

Laverstock to City Centre Cycle Facilities, Salisbury.

**Assessment of appropriate cycle facilities to link the
suburb of Laverstock to Salisbury City centre.**

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1 Introduction

1.1 Purpose of this report

The purpose of this document is to report on a review of existing and proposed cycle infrastructure linking the suburb of Laverstock with the nearby city centre of Salisbury in the county of Wiltshire. Also within this report are consultant recommendations with regard to measures that could be taken forward to detailed design and implementation as improvements for the benefit of cyclists.

1.2 Background

Improvements to facilities for cyclists between the suburb of Laverstock and Salisbury city centre had been investigated by local highway authority staff in 2003. There had been a need identified for better cycle specific infrastructure to link the two areas and so in line with Local Transport Plan (LTP) objectives to increase cycle use, an initial set of proposals were drawn up and budget allocated for detail design and implementation in the following year. However further work was held in abeyance until after the Government Office of the South West had re-appraised the Salisbury Transport Plan.

In 2006 the scheme was resurrected and a report produced by Salisbury Joint Transportation Team based upon the original proposals. The report produced by the team titled "Laverstock to City Centre Cycle Infrastructure" includes a number of options and recommended proposals that are centred on providing off carriageway cycle tracks for use by less confident cyclists including pupils attending the schools located in Laverstock.

The site poses significant physical constraints preventing straightforward construction of a continuous shared use cycle track, which had been deemed to be the preferred solution in 2003. Therefore despite support from cycling organisations and Laverstock Parish Council for the draft proposals, it has been deemed appropriate to review the practicalities of implementation in light of current guidance and best practice; and also to ascertain if a more appropriate solution is achievable.

Mouchel have therefore been instructed by the Wiltshire County Council project officer to review the 2006 report and assess what cycling infrastructure, if any, is both appropriate and feasible in 2008.

2 The existing layout

2.1 Route basis

The route between Laverstock and the city centre is predominantly one identified to serve the many children attending the several schools in Laverstock, many of whom would travel from the Salisbury direction, and also commuters or shoppers that would travel towards Salisbury from the Laverstock direction. The diagram below illustrates the routes suggested for review.

