pleasing (as shown in Figure 48).
- Temporary or rapid implementation measures, such as the strategic placement of bollards, planters, and line markings, allow for flexible junction redesigns (as shown in Figure 47).
- Consider introducing overrun areas at corners where large vehicles are expected to turn often. This helps reduce the effective radius for passenger vehicles while accommodating larger vehicles. Refer to [NTA Typical Construction Detail for Corner Overrun Area \(NTA-TCD-700-013\)](#).

Suitable Locations

- Appropriate for any junction where existing corner radii are disproportionately large relative to the traffic volumes and vehicle types using the junction, contributing to unnecessarily high vehicle speeds and longer pedestrian exposure.

Other Considerations and Further Guidance

- Consider the vehicles accessing / exiting the side road of the junction to determine suitability of junction tightening.
- Refer to Section 4.3.3 of [DMURS](#) for guidance on suitable corner radii by street classification.
- Refer to [Advice Note 6 DMURS: Priority Junction Tightening Measures](#) for additional guidance on junction tightening interventions.

Before



After



Figure 47: Interim corner radii reduction with pavement markings and bollards, Dublin
Source: © Google Street View 2019 (Before), 2021 (After)

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the images
to access
the source

Before



After



Figure 48: Corner radius reduction through reconstruction provided space for landscaping behind the footpath, Bullock, Co. Dublin
Source: © Google Street View 2019 (Before), 2022 (After)



5.2.1.2 Continuous Footpath

Key Features

- A continuous footway maintains an unbroken, level surface across side road junctions, prioritising pedestrian movement by keeping the footpath height and material consistent.
- It is designed to enhance pedestrian comfort and visibility, encouraging vehicles to yield as they cross the footway, while maintaining low turning speeds.
- While vehicles still cross the footway, the design cues—such as raised surfaces, continuous kerb lines, and visual continuity—reinforce pedestrian priority and improve safety.
- Short ramps on either side of the footpath, typically with a gradient of 1:15, require drivers to travel up and over it which provides a traffic calming benefit.

Suitable Locations

- Best suited for local streets with lower speed limits (10-30 km/h) in urban centres and neighbourhoods where pedestrian traffic is high.
- Should be considered on side streets with lower vehicle flows and high pedestrian volumes to ensure seamless pedestrian movement.
- Suitable for areas around public and commercial entrances, including apartment complexes, shopping centres, fuel stations and large parking areas.

Other Considerations and Further Guidance

- Blistered tactile pavers should be included where the footpath of the main road meets the footpath of the sideroad to assist pedestrians visually impaired in identifying the crossing area (Figure 49).
- Should be paired with corner radii reductions or build-outs where necessary to reduce crossing distances and further reduce driving speeds.
- The type of treatment can be used in isolation or combined with a cycle track where present on the main road (as shown in Figure 50).
- Requires careful consideration of drainage to prevent water pooling at crossing points.
- Refer to [Advice Note 6 DMURS: Priority Junction Tightening Measures](#) for additional guidance on junction tightening interventions. Table 3.1 includes a selection guide to help guide the selection of raised crossings or continuous footpaths based on road function and context.
- Refer to [NTA Typical Construction Details](#) Series NTA-1100 for different continuous footway crossing configuration details.



Figure 49: Continuous footpath, Dun Laoghaire
Link: [© Google Street View 2022](#)

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Figure 50: Continuous footpath and cycle track, Dun Laoghaire
Source: [© Google Street View 2019](#) (image shows the upgrade of existing layout on Google Maps)



5.2.1.3 Raised Crossings

Key Features

- Raised crossings are speed tables at crossing points, with ramps leading up to a flat section level with the existing footpath.
- Raised crossings provide a visual and physical queue that reinforces pedestrian priority to slow vehicles navigating the intersection and increases the likelihood of yielding by drivers.
- Raised crossings can be paired with pavement markings such as zebra or parallel crossings or distinctive paving materials to increase visibility of the intervention. This differentiates this treatment from the continuous footpath treatment.

Suitable Locations

- Recommended on busier high streets and link roads with moderate vehicle speeds in neighbourhood, suburban and business/industrial contexts where pedestrian volumes are moderate to high, but some vehicle priority must be maintained.
- Recommended at priority junctions with moderate to high pedestrian volumes.
- Effective at the entrances to traffic-calmed areas to provide a clear physical cue that signals to drivers they are entering a different environment (Figure 51). Both raised crossings and continuous footpaths can serve this function, reinforcing the transition to lower speed, pedestrian-prioritised spaces.

Other Considerations and Further Guidance

- Blistered tactile pavers should be included at each end of the crossing to signal to people with vision impairments that they are entering the crossing.
- Should be paired with corner radii reductions or build-outs where necessary to reduce crossing distances and further reduce driving speeds (Figure 52).
- The type of treatment can be used in isolation or combined with a cycle track where present on the main road.
- Crossings should be placed as close to pedestrian desire line as is practicable.
- Requires careful consideration of drainage to prevent water pooling at crossing points.
- Refer to [Advice Note 6 DMURS: Priority Junction Tightening Measures](#) for additional guidance on junction tightening interventions. Table 3.1 includes a selection guide to help guide the selection of raised crossings or continuous footpaths based on road function and context.
- Refer to [NTA Typical Construction Details Series NTA-700](#) for different raised crossing configuration details.



Figure 51: Raised crossing constructed with unit pavers, Dublin
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Figure 52: Asphalt raised crossing, Dún Laoghaire, Co. Dublin
Link: [© Google Street View 2019](#) (image shows raised crossing not visible on Google Maps)



5.2.2 Carriageway Narrowing

Key Features

- Recognised as one of the most effective interventions to calm traffic, carriageway narrowing reduces vehicle speeds and creates safer, more engaging streets. Narrower streets naturally compel drivers to slow down, as they perceive less space and are less likely to engage in high-speed driving.
- Designers should aim for the minimum carriageway width that safely accommodates traffic, with narrower widths being particularly effective in reducing speeds.
- Arterial and Link Streets should see lane widths of 3.0 – 3.25 m.
- Local streets should have a total carriageway width of 5.0 – 5.5 m with lane widths of 2.5 – 2.75 m, this may not be suitable on bus routes.
- Implementation can involve altering lane widths for the entire carriageway, introducing median strips, integrating traffic calming measures like chicanes or creating pinch points with build-outs (Figure 53).
- Reducing lane and carriageway width decreases crossing distances for pedestrians, reducing their exposure to motor vehicle traffic.
- The reclaimed space from narrowing can be reallocated for cycle tracks, widened footpaths, landscaping, community enhancements, or on-street parking where demand exists, with parking and build-outs contributing to the perceived narrowing of the carriageway.
- Careful design can retain necessary access for larger vehicles such as buses, while still reducing the effective driving width for smaller vehicles.

Suitable Locations

- Applicable on any roads where the carriageway and lane widths exceed DMURS recommendations, aiding in the creation of a balanced street environment.
- Particularly effective on streets with high pedestrian activity, near schools, and in areas where traffic calming can significantly enhance community interaction and safety.

Other Considerations and Further Guidance

- May have implications on drainage which may require the relocation or installation of additional gullies.
- A comprehensive approach may include combining additional calming measures to enhance the effect of narrowed carriageways.
- Where pinch-points are introduced, provisions should be made for cyclists to safely navigate them without conflicting with motor vehicles (Figure 54).
- Refer to Section 4.4.1 of [DMURS](#) for more details on carriageway widths



Figure 53: Carriageway narrowed by build-outs and a protected contraflow cycle lane, Blackrock, Co. Dublin
Source: © Google Street View 2021

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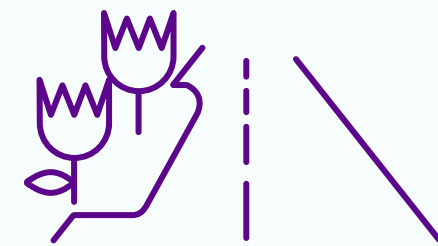
Figure 54: Carriageway Narrowing through a pinch point with a cycle bypass, Dublin
Source: © Google Street View 2022



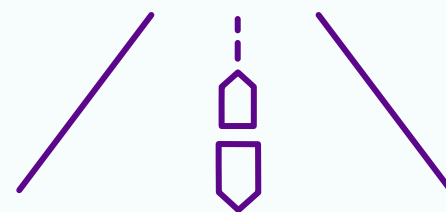
5.2.3 Horizontal Deflections

Horizontal deflections are traffic calming strategies that modify the alignment of streets to reduce vehicle speeds. By creating bends and changes in the roadway layout, these measures naturally encourage drivers to slow down to navigate safely. Horizontal deflections are effective in reducing speeds, but they need to be designed thoughtfully to ensure they do not disrupt the flow of larger vehicles, including emergency services.

