

## **Chapter 4 - Links Within the Highway**

### **Suitability of Routes**

Most cycling takes place on existing urban roads; this will also be the case with the National Cycle Network. As well as following lightly trafficked roads which require few or no measures, a National Cycle Network route should be an opportunity to introduce traffic calming, special cycling measures and visual enhancements, which will encourage local cycling.

The choice of routes in urban areas is largely determined by the extent to which junction features can be resolved where the cycle route meets or crosses more heavily trafficked roads. Main roads themselves may be the only direct route into a town centre, and here measures are likely to be needed to adequately reduce conflict with or intimidation by other traffic, through traffic calming or separation of cyclists from motor vehicles.

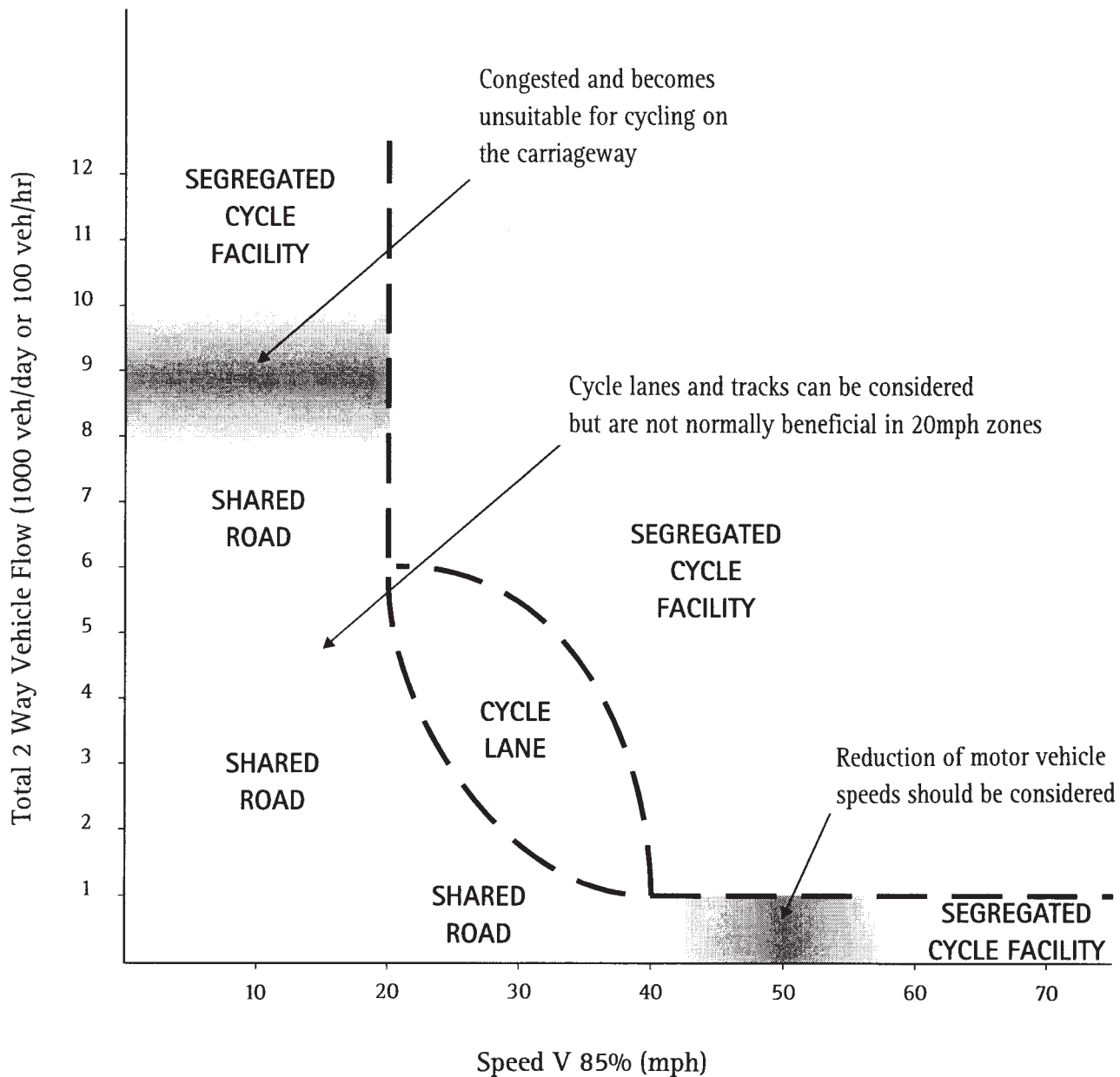
In order to assess the suitability of any road for a National Cycle Network route it is important to quantify vehicle speeds and flows. These criteria indicate whether the conditions need to be modified for cyclists to share the road with motor vehicles, or whether a segregated route should be established. Traffic conditions should be examined in both peak and off-peak periods. The designer should recognise that options are available to divert motor traffic, introduce traffic calming measures and to alter road markings and kerb lines to redistribute road and footway space. Reducing vehicle speeds and volumes are important elements in providing for cyclists.

This relationship is shown on Figure 4.1 which is an adaptation of a graph given in the CROW document "Sign Up for the Bike". The CROW criteria have been modified to reflect the needs of the inexperienced cyclist or family group who will benefit from segregation earlier than the experienced cyclist. Figure 4.1 sets out the motor vehicle speed and flow criteria which are relevant in determining the most appropriate cycling facility in both urban and rural situations. In practice this will be the first step in the assessment of the need for segregation and will be complemented by a broader assessment of local factors.

### **Parking and Loading**

An important factor in assessing the suitability of a road for cyclists is the use of the kerb space. Parking and loading take up road space and the opening of vehicle doors creates a hazard for cyclists. Where circumstances permit, it may be appropriate to restrict kerbside parking along a cycle route, displacing the vehicles to adjacent roads or off-street parking. Loading may also be relocated to more suitable areas. Such controls may operate throughout the day, or cover those time periods when cyclists are most at risk. Where restrictions are not feasible, consideration should be given to how the kerbside activity could be better managed to reduce the hazard to cyclists. For example, where the turnover of parked cars is high, a dividing strip may be required.