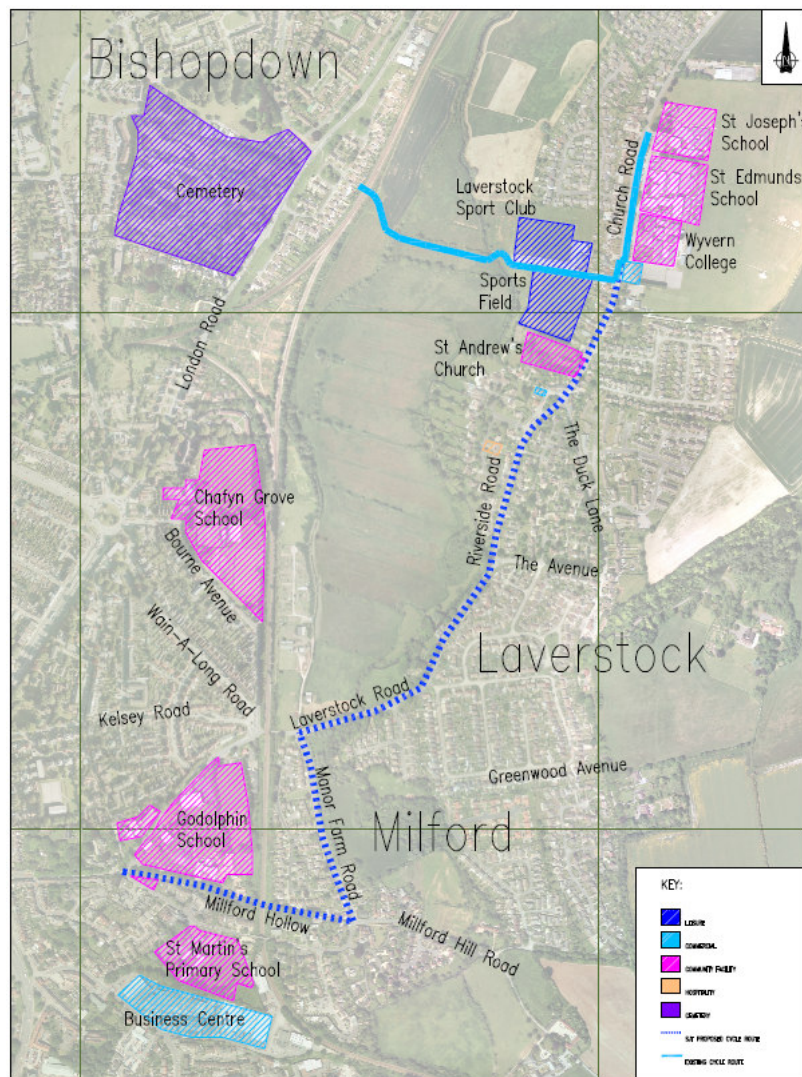


Figure 1 Suggested route and centres of attraction

2.2 Existing infrastructure

2.2.1 *Bishopdown to Laverstock Cycle track*

There is currently an off carriageway cycle track that links Bishopdown to Laverstock. This is well used and the aspiration would be to mimic this with a similar standard of facility to the south of it's termination on Church Road.

2.2.2 *Church Road Shared Use Cycle track*

There are some shared use cycle track facilities linking the Bishopdown cycle track to the adjacent school as shown in Figure 2. The facilities are limited to providing school access and are provided within a length of specific traffic calming that incorporates effective vertical deflections. This traffic calming does not continue along the majority of the route considered for this report.



Figure 2 End of Bishopdown cycle track

2.2.3 On carriageway

Heading towards Salisbury from the termination of the Church Road facilities, cyclists would currently continue along to the junction with Manor Road via Riverside Road and Laverstock Road. At this point they have two options both of which involve a relatively steep gradient over a considerable distance. The first and most direct route continues up Laverstock Road passing under the intimidating and narrow railway bridge and on past Godolphin School through a narrow steep sided section.



Figure 3 Narrow carriageway and Railway Bridge.

Alternatively the cyclist may choose the longer but slightly less intimidating route along the level Manor Road and then up the gradient of Milford Hill.



Figure 4 Manor Road and Milford Hill.

3 Meeting current criteria

Currently local Highway Authorities are encouraged by the Department for Transport (DfT) to make provision for cyclists through a range of guidance documents that have been written on behalf of, or with input from, the department. Direct advice within published Local Transport Notes on the assessment of when and how cycle tracks shared with pedestrians are implemented dates back to the 1980's. However there have been two iterations of draft replacement documents issued by the DfT for public consultation since 2004. These updates reflect best practice in this regard and take account of practical experience from cycling groups, local authorities and those that can be adversely affected by shared use conversions such as pedestrian groups. Broadly speaking these latest documents are an amalgamation of principles set out in Sustrans design guidance and that contained in "Cycle Friendly Infrastructure" the joint DfT, CTC, IHIE design guide for highway engineers.

In order to encourage increased use of cycling as a means of transport it has been seen and documented by Transport Research Laboratory (TRL) "Cycle Routes" that good quality specific facilities will often persuade existing utility cyclists to alter their route in preference of them and can encourage an increase in leisure cycling.

In order to achieve high quality routes, primary consideration for any cycle improvement scheme is to follow the hierarchy of provision also known as a hierarchy of solutions. This is echoed in many of the documents mentioned and is succinctly shown in the CTC quick reference sheet overleaf.



Quick Reference Sheet

Cycling Infrastructure Requirements		Hierarchy of Provision	
☾ <i>Coherence</i>	Continuous, consistent quality, linking all origins with all destinations	☾ <i>Traffic Reduction</i>	Particularly HGVs. Divert traffic, traffic calming, road closures.
☾ <i>Directness</i>	Follow desire lines without detours or delays	☾ <i>Speed reduction</i>	20 mph zones, Homezones, shared surfaces, traffic calming
☾ <i>Attractiveness</i>	Well lit, good security and visibility, quiet, attractive environment	☾ <i>Junctions and Traffic Management</i>	ASLs, signalisation, re-engineering of roundabouts, freedom from banned turns, removal of dedicated vehicle left turn slip lanes.
☾ <i>Safety</i>	Real and perceived	☾ <i>Carriageway Redistribution</i>	Cycle lanes, bus lanes
☾ <i>Comfort</i>	Good surfaces and maintenance, no awkward manoeuvres or interruptions	☾ <i>Off road provision away from highways</i>	Railway paths, canal towpaths, paths across parks, new cycle paths, ROWIPs
		☾ <i>Roadside pavement conversions</i>	Rarely satisfactory. Only appropriate for busy, fast rural roads with few side roads

