

DESIGN GUIDANCE | SPACES FOR PEOPLE

2. CYCLING ROUTES



ATKINS
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Spaces for People

2. CYCLING ROUTES

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Cycling Routes

OVERVIEW

This guidance has been developed to support partners with the implementation of temporary active travel facilities in Scotland, through Scottish Government's Spaces for People fund, which is administered by Sustrans.

Spaces for People is designed to improve health and wellbeing so that everyone is able to move around their local area safely while keeping to physical distancing requirements as we transition through and out of the COVID-19 crisis.

Walking, cycling or wheeling in fresh air is not only positive for physical health, but also helps people feel connected in times of isolation, and can allow communities discover their neighbourhood.

Any temporary measures put in place should make an area better, and care should always be taken to ensure people with disabilities and other groups in need additional support are considered appropriately.

Atkins worked collaboratively with Sustrans to develop this content.

Content is derived from best practice examples from across the globe. It is intended to provide inspiration for the design of temporary facilities and should not be seen as a prescriptive design solution.

Each topic area includes advisory text, examples of best practice and minimum design parameters where applicable.

Each area also includes road safety and mobility impairment considerations to guide the designer to providing mitigating measures from the outset.

Appropriate road safety risk assessments should be undertaken during design and road safety audits undertaken at appropriate stages before schemes are open for public use.

Content will be regularly reviewed and updated by Sustrans Scotland.

Disclaimer: The ideas, products and suggestions within this document are provided for information only and in relation to temporary facilities to help with the management of physical distancing and movement across town and city centres. It provides a collection of national and international examples of temporary infrastructure which may be of use in designing similar schemes across Scotland. Sustrans and Atkins do not accept any liability in relation to the use of the content of this document.

Where specific products are shown in this document, this does not constitute an endorsement of that product.



Figure 1. Lane separators along Old Dalkeith Road in Edinburgh. These ensure the cycle lane remains free of parked vehicles for key workers whilst still allowing access to resident driveways.

Cycling Routes

TIMELINE

Depending on the duration of time that temporary infrastructure is predicted to be in operation, different types of interventions may be more or less beneficial. The graphic below outlines some of considerations that might be made when selecting appropriate measures for differing timescales.

Although traffic cones and standing signage are effective in that they can be implemented quickly and easily, their utility is limited as a long-term solution. This is because of the ease with which they can be interfered with and otherwise circumvented. It is for this reason that semi-permanent solutions, such as heavy planters and bollards, may be more effective as long-term solutions.

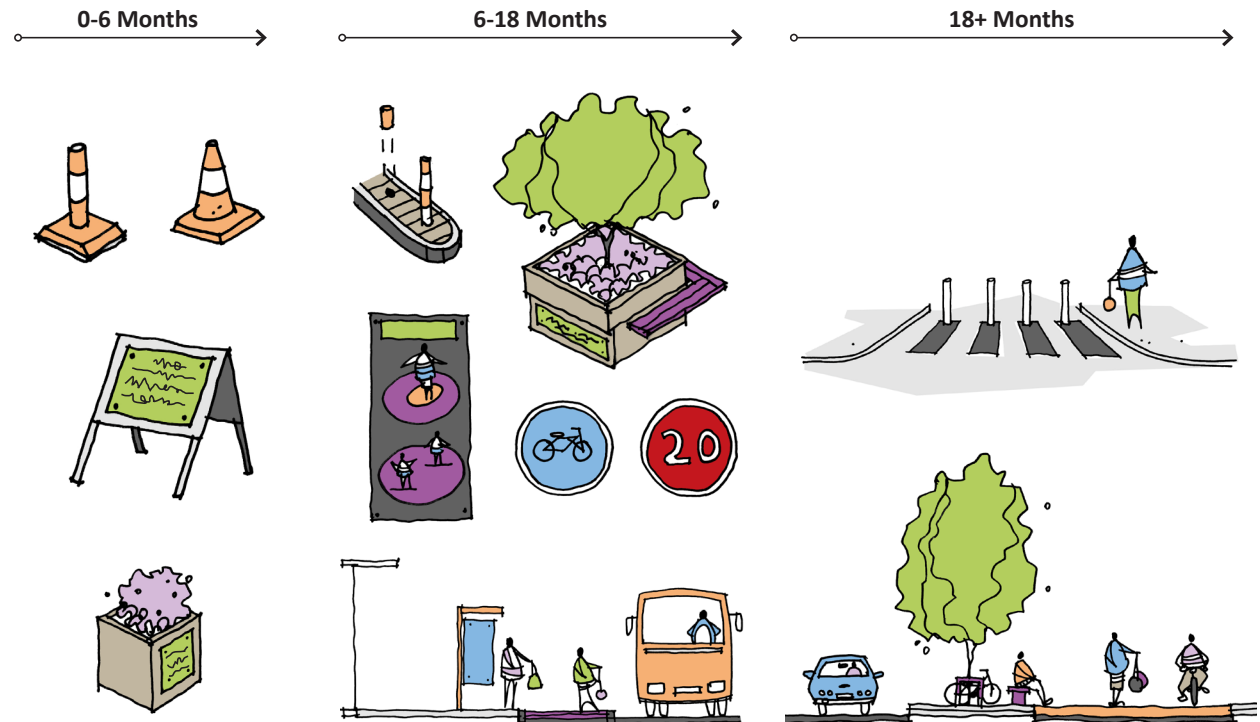


Figure 2. Timeline

Cycling Routes

GENERAL INFORMATION

As towns and cities re-open, appropriate access for cyclists will be key in maintaining movement, easing pressure on public transport services and facilitating physical distancing.

This is likely to include some of the following measures:

- **Temporary cycle lanes and tracks**
- **Modal filter road closures**
- **Reallocation of carriageway space**
- **One-way localised traffic management**
- **Contraflow cycling routes**
- **Quiet street improvements**
- **Reduced speed limits**
- **City-wide traffic management solutions**
- **Increased use of bus lanes for cyclists** (where feasible)
- **Increased levels of cycle parking** – both temporary and more permanent options
- **Increased cycle hire scheme provision**

These options could be implemented as short, medium or long term measures as needed.



Figure 3.

Cycling Routes

2.1 Temporary Cycle Lanes (One-way Travel)

2.1 TEMPORARY CYCLE LANES (ONE-WAY TRAVEL)

Physical Distancing Principles

It is expected that temporary cycle lanes would not be subject to strict physical distancing rules as this would likely prohibit their implementation and therefore have a wider impact on movement across towns and cities. Cyclists overtaking one another or passing other cyclists are likely to be momentary instances and so providing full physical distancing along entire route lengths could prove unfeasible.

Temporary cycle lanes should be as wide as possible, but it is noted that narrower than usual lane widths (of around 1.5m for one-way travel) might be necessary in order to implement schemes.

***Note:** Where cycle lanes are used, the 1.5m should be the minimum absolute width to any separation feature (i.e. the separation feature should not be placed within the overall 1.5m width).*

Potential Options

- Create new wide cycle lanes in existing carriageway space by removing traffic lanes.
- Widen existing cycle lanes.
- Bus lane times of operation could be amended to provide additional space for cyclists.

Key Considerations

- **Streets with high footfall will likely require greater width** and/or separation by direction of travel.
- **Temporary expansion** in to carriageway could be at carriageway level or built up to the same level as the footway but safe access between the two will be needed.
- **Additional space** will be required to **facilitate queueing** outside shops.
- **Accessibility for mobility impaired users** should be considered from the outset of each scheme.
- **Physical separation from carriageway** (more than markings or cones) will likely to be required to protect pedestrians and prevent misuse by others.
- **Experimental Traffic Regulation Order (TRO) or Temporary Traffic Regulation Order (TTRO)*** may be required.
- Where dropped kerbs are used, consideration should be given to the **longer term impacts** of this on the network.

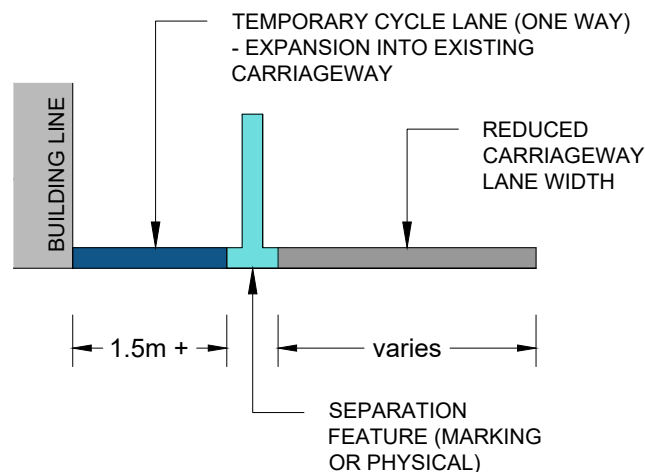
Cycling Routes

2.1 Temporary Cycle Lanes (One-way Travel)

Reduced Carriageway Lane Widths

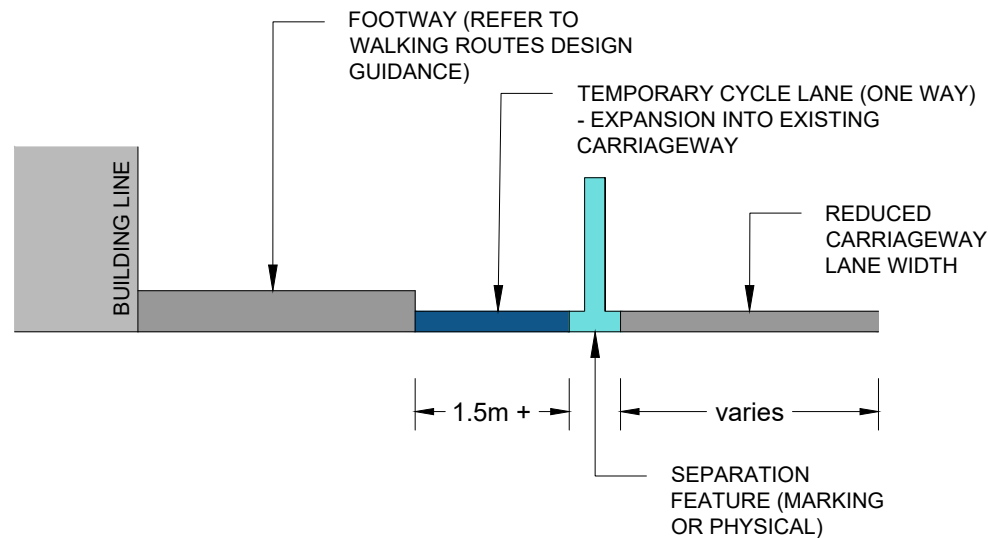
- Where cycle lanes are provided by expansion into existing carriageways, the resultant **reduced carriageway lane widths should be considered in terms of the prevailing traffic speeds, volumes and vehicle types**. Narrowing carriageways is likely to be necessary to implement temporary cycle lanes.
- Where buses will be using the reduced carriageway width, the designer should **consider the needs of two buses passing each other**, which is likely to require a minimum of 6.5m carriageway width – which may also require reduced speed limits to enable this.