# Link Specification Criteria - Figure 4.1



If the 85% speeds are above the speed limit, consideration should be given to speed reduction measures

## **Reallocation of Road Space**

A fundamental aspect of the provision of cycling facilities is the reallocation of road space from motor vehicles to cycling. This can be seen in the majority of figures within this document. The provision of **cycle tracks in urban areas at the expense of the** footway is not encouraged, particularly where there are high pedestrian flows, but it is acknowledged that there are situations where this may be necessary. If a segregated facility is being provided then the cyclist should usually be placed nearest to the motor traffic and a dividing strip provided between the cycle track and the carriageway.

Reallocation of road space not only promotes cycling but can act as a restraint on motor traffic which is now an important aspect of transport and planning policy.

## Reallocation of Road Space to Cyclists - Figure 4.2

### Notes

#### Removal of car parking

1. These examples are given to emphasise the importance of reallocating road space from motor vehicles to cyclists. More detailed consideration of the features shown in this figure is provided elsewhere.
2. The provision of cycle lanes is achieved by removing parking from one side of the carriageway and reducing the all purpose carriageway width from 7.0m to 6.0m.
3. Reducing lane widths can help to reduce traffic speed. A width of 6.0m will be capable of carrying HGVs, buses and a vehicle flow of up to 10,000 vpd.

#### Dual Carriageway

4. A cycle track or cycle track/footway can be created by reducing a dual carriageway to a single carriageway. Planting avenue trees will enhance the facility.

#### Advanced Stop Lines

5. This facility has advantages for cyclists without necessarily reducing junction capacity. Reducing the number of cyclists in the general traffic stream will enable the saturation flow of the nearside lane to be maintained with a narrower width. In some instances lane widths of 2.5m can be acceptable. Reducing the traffic flow will be an important aspect for some National Cycle Network routes. See Figures 5.12, 5.13 and 5.15.

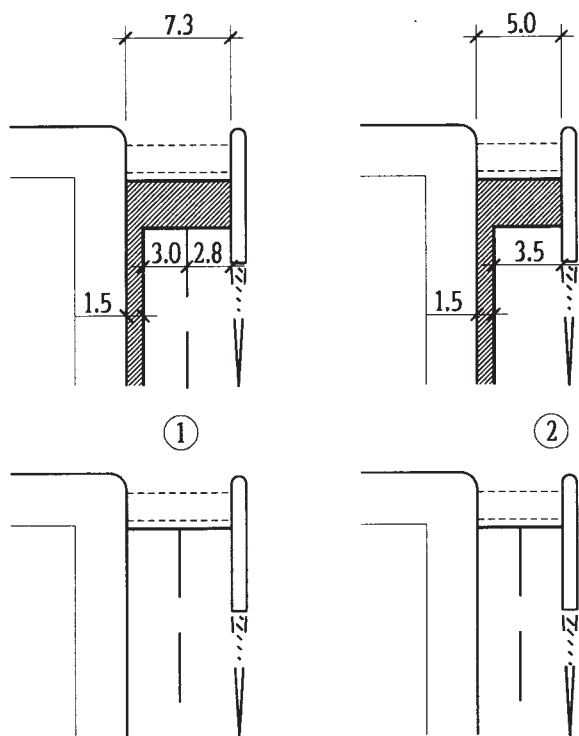
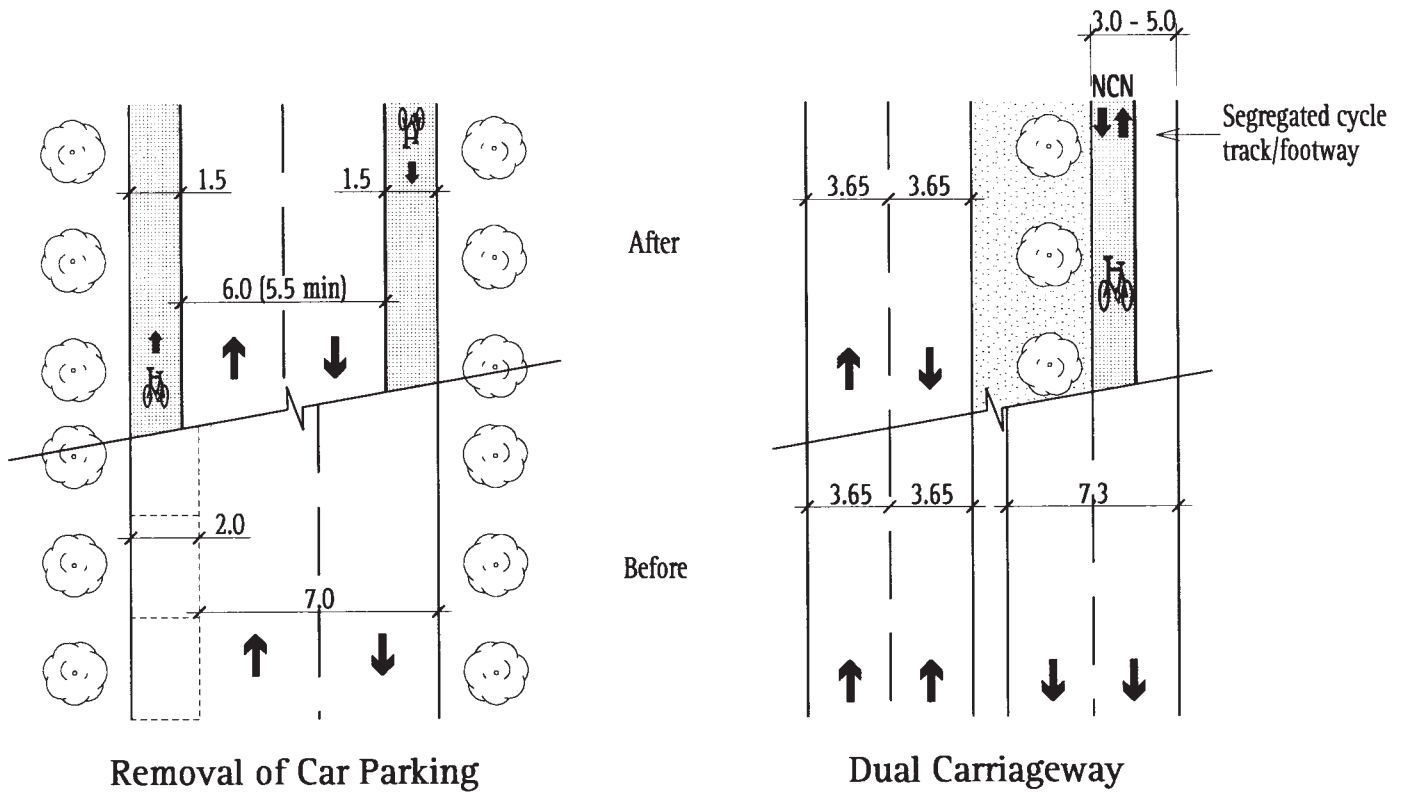
#### Multi-Lane Highways