Types of horizontal deflections include:



Build-outs



Traffic islands



Chicanes



5.2.3.1 Build-Outs

Key Features

- Build-outs are extensions of the footway, kerb or verge into the carriageway that create pinch points to reduce vehicle speeds.
- Build-outs at pedestrian crossings, both at junctions and mid-block, reduce pedestrian crossing distances, lowering their exposure to motor vehicles and increasing safety.
- The additional space provided by build-outs can be used for amenities such as street furniture, cycle parking (Figure 56), parklets, street trees (Figure 55), rain gardens / SuDs, and formalised parking bays, reducing the likelihood of pavement parking.
- Build-outs at bus stops, known as bus borders, eliminate the need for buses to pull in and out of traffic, reducing delays caused by waiting for gaps in traffic. They also reduce the length of road required for bus bays and provide space for bus shelters without impeding the footpath.

Suitable Locations

- Build-outs are effectively positioned at strategic points along straight sections of the carriageway, particularly where vehicle speeds need moderation.
- Ideal around mid-block crossings, junctions, parking bays, and bus stops to create safer and calmer traffic conditions.
- They should be incorporated where the streetscape benefits from added green infrastructure or cycling facilities, enhancing the overall street environment.

Other Considerations and Further Guidance

- Ensure the provision of amenities in the build-out allows for adequate sightlines of pedestrians and oncoming vehicles.
- May have implications on the drainage network if the flow path is blocked, potentially creating unintended low points. Build-outs can retain a clear channel between the kerb and the outer edge of the build-out to mitigate this impact.
- May be used in conjunction with raised tables and/or other design features to improve pedestrian priority at junctions and crossings.
- Consider providing cycle bypasses alongside build-outs to ensure a continuous, safe path for cyclists. These bypasses should typically 1.5 m wide to accommodate various cycle types and maintenance access, and can either be level with the carriageway or ramped over the build-out.
- Refer to Section 4.4.7 of [DMURS](#) for more details on Horizontal and Vertical Deflections.



Figure 55: Mid-block build-out framing on-street parking bays and reducing pedestrian crossing distance, Clonakilty, Cork Source: © Google Street View 2019

Click on the images to access the source



Figure 56: Build-out at a junction providing space for cycle parking, Dublin Source: © Google Street View 2022



5.2.3.2 Refuge Island

Key Features

- Refuge islands are designed to protect pedestrians and cyclists in crossing streets and provide a safe midway point for pedestrians who may need to rest while crossing the carriageway.
- Refuge islands allow pedestrians to cross one direction of traffic at a time, reducing the complexity and risk of crossing. This is particularly beneficial for children, elderly pedestrians, and those with mobility impairments.
- They are designed to narrow the carriageway and deflect vehicle paths as part of traffic calming strategies, and can help to channelise traffic, reducing speeds and preventing overtaking.
- The opening of the refuge should be 2.4 – 5.0 m to accommodate pedestrians queuing.

Suitable Locations

- Particularly useful at wide crossings (Figure 58), multi-lane roads, roundabout entry/exits, or complex signalised junctions where pedestrian phases may not allow a complete crossing in one signal cycle (Figure 57).
- They are also suitable for positioning within hatched areas of turning lanes at junctions.
- Adequate lighting and visibility are crucial where islands are installed, to ensure the safety of both pedestrians and motorists.

Other Considerations and Further Guidance

- Placement should ensure clear visibility to oncoming traffic for both drivers and pedestrians.
- Where possible on roads with high volumes of pedestrians, sufficient space should be provided to safely store queuing pedestrians and facilitate circulation, including people using mobility devices, people with service animals, or people using buggies or other devices.
- Signage on refuges should be clear and illuminated to indicate the correct passage around the island, enhancing their visibility and reducing the risk of collision.
- Longer vehicles may face difficulties negotiating around traffic islands, so adequate clearance should be provided to facilitate their movement, especially near junctions or areas where vehicles may park close to the islands.
- Refer to Section 4.4.7 of [DMURS](#) for more details on Horizontal and Vertical Deflections.



Figure 57: Refuge Island as a signalised pedestrian crossing, Dublin
Link: [© Google Street View 2022](#)

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Figure 58: Refuge island at wide junction, Maynooth, Co. Kildare
Source: [© Google Street View 2024](#)



5.2.3.3 Chicanes

Key Features

- Chicanes are intentional, alternating shifts in the alignment of a street creating a weaving path designed to slow down vehicles and discourage speeding.
- Can be implemented with a variety of design options including by varying the kerbline, build-outs (Figure 60), landscaping, bollards and traffic islands, street furniture, or by alternating parking bays on either side of the carriageway (Figure 59).
- Landscaping and street furniture can enhance the effectiveness of chicanes by reducing drivers' field of view and the perceived width of the road. However, they must not compromise the visibility of oncoming traffic and other road users such as pedestrians and cyclists.
- Approaches to chicanes should be tapered to reduce the risk of sudden movements by road users.

Suitable Locations

- Ideal for residential areas and areas with high pedestrian activity, such as near schools and parks, where reduced vehicle speeds are desired without restricting access.

Other Considerations and Further Guidance

- Tighter dimensions for the chicane have a greater impact on speed reductions. However, the design of chicanes must accommodate all vehicles that are permitted to use the road, with considerations for long vehicles which require more relaxed dimensions to negotiate the chicanes effectively.
- Chicanes may have less of an impact on emergency vehicles compared to vertical deflections.
- Proper signage and clear markings can be helpful to guide road users through the new street layout safely.
- Maintain clear sightlines for all users, particularly where chicanes cause the carriageway to narrow, to avoid creating blind spots or areas of potential conflict.
- Consider providing cycle bypasses to ensure a continuous path for cyclists, typically 1.5 m wide to accommodate various cycle types and maintenance access.
- Refer to Section 4.4.7 of [DMURS](#) for more details on Horizontal and Vertical Deflections.



Figure 59: Alternating parking can create a chicane with minimal civil work, Dún Laoghaire

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Figure 60: Chicane implemented with alternating build-outs, Dublin

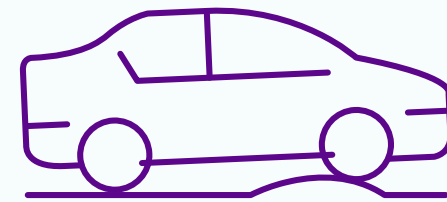
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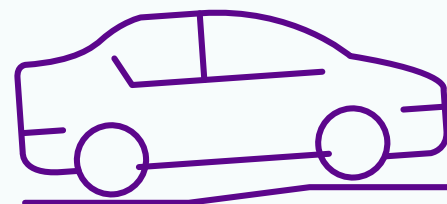
5.2.4 Vertical Deflections

Vertical deflections are traffic calming measures designed to physically alter the road surface to reduce vehicle speeds through raised elements that create a vertical change. These measures are particularly effective in enhancing pedestrian safety and managing traffic speeds but may not be suitable along bus routes. The impact on passenger comfort, potential delays in emergency vehicle response times, and the overall smooth operation of bus services require that such installations be carefully designed to minimise adverse effects.

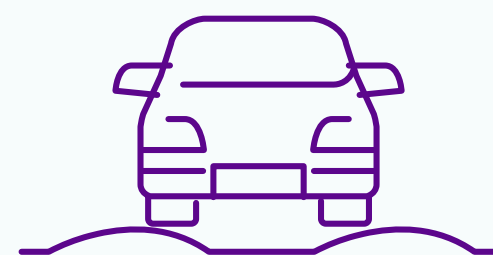
Types of vertical deflections include:



Speed Humps



Raised Tables



Speed Cushions



5.2.4.1 Speed Humps / Ramps

Key Features

- Speed humps, or ramps, are uninterrupted rises in road surface designed to control vehicle speed, typically 75-100 mm in height with a flat, round-top or sinusoidal profile.
- The preferred length of a speed hump spans 3.7-4.3 m, catering to diverse vehicle types, including long wheelbase vehicles.
- Entry slopes have the biggest impact on speeds with entry slopes of 1:15 appropriate for lower speeds and slopes of 1:20 for more moderate vehicle speeds.
- Ramps should be well-lit and clearly marked for visibility to oncoming traffic, particularly at night.
- The sinusoidal ramp, with its smoother slope profile, is favourable for roads with high volumes of cyclists or along bus routes. The sinusoidal profile provides a more comfortable transition for bus passengers and cyclists. This is especially helpful for people using adaptive cycles such as recumbent cycles without suspension.