Cycle Lane – Carriageway

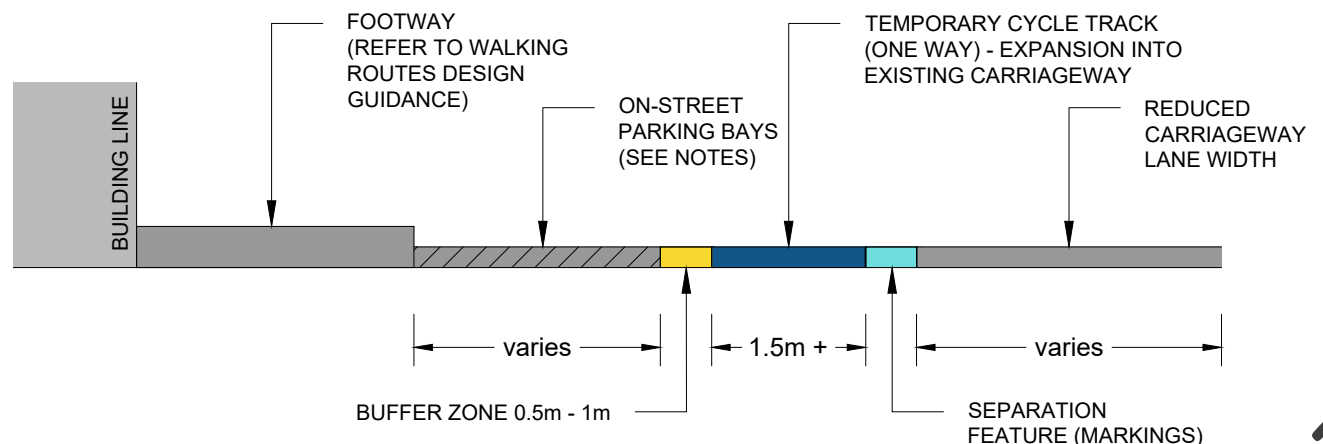


Typical Cross Section Arrangements:

Footway – Cycle Lane – Carriageway



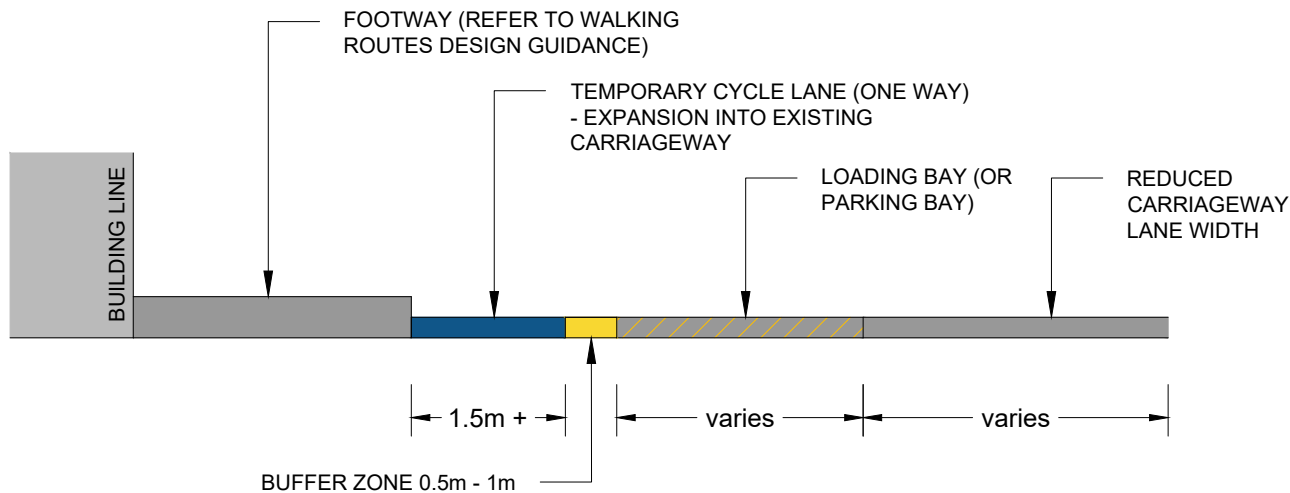
Footway – On Street Parking (Open) – Cycle Lane – Carriageway



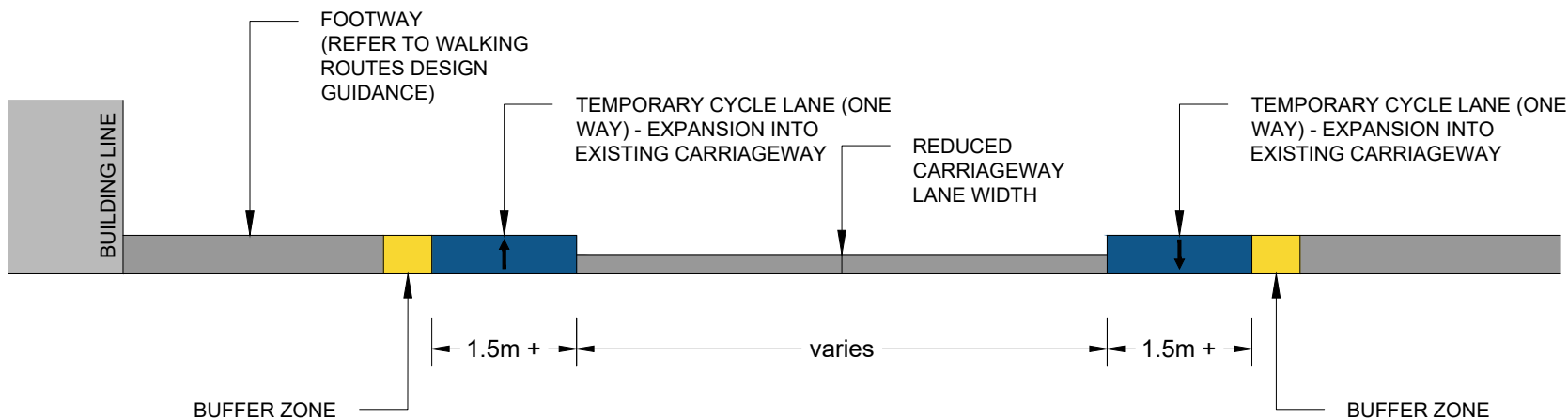
Cycling Routes

2.1 Temporary Cycle Lanes (One-way Travel)

Footway – Cycle Lane – Loading (or Parking) Bay – Carriageway



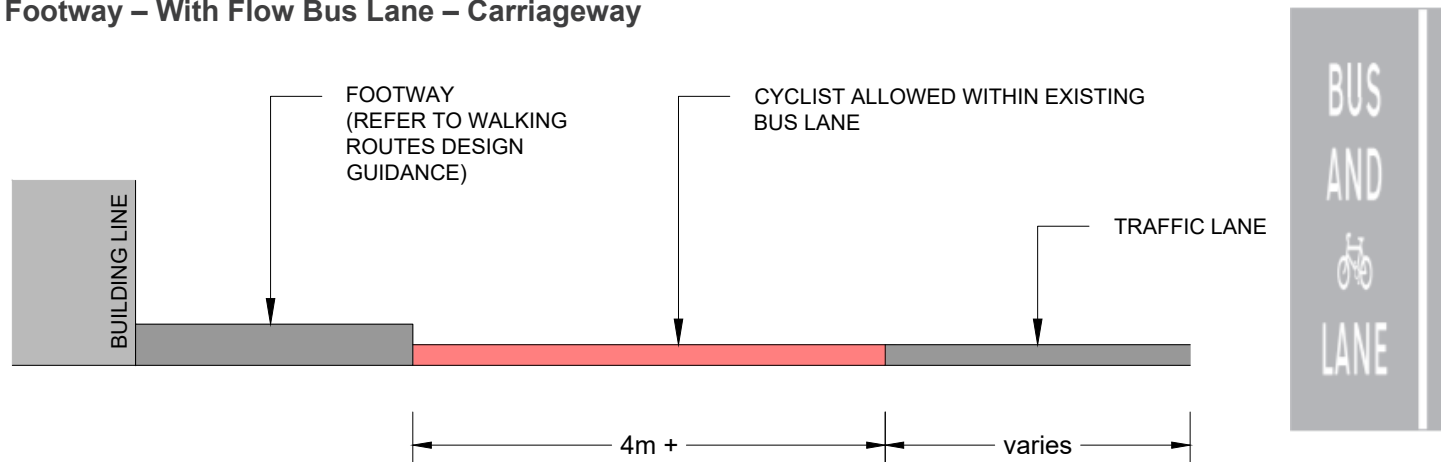
One Way Cycle Tracks (at footway level)



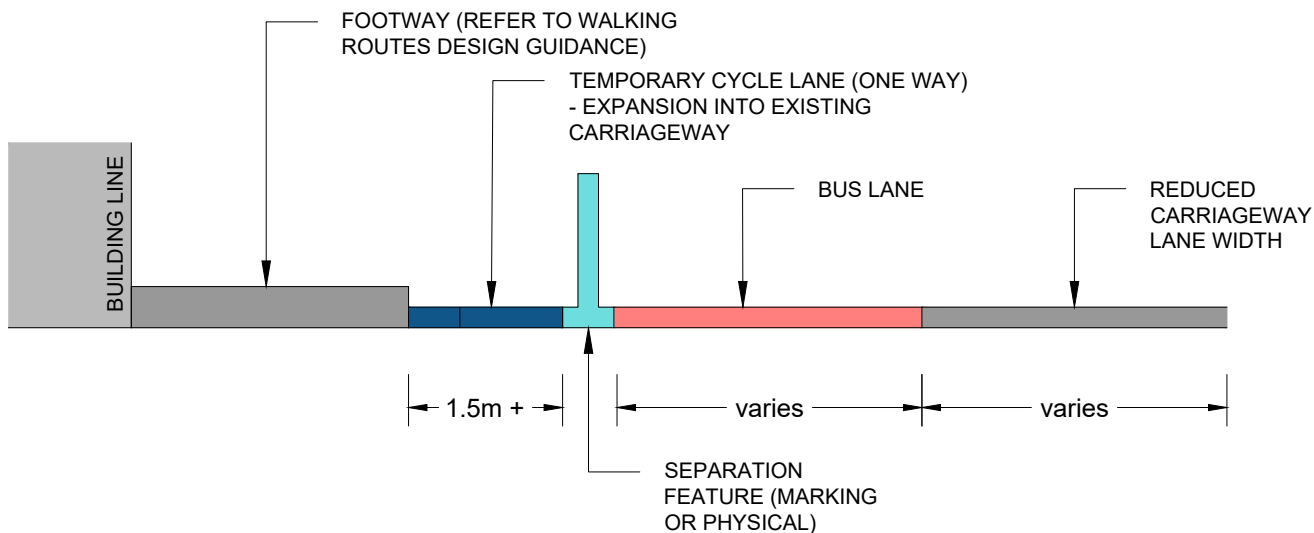
Cycling Routes

2.1 Temporary Cycle Lanes (One-way Travel)

Footway – With Flow Bus Lane – Carriageway



Footway – Cycle lane – Bus Lane – Carriageway



Cycling Routes

2.1 Temporary Cycle Lanes (One-way Travel)

Typical Cross Section Arrangements – Examples



Figure 4. Carriageway converted into temporary cycle lane, Glasgow



Figure 5. Closed parking bays alongside temporary cycle lane, Glasgow



Figure 6. Carriageway converted into temporary cycle lane, Glasgow



Figure 7. Bus lane converted into temporary cycle lane, Leicester

Cycling Routes

2.1 Temporary Cycle Lanes (One-way Travel)

Cross Section Notes

- The cross sections are indicative and are intended for roads of speed ≤ 30 mph. For higher speed roads, additional separation distances and features should be considered.
- Where minimum widths are stated, this should not be the target. **Cycle lane widths should be as wide as possible** to improve the user experience.
- **Wider cycle lanes** help facilitate overtaking opportunities which allow for physical distancing. Where this is not possible, signage to discourage cyclist overtaking could be used.
- **Separation features** will likely vary depending on the various other needs of the local area.
- Subject to the characteristics of **parking bays**, it may be possible to use the space as part of the temporary cycle lane or to provide space for positioning of signage and/or temporary cycle parking.
- Where they are to remain open, appropriate **'buffer' space** should be considered to avoid encroachment of parked vehicles into cycle lanes and opening of vehicle doors.
- Careful consideration is also required to maintain provision of parking for **mobility impaired users**, including separation distances required for access to and from vehicles.
- **Reducing the speed limit** can provide a more attractive and safer environment for cycling and could be a possible measure to supplement temporary infrastructure.