6. Where possible the provision of cycle facilities at the expense of motor traffic should also be accompanied by an enhancement of pedestrian facilities and environmental improvements.

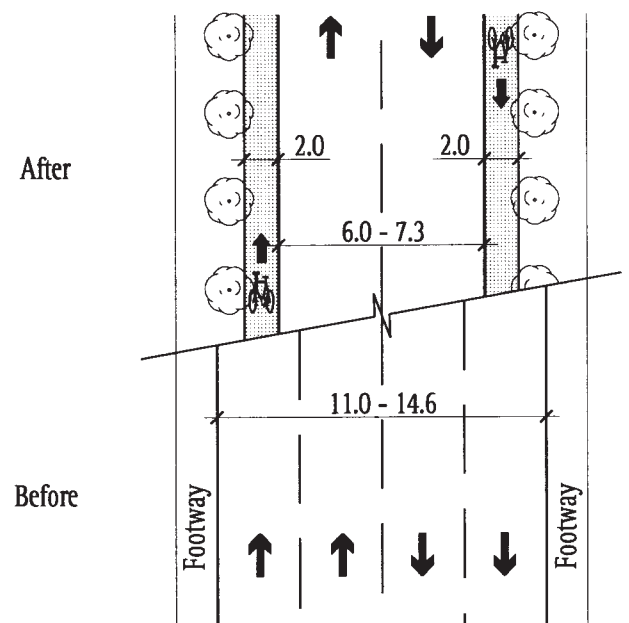
### Examples

1. BRISTOL: College Green  
(Avon County Council)
2. HAMMERSMITH: King Street (London Borough of Hammersmith and Fulham)
3. DERBY: Exeter Bridge  
(Derbyshire County Council)

# Reallocation of Road Space to Cyclists – Figure 4.2



Advanced Stop Lines



Multi-Lane Highways

## Mandatory With-Flow Cycle lane and Bus lane - Figure 4.3

### Notes

1. Where feasible mandatory cycle lanes are preferable to advisory cycle lanes for the National Cycle Network.
- to
2. If stopping and loading cannot be prohibited over the length of a mandatory cycle lane then a time-limited mandatory lane or an advisory cycle lane may be considered. Advisory cycle lanes may be appropriate on roads too narrow to permit mandatory lanes.
3. Where mandatory cycle lanes of 1.5m would result in unacceptably narrow lane widths for other traffic, consideration should be given to using an advisory cycle lane, accepting that on occasions there may be some encroachment from motor vehicles.
4. The use of busy bus lanes as a part of the National Cycle Network is not ideal for young or novice cyclists. It is National Cycle Network policy to avoid major urban roads whenever possible.
5. 24-hour bus lanes are preferred, but 12-hour bus lanes are acceptable.

6. The bus lane width shown is the desirable standard. This width will permit cyclists to pass stationary buses. Where bus stops are not within the bus lane, or where bus flows are low, the width of the lane may be reduced to 3.0m for short lengths.