Suitable Locations

- Primarily on streets with speed limits under 50 km/h, including residential areas and school zones, with consideration for appropriate ramp profiles on bus routes.
- Regular spacing between 70-100 m on residential streets and near schools enhances safety and ensures drivers maintain consistent low speeds.
- They are particularly appropriate for residential areas (Figure 61), school zones (Figure 62), and other locations where pedestrian safety is a high priority.
- Flat-top speed humps should be located at pedestrian crossing points to allow at-grade crossing (refer to 5.2.5.2 – Raised Tables).

Other Considerations and Further Guidance

- Speed humps can be effectively combined with other traffic calming measures such as buildouts and carriageway narrowing to further moderate traffic speeds.
- When planning the implementation of speed humps, it is important to consider the most common types users of the road, such as emergency services and those with specific vehicle types, like hearses, which may require longer speed humps.
- Sinusoidal ramps can have a lesser traffic calming effect for cars and SUVs due to the smooth profile and should be paired with other traffic calming measures. Prefabricated concrete ramps can be used to ensure a smooth profile and consistent implementation. Ramps can be implemented using modular rubber units for swift deployment and evaluation in pilot schemes before committing to permanent installations.
- Refer to Section 4.4.7 of DMURS for more details on Horizontal and Vertical Deflections.
- Refer to NTA Typical Construction Details Series NTA-700 for different ramp configuration details.



Figure 61: Sinusoidal ramp, Bray, Co. Wicklow
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Figure 62: Speed hump in a school zone highlighted with red pavement, Monasterevin, Co. Kildare
Link: [© Google Street View 2019](#)



5.2.4.2 Raised Tables

Key Features

- Raised tables, also known as speed tables, are flat-topped vertical deflections of at least 2 m in length, facilitating level pedestrian crossings.
- A flat-top length of 2.5 m can accommodate the entire wheelbase of a passenger vehicle to reduce discomfort. This should be extended to 6 m on bus routes.
- The height should match the adjoining kerb, with a maximum height of 75 mm on bus routes to reduce passenger discomfort.
- Entry slopes have the biggest impact on speeds with entry slopes of 1:15 appropriate for lower speeds contexts and slopes of 1:20 for more moderate vehicle speeds or along bus routes.
- A raised junction (Figure 64) is a type of raised table encompassing an entire junction, enabling pedestrians to cross safely and providing traffic calming at all legs of the junction.
- Raised tables can be paired with zebra crossings to improve pedestrian priority.

Suitable Locations

- Raised tables should be placed on pedestrian desire lines to enhance permeability and create safer crossing opportunities (as shown in Figure 63).
- Raised tables placed at the entry points of residential / pedestrian priority areas can act as a gateway feature signalling to drivers that they are entering a low-speed area.
- Suitable for locations sensitive to traffic speeds and volumes, such as near schools and residential areas.

Other Considerations and Further Guidance

- Raised tables can sometimes present challenges for users of adapted cycles who may find the vertical deflections difficult to navigate, requiring additional design considerations to ensure accessibility.
- On one-way streets that are bus routes, consider more gradual exit ramps to improve passenger comfort for buses leaving the speed table.
- Ensure efficient drainage around raised tables to prevent water accumulation and maintain passability.
- Raised tables can be integrated with varying surface treatments and combined with other traffic-calming structures, like build-outs, to amplify their effectiveness.
- Refer to Section 4.4.7 of DMURS for more details on Horizontal and Vertical Deflections.
- Refer to the Section 6.13.3 of the [Traffic Management Guidelines](#) for more details on implementing raised tables.
- Refer to [NTA Typical Construction Details](#) Series NTA-700 for different raised table details.



Figure 63: Mid-block raised table with red pavement markings to highlight the ramp, Newbridge, Co. Kildare
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Figure 64: Raised junction, Dún Laoghaire, Co. Dublin
Link: © Google Street View 2019



5.2.4.3 Speed Cushions

Key Features

- Speed cushions are modified speed humps featuring wheel cutouts that allow larger vehicles like emergency services and buses to pass with minimal disruption, ensuring no significant increase in response times and maintaining comfort for bus passengers.
- Configured to extend across the direction of travel, typically 1.5-1.9 meters wide, to match the wheelbase of large vehicles.
- While narrower speed cushions might allow cars to avoid driving over the deflection, they can force drivers to slow down to track their wheels to each side of the cushion.

Suitable Locations

- Streets where the speed limit is less than 50 km/h where emergency and public transit vehicle access is essential, such as major bus routes.
- They are particularly appropriate for residential areas, school zones, and other locations where pedestrian safety is a high priority.
- Should be strategically placed to prevent their location from compromising cyclists' choice of road positioning. They are not preferred on designated cycle routes where their placement could force cyclists into less safe positions in the carriageway and can be a hazard for three wheeled cyclists.

Other Considerations and Further Guidance

- The placement and design of speed cushions should aim for the maximum width feasible to reduce speeds for smaller vehicles while allowing larger ones to pass unimpeded.
- Pairing with other traffic calming strategies, like build-outs or refuge islands (Figure 66), can enhance effectiveness and prevent circumvention by smaller vehicles.
- Their use on bus routes necessitates collaboration with transport authorities to ensure bus drivers can navigate them without compromising service efficiency.
- Modular rubber units can offer a flexible solution for piloting speed cushion benefits before permanent installation (as shown in Figure 65).
- Refer to Section 4.4.7 of [DMURS](#) for more details on Horizontal and Vertical Deflections.
- Refer to [NTA Typical Construction Detail for Speed Cushions \(NTA-TCD-700-008\)](#).



Figure 65: Rubber speed cushions, Howth, Co. Dublin
Link: [© Google Street View 2023](#)



Figure 66: Speed cushions paired with a refuge island, Westport Co. Mayo
Link: [© Google Street View 2024](#)



5.2.5 20km/h and 30km/h Limits and Zones

Key Features

- Speed limits of 20km/h or 30km/h are set on streets to create safer environments, particularly in mixed traffic areas. Lower speed limits prioritise the safety of pedestrians and enhance the usability of streets for various activities.
- Appropriate signage and road markings are deployed to clearly communicate the new speed limits to drivers.
- These limits should align with the street's design speed. This can be supported by traffic calming and placemaking features that encourage driving at or below the posted speeds, discouraging 'rat-running' or cutting through neighbourhoods due to lower speeds (as shown in Figure 67).

Suitable Locations

- A speed limit of 30km/h is recommended for built-up and urban areas, including city or town centres, residential streets, and areas with high pedestrian activity or where vulnerable road users are commonly present.
- A 20km/h speed limit is specifically recommended for pedestrian zones and shared spaces.
- School Speed Limits, which are often lower, should be implemented near schools during opening and closing times, accompanied by speed treatments to manage vehicle speeds effectively (Figure 68).
- Refer to Table 4.1 of [DMURS](#) for guidance on selecting the appropriate design speed based on the street's function and land-use context.

Other Considerations and Further Guidance

- The setting of statutory speed limits is a reserved function of elected members of Local Authorities. The implementation of revised speed limits for built-up and urban areas is currently being progressed through the [Speed Limit Review](#) process.
- Enacting lower speed limits is most effective when supported by physical street design measures that reduce design speeds and naturally encourage driver compliance.
- Implementation of new speed limits may require public transport services like buses to adjust their schedules to accommodate slower travel speeds.
- Refer to 4.1 of [DMURS](#) for more details on speed limits and design speeds.
- Refer to www.speedlimits.ie for up to date details on speed limit reductions in Ireland.
- Guidance on traffic volumes and safe cycling conditions can be found in Table 2.1 of the [Cycle Design Manual](#), which helps ensure these speed zones are effectively implemented.



Figure 67: 30km/h speed limit complimented with physical traffic calming measures, Dublin
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Figure 68: 30km/h slow zone complimented with visual traffic calming measures, Dublin
Source: © Google Street View 2022



5.2.6 School Zones

Key Features

- School zones aim at improving safety at the school gate by providing ‘front of school’ treatments to reduce motor vehicle speeds, alleviate congestion and to improve access routes to school by improving walking and cycling infrastructure.
- Clear signage marks the school zone area to moderate driver behaviour (Figure 69).
- Physical measures like bollards (Figure 70) can be used to discourage car drop-offs directly in front of schools, supporting a safer, car-free zone for pupils to enter and exit the school.
- The introduction or upgrade of crossings, such as raised zebra crossings, ensures safer pedestrian movement.
- Implementing periodic speed limits during school hours can help reduce traffic speeds and enhance safety.

Suitable Locations

- On any streets in the vicinity of a school where safety, congestion and access via active travel is a concern.