Key Considerations

- Temporary TRO required to introduce new speed limits.
- Reduced speed limits could be extended permanently.



Figure 10. International signage example prohibiting cyclists from overtaking



Figure 8. Signage prohibiting vehicles from overtaking cyclists through a narrow lane



Figure 9. Signage example promoting physical distancing via single file travel through a narrow shared path

Note: the examples below show ideas only. Please see Signage section of this guide for advice on placement of signs and sign types

Cycling Routes

2.1 Temporary Cycle Lanes (One-way Travel)

Separation Features

Separation features improve the level of service afforded to users by increasing the perception of safety and helping avoid conflict.

These include features both within and between user groups.



Figure 11. Cycle lane separators

Options for cycle lanes may include markings, lines, moveable infrastructure (e.g. cones) and physical infrastructure.

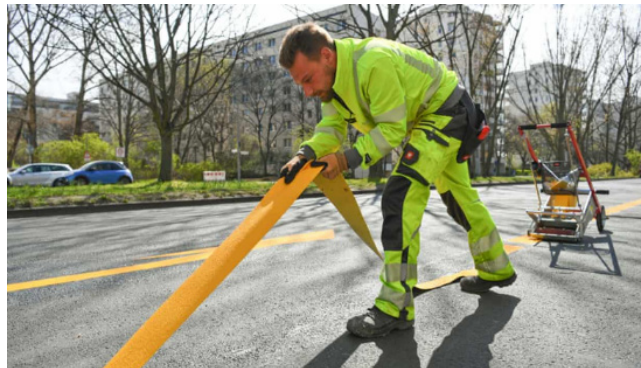


Figure 12. Temporary lines in Berlin

Key Considerations

- **Markings and easily moved objects** such as cones are likely to be subject to misuse.
- **Continuous separation** removes possibility for users to extend into other areas to maintain social distancing and could also restrict permeability in some cases.
- Length of time segregation will be in place (e.g. **short-term, medium term, long term**).
- Procurement, installation, and maintenance.
- **Conservation area** considerations.
- Some separation features may have an adverse on other road users such as motorcyclists.



Figure 13. Cycle lane defenders

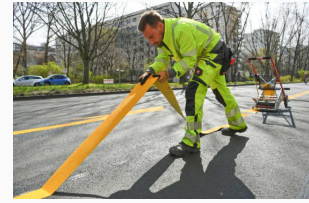





Figure 14. Lining and cones in Glasgow

Cycling Routes

2.1 Temporary Cycle Lanes (One-way Travel)

Separation Materials

Name	Use	Key Points	Examples
Flexi Cylinder Self Righting Delineator Post and Temporary Lines	Temporary	<ul style="list-style-type: none"> • Easy installation • Low cost • Maintenance implications – Potential to be dislodged • May offer less in terms of safety perception • May not be appropriate for heritage areas 	  <p>Figure 15. Temporary lines in Berlin</p>
Cycle Lane Defenders	Medium / long term	<ul style="list-style-type: none"> • Robust • Drainage gaps required • Higher Cost 	 <p>Figure 16. Cycle Lane Defenders</p>
Satellite Islands	Medium / long term	<ul style="list-style-type: none"> • Robust • Drainage gaps required • Potentially onerous spatial requirements (600mm wide) • Heritage finish available • Higher Cost 	  <p>Figure 17. Cycle lane separators</p>
Lane Separators	Medium / long term	<ul style="list-style-type: none"> • Robust • Drainage gaps required • Heritage finish available • Higher Cost 	 <p>Figure 18. Lining and cones in Glasgow</p>

	Green = Short-term – Immediate
	Purple = Medium-term – 6 to 18m
	Orange = Long term – +18m

Cycling Routes

2.1 Temporary Cycle Lanes (One-way Travel)

Transitions

Occasionally it will be necessary to provide a transition from on-carriageway cycle lanes to off-carriageway cycle tracks, or to re-merge cycle lanes with carriageway space. **Transitions should be clear, smooth, safe and comfortable for cyclists.** Minimum speed change and vertical and/or horizontal deflection for cyclists should be the objective.

- **Where a cycle track re-joins the carriageway**, a cycle route transition should be provided which is smooth and gradual. In a temporary layout, this may include a temporary ramp structure.
- **Cycle symbol markings and advisory/mandatory lane markings** may be useful to highlight the presence of cyclists where a cycle lane re-merges with traffic on the carriageway.
- **The transition section should ideally run parallel to the carriageway.** Cyclists should not be required to look behind themselves at difficult angles in order to re-enter the carriageway.
- **Transitions from cycle lanes back to carriageway** should not be close to road junctions as this may introduce additional conflicts.

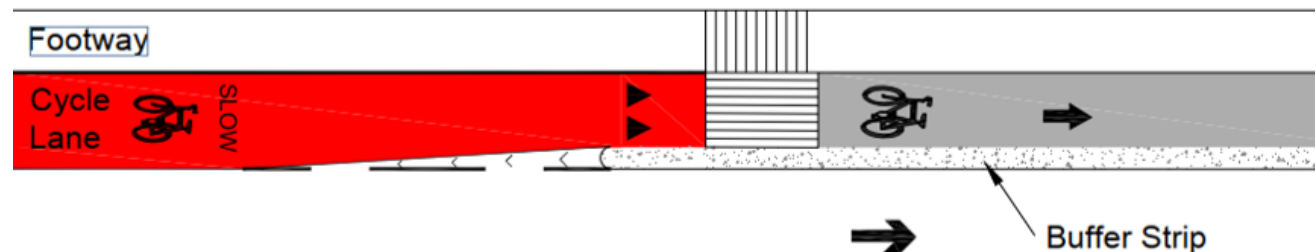
- **Signage may be useful to heighten awareness** to other road users at merges and transitions but may require approval on a scheme by scheme basis where the content is not currently prescribed.

Note: *Whilst desirable, it may not be achievable to provide coloured surfacing or tactile paving within a temporary layout.*

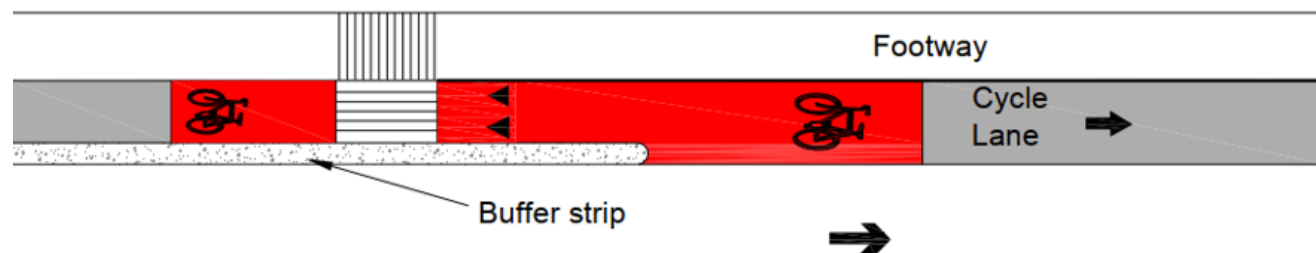


Figure 19. Examples of signage to heighten driver awareness at transitions and merge points

Typical layout for cycle lane (carriageway level) transitioning to cycle track (footway level)



Typical layout for cycle track (footway level) transitioning to cycle lane (carriageway level)



Cycling Routes

2.2 Temporary cycle tracks (two-way travel)

2.2 TEMPORARY CYCLE TRACKS (TWO-WAY TRAVEL)

Cycle Track Options

- **Cycle track at carriageway level** – at the same level as motor traffic but separated by physical means (i.e. kerbing).
- **Stepped cycle track** – adjacent to the carriageway and separated vertically from both the road carriageway and the footway.
- **Cycle track at footway level** – adjacent to the road carriageway and separated vertically from the road carriageway.
- **Cycle track away from the road.**

Each gives an increasing level of protection from motor traffic and comfort for cycle users.

In some cases, existing cycle tracks may need to be closed to provide additional footway space, meaning the cycle track route needs to be re-provided as a cycle lane on the carriageway.



Figure 20. Cycle track at footway level

Key Considerations

- Treatment at side roads and junctions needs to consider the **needs of all road users** and be unambiguous.
- Cycle track provision should be considered in the context of **local speed limits**, with additional spatial allowances made as necessary to reflect prevailing speeds and traffic conditions.
- Existing **carriageway surface quality** will need to be considered (items such as potholes), as well as different surfacing types and drainage implications.
- **Loading and parking areas** for shops and businesses could create conflict for cyclists.
- **Crossings for pedestrians** and for bus stops may require temporary markings (e.g. informal zebra markings).
- Use of ramps to facilitate **pedestrian crossing** of cycle tracks may impede one direction of travel more than the other.
- Potential for **conflict** with other users where two-way traffic is carried through a priority junction. This is particularly relevant on downhill gradients where cyclists may be approaching junctions at speed from a direction that drivers are not expecting.
- Two-way cycle tracks will need some form of **segregation** feature along the centre such as lines/markings.

Cycling Routes

2.2 Temporary cycle tracks (two-way travel)

Cross Sections

It is expected that temporary cycle tracks would not be subject to strict physical distancing rules as this could prohibit their implementation.

Cyclists overtaking one another or passing other cyclists are likely to be momentary instances and so providing full physical distancing along entire route lengths could prove unfeasible.

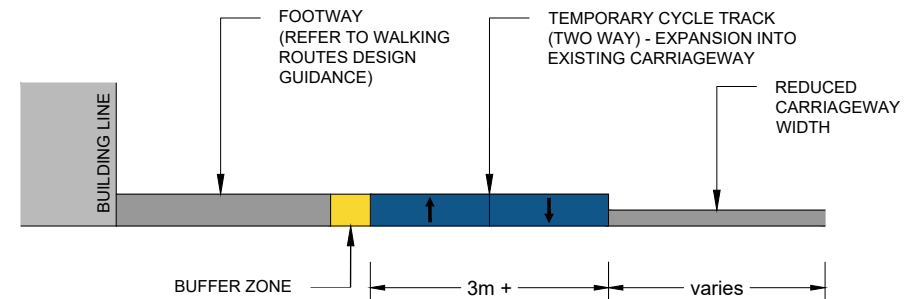
Temporary cycle tracks should be as wide as possible, but it is noted that minimum widths of around 3m for two-way travel might be necessary in order to implement schemes.

Note: Where cycle tracks are used, the 3m should be the minimum width to any separation feature (i.e. the separation feature should not be placed within the 3m width).