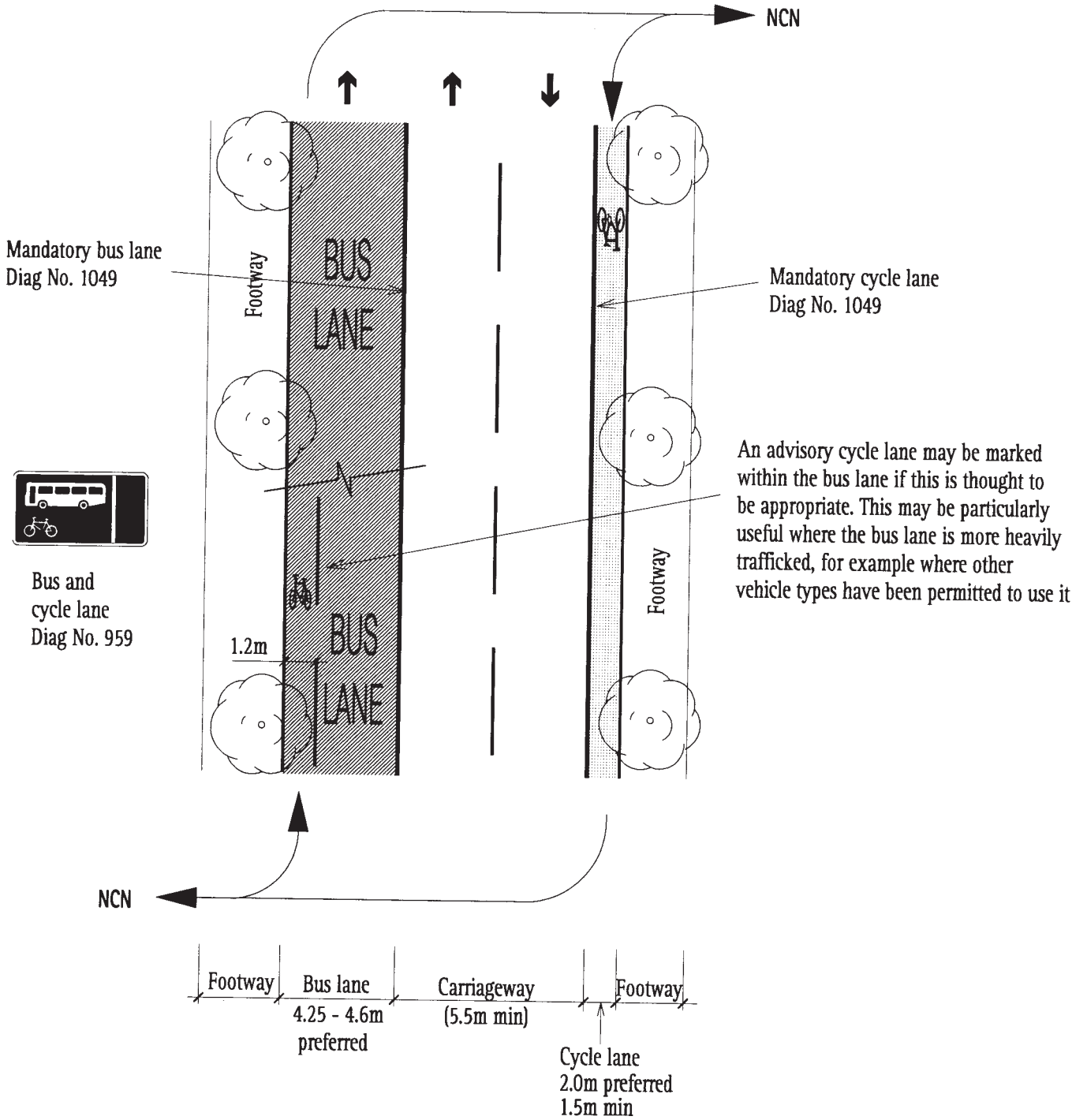
### References

1. Local Transport Note 1189  
Making Way for Cyclists (S)
2. Local Transport Note 1191  
Keep Buses Moving. Guide to Traffic Management  
  
Assist Buses in Urban Areas

### Examples

1. There are numerous examples of mandatory and advisory cycle lanes across the country
2. There are numerous examples of bus lanes which cycles can use
3. BRIGHTON: Advisory cycle lane in Bus Street (East Sussex County Council)
4. OXFORD: St Giles - Mandatory cycle lane (Oxford City Council)
5. NOTTINGHAM: Mansfield Road - Bus lane plus cycles (Nottinghamshire County Council)

# Mandatory With-Flow Cycle Lane and Bus Lane - Figure 4.3



## **Advisory Cycle Lane with Adjacent Parking/Loading - Figure 4.4**

### **Notes**

1. The use of mandatory cycle lanes is preferred. However, where kerbside parking is retained, an advisory cycle lane is necessary to allow access for the parking.
2. A dividing strip is necessary between the parked vehicles and the cycle lane to protect cyclists from opening doors. This is most critical when there is a high turnover of parking.
3. The dividing strip should be clearly visible. This can be achieved by defining both sides of the cycle lane and colouring its surface. Otherwise the dividing strip may be in a contrasting material or hatched.