Other Considerations and Further Guidance

- As with 20 km/h and 30 km/h zones, implementation of school zones is more effective at reducing speeds when complimented with physical measures to reduce the design speed of the street.
- Effective communication with parents and pupils is key to raising awareness about the rules and benefits of school zones.
- Detailed design guidance and further information on best practices for school zones can be found in the [Safe Routes to School \(SRTS\) Design Guide](#)



Figure 69: School Zone with decorative bollards, pavement markings and speed humps, Maynooth, Co. Kildare
Link: [© Google Street View 2024](#) (image shows the upgrade of existing layout on Google Maps)

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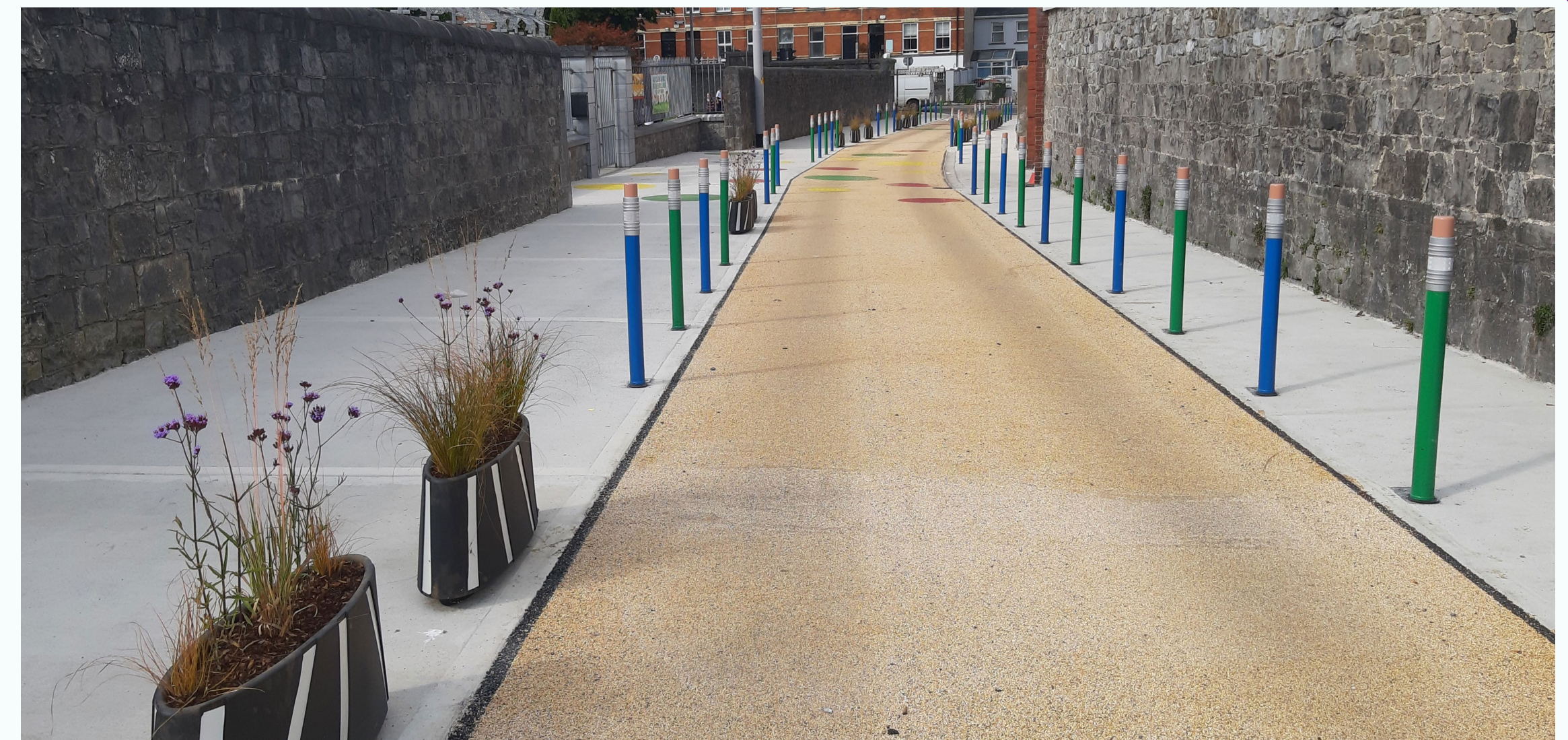


Figure 70: School zone with vertical edge elements and coloured pavement, Limerick. National Transport Authority
Link: [© Google Street View](#) (image shows the upgrade of existing layout on Google Maps)



5.2.7 Cycle Streets

Key Features

- Cycle streets are designed with the primary goal of serving cyclists, where motor vehicles are considered guests and should only be using the street for access.
- Design should ensure that cycle streets are attractive to both experienced cyclists and less confident cyclists.
- Priority for cyclists should be provided using self-enforcing design such as by using coloured pavement surfacing and a mountable (at-grade) textured central strip to emphasise that such streets are low speed environments where motor vehicles should not attempt to overtake cyclists (Figure 71).
- Cycle streets are part of an interconnected network, allowing cyclists to travel throughout a city with minimal interaction with busy roads.
- Significantly reduced interactions with high-speed and high traffic areas leads to fewer collisions and injuries.

Suitable Locations

- Ideal for main routes within the cycle network with speed limits of up to 30km/h, two-way traffic flows of less than 400 pcus in the peak hour and, ideally, where volumes of cycling should exceed motor traffic levels
- Streets where vehicular through-traffic has been mitigated or eliminated.

Other Considerations and Further Guidance

- The design and operational needs of delivery, maintenance, and refuse collection vehicles must be considered while maintaining the integrity of the street as a cyclist-preferred route.
- Enforcing the prioritization of cyclists over motor vehicles may require additional traffic reduction and traffic calming measures (as shown in Figure 72) to preserve the street's integrity as a cycle-focused zone.
- Entry and exit points should be clearly signed in accordance with the [Traffic Signs Manual](#), include the use of the Cycle Street signs RUS 068 and RUS 068A.
- Refer to Section 4.2.9.4 of the [Cycle Design Manual](#) for additional guidance on Shared Streets and Cycle Streets.



Figure 71: Cycle Street with textured central strip, Cardiff, Wales
Source: © Google Street View 2019

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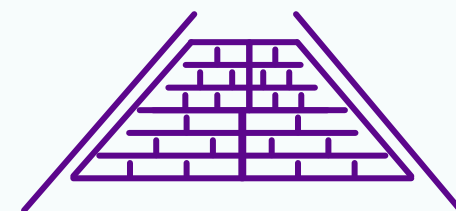
Figure 72: Cycle Street textured central strip and speed tables, Groningen, Netherlands
Source: © Google Street View 2022



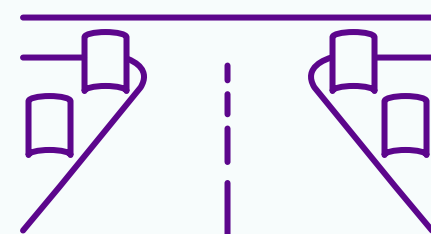
5.2.8 Psychological Measures

Psychological measures are a strategic approach within traffic calming that uses the road users' perception to encourage lower vehicle speeds. While not as effective as physical measures like vertical and horizontal deflections, or actual carriageway and junction narrowing, visual narrowing can be effective when used in conjunction with these interventions. Altering the visual landscape of a roadway with elements such as bollards, plantings, and distinct pavement markings, creates an impression of a more confined space. This perceived friction prompts drivers to slow down instinctively, contributing to a safer environment, especially where more substantive modifications are not feasible.

Types of visual narrowing interventions include:



Surface Treatments



Visual Narrowing



5.2.8.1 Surface Treatments

Key Features

- Surface treatments create a visual and tactile change in the roadway to influence driving behaviours, encouraging lower speeds and heightened awareness of their environment.
- Utilise a variety of materials and methods such as block paving (Figure 74), coloured asphalt, and rumble strips to signal to drivers they are entering low-speed or shared environments.
- Surface treatments can enhance road safety and aesthetics. They include painted crossings, murals within intersections, and artistic elements along the roadway approaches (Figure 73). These are aimed at improving visibility for pedestrians, encouraging cautious driving, and reducing vehicle speeds.
- On quiet streets with a carriageway width of less than 5.5 m, removal of the centre line can act as a speed reduction measure, encouraging yielding behaviour from road users travelling in opposing directions.

Suitable Locations

- Areas with high pedestrian activity such as school zones, town centres, and residential neighbourhoods.
- Road sections where physical narrowing is not possible but visual cues are needed to encourage slower speeds.
- Transition zones where drivers move from higher-speed roads to streets with mixed traffic use, requiring heightened caution.