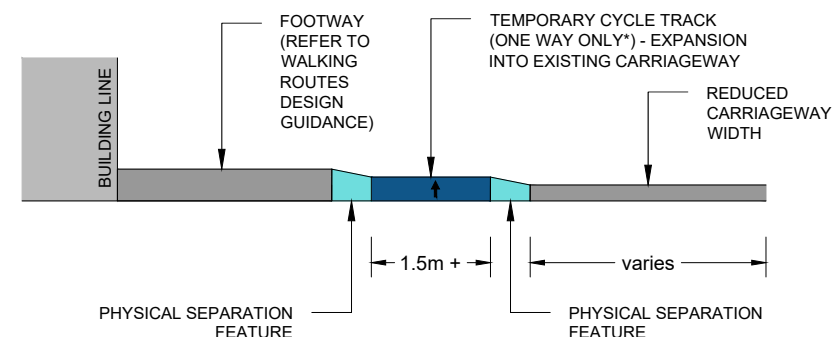
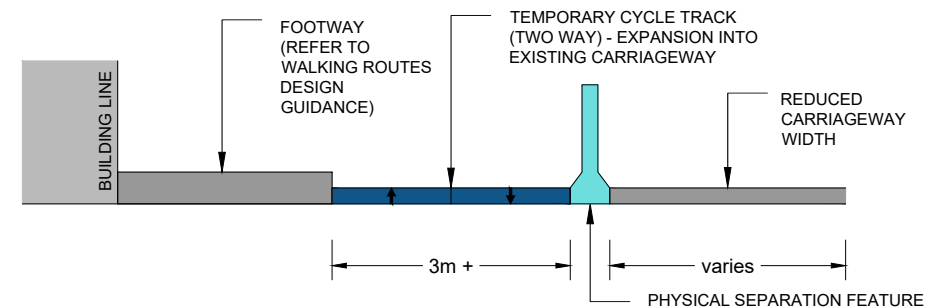
Reduced Carriageway Lane Widths

- Where cycle tracks are provided by expansion into existing carriageways, the resultant reduced carriageway lane widths should be considered in terms of the prevailing traffic speeds, volumes and vehicle types. Narrowing carriageways is likely to be necessary to implement temporary cycle tracks.
- Where buses will be using the reduced carriageway width, the designer should consider the needs of two buses passing each other, which is likely to require a minimum of 6.5m carriageway width – which may also require reduced speed limits to enable this.

Cycle track at footway level



Cycle track at carriageway level



Cycling Routes

2.2 Temporary cycle tracks (two-way travel)

Separation distances and effective widths



Where street furniture and other fixed objects are in place, it is desirable to design additional clearance for the comfort and safety of users.

Note: Clearances below are to be treated as advisory in temporary situations.

Object	Min. Clearance
Low Upstand ≤ 50mm	Nil
Kerb Height 50mm to 150mm	0.2m
Continuous feature of height <1.2m or an isolated feature of any height (e.g. sign post, cabinet, lighting column)	0.25m
Continuous feature of height >1.2m or a bridge parapet of any height	0.5m
Carriageway	0.5m*

*For roads with a speed limit in excess of 40mph the desirable minimum clearance between a carriageway and cycle track will be greater.

Separation Features - Examples

Name	Key Points	Examples
Flexible Kerbing Systems	<ul style="list-style-type: none"> Bolt down product requiring no excavation Lightweight Can be fixed to tarmac or concrete surfaces Can be made from recycled materials 	 <p>Figure 21. Flexible kerbing system</p>
Pre-cast Concrete Kerbing Systems	<ul style="list-style-type: none"> Stick down product requiring no excavation Temporary or permanent fixture (note - can be difficult to remove at a later date) Bespoke kerb types available for schemes i.e. surface treated in factory 	 <p>Figure 22. Pre-cast concrete kerbing system</p>

Key Considerations

- Length of time segregation will be in place (e.g. short-term, medium term, long term).
- Procurement, installation, and maintenance cost.
- Conservation area considerations.
- Impact on services and street furniture.
- Temporary or Permanent – ability to be removed easily.

Cycling Routes

2.2 Temporary cycle tracks (two-way travel)

Transitions

Occasionally it will be necessary to provide a transition from a cycle track to a cycle lane, or to re-merge cycle tracks with carriageway traffic such as in quiet street environments.

Transitions should be clear, smooth, safe and comfortable for cyclists. Minimum speed change and vertical and/or horizontal deflection for cyclists should be the objective.

Note: Whilst desirable, it may not be achievable to provide coloured surfacing or tactile paving within a temporary layout.

- **Where a cycle track re-joins the carriageway**, a cycle route transition should be provided which is smooth and gradual. In a temporary layout, this may include the use of a ramp structure.
- The resultant feature may take the form of **a temporary cycle lane or quiet streets arrangement** without formal separation, if appropriate.
- **Cycle symbol markings and advisory/mandatory lane markings** may be useful to highlight the presence of cyclists.
- **Transition sections should ideally run parallel to the carriageway.** Cyclists should not be required to look behind themselves at difficult angles in order to re-enter the carriageway.
- **Signage can be used to heighten awareness** of the facility to other road users at merges and transitions but will likely require approval on a scheme by scheme basis where not already prescribed.



Examples of signage to heighten driver awareness of cyclists at transitions and merges.



Figure 23. Transition from cycle track (footway level) ramped to cycle lane (carriageway level)

Cycling Routes

2.3 Cycling on Quiet Streets

2.3 CYCLING ON QUIET STREETS

With Vehicular Traffic

For streets of appropriate character, and where traffic speeds/ volumes are low, it may be possible to improve access for cyclists with relatively ‘light touch’ interventions.

Typically this will allow cyclists to share the carriageway space with vehicular traffic, without the need for separation features.

Options may include:

- **Applying temporary road markings** to heighten awareness of cyclists.
- **Reducing existing speed limits.**
- **Temporary signage.**
- **Control traffic types and volumes**, as well as direction of travel.
- **Allowing cyclist contraflows on one-way streets** to increase permeability.

Benefits of cycling on quiet streets include:

- **The directness** and coherence of cycle journeys can be improved.
- **The visibility of cyclists**, particularly at junctions can be improved.
- **Conflict with pedestrians can be reduced.**
- **Traffic volume and speed control** has wider benefits – for pedestrians, for example.



Figure 24. Cycling on a quiet street in Cardiff

Key Considerations

- Where existing streets are deemed to be suitable, the designer should still seek to consider whether changes can be made to the volume, speed and composition of traffic to **improve cycling conditions**.
- Where **on-street parking** may cause difficulties for cyclists, its removal should be considered.
- Integration with existing and/or proposed cycling routes should be considered to ensure **onward connectivity**.
- One-way vehicle flow along streets is particularly attractive for cyclists. However, it may be necessary for a one-way street TRO to include an exemption for cyclists to **facilitate permeability** and avoid moving a conflict point elsewhere.

Cycling Routes

2.3 Cycling on Quiet Streets

No Vehicular Traffic

For streets of appropriate character, and where traffic volumes are low, it may be possible to restrict vehicular access (temporarily or permanently) to reallocate the entire carriageway space for cyclists and pedestrians.

Key Considerations

- Where streets are deemed to be suitable, the designer should still seek to **consider the impact of any temporary or permanent restrictions** on vehicular traffic on the surrounding road network.
- Potential hazards resulting from interaction of cyclists and pedestrians within a shared carriageway – **segregation of pedestrians and cyclists should be considered**, and footway provision maintained where possible.
- Integration with existing and/or proposed cycling routes should be considered to **ensure onward connectivity**.
- Where vehicular access needs to be maintained for local residents and/or bus services, a ‘**cycle street**’ approach may be suitable, whereby interventions may be provided to indicate **cyclist priority over vehicular traffic**.



Figure 26. Kelvin Way, Glasgow before street was reallocated to pedestrians and cyclists only



Figure 25. Kelvin Way, Glasgow after street was reallocated to pedestrians and cyclists only

Cycling Routes

2.4 Junction Treatments

2.4 JUNCTION TREATMENTS

Limited Case History

There is little evidence currently available regarding best practice for temporary junction treatment measures. Ultimately the optimum solution at junctions will likely be dependent upon the characteristics of the local environment, as well as the ambitions for the temporary measures implemented (i.e. period of implementation, volume of users etc.).

Therefore, **where appropriate the designer should refer to existing design guidance for the development of permanent cycling infrastructure and temporary traffic management** to inform their scheme design at junctions. ***All guidance set out below is to be treated as advisory only.***

Key Design Principles for safety at junctions

- Low speeds
- Good intervisibility
- Single lane approaches (where possible)
- Designs that facilitate correct positioning and offer protection from turning vehicles

For additional information please refer to:

[Please refer to Cycling by Design \(Transport Scotland, 2011\)](#)

Key Considerations

- Cycle lanes at priority junctions **will not be able to have separation features** across the minor arm if the junction operation is to be maintained.
- **Cyclist priority at junctions** will need to be decided upon and maintained consistently throughout a route and/or city-wide area.
- If **raised temporary structures** are used at junctions (e.g. across a side/minor road), this will have wider implications for other traffic and the product used **should be robust enough to withstand vehicular traffic.**
- **Access for mobility and visually impaired users** at or near crossings at junctions will need to be considered from the outset to avoid conflict.
- Treatment of junctions to accommodate **two-way cycle tracks** is more challenging as other road users may not anticipate cyclist travelling in both directions at the junction.
- Layouts that place the cyclist **within a vehicle driver's normal field of vision** are less hazardous than those that place the cyclist out with the driver's field of vision.



Figure 27. Example of a cycle lane at a simple priority junction - Taunton

Cycling Routes

2.4 Junction Treatments

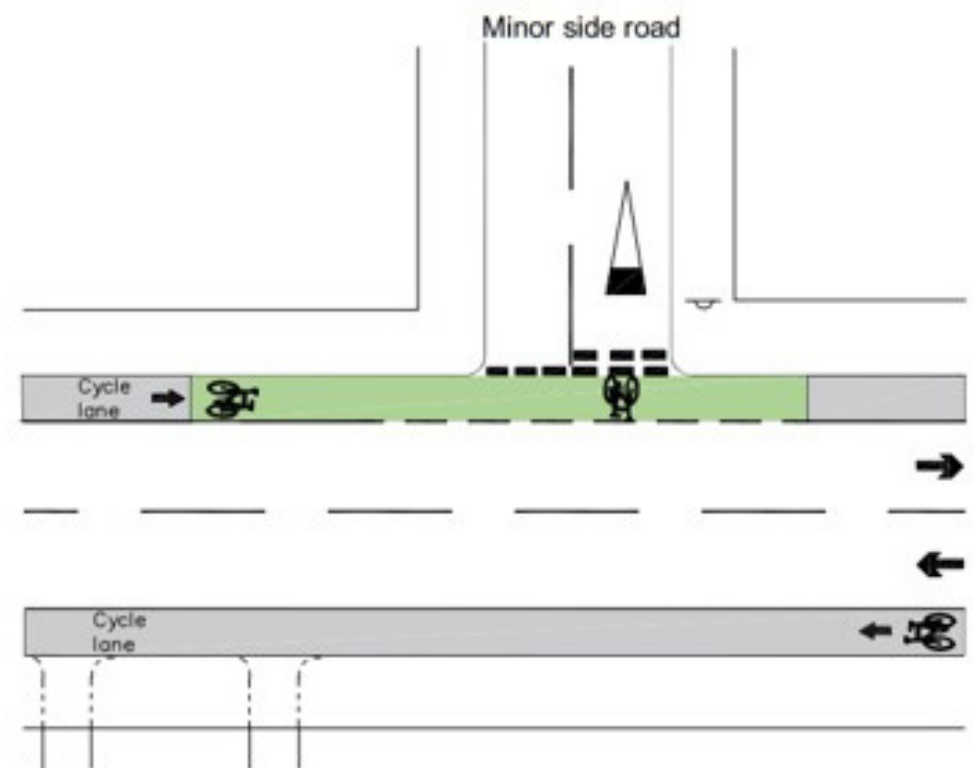
Simple Priority Junctions – Cycle lane

Cyclists on the major arm of the junction should have priority over side road traffic. Where a temporary cycle lane (with or without separation features) is provided, this should be continued across the side road arm as an advisory cycle lane.