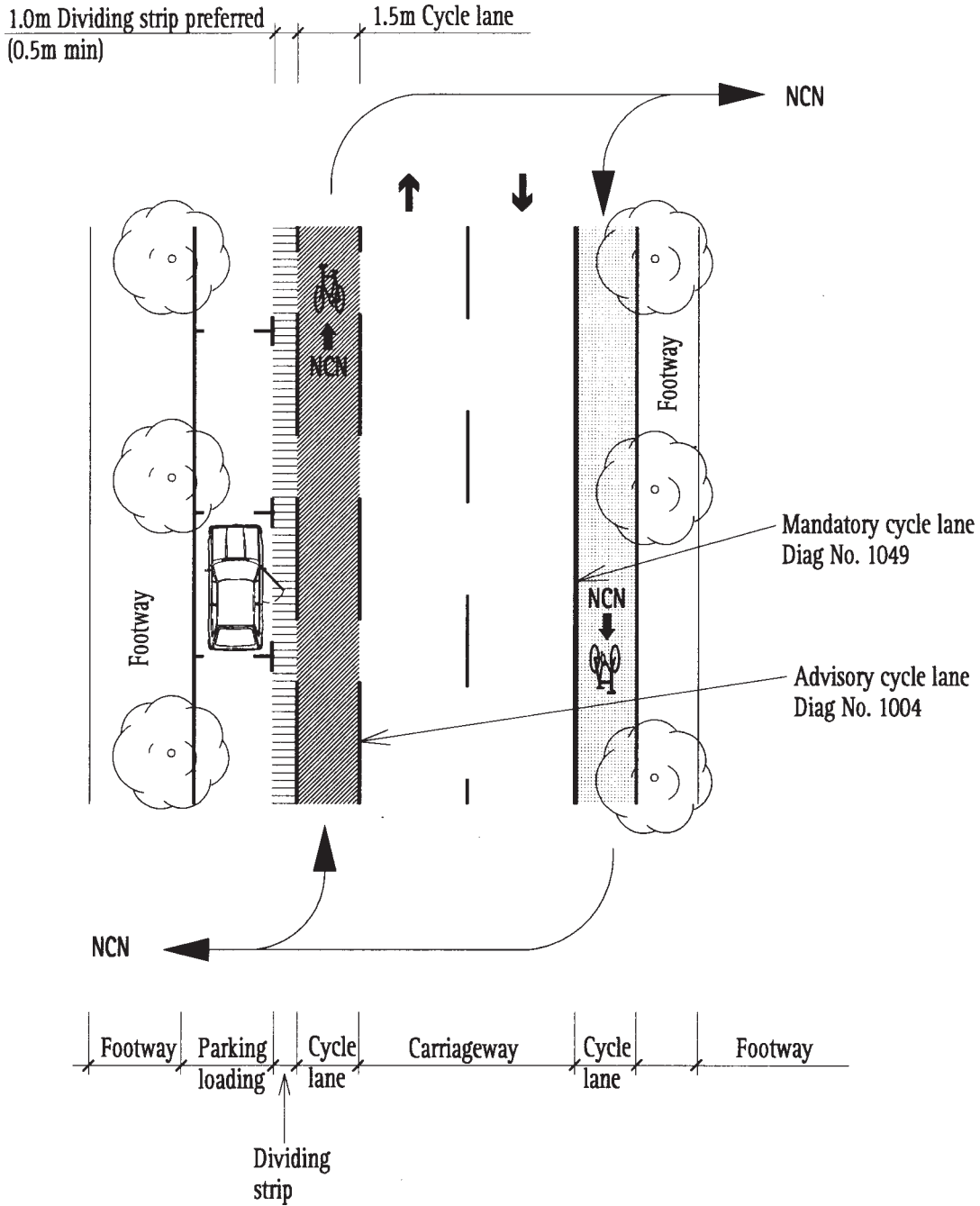
### **References**

1. Local Transport Note 1189 Making Way for Cyclists (S)

### **Examples**

1. OXFORD: Cowley Road  
(Oxfordshire County Council)
2. EXETER: Burnthouse Lane  
(Devon County Council)
3. NOTTINGHAM: Beechdale Road  
(Nottinghamshire County Council)
4. BRISTOL: Winterstoke Road  
(Avon County Council)
5. OXFORD: London Road  
(Oxfordshire County Council)

# Advisory Cycle Lane with Adjacent Parking/Loading - Figure 4.4



## Contra-Flow Cycle Lane - Figure 4.5

### Notes

1. Where motor vehicle speeds and volumes are sufficiently low, the preferred method of allowing cyclists to travel "contra-flow" is by creating a "false" one-way street or by a Traffic Regulation Order. This arrangement can avoid the need for parking restrictions or cycle lanes and is common in other bicycle- friendly European countries. See Figure 6.4 for details.
2. The preferred width of a one-way cycle lane is 2.0m, minimum width 1.5m. Two-way cycle lanes should preferably be 3.0m wide and should be physically segregated from motor vehicles.
3. A mandatory contra-flow cycle lane requires a Traffic Regulation Order to prohibit motor vehicles entering the lane and to prohibit waiting and loading in the cycle lane.
4. Where the carriageway width permits, it is advantageous to provide a raised kerb strip (continuous or broken) separating motor vehicles from cycles.
5. The provision of the right-turning cycle lane can be considered where vehicle speeds are below 40mph and vehicle flows are below 6000vpd. Where these criteria are not met then a 'Jug handle' with a central island as illustrated in Figure 6.4 may be appropriate.
6. Where occasional encroachment into the contra-flow lane may be unavoidable, e.g. to permit access by large vehicles to frontages, a stretch of advisory contra-flow cycle lane may be the best solution. See Figure 4.6.