Consider first

Consider last

Cycle Path Basic Design Dimensions		
Parameter	Recommended	Minimum – not to be used unless it is to the users clear advantage.
Gradient	3%	5%
Width – on road cycle lane	2m	1.5m
Width – cycle track only	3m	2m
Width – shared track TA 90-05	5m (3.0m cyclist, 2.0m pedestrian)	3m (1.5m cyclist, 1.5m pedestrian)
Crossfall	2.5%	2% to 3.3%
Radius of curvature	15m or greater	
Tight bend radius	4m minimum	
Visibility on bends	30m	20m
Design speed	30kph min	

www.ctc.org.uk

Figure 5 CTC Quick Ref Hierarchy of Provision

In order that the most vulnerable are afforded most protection when considering measures there is also a hierarchy of users. It is usual to place pedestrians, particularly those with mobility or other impairments, first followed by cyclists where they share the same spaces. Motor vehicle users would be behind both of those categories. The hierarchy of provision as shown above and that hierarchy of users therefore form the basis up on which the remainder of the report is based.

4 Review of previous scheme proposals

4.1 Suitability of a shared use cycle track solution

In the case of the draft proposals detailed in the 2006 Salisbury Joint Transportation Team report “Laverstock to City Centre Cycle Infrastructure” it would appear that there is no practical way to complete a direct, continuous and coherent off carriageway route from the Bishopdown cycle track in Laverstock to the end of Milford Hollow as discussed in that report. This conclusion is reached following review of the report and undertaking site observations.

4.1.1 *Footpath to Cycle Track conversion*

Milford Hollow is a public footpath which would require conversion under the auspices of the full Cycle Tracks Act 1984. This process is onerous for the promoting authority, leading to public inquiry if unresolved objections were to be received. It is highly likely that objections would be received due to the steep topography and unsuitably narrow sections observed causing potential conflict. Also the existing pedestrian railway over bridge is unlikely to conform to the required parapet standards for use adjacent to a cycle track and is itself extremely narrow for shared use to be considered.



Figure 6 Milford Hollow - bridge and foot path.

4.1.2 *Footway to Cycle Track conversion*

Conversion of a footway adjacent to a carriageway (as distinct from a public right of way foot path discussed above) is a less onerous task for a highway authority. This is often considered in such projects where there is adequate space, or flows are low enough, to minimise potential conflict between pedestrians and cyclists.

As acknowledged in the 2006 SJTT report, there are many locations along the existing footway that are not wide enough to advocate shared use either with or without segregation by tactile white line. There are photographs below showing some instances of this. Unfortunately the carriageway is also narrow in places, so if two-way traffic flow is to be maintained, then widening of the footway would be impractical and a prohibitively expensive undertaking due to the scale of what would be required.



Figure 7 Narrow sections of existing footway and potential conflict points.

The remaining sections of footway that would be of adequate width for consideration to convert, also suffer from a proliferation of side road crossings and private driveways entering onto the proposed route. This introduces unnecessary points of conflict between cyclists and motor vehicles when the cyclist on the carriageway would maintain right of way and adequate forward visibility.

The commonly held perception that it is safer for a cyclist to be on a shared use cycle track rather than on the road may not be borne out in this instance. Additionally a shared use path is always to the detriment of the pedestrian user and so without a more substantial case for taking cyclists off the carriageway this could not be deemed a suitable course of action for the project.

4.1.3 *Recommendation – Shared use*

A high quality, attractive, safe, direct and continuous off carriageway route cannot be achieved. It is therefore recommended that no further investigations are undertaken into the provision of a shared use cycle track facility on this route.

4.2 **On carriageway cycle lanes**

On carriageway cycle lanes have been indicated as the means to link sections of shared use cycle track. They have only been indicated where it is deemed that the carriageway is of sufficient width to maintain two way vehicle flow with a centre line and 1.5m advisory cycle lanes. Whilst this may be an acceptable scenario on roads of continuous width, this particular site causes a very disjointed approach where lanes have to be discontinued. Also there are locations with a cycle lane on only one

side of the carriageway, again due to lack of width. This has the result of squeezing the space available for the cyclist on the opposite side of the road and so it can be seen that providing no cycle lane at all may be preferable in that case. The exception to this would be on a steep hill where cyclists may better match vehicle speeds on the descent whilst they can benefit from the added clearance afforded by the cycle lane on the ascent.