Key Considerations

- Where **separation features** are used on cycle lanes, these will need to be **discontinued at junctions** to enable vehicular movements. A distance of around 5 metres either side of the junction is likely to be appropriate (see guidance relating to permanent facilities).
- A **consistent approach to cyclist priority** along a specified route is key to providing a familiar and comfortable facility for cyclists.
- **Raised tables** may need to be temporary structures but these would **need to be robust** enough to withstand vehicular traffic where junction operations are to be maintained.
- **Coloured surfacing and prominent cycle symbol markings** can be useful in emphasising the presence of the cycle lane and priority of cyclists at the junction. If required, cycle symbol markings may be turned 90° to face side road entry traffic. Provision of coloured surfacing may not be achievable as part of a temporary intervention.

Typical layout for cycle lane at a simple priority junction



For additional information please refer to:

[Please refer to Cycling by Design \(Transport Scotland, 2011\)](#)

Cycling Routes

2.4 Junction Treatments

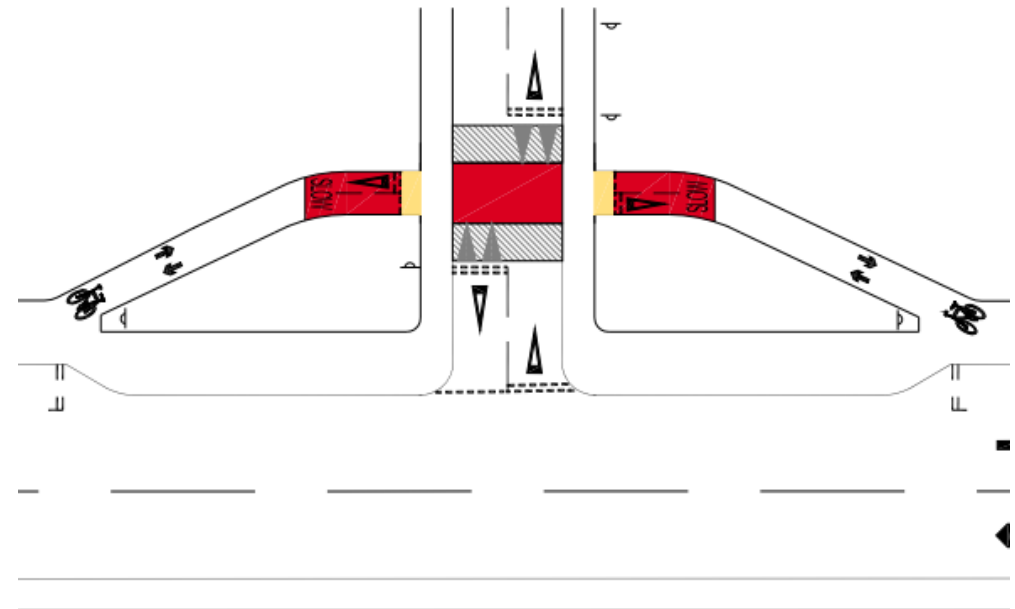
Simple Priority Junctions – Cycle Tracks

Where a temporary cycle track is provided a decision is required as to whether cyclists on the cycle track or drivers on the side road have **priority** and this **should be consistent along the whole route** or across a city-wide context. A site-specific assessment should be made based on the needs of all road users at the junction.

Key Considerations

- **A consistent approach** to cyclist priority is key to providing a familiar and comfortable facility for cyclists.
- **Raised tables** may need to be temporary structures but these would need to be robust enough to withstand vehicular traffic where junction operations are maintained.
- **Coloured surfacing, signage and prominent cycle symbol markings** can be useful in emphasising the presence of the cycle track and priority of cyclists at the junction. Provision of coloured surfacing may not be achievable as part of a temporary intervention.
- For **cycle track crossings**, if cyclist priority is maintained, a sufficient offset should be provided to allow for the storage of vehicles turning into the side road (see relevant permanent facility guidance).
- Differential coloured surfacing may help to **highlight the approach to a crossing**.

Typical layout for cycle track with priority at a simple priority junction



For additional information please refer to:

[Please refer to Cycling by Design \(Transport Scotland, 2011\)](#)

Cycling Routes

2.4 Junction Treatments

Simple Priority Junctions – Blended side road entry treatment

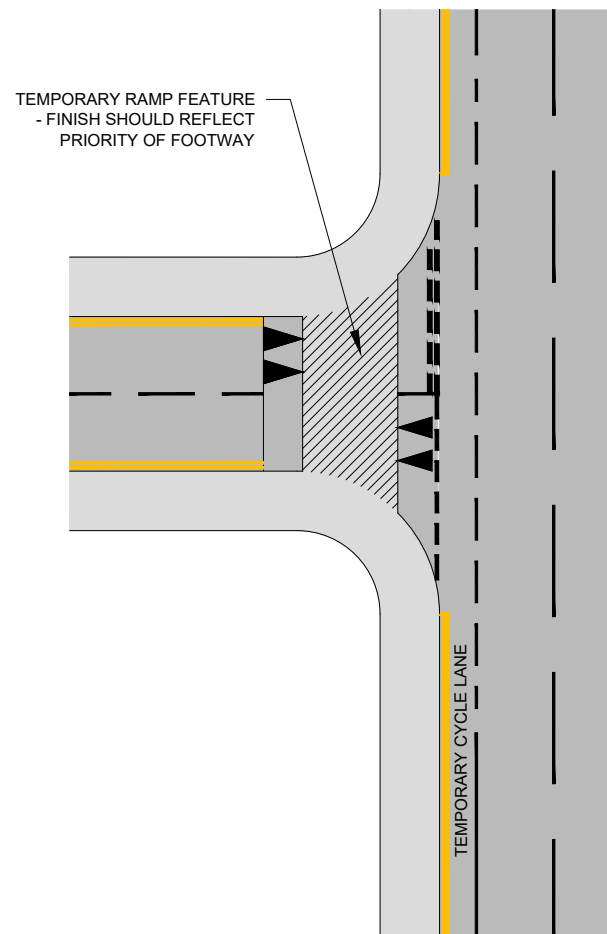
Blended side road entry treatments slow motor vehicles as they manoeuvre at a junction, as the continuous footway indicates to drivers pedestrians have priority and that they should give way to pedestrians using the footway, making it easier and more convenient for pedestrians to cross the side road.

In a temporary setting, blended side road entry layouts may be created using temporary ramp facilities.

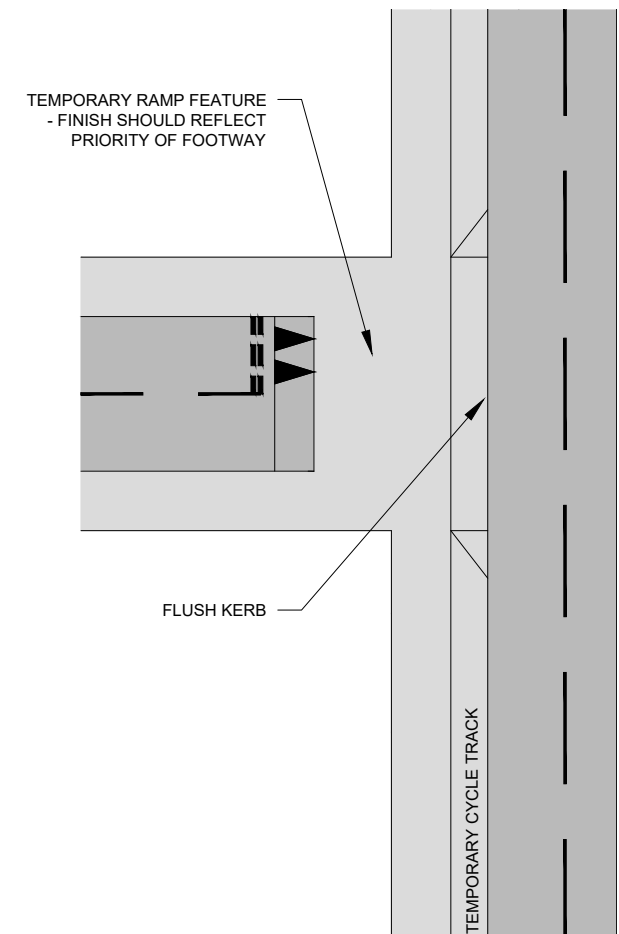
Notes

- Such layouts can provide **safety benefits to cyclists**, helping to prevent collisions with motor vehicles turning into and out of the side road.
- Ramped surfaces should be flush with the footway and clearly **indicate priority of pedestrians**.
- Temporary **ramps should not be so steep as to create a hazard** for cyclists turning into and out of the side road.
- Installation of temporary ramps should **allow continuation of drainage flows** along kerbs to avoid ponding or debris build up.

Cycle lane at priority junction with continuous footway



Cycle track at priority junction with continuous footway



Cycling Routes

2.4 Junction Treatments

Examples of Cycle Lanes at Simple Priority Junctions



Figure 28. Cycle Lane, Belfast



Figure 29. Cycle Route, Brussels

Note: *physical separation feature terminated before junction*

Cycling Routes

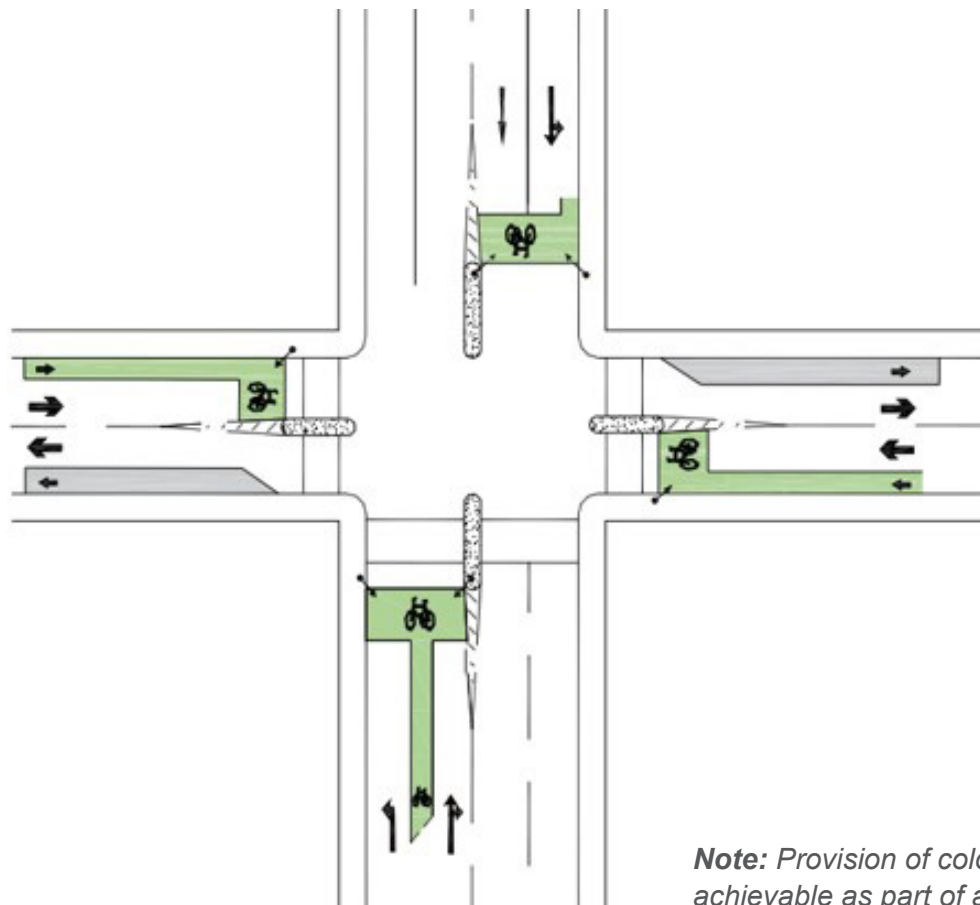
2.4 Junction Treatments

Facilities at signal-controlled junctions

Where a temporary cycle lane or track meets a signal-controlled junction, it is important to provide clear layouts for both cyclists and drivers of vehicles. Key points to consider:

- Where **separation features** are used on temporary cycle lanes, these should be **discontinued in advance of junctions** to enable vehicular movements such as left turns.
- **Cycling-friendly traffic signal phases** with separate, exclusive green phases for cyclists.
- **Temporary markings to highlight advanced stop lines (ASLs)** ahead of traffic. These should be deep enough to avoid cyclists feeling intimidated by traffic behind.
- **Signal timings** at crossings could be extended, and/or phase frequency increased, **to provide additional crossing time for pedestrians** and reduce build-up of groups waiting to cross.
- **Temporary left turn filters for cyclists** (or prohibited left turns for vehicles) to avoid conflict with left-turning vehicles.
- **Temporary cycle bypass** at signals.

Typical layout for cycle lanes at a signalised junction



Note: Provision of coloured surfacing may not be achievable as part of a temporary intervention.

For additional information please refer to:
[Please refer to Cycling by Design \(Transport Scotland, 2011\)](#)

Cycling Routes

2.4 Junction Treatments

Signal-controlled Junction – Temporary Cycle Bypass

Where space and level of pedestrian use allow, it could be beneficial to cyclists to provide a temporary slip off in advance of a signal-controlled junction, leading to **a short section of cycle track that enables the cyclist to bypass the red signal**. This may be used to assist cyclists either to turn left or to continue straight ahead through a signal-controlled junction.

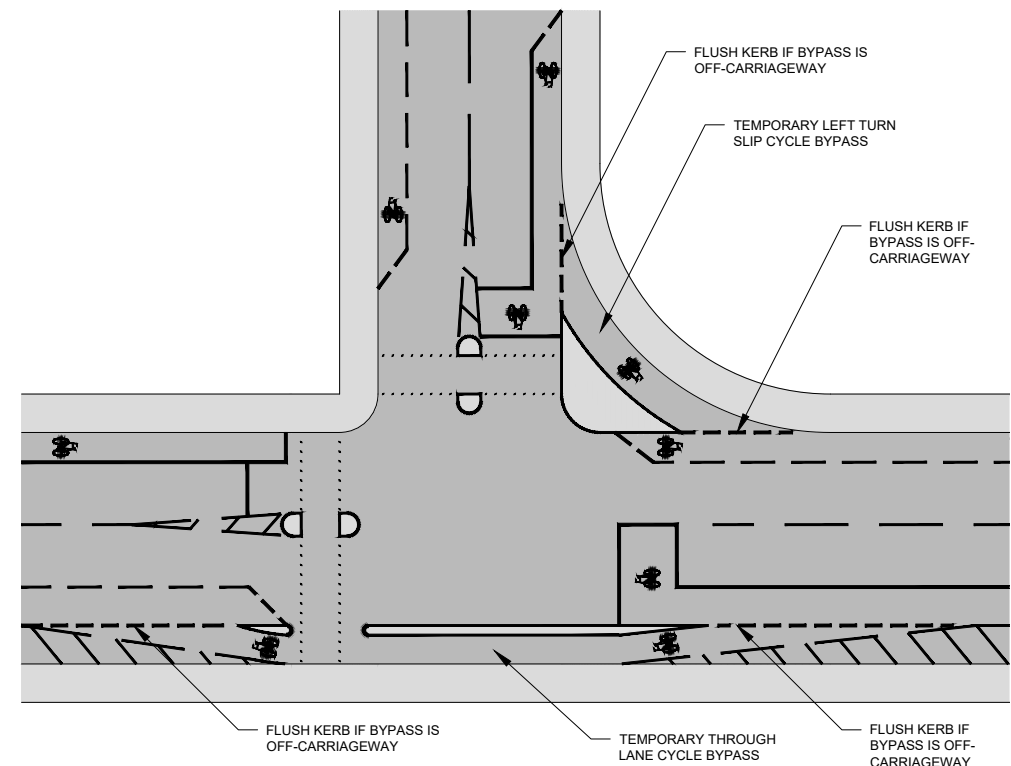
Benefits

- **Helps protect cyclists at busier junctions**, increasing the perception of user safety and reducing conflict points.
- **Reduces delays to cyclists.**
- **Enables cyclists to maintain momentum**, thereby improving levels of comfort.
- Could **increase permeability for cyclists**

Key Considerations

- Bypasses should ideally be built **within the carriageway** so as not to impact on pedestrian flows and to avoid vertical deflection.
- **Signal phases** may be integrated for cycle bypasses to give **early starts, or separate cycle phases**. They should link into a cycle lane or cycle track, or merge into general traffic with appropriate transition features.
- **Consideration** is required at pedestrian crossing locations, especially **for mobility impaired users** where such layouts may be unfamiliar.
- **Temporary separation features** (e.g. bollards, cones or road markings) offer potential options to create temporary cycle bypass within an existing junction layout. The appropriate intervention should be assessed on a site-by-site basis.

Typical layout for temporary cycle bypasses at a signal-controlled junction



For additional information please refer to:

[Please refer to Cycling by Design \(Transport Scotland, 2011\)](#)

Cycling Routes

2.4 Junction Treatments

Signal-controlled Junction – Temporary Cycle Lanes

A temporary cycle lane marked through a signal-controlled junction provides a visible indication of route continuity and increases drivers' awareness of key cycle movements, which is likely to be useful in temporary situations where the road layout has changed substantially for drivers, pedestrians and cyclists.

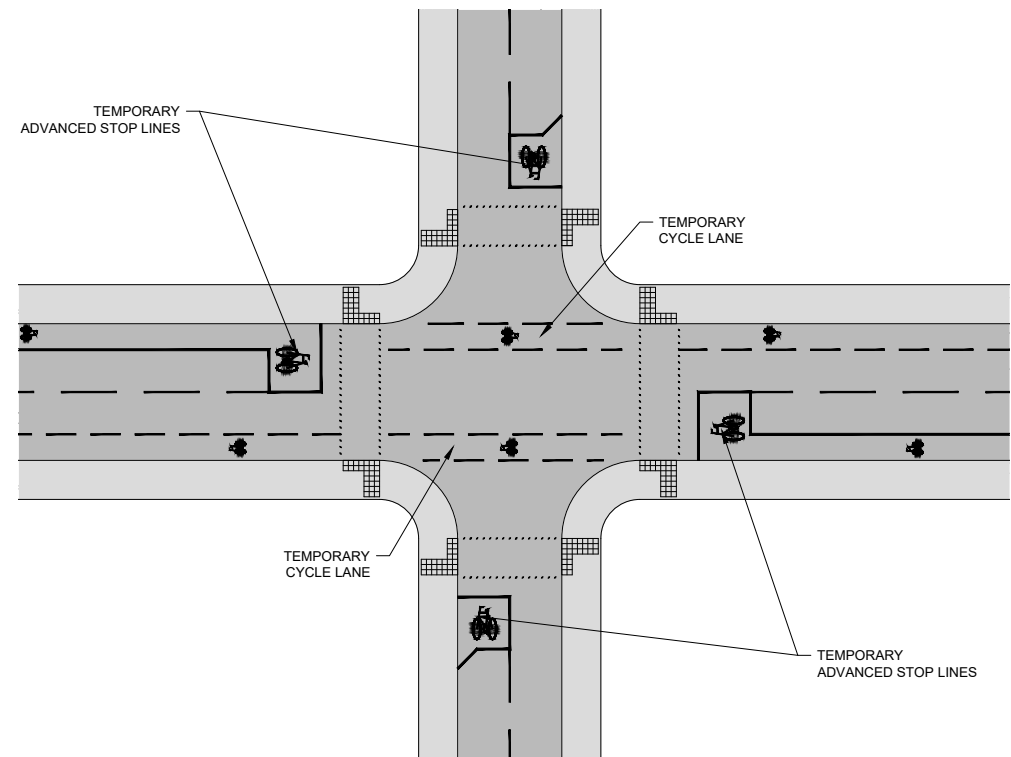
Benefits

- **Help to guide cyclists** and increase the perception of user safety.
- **Raises awareness to drivers** that a junction forms part of a cycle route and that cyclists can be expected.
- Could be particularly **beneficial for larger and more complex junctions**.

Key Considerations

- Where cyclists have several cross-cutting desire lines through a junction, such as right turn movements attempting to mark these may be confusing and counter-productive.
- Temporary route markings through junctions will likely be subject to high levels of wear and will need to be of a suitable specification to avoid slippery conditions for cyclists and motorcyclists.
- Consider use of coloured surfacing to raise driver awareness.

Typical layout for temporary cycle lanes at a signal-controlled junction



For additional information please refer to:

[Please refer to Cycling by Design \(Transport Scotland, 2011\)](#)

Cycling Routes

2.4 Junction Treatments

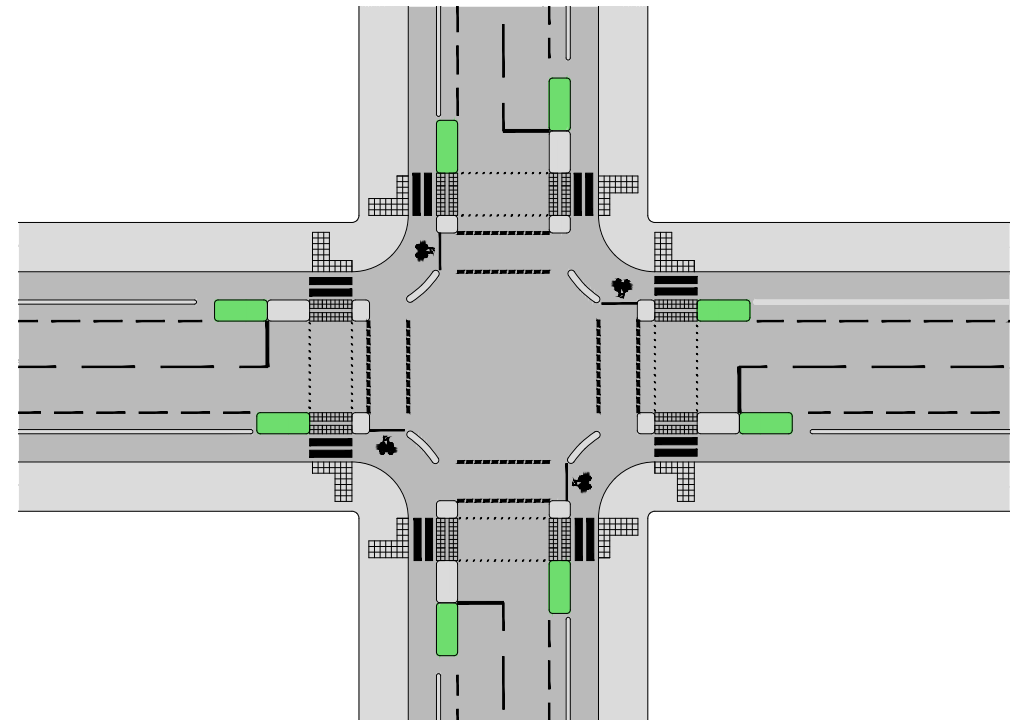
Signal-controlled Junction – Protected Junction

A protected junction arrangement allows cyclists to undertake movements at a signal-controlled junction within their own lane, **protected from motor vehicles**.