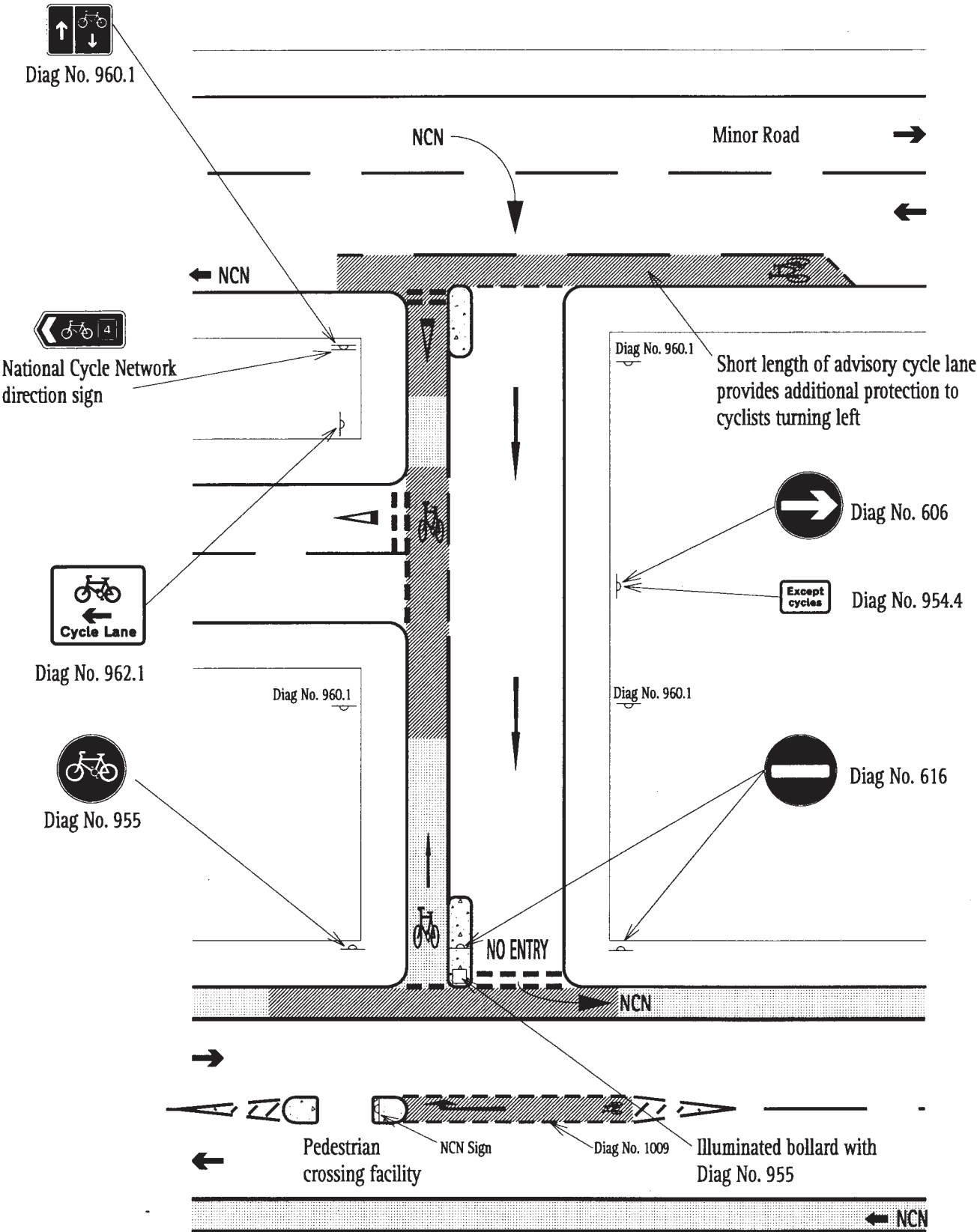
### References

1. Local Transport Note 1189  
Making Way for Cyclists (S)

### Examples

1. MANCHESTER: Cooper Street  
(Manchester City Council)
2. MIDDLESBROUGH: Southwell Road/Eastbourne Road  
(Cleveland County Council)
3. PETERBOROUGH: Geneve Street  
(Cambridgeshire County Council)
4. CAMBRIDGE: Downing Street  
(Cambridgeshire County Council)
5. NOTTINGHAM: Middle Street, Beeston  
(Nottinghamshire County Council)

# Contra-Flow Cycle Lane - Figure 4.5



## Contra-Flow Cycle Lane with Adjacent Parking - Figure 4.6

### Notes

1. The preferred width of a one-way cycle lane is 2.0m, minimum width 1.5m. A two-way cycle lane should preferably be 3.0m wide and should be physically segregated from motor vehicles.
2. Where mandatory cycle lanes are below the minimum width of 1.5m, consideration should be given to using an advisory cycle lane of a more suitable width, accepting that on occasions there may be some encroachment from motor vehicles.
3. The dividing strip should be clearly visible. This can be achieved by defining both sides of the cycle lane and colouring its surface. Otherwise the dividing strip may be in a contrasting material or hatched.
4. A contra-flow advisory cycle lane does not require a Traffic Regulation Order. However, it will be necessary for the "one way" traffic order to contain an exemption for cyclists.

### References

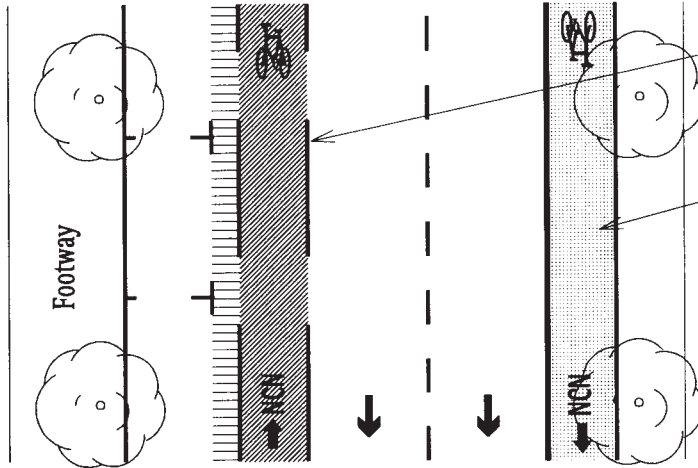
1. Local Transport Note 1189  
Making Way for Cyclists (S)
2. Traffic Advisory Leaflet 5189  
Innovatory Cycle Scheme, London, King Street  
Hammersmith Contra-Flow Cycle Lane

### Examples

1. LONDON: Crisp Road and King Street  
Contra-flow with segregation island  
(London Borough of Hammersmith Et Fulham)
2. BRISTOL: Arley Hill and Neatham Road  
Contra-flow with adjacent parking  
(Avon County Council)

# Contra-Flow Cycle Lane with Adjacent Parking - Figure 4.6

1.0m Dividing strip preferred  
(0.5m min)      1.5m Cycle lane



## Contra-Flow Lane Markings

Advisory lane marking  
Diag No 1004

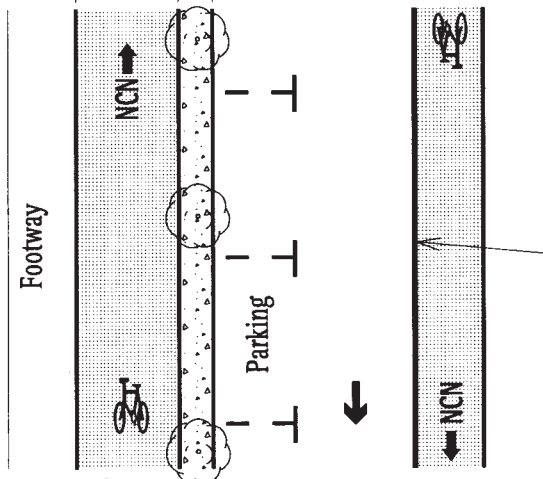
With-flow cycle movements could use advisory or mandatory cycle lane if appropriate



Contra-flow cycles

The above sign is recommended to be used in conjunction with advisory contra-flow lanes. The use of this sign will require special authorisation from the DOT

2.0m preferred width      1.0m Segregation island  
0.5m min



## Cycle Lane with Segregation Island

NOTE: Strategic gaps or channels through island can alleviate drainage problems. The segregation island could be used for mounting parking meters.

Mandatory with-flow cycle lane

## Segregated and Unsegregated Cycle Track/Footway - Figure 4.7

### Notes

1. The provision of cycle facilities in urban areas at the expense of pedestrian facilities is not encouraged where there are high pedestrian flows. It is preferable to leave footways intact and take space from the carriageway to provide for the cyclist. Every proposal to convert footways to shared use must be considered on its local merits as footways and their use are so varied.
2. See Figure 5.4 for details of cycle routes crossed by private accesses.
3. The margin shown in the detail is provided where space permits as a physical comfort barrier between motor vehicles and cyclists/pedestrians. The planting of trees is encouraged to provide a visual shield. Street furniture or trees within the margin will entail increasing the width to a minimum of 1.0m in order to provide the necessary clearances to motor vehicles and cyclists. Street furniture within the cycle track/footway should be removed or relocated.
4. The most common method of tactile segregation is by using a raised white line delineator Diag No. 1049.1 combined with tactile paving. The use of a 50mm change of level may be appropriate in certain locations on the National Cycle Network to suit local conditions or where it is considered that this omission will be particularly detrimental to partially sighted people.
5. On an unsegregated cycle track/footway a 3.0m width is preferable, although 2.0m width has been successful for flows of 100-200 pedestrians/cyclists per hour. A 2.0m width facility should normally be unbounded along both sides. More detailed information on widths for segregated facilities is given in **Figure 8.4**.