4.2.1 *Alternative options*

A novel alternative would be to remove the centreline entirely where the carriageway is too narrow to maintain the bi-directional vehicle lanes and cycle lanes at the same time. This approach has been tried in Peebles in Scotland and at numerous locations in England to great effect. Example documents detailing such schemes, have been appended. If this approach were to be followed then provision of a continuous cycle lane in each direction and a therefore a continuous route would be achieved.

If this approach were adopted then there are several considerations:

- I. Drivers may stay in the cycle lane when there are low cycle flows, so devaluing their worth.
- II. The layout encourages drivers into a “head on” trajectory which may be confusing to some.
- III. Existing markings that are removed without resurfacing may still be visible, particularly in poor light and wet conditions.
- IV. This is likely to have a speed reducing & traffic calming effect as drivers use caution.
- V. It is likely to generate adverse publicity for the Highway Authority if a collision were to occur
- VI. Publicity and education about the reasons for such a scheme would be advisable.

4.2.2 *Recommendation – Cycle Lanes*

Whilst there are potential benefits to cyclists in adopting this approach, widespread consultation and further traffic calming proposals are likely to be required to achieve a safe and commendable scheme for implementation. It is recommended that a consultation exercise is undertaken on that basis.

4.3 **Uncontrolled crossing points**

In order to access facilities where there is insufficient width to provide a dedicated cycle lane or cycle track in each direction, the 2006 report suggests uncontrolled crossing locations similar to existing installations along the route. These merely consist of contrasting coloured carriageway surfacing and wooden posts to alert drivers to the presence of the crossing point. The effectiveness of this approach is

unmeasured but would appear to be a reasonable approach that does not confer any change to right of way and is not observed to confuse drivers, cyclists or pedestrians. The only suitable prescribed crossing for cycle use is the traffic signal controlled Toucan crossing. The multiple installations required to achieve the route suggested in the report would be prohibitive in cost and delay terms to both drivers and pedestrians/cyclists. Site observations would indicate relatively low flows of vehicles and pedestrians, further undermining the need for such equipment. No account has been taken of any visually impaired pedestrians in the area that are likely to benefit from traffic signal crossings and there is no equivalent to the Zebra crossing available for cyclists.

4.4 Route signs

Route signage is a cost effective way of indicating the most appropriate routes for cyclists, highlighting where specific facilities may be found and also alerting drivers' of the likely presence of cyclists.

4.4.1 Recommendation - Route Signs

It is recommended that a cycle and pedestrian signing scheme is progressed alongside any other improvements made for cyclists, in whatever form those improvements may take.

5 Conclusion

The scheme as outlined in the 2006 report by Salisbury Joint Transportation Team does not conform to current guidance and best practice for cycle infrastructure provision. It should not be pursued in the format shown.

Providing a coherent, direct route between Laverstock and Salisbury is not possible off carriageway without prohibitive levels of construction and associated cost for the outcome that may be realised in terms of LTP objectives. The level of modal shift it would be likely to generate being limited to a portion of school pupils and an un-quantified number of local utility journeys.

An on carriageway scheme based on road space reallocation using predominantly white lining and coloured surfacing treatment should be investigated further with a view to widespread consultation before implementation.

It is suggested that consideration is given to a well signed gyratory route for cycles to maximise use of road width available at Milford Hill and Laverstock Road where there are steep gradients.

6 Appendix A

Review plans of 2006 proposals with actual dimensions and photographs

- Existing layout and road markings Drawing Number 748525 - 002
- Preliminary Design Drawing Numbers
 - 748525 – 006
 - 748525 – 007
 - 748525 – 008
 - 748525 – 009

7 Appendix B

On carriageway cycle lanes - concept plans

Drawing Numbers:

- 748525 – 010
- 748525 - 011
- 748525 - 012

8 Appendix C

Examples of alternative provision for cyclists on carriageway:

- Cowley Road, Oxford
- B7062 Kingsmeadows Road, Peebles
- The Deep Visitor Attraction, Hull
- Rownhams Lane, Hampshire
- Canongate, St Andrews
- Bewdley, Worcestershire
- Button Oak, Shropshire
- Blackwater and Salisbury Rd, Hampshire
- Felixstowe Road, Martlesham, Suffolk

Reproduced from Cycling Scotland and Cycling England publication

1. Background

As part of schemes to create more cycle-friendly environments, Cycling Scotland has consulted widely on the following cycle-friendly measures:

- Centreline Removal;

- Use of Cycle Logo 1057 with no cycle lane markings; and

- Measures at roundabouts.

We received some extremely useful advice and information on similar measures in other parts of the UK and would like to disseminate the information gathered as a mechanism for exchanging ideas regarding good practice.