Cyclist movements through the junction could potentially be **co-ordinated with the pedestrian crossing phase**, allowing pedestrians and cyclists to move in parallel but without integrating.

Separation features could take many forms depending on the local context and heritage considerations.

Typical indicative layout for temporary protected cycle lanes at a signal-controlled junction



Key Considerations

- **Temporary separation features** (e.g. bollards, cones or road markings) offer potential options **to create a temporary protected junction** within an existing junction layout. The appropriate intervention should be assessed on a site-by-site basis.
- **Use of temporary planters** (or similar – refer to Traffic Management guidance) on approach can aid in **reinforcing** the designated **space within the layout for cyclists**. Location of such features should be considered to avoid impact of intervisibility between users at the junction.
- **Consideration is required at pedestrian crossing locations**, especially for mobility impaired users where such layouts may be unfamiliar.

For additional information please refer to:

[Please refer to Cycling by Design \(Transport Scotland, 2011\)](#)

Cycling Routes

2.4 Junction Treatments

Examples of temporary facilities at signal-controlled Junctions

Temporary cycle lane at a signal-controlled junction with advanced stop line (UK)



Note: left turns have been prohibited except for buses and cyclists to avoid conflict

Temporary signals installed for two-way cycle traffic (UK)



Note: other road users may not be anticipating bi-directional travel. Temporary signals for cyclists, phased with existing signals, may help to avoid conflict.

Cycling Routes

2.4 Junction Treatments

Temporary Facilities at Roundabout Junctions

The manner in which cyclists are accommodated at roundabouts will depend on a number of factors relating to layout and the volume and composition of traffic. **Roundabouts vary in scale from simple mini roundabouts to large roundabouts catering for complex traffic patterns.**

When entering and circulating on a roundabout, cyclists should be given the opportunity to position themselves such that they are visible to drivers.

Cyclists will generally feel and be safer on roundabouts where:

- **Approach arm traffic speeds are low.**
- **Circulatory carriageway speeds are low.**
- **Cyclists are positioned prominently.**

Potential options

- **For large roundabouts, temporary hatch markings** could be provided to narrow the circulatory carriageway to a single lane.
- **At signal-controlled roundabouts, cycle-friendly signaling phases** with separate, exclusive green phases for cyclists.
- **At normal roundabouts, the use of temporary hatch markings** to reduce junction flaring on approach to reduce vehicular approach speeds.

Key Considerations

- **A consistent approach** to cyclist priority is key to providing a familiar and comfortable facility for cyclists.
- Where **separation features** are used on temporary cycle lanes, these will need to be **discontinued on approach to roundabouts** in order to allow cyclists to integrate with motor traffic and take up a prominent position at the entry.
- Temporary cycle lanes **on the perimeter of the circulatory carriageway** of a roundabout **should be avoided** as they place cyclist on the nearside of the roundabout in a non-prominent and vulnerable position.
- **Alternative off-carriageway solutions** may be preferred to on-carriageway. Where provided, off-carriageway interventions should be direct, safe and attractive to use.

For additional information please refer to:

[Please refer to Cycling by Design \(Transport Scotland, 2011\)](#)

Cycling Routes

2.5 Parking, Loading and Taxi Ranks

2.5 PARKING, LOADING AND TAXI RANKS

Loading and parking bays

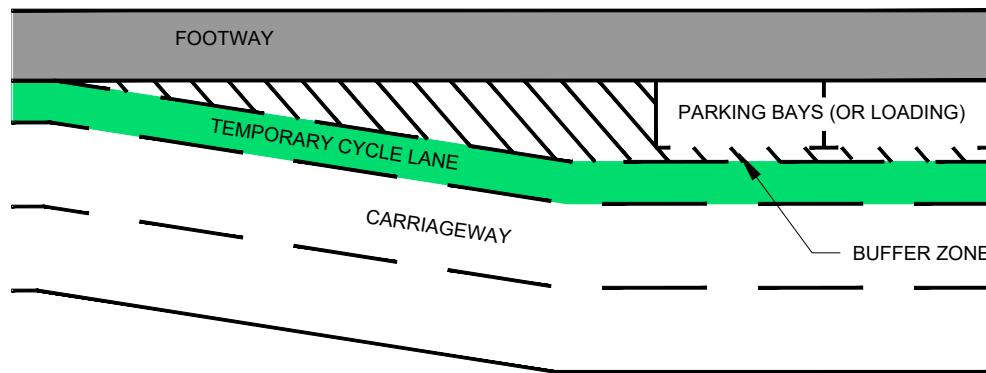
As businesses begin to re-open, loading bays will be key to replenishing stocks. Some loading bays may have already been used for alternative purposes such as temporary cycle lanes, tracks or widened footways and alternative loading arrangements may need to be sought.

Where cycling routes are implemented on streets containing loading bays, consideration should be given to:

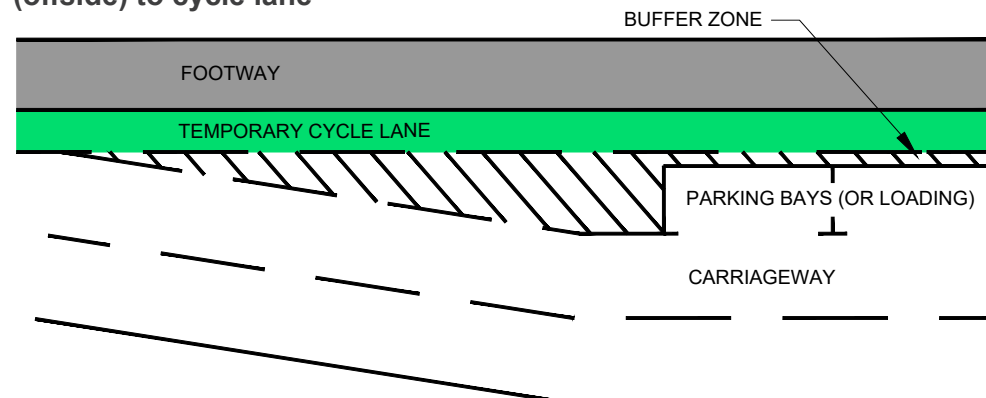
- **Alternative loading locations**
- **Routes between businesses and alternative loading locations** – are the routes suitable for transporting goods by trolley etc?
- **New informal loading bays** on main streets
- **Gaps in cycle lanes and cycle tracks** to allow goods to be delivered to businesses
- The option of identifying **specific delivery times** off-peak for goods deliveries

Provision of a temporary cycle lane to the offside of parking or loading bays may result in the need for the closure of the bays to avoid conflicts between cyclists and drivers of vehicles, particularly where higher cyclist flows are expected.

Typical layout example of parking (or loading) bays maintained adjacent (nearside) to cycle lane where bays may be closed or remain open depending on the local context



Typical layout example of parking (or loading) bays maintained adjacent (offside) to cycle lane



Cycling Routes

2.5 Parking, Loading and Taxi Ranks

Loading and parking bays

Where bays are retained, the operation of parking bays, loading bays (and taxi ranks) needs careful consideration to ensure a rationalised and safe flow of vehicles to/from these areas. This should **include consideration of separation distances** to reflect delivery requirements and /or access across cycle tracks with goods.



Figure 30. Example of layout to accommodate loading alongside cycle lane in Milan

2.6 SPEED MANAGEMENT

Creating suitable and comfortable conditions for cyclists on the carriageway **is a key element of encouraging cycle use**, particularly in urban areas. For temporary solutions a **principal consideration** of the designer when considering implementation of cyclist facilities **is the prevailing traffic speeds**, and whether changes can be made to reduce speeds where necessary.

The guidance detailed here is intended for roads of speed $\leq 30\text{mph}$. Therefore, where appropriate/achievable consideration should be given to reducing speed limits to $\leq 30\text{mph}$ to augment any intervention measures. This will likely be most achievable within urban settings.

In rural settings (or urban settings where traffic speeds cannot reasonably be reduced $\leq 30\text{mph}$) the appropriateness of providing temporary cyclist facilities should be examined to understand if they could be deemed counterproductive to the ambition of the scheme i.e. consideration may conclude that interventions may result in a decrease in comfort and safety for cyclists where interventions are provided on a high-speed route. In these scenarios alternative proposals should be considered.

For temporary cycle routes which propose cyclists integrating with motorised traffic, the carriageway lane widths (including shared bus lanes) should be sufficiently wide to **ensure safe separation** distances can be observed by drivers passing slower moving cycle traffic. Provision of narrowed traffic lanes to accommodate temporary cycle lanes may result in poor driver discipline and encroachment into cycle lanes, especially on higher speed routes.



Key Considerations

- **Reducing existing speed limits $\leq 30\text{mph}$.** This is perhaps most achievable for roads with speed limits $\leq 40\text{mph}$. A Temporary TRO will be required.
- **Measures to manage speeds** along cycling routes may include use of **temporary signage** (including variable messaging signage), **as well as physical interventions** i.e. temporary gateway treatments or build outs along cycle routes.
- **Where an existing road has a speed limit in excess of 40mph ,** the appropriateness of temporary interventions should be considered.
- Where appropriate, **traffic speed surveys** should be undertaken to fully quantify prevailing traffic speeds **to ensure interventions are appropriate** and designed to suit the context of the setting.

Cycling Routes

2.7 Temporary Cycle Parking

2.7 TEMPORARY CYCLE PARKING

There are several **types of temporary cycle parking that can be installed relatively quickly**, including:

- **Proprietary products** (i.e. temporary cycle racks or Sheffield Stands) bolted into the ground – so could be removed at a later date if necessary.
- **Other non-proprietary solutions** e.g. use of pedestrian barriers.

The appropriate solution will be subject to consideration of capacity and availability of appropriate locations within the overall streetscape.

Cycle parking capacities and layouts

Capacities and layouts for types of temporary parking will be determined by available street space, the solution implemented and the anticipated volume of users. The images below provide an indication of typical spatial requirements and layouts for non-adapted cycle parking which can be used to determine suitable locations and capacity.

Spatial requirements for adapted cycles are available at the Sustrans Design Guidance:

<https://www.sustrans.org.uk/for-professionals/infrastructure/walking-and-cycling-infrastructure-design-guidance/>

Key Considerations

- Cycle parking should not be placed in locations where it would reduce the available footway width or pose a risk to mobility impaired pedestrians.
- Security of temporary cycle parking – natural surveillance.
- Cycle parking placed in parking bays or in the carriageway where space allows is likely most appropriate, although a TRO may be required to suspend parking bays.
- No evidence to suggest that physical distancing needs to be maintained between cycle parking spaces.