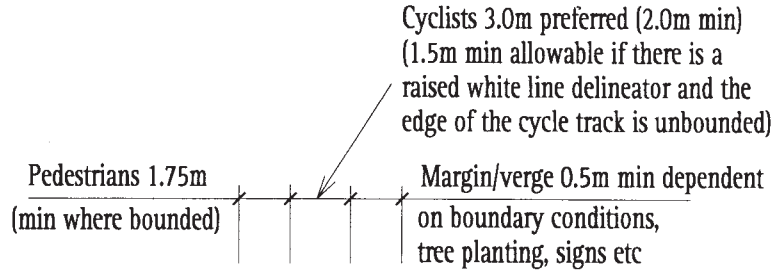
### References

1. Local Transport Note 2186  
Shared Use by Cyclists and Pedestrians (S)
2. Traffic Advisory Leaflet 4190  
Tactile Markings for Segregated Shared Use by  
Cyclists and Pedestrians
3. Disability Unit Circular 1191  
The Use of Dropped Kerbs and Tactile Surfaces at  
Pedestrian Crossing Points
4. Disability Unit Draft Guidance Note  
Guidance on the Use of Tactile Paving Surfaces



### Examples

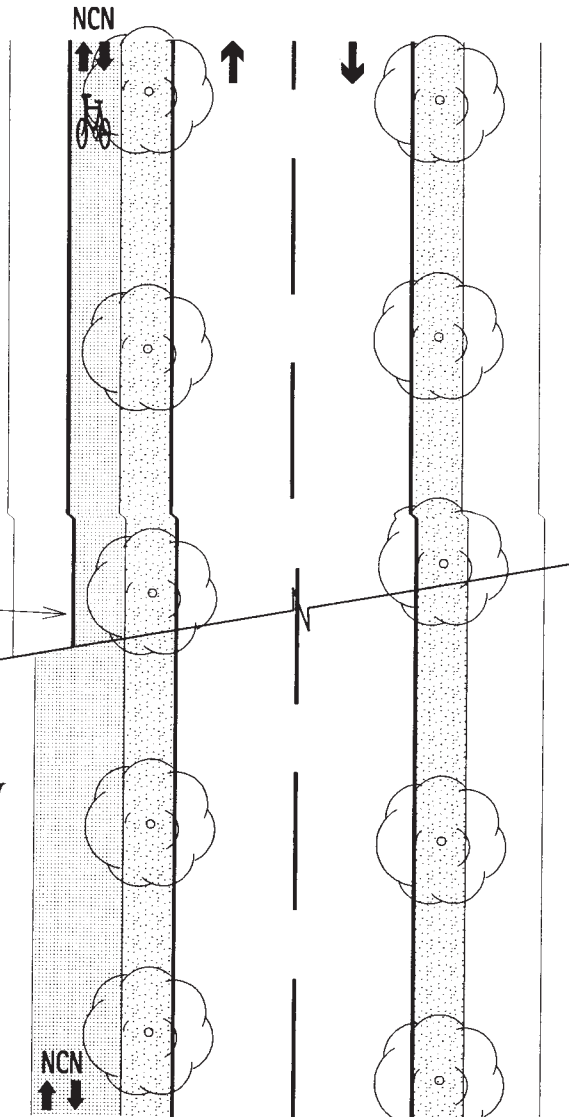
1. MANCHESTER: Wythenshaw/Simons Way Cycle  
Route  
(Manchester City Council)
2. SHEFFIELD: Devonshire Green Cycle Track  
(Sheffield City Council)
3. LONDON: Hyde Park  
(Westminster City Council)
4. NOTTINGHAM: Queens Walk, The Meadows (Nottinghamshire County Council) MILTON KEYNES: Redways  
(Buckinghamshire County Council) SOUTHAMPTON: Totton Bypass (Hampshire County Council)
7. NOTTINGHAM: Hucknall Bypass A611  
(Nottinghamshire County Council)

# Segregated and Unsegregated Cycle Track/Footway - Figure 4.7





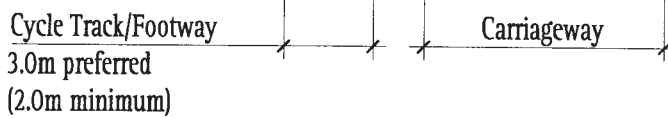
## Segregated Cycle Track/Footway

- Diag No. 957 
- Plate added showing route number on same post 
- Note: Mirror image required for people travelling in opposite direction
- Raised white line delineator  
Diag No. 1049.1



## Unsegregated Cycle Track/Footway

- Diag No. 956 
- Plate added showing route number on same post 



## Cycle Track Joining and Leaving Carriageway - Figure 4.8

### Notes

1. The design should allow cyclists to join or leave the carriageway safely and conveniently, without interruption. Particular attention should be paid to kerb ramp and radius details.
2. The most common method of tactile segregation of cycle track/footway is by using a raised white line delineator Diag No. 1049.1 combined with tactile paving. The use of a 50mm change of level may be appropriate in certain locations on the National Cycle Network to suit local conditions or where it is considered that this omission will be particularly detrimental to partially sighted people.
3. The margin/verge separation shown in the detail is provided where space permits as a physical comfort barrier between motor vehicles and cyclists/ pedestrians. Street furniture erected within it will entrance to necessitate a minimum margin width of 1.0m in order to provide the necessary clearances to vehicles.
4. Diag No. 1024 "Slow" has been shown on approaches to the crossing. If the designer wishes to include this marking and the text height prescribed is unsuitable then the text height prescribed for Diag No. 1058 should be used. The use of half height "Slow" markings will require special authorisation from the DOT.