2. Centreline Removal

B7062 KINGSMEADOWS ROAD, PEEBLES

Background

Local community groups asked for improved cycle facilities to be linked to new housing development in the area. Cycle lanes were introduced on each side of the B7062 radial route for Peebles along a semi-rural section of road. The lanes link in with an existing foot/ cycle bridge. Subsequently the centre lines faded in places such that they are now virtually invisible, while cycle lane markings were renewed and are more prominent.

Data

The section of road over which the cycle lanes run is 1km long and between 6m (min) and 9m (max) wide. AADT approx 3,700 vehicles (Dec 2004); Average speed 31mph, 85th %ile speed 35mph. No 'before' data available. A cycle counter at the bridge recorded approximately 80 cycles per day (two-way) recently.



Outcomes

Although no before and after studies have been conducted, anecdotal evidence suggests that drivers' behaviour has changed slightly. Drivers will drive in the cycle lane when the road is clear, however when required to overtake a cyclist, (s)he is more inclined to wait for a gap and give plenty of space.

David Sharp, Borders Council

COWLEY ROAD, OXFORD

Centrelines were removed as part of a whole package of measures at this urban location.

Problems and Issues:

Many conflicting uses – Over 100 small businesses (shops and restaurants) needing access from main road, bus stops, parking bays, high pedestrian volumes, large residential population locally.

Vehicle counts - 3,000 cyclists, 1,000 goods vehicles, 700 buses, overall AADT between 7,000 and 13,000;

Speed limit 30mph and road width of between 7m and 11.5m; and

High vehicle speeds when quiet, and lots of 'boy racer' traffic in the evening.

Objectives

To improve safety and maintain access for existing uses.

Measures

Oxfordshire Council implemented a 20mph zone for 60m of the road length, within which centrelines were removed, some parking spaces were removed in favour of loading bays, and three new zebra crossing were installed. TSRGD 1057 cycle symbols without cycle lanes were placed in the middle of the running lanes. A



variable message '20mph Slow Down' sign was also installed on the approach to the 20mph zone.

In the 30mph sections of road, centrelines were removed and cycle lanes retained in places. On some sections of road where the centrelines have been removed, scorch marks remain which clearly mark out the old centreline. This is thought to diminish the visual effect.

Outcomes

The scheme is only one year old and it is difficult to draw any definite conclusions at this stage. However, the anecdotal evidence is largely positive:

Traffic speeds are down;

Cyclists seem to interact reasonably well with general traffic, despite early concerns.;

Loading is easier and has less impact on the operation of the main carriageway;

Where the line was hydroblasted off it leaves a mark which is better than burning off or painting but still clearly shows the centre of the road. n.b hydroblasting

is horribly noisy so it's a good idea to warn the residents before starting at 7.30am on a Sunday;

The overall effects of the scheme won't be apparent for a year or two as once it is complete and has bedded in.

Celia Jones, Oxfordshire County Council

THE DEEP VISITOR ATTRACTION, HULL

Hull Council removed centrelines on the carriageway which formed part of a cycle route towards this popular visitor attraction.

Problems and Issues

The cycle route goes through an industrial area which is characterised by no parking, low traffic volumes and high speeds. The carriageway width is 7.3m.

Cycle use is relatively low on this route, however in Hull generally the mode share has been approximately 12% for the last 10 years.

Measures

1.5m cycle lanes were installed on both sides of the carriageway and the centreline removed.

Outcomes

No structured feedback but there have been no accidents to date.

Andy Mayo, Local Transport Projects

ROWNHAMS LANE, HAMPSHIRE

Hampshire Council removed the centrelines on this road which forms part of the North Badersley to Southampton cycle route.

Background

Rownhams lane is an urban setting with a half-hourly bus service in each direction, very little HGV traffic and 4-5,000 vehicles AADT. The carriageway is between 6.1m and 6.3m wide. There was a requirement to make the road more cycle friendly as part of a long term project to improve facilities along the length of the cycle route.

A school and hospital are located nearby.

Measures

The Council removed the centrelines and installed 1m cycle lanes. For safety reasons, the centreline was retained where side road junctions joined the carriageway.

Outcomes

Drivers have dealt with the scheme well. Removing the centreline makes drivers slow down and think before overtaking cycles. Average traffic speeds have dropped by 2mph to under 30mph.

However in the 3 years of the scheme there has been no significant increase in cycle numbers. This could be largely due to the delay in implementing measures throughout the remainder of the route.