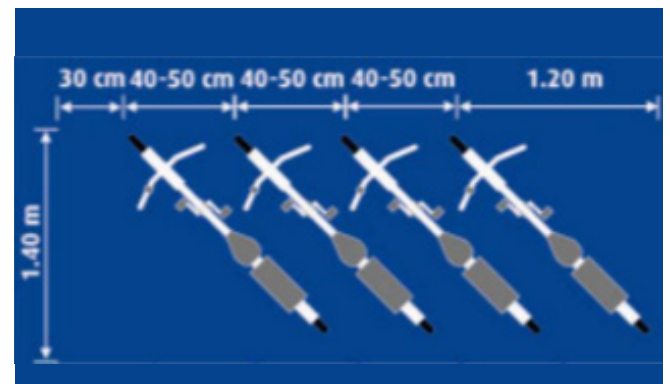
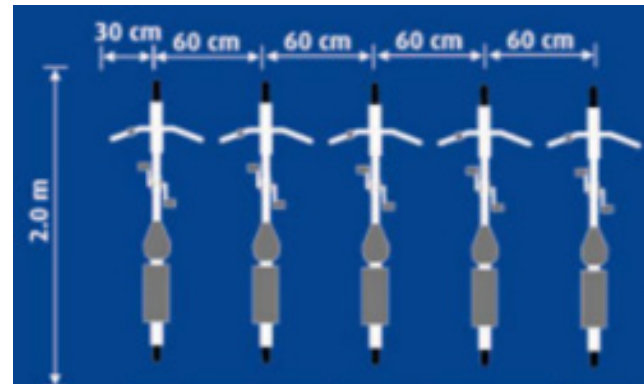


Figure 31. Cycle parking, spatial requirements

Cycling Routes

2.7 Temporary Cycle Parking

Examples of Temporary Cycle Parking



Figure 32. Contemporary Cycle Parking



Figure 33. Non-Proprietary Cycle Parking at an Event



Figure 34. Sheffield Stand Temporary Cycle Parking



Figure 35. Proprietary Temporary Cycle Parking



Figure 36. Proprietary Temporary Cycle Parking

Temporary cycle parking positioning

- **Visible** (signposted as necessary), accessible and convenient
- **Secure** i.e. well overlooked where possible.
- **Well laid out** to aid access/egress and provide ample locking points.

Cycling Routes

2.8 Mobility Impairment and Safety Considerations

2.8 MOBILITY IMPAIRMENT AND SAFETY CONSIDERATIONS

Mobility Impairment Considerations

Key Considerations

- **Existing controlled crossings** will likely need to be maintained and accommodated within temporary cycle lanes.
- **Cycle parking** should not be placed in locations where it would reduce the available footway width or pose a risk to mobility impaired pedestrians.
- Where bus stops are provided to the offside of cycle lanes or tracks, access to the bus stop across the cycle lane will need to be considered and appropriate measures to warn cyclist of the crossing should be included such as signage, markings and clear visibility to the crossing point. Waiting areas should be large enough to cater for expected demand and not obstruct cycling routes to help avoid conflict with mobility and sight impaired pedestrians.



Figure 37. Crossing of one-way cycle track to access bus stop



Figure 38. Example of a temporary bus boarder across cycle track

Cycling Routes

2.8 Mobility Impairment and Safety Considerations

Safety Considerations for Cycle Lanes

- **Narrowing traffic lanes**

Narrow traffic lanes increase the risk of side swipe collisions. Careful consideration should be given to routes heavily trafficked by HGVs and buses. **Narrow lanes may encourage dangerous overtaking and therefore visibility should be examined.**

- **Extensive use of road markings**

There is a risk that extensive use of road markings could result in cyclists slipping on them (especially when wet), which is particularly relevant at junctions, bends or braking areas. **Markings with a suitable skid resistance should be used.**

- **Interaction at side roads**

There is an increased risk of a cyclist being struck by a vehicle emerging from a side road where drivers are unaware of a temporary cycle lane or if priority is unclear. Adequate warning should be provided i.e. **Road markings and traffic signs** on side road approaches and priority should be **unambiguous to all road users.**

- **Surface finishes**

Some finishes may increase the risk of skidding, particularly during periods of wet weather or ice. The suitability of the surface finish for cyclists should be considered when implementing temporary cycle lanes.

- **Existing surface quality**

Avoid providing cycle lanes where the existing surface condition is poor and consider the ongoing maintenance requirements to **ensure surface quality is maintained.**



Figure 39. Marking out new cycle lane



Figure 40. Reduced carriageway widths & Pedestrian guardrail

Cycling Routes

2.8 Mobility Impairment and Safety Considerations

Safety Considerations for Cycle Tracks

- **Trip hazard to pedestrians** - Temporary physical separation measures may pose a **trip hazard**. Consider measures to maximise visibility of temporary features such as high visibility markings and contrasting colours.
- **Features being struck by road users** – There is a risk that motorcyclists will strike low level segregation features fixed to the carriageway. **Visibility, orientation and available widths** are all important factors in reducing this risk.
- **Passively safe features** – Impact with roadside features increases the potential severity of a collision. Passively safe features will reduce the damage to a vehicle in the event of a collision and **reduce the risk of injury to occupants**.
- **More information** on how different features are perceived by the different user groups can be found Glasgow City Council's "Cycle Lane Soft Segregation Trial Report":
<https://www.glasgow.gov.uk/CHttpHandler.ashx?id=33023&p=0>



Figure 41. Examples of physical separation measures for cycle track



Figure 42. Examples of physical separation measures for cycle track



Figure 43. Examples of physical separation measures for cycle track

Note: Post-implementation monitoring should be undertaken to allow for adjustments to mitigate unforeseen issues during the design stage.

Cycling Routes

Image References

IMAGE REFERENCES

Figure 1. Lane separators along Old Dalkeith Road in Edinburgh. These ensure the cycle lane remains free of parked vehicles for key workers whilst still allowing access to resident driveways.

Photograph, courtesy of Atkins

Figure 2. Timeline

Diagram, courtesy of Atkins

Figure 3.

Photograph, courtesy of Sustrans

Figure 4. Carriageway converted into temporary cycle Lane, Glasgow

<https://www.gobike.org/>

Figure 6. Carriageway converted into temporary cycle lane, Glasgow

Photograph, courtesy of Atkins

Figure 5. Closed parking bays alongside temporary cycle lane, Glasgow

<https://projectscof.com/2020/05/glasgows-temporary-clydeside-cycle-lane-ready-for-use/>

Figure 7. Bus lane converted into temporary cycle lane, Leicester

<https://www.leicester.gov.uk/media/186689/covid-19-transport-recovery-plan-may-2020.pdf>

Figure 9. Signage example promoting physical distancing via single file travel through a narrow shared path

Photograph, courtesy of Atkins

Figure 8. Signage prohibiting vehicles from overtaking cyclists through a narrow lane

Photograph, courtesy of Atkins

Figure 10. International signage example prohibiting cyclists from overtaking

Figure 11. Cycle lane separators

<https://www.rosehillhighways.com/products/lane-separators/>

Figure 13. Cycle lane defenders

<https://www.rosehillhighways.com/products/cycle-lane-defenders/>

Figure 12. Temporary lines in Berlin

<https://www.theguardian.com/world/2020/apr/11/world-cities-turn-their-streets-over-to-walkers-and-cyclists>

Figure 14. Lining and cones in Glasgow

Photograph, courtesy of <https://www.rosehillhighways.com/products/refuge-islands/one-piece-traffic-island/>

Figure 15. Temporary lines in Berlin

<https://www.theguardian.com/world/2020/apr/11/world-cities-turn-their-streets-over-to-walkers-and-cyclists>

Figure 17. Cycle lane separators

<https://www.rosehillhighways.com/products/lane-separators/>

Figure 16. Cycle Lane Defenders

Photograph, courtesy of <https://www.rosehillhighways.com/products/refuge-islands/one-piece-traffic-island/>

Figure 18. Lining and cones in Glasgow

Photograph, courtesy of Atkins

Figure 19. Examples of signage to heighten driver awareness at transitions and merge points

Figure 20. Cycle track at footway level

<https://cyclingindustry.news/temporary-bike-lanes-case-builds-for-clear-government-direction/>

Figure 21. Flexible kerbing system

<http://www.rediweldtraffic.co.uk/>

Figure 22. Pre-cast concrete kerbing system

<http://www.bomax.co.uk/scan-kerb/>

Figure 23. Transition from cycle track (footway level) ramped to cycle lane (carriageway level)

<https://therantyhighwayman.blogspot.com/2020/03/beyond-bicycle-room-for-manoeuvre.html>

Figure 24. Cycling on a quiet street in Cardiff

<https://www.cycling-embassy.org.uk/photos/good-cycling-facility-of-the-week/good-cycling-facility-of-the-week-8th-august-2019>

Figure 26. Kelvin Way, Glasgow before street was reallocated to pedestrians and cyclists only

<https://www.bbc.co.uk/news/uk-scotland-glasgow-west-52506154>

Cycling Routes

Image References

Figure 25. Kelvin Way, Glasgow after street was reallocated to pedestrians and cyclists only

<https://www.glasgowlive.co.uk/news/glasgow-news/immediate-popularity-kelvin-way-traffic-18197762>

Figure 27. Example of a cycle lane at a simple priority junction - Taunton

Source Unknown

Figure 28. Cycle Lane, Belfast

<https://www.belfastlive.co.uk/news/belfast-news/dublin-road-pop-up-cycle-18425347>

Figure 29. Cycle Route, Brussels

<https://tactical.space/>

Figure 30. Example of layout to accommodate loading alongside cycle lane in Milan

<https://www.bbc.co.uk/news/uk-52524807>

Figure 31. Cycle parking, spatial requirements

https://ec.europa.eu/energy/intelligent/projects/sites/iee-projects/files/projects/documents/presto_fact_sheet_bicycle_parking_and_storage_en.pdf

Figure 32. Contemporary Cycle Parking

<https://www.cyclehoop.com/product/racks/car-bike-port/>

Figure 33. Non-Proprietary Cycle Parking at an Event

<http://content.tfl.gov.uk/temporary-cycle-parking.pdf>

Figure 34. Sheffield Stand Temporary Cycle Parking

<http://content.tfl.gov.uk/temporary-cycle-parking.pdf>

Figure 35. Proprietary Temporary Cycle Parking

<https://twitter.com/TranspoScout/status/1165693730457677824>

Figure 36. Proprietary Temporary Cycle Parking

<https://bikeportland.org/2008/03/28/new-temporary-bike-racks-get-their-first-real-test-7065>

Figure 37. Crossing of one-way cycle track to access bus stop

<https://www.citymetric.com/transport/naked-streets-floating-bus-stops-and-how-cycling-infrastructure-can-endanger-blind-1327>

Figure 38. Example of a temporary bus boarder across cycle track

Zical Vectorial Systems product brochure

Figure 39. Marking out new cycle lane

<https://www.glasgowtimes.co.uk/news/18447014.new-cycle-lane-pops-up-clyde-ease-traffic-pressure/>

Figure 40. Reduced carriageway widths

<https://www.birminghammail.co.uk/news/midlands-news/new-social-distancing-measures-introduced-18252004>

Figure 41. Examples of physical separation measures for cycle track

Source Unknown

Figure 43. Examples of physical separation measures for cycle track

Source Unknown

Figure 42. Examples of physical separation measures for cycle track

Source Unknown