Other Considerations and Further Guidance

- The design and materials used should be durable enough to withstand local weather conditions and traffic loads. Consideration must be given to maintenance needs, as some materials may require frequent upkeep or may be prone to fading or wear.
- The impact on all road users, including cyclists and motorcyclists, should be considered since some surface treatments can affect comfort, traction and control.
- Involve community stakeholders in the selection and design of artistic elements to reflect local identity and improve public space.
- Pair with other physical traffic calming measures for enhanced impact.
- Consider acoustic impacts of interventions, particularly in residential zones, where noise from vehicles driving over certain textures such as rumble strips may be intrusive.
- Refer to the [Asphalt Art Safety Study](#) from the United States which provides quantitative assessment and design guidance on implementation of creative surface treatments and their safety impact especially at junctions.



Figure 73: 30km/h school zone complimented with decorative road markings, Dublin
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Figure 74: Raised table paired with unit pavers, Westport, Co. Mayo
Link: © Google Street View 2023



5.2.8.2 Visual Narrowing

Key Features

- Vertical edge elements like bollards, planters, and street trees are used to visually and physically narrow the roadway, encouraging slower vehicle speeds and enhancing pedestrian safety.
- These elements can be installed as quick-build, temporary solutions using moveable planters or plastic bollards (Figure 76), or as permanent fixtures with concrete bollards, unit pavers (Figure 75) and well-established street trees.
- They serve the dual purpose of traffic calming and aesthetic enhancement, contributing to the overall streetscape and environment quality.
- Beyond slowing traffic, vertical elements also create a protective barrier between pedestrians and vehicles, increasing the perceived and actual safety for pedestrians.

Suitable Locations

- Suitable for urban streets, school zones, and commercial districts where pedestrian activity is high, and traffic calming is needed.
- Ideal for roadway perimeters, delineating pedestrian areas, and for mid-block pedestrian refuges.
- Effective in parking strategies, where on-street parking acts as a buffer between moving traffic and pedestrians.

Other Considerations and Further Guidance

- The selection and placement of vertical elements should account for the visibility of pedestrians and drivers, ensuring that they do not obstruct sightlines.
- Maintenance aspects, especially for planters and trees, should be considered.
- For permanent installations, the integration of vertical elements into the existing urban fabric should be considered, ensuring they complement the local character and streetscape design.
- When deploying these interventions, their impact on emergency vehicle routes and the needs for access by people with mobility impairments should be evaluated.
- Refer to [NTA Typical Construction Details Series NTA-700](#) for central raised strip details.



Figure 75: Unit pavers, planting at the edge of the carriageway, and buff coloured pavement act as a form of visual narrowing, Maynooth, Co. Kildare
Source: © Google Street View 2023

Click on the images to access the source



Figure 76: Bollards at the edge of the carriageway and textured central strip provide visual narrowing, Dublin
Link: © Google Street View 2022 (image shows the upgrade of existing layout on Google Maps)



5.3 Placemaking Interventions

Traffic reduction measures help to reduce traffic volumes and traffic calming measures help to reduce traffic speeds, however in order to create an attractive environment for people walking, wheeling and cycling, additional placemaking interventions should be implemented. By enhancing the public realm, these interventions promote social cohesion, boost environmental sustainability, and increase the area's value.

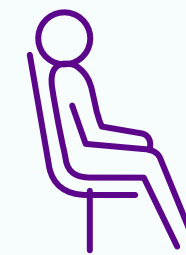
Combining traffic reducing and traffic calming measures helps to provide opportunities for placemaking enhancements. For example, changing a street to one-way allows for the additional street space to be used for pocket parks and seating or creating build-outs to narrow the street provides space for cycle parking or seating. A list of measures that will enhance an area alongside traffic calming can be found on the following pages.

Collaborative placemaking not only compliments traffic reduction and calming measures but also invites community participation, ensuring the creation of spaces that resonate with local desires and needs. Placemaking interventions should reflect local heritage and landscape designations, enhancing the area's unique character and cultural significance.

A list of the interventions is provided below with more details on their respective page.



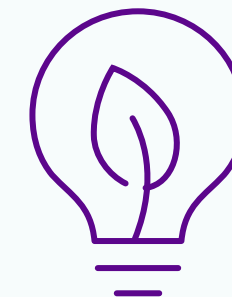
Landscaping and SuDS



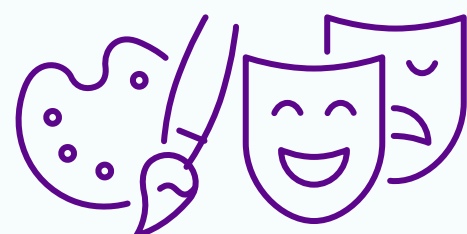
Seating



Parklets and Pocket Parks



Lighting



Public Art and Pop-Up Spaces



Waste Bins



5.3.1 Landscaping and Sustainable Urban Drainage Systems (SuDS)

Key Features

- Landscaping and SuDS add both aesthetic appeal and ecological benefits to streetscapes, offering natural solutions for managing water and enhancing biodiversity.
- These interventions can include the integration of rain gardens, bioswales, and permeable pavements that not only manage stormwater but also reduce urban heat island effects and improve air quality.
- Informal seating areas, bike parking, and other street furniture can be incorporated into the design, utilising space efficiently and creating multi-functional areas.

Suitable Locations

- Ideal in areas that have gained additional space through traffic calming measures such as build-outs or at junction redesigns where corner radii have been reduced (Figure 77).
- Alongside kerbs where existing gullies can be adapted to create rain gardens such as in place of one or more existing on-street parking spaces.
- Particularly effective as part of wider pedestrianisation efforts, where they can contribute to an improved street environment such as on high streets.

Other Considerations and Further Guidance

- Landscaping and SuDS should be designed to fit the local context, reflecting the natural heritage and contributing to the area's sense of place.
- Community involvement in the design and maintenance can foster local stewardship and ensure the interventions are valued by residents.
- Maintenance considerations are essential, as these features often require more care than traditional hard landscaping.
- Adequate drainage planning is crucial; inlets along the kerb should allow water to enter SuDS features effectively (as shown in Figure 78). When converting hard paved areas into landscaped features, consider the impact on local drainage and potential overflow solutions.
- The placement should not impede pedestrian or vehicle sightlines and should consider the needs of all road users, including those with disabilities.
- Benefits include improved mental health outcomes for residents due to increased access to nature, as well as the creation of green infrastructure that serves as a traffic calming measure and a means to achieve environmental sustainability goals.
- Can be trialled using mobile planters before a permanent scheme is introduced.
- Refer to [Greening and Nature-based SuDS for Active Travel Schemes](#) for more details on intervention types and drainage considerations.



Figure 77: Landscaping area built within space gained from a junction corner radius reduction, Bullock, Co. Dublin
Link: [© Google Street View 2023](#)

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Figure 78: SuDS incorporated into a median, Booterstown, Co. Dublin
Link: [© Google Street View 2023](#)



5.3.2 Parklets and Pocket Parks

Key Features

- Parklets and pocket parks transform small urban spaces, often reclaimed from on-street parking, into public green areas.
- These spaces typically integrate sustainable drainage systems (SuDS) and can offer informal seating (Figure 79), play areas, and cycle parking.
- Designed to be permanent, temporary, or seasonal, these installations can act as valuable community resources and aesthetic enhancements.

Suitable Locations

- Ideal in place of on-street parking or in conjunction with road closures and build-outs.
- Where a modal filter is proposed, the split space in between can be reconfigured as a pocket park (as shown in Figure 80).
- On high streets to increase the level of greening and the aesthetics of a street, often supporting local business activities.

Other Considerations and Further Guidance

- Consultation with the residents, schools, community groups and local businesses can ensure the design meets community needs and fosters ownership.
- Consideration for emergency vehicle access is important. This may be maintained with removable bollards or thoughtful design.
- Can be divisive among residents due to the loss of parking, so transparent communication and community buy-in are crucial.
- More expensive to implement than simple road closures with bollards or planters.
- Parklets and pocket parks can be leveraged to enhance commercial areas, providing extra space for outdoor dining or displays that can attract foot traffic and stimulate local economic activity.
- Pocket parks can be created quickly and cheaply using bollards to remove traffic and reclaim carriageway space. The space can be developed over time to provide more formal infrastructure.



Figure 79: Parklet installed in an on-street parking space, Cork
Source: Irish Examiner Link: © Google Street View 2022 (image shows the upgrade of existing layout on Google Maps)

Click on the images to access the source

Before



After



Figure 80: Modal filter integrated into a parklet, London, UK
Source: © Google Street View 2018 (Before), 2022 (After)



5.3.3 Public Art and Pop-Up Spaces

Key Features

Public Art

- Enhances visual appeal of public spaces through the installation of sculptures, murals, street art (Figure 81), and interactive pieces.
- Reflects and celebrates local culture, history, and community narratives.
- Can be implemented as permanent fixtures or rotating exhibits to maintain community interest.
- May be supported through Ireland's Per Cent for Art scheme, which allocates 1% of capital project budgets to artistic features, fostering cultural engagement in temporary and permanent public spaces.