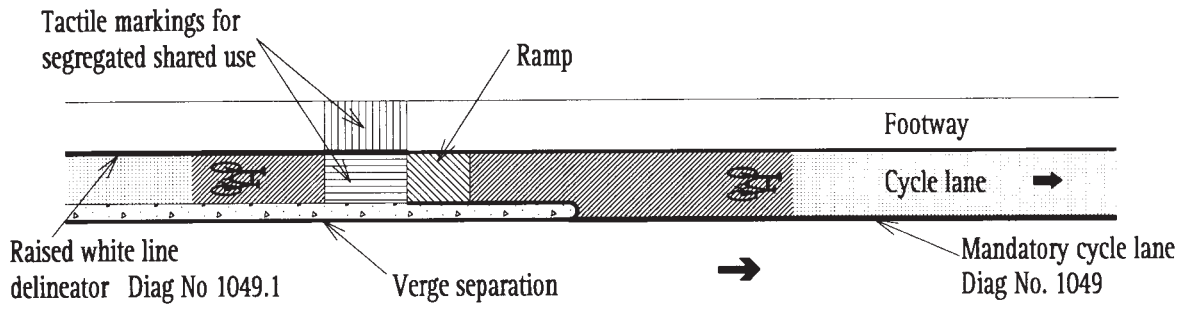
### References

1. Local Transport Note 1189  
Making Way for Cyclists (S)
2. Traffic Advisory Leaflet 4190  
Tactile Markings for Segregated Shared Use by Cyclists and Pedestrians

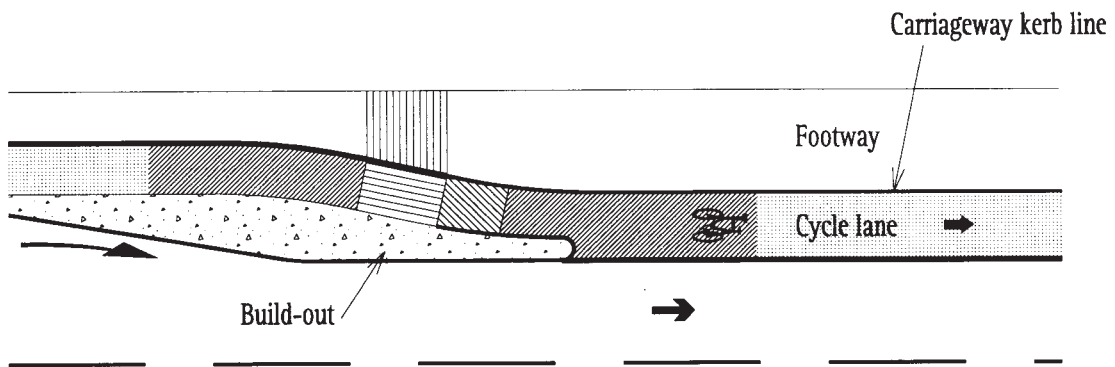
### Examples

1. CAMBRIDGE: Barton Road  
(Cambridgeshire County Council)
2. YORK: Water End  
(York City Council)
3. MANCHESTER: Oxford Road Cycle Route  
(Manchester City Council)
4. OXFORD: Belbroughton Road/Banbury Road  
(Oxfordshire County Council)
5. NOTTINGHAM: Beeston Lane, West  
University (Nottinghamshire County Council)

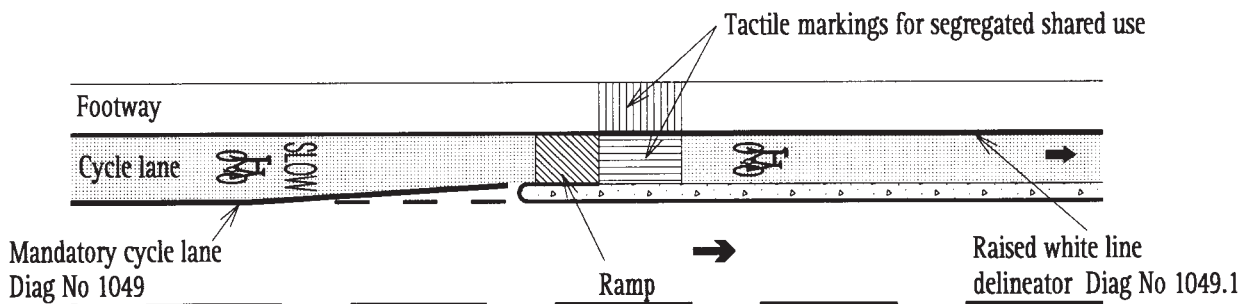
# Cycle Track Joining and Leaving Carriageway - Figure 4.8



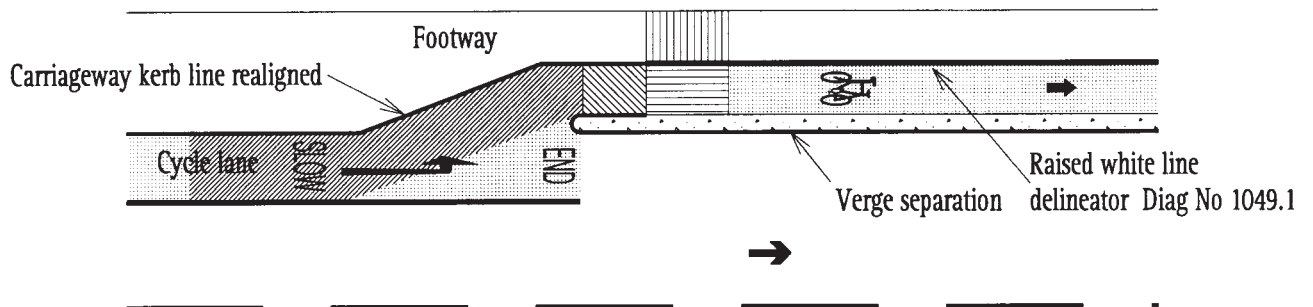
Joining Carriageway: Option 1



Joining Carriageway: Option 2



Leaving Carriageway: Option 1



Leaving Carriageway: Option 2