Pop-Up Spaces

- Temporary setups that offer flexibility for community events, markets (Figure 82), or as testing grounds for new business ideas.
- Create vibrant hubs for temporary activities, exhibitions, markets, or social gatherings.
- Act as enablers for placemaking, allowing rapid response to community needs and interests.

Suitable Locations

Public Art

- Prominent positions in community hubs, parks, and town squares where art can be appreciated by a wide audience.
- Along pedestrian pathways or in conjunction with seating areas to create inviting social spaces.
- Transitional spaces like underpasses or blank facades that can benefit from beautification.

Pop-up Spaces

- Vacant lots or parking spaces repurposed to host pop-up events and installations.
- Areas adjacent to local businesses that can benefit from increased foot traffic and customer interaction.
- In neighbourhoods lacking formal community spaces, serving as makeshift venues for public gathering and activity.

Other Considerations and Further Guidance

- Both public art and pop-up spaces should be accessible and inclusive, accommodating a diverse range of community members and participants.
- Involving local stakeholders in planning and execution ensures relevance and community buy-in.
- Regulatory compliance, safety, and impact on existing traffic and pedestrian flow must be considered during planning stages.



Figure 81: Love our Laneways, Dun Laoghaire Source: Dún Laoghaire-Rathdown County Council
Link: © Google Street View 2022 (image shows the upgrade of existing layout on Google Maps)

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Figure 82: Pop-Up Stalls in a former car park, Dublin
Source: © Google Street View 2022



5.3.4 Seating

Key Features

- Seating provides an extra element of comfort to a route and encourages the community to make the place their own, which is fundamental to help users feel safe
- Seating can maximise local activity, allowing people to socialise and to linger.
- Beneficial to people with mobility impairments who require seating at reasonably frequent intervals
- In some locations, seating can be associated with tables or play equipment.
- Seating must not restrict the footway, a minimum of 2m must be maintained in low footfall areas increasing to 3m in high footfall areas such as the City Centre / District centres.

Suitable Locations

- Install seating at regular intervals along pedestrian routes, particularly in areas of high foot traffic and community spaces to support accessibility and encourage walking. Healthy Streets recommends providing seating at 100m intervals.
- Position seating to avoid obstructing the main pedestrian flow, ensuring clear pathways for individuals with visual impairments, and maintaining ample space for manoeuvring around seated areas.
- Consider proximity to key destinations, such as near public transport stops, in shopping areas, and adjacent to recreational spaces, to benefit a broad range of users.
- If insufficient width available in footway, consider removing a parking bay or providing a build-out to accommodate seating.

Other Considerations and Further Guidance

- Maintenance and management plans should ensure seating remains clean, safe, and welcoming.
- Can be provided in conjunction with a modal filter, pocket park, parklet, etc.
- Engage with community members during the planning phase to identify optimal locations and design elements that serve the widest community needs.
- Seating should be designed and located in accordance with I.S. EN 17210 Accessibility and usability of the built environment, ensuring inclusive design through appropriate seat height, backrests and armrests, and sufficient clear space to accommodate a wide range of users.



Figure 83: Public seating space, Dublin
Source: © Google Street View 2024

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Figure 84: Public seating space, Dún Laoghaire, Dublin
Link: © Google Street View 2022



5.3.5 Lighting

Key Features

- Street lighting enhances safety on routes heavily used by commuters, forming part of the safer routes to school networks, especially during the winter months when daylight is scarce.
- The right lighting can deter crime and anti-social behaviour, improving community well-being and allowing for extended use of public spaces into the evening.
- Design should ensure adequate illumination of pedestrian paths and reduce blind spots, particularly at critical decision points and junctions.

Suitable Locations

- Traffic-free routes and paths frequently used post-dusk, such as public parks, residential walkways, and shared-use paths (Figure 86), should be considered for lighting installation.
- Supplemental lighting at pedestrian crossings (Figure 85) and cycle parking areas can increase visibility and perceived safety, fostering a more inviting environment for active travel modes.
- Key communal areas, such as squares, outdoor seating zones, and transit stops, where social and commercial activities extend into the evening hours.

Other Considerations and Further Guidance

- Lighting should be energy efficient, environmentally friendly, and minimise nuisance to adjoining residents. Dark sky-compliant fixtures that focus light downwards help reduce light pollution, wildlife disruption, and glare.
- Adaptive lighting technologies, such as motion sensors, can improve efficiency by providing light only when needed.
- Sustainable designs with minimal upkeep should be prioritised, considering both power consumption and maintenance costs.
- New installations should be coordinated with urban elements like tree placements to maximise efficiency and minimise disruption.
- Design of public lighting should adhere to the following guidelines:
 - I.S. EN 13201-2:2015; Road Lighting Performance requirements
 - BS 5489-1:2020; Design of Road Lighting, Part 1 Lighting of roads and public amenity areas – Code of Practice
 - PLG23; Lighting for Cycle Infrastructure; Institute of Lighting Professionals
 - DN-LHT-03038; Design of Road Lighting for the National Road Network; TII
 - Design Manual for Urban Roads and Street (DMURS)
- Refer to Sustrans Traffic-Free Routes and Design Guide for additional lighting considerations on traffic-free routes.



Figure 85: Illuminated pedestrian crossing, Dún Laoghaire, Co. Dublin

Link: [© Google Street View 2022](#) (image shows the upgrade of existing layout on Google Maps)

Click on the images to access the source



Figure 86: Low level directional lighting along the Portmarnock to Baldoyle Greenway, Dublin

Source: [Cycle Design Manual](#)

Link: [© Google Street View 2024](#)



5.3.6 Waste Bins

Key Features

- Provision of strategically placed waste bins helps reduce littering by providing easily accessible disposal points.
- The integration of separate compartments for recyclables can encourage public recycling, helping to meet environmental sustainability goals.
- Waste bins serve as a placemaking feature, reducing littering and contributing to a cleaner, more pleasant environment, which enhances the appeal of the neighbourhood for walking and community activities.

Suitable Locations

- High footfall areas like high streets, parks, near seating areas, and in proximity to food and retail outlets.
- Strategic placement at entrances to public spaces and alongside pathways to maximise usage and convenience.
- Coastal areas and tourist spots may require a higher number of larger capacity bins due to seasonal surges in litter.

Other Considerations and Further Guidance

- The design and placement of bins must consider ease of access for collection services.
- Placement should not impede pedestrian flow or accessibility, maintaining clear pathways especially for those with mobility impairments.
- Considerations for maintenance and regular emptying of bins should be taken prior to installation to avoid overflowing waste in the public realm. Smart bin technology can be employed to notify maintenance crews when bins are full, optimizing collection schedules and reducing overflow.
- It is important to strike a balance between having enough bins for convenience and over-cluttering public spaces.
- Periodic review of bin locations and usage can ensure the ongoing effectiveness of waste management strategies.
- Refer to Dún Laoghaire-Rathdown County Council's March 2023 Street Bin Review for additional insights into strategic placement and management of waste bins.



Figure 87: Waste bin with foot pedal, Galway
Link: [© Google Street View 2019](#)

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Figure 88: Big Belly waste bin, Dún Laoghaire, Co. Dublin
Link: [© Google Street View 2022](#)



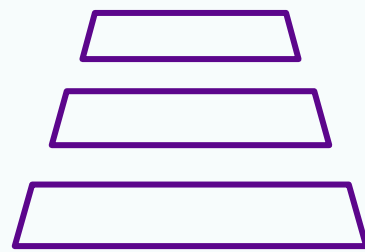
5.4 Ancillary Measures

Ancillary measures complement core traffic calming strategies to further refine the urban streetscape and promote a safer, more efficient, and user-friendly transportation network. These additional interventions support active travel and enhance the clarity and functionality of the street environment.

A list of the interventions is provided below with more details on their respective page.



[Access Controls](#)



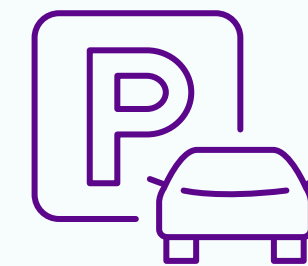
[Boundary Crossings](#)



[Cycle Parking \(Short Stay\)](#)



[Cycle Parking \(Long Stay\)](#)



[Parking Management](#)



5.4.1 Access Controls

Key Features

- Removal of inaccessible barriers, such as kissing gates, restrictive chicanes, or kerbs, which create obstacles for non-standard bicycles, prams and mobility aids.
- Removal of barriers that can increase the permeability of a neighbourhood and provides comfortable, direct access through an area and is away from motor traffic (Figure 89).
- Improves coherence and attractiveness of wider network for walking and cycling, improves journey time for people walking and cycling and ensures routes are inclusive to all users.
- Offers a cost-effective method to enhance the walking and cycling network without disrupting vehicle flow.
- Where absolutely required, bollards at 1.5m wide spacings may be installed to restrict passage to motor traffic (as shown in Figure 90).
- Where needed, introduce infrastructure improvements like dropped kerbs and kerb removal to facilitate smooth transitions for those with mobility aids or non-standard bicycles.

Suitable Locations

- Sites where current barriers hinder non-motorised users, particularly at junctions between roads and paths.
- Strategic points in the network that link on-road and off-road travel, enhancing continuity.

Other Considerations and Further Guidance

- Integration with dropped kerbs for seamless transitions for all users, including those with mobility aids.
- Implement markings and tactile ground surface indicators to delineate spaces and manage user interaction.
- Refer to Access Control of Active Travel Facilities for additional guidance and standard layouts for access control.
- Prioritise these controls in areas with significant pedestrian and cyclist traffic to maximise the benefits of improved accessibility and network coherence.

Before



After



Figure 89: Upgraded cut through for improved cycling access, Mount Anville Park, Dublin
Source: © Google Street View 2014 (Before), 2022 (After)

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Before



After



Figure 90: Reconfiguration of a narrow park entrance to be more welcoming and accessible, Kilbogget Park, Cabinteely, Dublin
Source: © Google Street View 2018 (Before), 2023 (After)



5.4.2 Boundary Crossings

Key Features

- Crossings at boundary roads are key to reducing the severance caused by major roads (Figure 92), enabling longer walking and cycling trips to and from adjacent neighbourhoods.
- Include a mix of controlled and uncontrolled crossings, such as parallel, signalised parallel (Figure 91), toucan, and zebra crossings, each suited to different traffic conditions.
- Ensure prioritisation of pedestrians and cyclists to support seamless access to and from the neighbourhood.
- Aimed at reducing delays and facilitating ease of movement for non-motorised users.

Suitable Locations

- Place crossings on, or as close as possible to, desire lines to provide direct access for users.
- Used over main roads to connect two neighbourhoods together or to connect two traffic-free routes together.
- Position crossings near high-traffic destinations like educational institutions and shopping centres, as well as in zones with significant pedestrian engagement such as high streets.

Other Considerations and Further Guidance

- Some crossing types may be paired with a raised table to improve comfort and safety for users.
- Consider using distinctive coloured surfacing for enhanced visibility and recognition.
- It may be necessary to restrict existing parking on approaches to crossings to ensure there is adequate visibility between vehicles on the road and users on the crossing.
- Refer to Section 4.5 of the [Cycle Design Manual](#) for additional guidance on selection and design of crossing types based on the road context.



Figure 91: Signalised parallel crossing, Blackrock, Co. Dublin
Source: [Cycle Design Manual](#) Link: © Google Street View 2022

Click on the images to access the source

Before



After



Figure 92: Removal of walls and installation of a controlled crossing to connect segments of the Slang River Greenway, Dublin
Source: [NTA Permeability Best Practice Guide](#) Link: © Google Street View 2009 (Before), 2022 (After)



5.4.3 Cycle Parking (Short Stay)

Key Features

- Short Stay Cycle Parking is essential for encouraging cycling by providing secure and convenient locations for cyclists to park their bicycles. The absence of cycle parking will deter some people from deciding to cycle.
- Should be easily accessible and located near key destinations to cater to cyclists' needs for quick visits.
- Adequate space around stands (around 800mm wide by 1200mm long per bicycle) for ease of use and step-free access is necessary.
- Should include space to accommodate non-standard cycles, including cargo bikes and bicycles with trailers (as shown in Figure 94).
- Provides a low-cost cycle security option and can be used as an economical alternative to standard bollards or fencing to prevent pavement parking.
- Design considerations must ensure that parking does not obstruct pedestrian movement or accessibility (Figure 93).

Suitable Locations

- Sufficient cycle parking should be located at key destinations and centres, within 15 meters of the destination entrance to maximise convenience.
- At businesses cycle parking should be as close to accessible entrances as possible and no further away than Disabled car parking.
- Key transport interchanges should have ample short stay parking to facilitate multimodal travel.

Other Considerations and Further Guidance

- Cycle parking locations must never obstruct footways, drop kerbs, doorways or access to bus stops.
- Where there is insufficient footway space to accommodate cycle parking, consider removing parking bays to accommodate cycle parking within the carriageway – around eight parked cycles can be fitted in the same space taken up by one car parking space.
- May be integrated into the design of Parklets and build-outs.
- Cycle parking locations and access routes should be safe and feel safe at all times, with good lighting, sight lines and natural surveillance.
- Regular maintenance and monitoring are needed to manage space efficiently and address any abandoned cycles.
- Incorporate additional facilities such as signage, wayfinding, and maintenance stands to enhance user experience.
- Refer to Chapter 6 of the [Cycle Design Manual](#) for additional guidance on cycle parking.



Figure 93: Short stay cycle parking provided in a parking layby, Stillorgan, Co. Dublin
Source: © Google Street View 2022

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Figure 94: Short stay cycle parking for standard and large cycles within the carriageway, St Stephens Green, Dublin
Source: © Google Street View 2022



5.4.4 Cycle Parking (Long Stay)

Key Features

- Long Stay Cycle Parking is intended for cyclists who require secure and extended parking facilities, often for several hours or more.
- Cycle hangars, and similar, can be provided on-street within residential areas to provide parking for residents where there is no space within older dwellings (Figure 95).
- Space within the hangar is leased by the Local Authority and access to the hangar is limited to the registered key holders.
- In addition to the locked door of the hangar, residents also lock their bicycle to the stands within (as shown in Figure 96).
- A cycle hangar that can accommodate 6-10 cycles will have an approximate footprint of 2.5m x 5.0m, similar to a single car parking space.
- Reduces the time taken to get back in and out of back gardens, yards, garages, etc. Covered cycle parking reduces the deterioration to cycles due to weather.

Suitable Locations

- Residential areas where private storage is limited, such as streets with terraced housing or houses in multiple occupation in older high-density residential areas.
- At businesses cycle parking should be as close to accessible entrances as possible and no further away than Disabled car parking.
- Cycle parking locations must never obstruct footways, drop kerbs, doorways or access to bus stops.
- Anywhere secure bicycle storage would encourage more people to cycle rather than drive, contributing to a decrease in short-term car parking demand.

Other Considerations and Further Guidance

- Safety and accessibility for users are paramount, ensuring that entrance and exit points are secure, visible, and well-lit. Consider integration with traffic calming measures to enhance the visibility and safety of access points to the parking facility.
- Users will need safe access either from the footway (or carriageway on very quiet streets). Where the hangar is located within the carriageway, assess risks from passing vehicles, including potential damage and consider using reflective materials to improve visibility for drivers.
- Careful consideration of different types and sizes of bicycles, including cargo bikes and adapted cycles, to ensure inclusivity and practicality of use for all potential users.
- Provision for ancillary facilities such as charging points for e-bikes, repair stations, and perhaps cycling-related amenities to enhance the cycling experience.
- Refer to Chapter 6 of the [Cycle Design Manual](#) for additional guidance on cycle parking.



Figure 95: On-street cycle hangar, Dublin
Source: © Google Street View 2021

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Figure 96: Bicycle locker in a car park, Balbriggan, Co. Dublin
Source: [Fingal County Council](#) Link: © Google Street View 2023



5.4.5 Parking and Loading Management

Key Features

- Restricting, formalising parking, and enforcing parking restrictions on residential streets to prevent, or reduce the impact of pavement parking or parking within cycling facilities.
- Pavement parking creates obstructions and hazards (Figure 97), forcing users in the carriageway. This can put users at risk and may even exclude some users from using the footway - particularly people with visual impairments, people using mobility aids, the elderly, and people with pushchairs.
- Pavements are not designed to carry the weight of a vehicle with potential for damage to the paving. This may result in injuries and adds to maintenance costs.
- Parking in cycling facilities has a similar effect on cyclists, reducing the safety benefits of the facility. Physically protected cycling facilities can reduce the likelihood of vehicles parking or stopping within the cycling facility.
- Loading zones and passenger drop off zones can help prevent double parking, parking in cycling facilities or on pavements (Figure 98).
- Parking bays can be formalised using build-outs, planting, cycle hangars, and a variety of other interventions.
- Cycle parking, planters, seating, bollards, and other street furniture may be used to prevent vehicles from mounting the pavement.
- Provide opportunities for car clubs and carpooling in a neighbourhood to reduce the traffic and the need for auto ownership in the area.

Suitable Locations

- Areas around commercial and retail centres where frequent loading and unloading occur.
- Residential streets with limited parking capacity to prioritise resident parking and manage visitor access.
- Near public facilities like schools, hospitals, and government buildings where specific drop-off and pick-up requirements are needed.

Other Considerations and Further Guidance

- Parked cars can serve a traffic calming benefit by visually narrowing the carriageway and can protect pedestrians from errant vehicles.
- Restricting parking may make it easier for emergency and refuge vehicles to pass through an area. consider double yellow lines in sections to keep the road accessible for emergency vehicles.
- Space from on-street parking may be reallocated to provide contraflow cycle tracks on one-way streets, additional footway width, etc.
- Loading zones should have clear signage indicating the times of operation and any restrictions.
- Refer to Section 4.4.9 of [DMURS](#) for additional guidance.



Figure 97: Pavement parking reduces effective footpath width, Dún Laoghaire
Link: [© Google Street View 2019](#)

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Figure 98: Taxi and loading zone straddling pavement and carriageway edge, Bray
Source: [© Google Street View 2023](#)



1. Purpose of this Document

2. Neighbourhood Traffic Calming and Road Safety

3. Principles and Approach

4. Engagement

5. Interventions

6. Data and Monitoring

6 . Data and Monitoring





6.1. Importance of Data and Monitoring

The effectiveness of traffic calming and road safety interventions depends not only on their design and implementation but also on thorough data collection and evaluation to measure their impacts over time. Establishing a clear evaluation framework is essential to ensure that these schemes meet their intended goals.

Temporary or trial schemes are an important tool for local authorities, offering the opportunity to test interventions in a real-world environment before committing to permanent changes. Data collection during trial periods is particularly crucial, as it provides the evidence needed to assess the scheme's effectiveness and communicate its benefits or impacts to the public. This evidence forms the basis for decisions on whether to extend, modify, or make the scheme permanent. Collecting comprehensive data during this phase helps build confidence and transparency, ensuring that stakeholders and residents can understand the rationale behind any changes.

Beyond evaluating individual trial schemes, data collection and monitoring can also help establish a broader understanding of how different traffic calming measures impact traffic speeds and volumes. For example, in the Dublin 24 Rapid Implementation Cycle Network, carriageway narrowing contributed to an 11% reduction in average motor vehicle speeds. Expanding the dataset on interventions implemented across local authorities will help build a valuable reference for understanding the typical effects of various traffic calming measures, informing future decision-making and policy development.

The following methodology and themes are proposed for data collection and monitoring. These will provide a comprehensive assessment of the impacts of the schemes and help guide future decision-making.

6.2. Key Evaluation Questions

At the outset of any traffic calming and road safety intervention, it is important to establish key evaluation questions that will shape the monitoring and assessment process. Sample evaluation questions that can be considered include:

- To what extent have the traffic calming and road safety objectives been achieved?
- How has the intervention affected walking, cycling, and wheeling rates among local residents?
- How have road safety outcomes (e.g., collisions and near-misses) improved for people walking, wheeling, and cycling?
- How do local residents and businesses perceive the changes brought about by the intervention?
- How has the intervention impacted motor vehicle speeds and traffic volumes in the area?
- What are the environmental impacts of the intervention, particularly on air quality and noise levels?
- What impact has the intervention had on economic activity in local commercial areas?
- Are there any unintended consequences, such as traffic displacement onto neighbouring streets?
- What lessons can be learned from the intervention to improve future traffic calming and road safety schemes?



6.3 Methodology

Building on the data collection framework discussed in [Section 3.4](#), a structured approach to data collection and monitoring is recommended. The methodology for evaluating traffic calming and road safety schemes should include both quantitative and qualitative elements to provide a comprehensive understanding of the impacts.

- **Pre-Intervention Data Collection:** Establish a baseline by collecting data on traffic speeds, volumes, modal share, road safety incidents, and local perceptions of road safety and travel behaviour.
- **Post-Implementation Monitoring:** After the scheme is implemented, collect data at regular intervals (e.g., immediately after, six months later, and annually) to track the impacts of the interventions.
- **Comparative Analysis:** Where possible, compare data from the intervention area with a control area that has not undergone similar interventions. This will provide context to the results and help isolate the impacts of the traffic calming measures.



Illustration adapted by AECOM from © inspiring.team - stock.adobe.com



6.4 Data Collection Themes

To effectively assess the performance of traffic calming and road safety schemes, data should be collected across multiple themes. Each theme ties back to the key evaluation questions and will provide actionable insights. Examples of monitoring tools and themes that can be used to support the above are listed below:

Community Feedback and Perception

Understanding how the local community perceives the changes brought about by the interventions is critical. Qualitative feedback can highlight areas where further improvement is needed or identify unintended consequences.

- **Focus Groups and Surveys:** Conducting regular focus groups and surveys with local residents and businesses will capture their views on the interventions' effectiveness, convenience, and impact on daily life.
- **Engagement with Disabled Persons Organisations (DPOs):** Ensure that feedback is gathered from Disabled Persons Organisations (DPOs) to understand the accessibility and inclusivity of the interventions for people with disabilities.
- **Business Surveys:** Engage with local businesses to understand how the scheme has impacted customer footfall and delivery logistics.

Modal Shift Analysis

The goal of many traffic calming schemes is to encourage a shift from private vehicle use to active travel modes. Tracking modal shift will show whether walking, cycling, and public transport use has increased.

- **Household Travel Surveys (HTS):** Periodic HTS should be conducted to gather detailed data on residents' travel habits, before and after the interventions. This will help assess changes in travel behaviour over time.
- **Pedestrian, Cyclist, and Vehicle Counts:** Automated or manual counts at key points within the scheme area will help monitor changes in travel volumes by mode. These counts can be adjusted for seasonal and time-of-day variations.

Road Safety Data

Improved road safety is a core goal of traffic calming schemes. Tracking collisions and near-misses involving vulnerable road users (pedestrians, cyclists, people wheeling) is essential for assessing success.

- **Collision Reports:** Collect data on the number and severity of collisions, working with local police and the Road Safety Authority (RSA).
- **Near-Miss Reporting:** Encouraging residents to report near-misses can provide an early indicator of road safety issues before they result in formal incidents.
- **Video Analytics for Conflict Detection:** Consider deploying video analytics technology at key junctions or dangerous areas to analyse near misses and conflicts between different types of road users before and after interventions. This technology can help identify risk factors and evaluate how well interventions are reducing dangerous interactions in specific locations.

Traffic Speed and Volume Monitoring

Reducing motor vehicle speeds and through-traffic is often a key objective of traffic calming measures. Regular monitoring of traffic speeds and vehicle volumes can provide insight into how effectively the scheme is working.

- **Speed Monitors:** Install speed monitoring devices at critical points to assess compliance with speed limits.
- **Traffic Volume Counts:** Compare vehicle volumes before and after the scheme's implementation to see if traffic has been reduced.



6.4 Key Data Collection Themes (continued)

Environmental Impact Monitoring

One of the anticipated benefits of traffic calming is improved environmental outcomes, such as reduced air pollution and noise levels.

- **Air Quality Monitoring:** Install air quality sensors in key locations to measure changes in pollutant levels, particularly nitrogen dioxide (NO₂) and particulate matter (PM10/PM2.5).
- **Noise Pollution Monitoring:** Track noise levels before and after the intervention to assess whether reduced traffic volumes are contributing to a quieter, more pleasant environment.

Health and Quality of Life Benefits

Traffic calming and road safety schemes can provide significant health benefits, especially in terms of increased physical activity. Monitoring changes in public health outcomes can strengthen the case for further interventions.

- **Health Surveys:** Surveys measuring residents' physical activity levels before and after the interventions can highlight any improvements in overall well-being.
- **Quality of Life Surveys:** Asking residents about their perceptions of safety, community connectedness, and overall satisfaction with the area will help quantify the social benefits of the scheme.

Economic Activity Monitoring

Monitoring the economic impact of traffic calming measures, particularly on local businesses, is important for assessing whether the scheme supports broader economic sustainability goals, especially if the neighbourhood includes commercial land uses.

- **Footfall Counts:** Regular footfall counts in commercial areas will help determine whether the interventions are attracting more people to walk or cycle, which can boost local businesses.
- **Business Occupancy and Sales:** Work with local businesses to track changes in sales, customer numbers, and business occupancy rates.