Peter Savidge, Hampshire County Council

CANONGATE, ST ANDREWS

As part of a series of cycle friendly measures including cycle lanes, contra-flow lanes and continental roundabouts, Fife Council removed the centrelines on the Canongate. The Canongate is an urban road.

The road consists of two 1m cycle lanes and a 3.65m traffic lane in each direction.

Chris Bell, now of Stirling Council

3. Cycle Logos (TSRGD ref 1057) without Cycle Lanes

BEWDLEY, WORCESTERSHIRE

Background

This scheme was derived from an idea by Hugh McClintock which originated as part of 'Bike Friendly Zone' measures in Australia. Bewdley was the pilot for the application of 1057 logos with no cycle lane on the NCN 45 and 49 routes.

Problems

Rural roads with high traffic speeds and low awareness of cycles. Narrow carriageway.

Traffic Data

Thursday 27th June 2003.

Total 2 way flow:	16345	(100%)
2 way cycle flow:	81	(0.5%)
2 way HGV flow:	506	(3.1%)
2 way Bus flow:	326	(2%)

Objectives

Raise awareness; and
Improve safety.

Measures

Cycle symbol 1057 (750mm wide) placed 750mm from kerb edge, giving the cyclist 1.5m.

A vertical cycle sign (TSRGD ref 967) must be placed at least once on each side of the carriageway on a route with 1057 symbols;

Care must be taken to ensure symbols are not obscured by parked cars; and

As a general rule, symbols rather than lanes were used where the carriageway was narrower than 7.5m.



Outcomes

- The scheme has not been running for long enough to draw any definite conclusions regarding cyclist volumes;
- Cycling groups generally approved of the scheme – stakeholders were taken on a cycle ride along the route;
- Some 967 signs were placed at the back of footways. This should be avoided as it caused confusion for pedestrians; and
- Some symbols were placed on a bend in the road, which has caused no complaints or reported skidding problems.

Alan Couchman, Worcestershire County Council.

BUTTON OAK, SHROPSHIRE.

Shropshire County Council introduced cycle logos in a rural village on NCN45.

Problems and Traffic Data

- The scheme is in a rural village, 40mph limit (48mph 85th percentile speed);
- 3,600 vehicles per day, 50 HGVs per day;
- Carriageway width is too narrow for cycle lanes (approx 5.5m).

Measures

- Cycle logos without lanes were placed every 100m;
- They were staggered each side of the road so the motorist sees them every 50m approx;
- At every third cycle logo a 200 x 200mm x 1000mm high wooden bollard with a blue sign, white cycle symbol and red box with NCN number 45 was installed;
- The scheme is over a distance of about 700m.



BLACKWATER AND SALISBURY RD, HAMPSHIRE

Hampshire County Council have installed cycle logos with no cycle lanes on carriageways in Hampshire, on Salisbury Road and in Blackwater.

Problems

High traffic volumes and a carriageway width that is too narrow for cycle lanes.

Measures

The Council implemented:

Red patches with 1057 logos on top on the carriageway; and

Red surfacing at junction mouths.



Impact

Local CTC groups have been lukewarm on the measures.

Peter Savidge, Hampshire County Council

FELIXSTOWE ROAD, MARTLESHAM, SUFFOLK

Background

Felixstowe Road is part of the old main road between Woodbridge and Felixstowe, now bypassed by the A12. It is a C class road (subject to a 30 mph speed limit) linking the communities of old and new Martlesham. It is the only direct route for pedestrians and cyclists, but is also used by many motorists as the 'back route' into Martlesham. The road is subject to a 30 mph speed limit and carries some 4500 vpd, including over 150 cyclists.



Problem

There has been a substantial growth in traffic on the Felixstowe Road in recent years due to a number of factors, and it is perceived by drivers as a 'short cut', particularly at peak times.

This made conditions increasingly difficult for local people, especially pedestrians and cyclists for whom this is an essential route. There was no footway and the road was poorly lit. Cyclists were deterred by experiences of being 'squeezed' by traffic passing too close and too fast. Although there were no serious injury accidents there were many anecdotal accounts of near misses that fuelled concern about safety. Calls for improvements to the road became a 'local issue' which was taken up by the Parish Council. The PC made requests for a footway and other improvements. With the development of the National Cycle Network through the area it became clear that Felixstowe Road was an essential link in National Cycle Route 1 and therefore any improvement to the road also needed to include 'cycle-friendly' measures.

Main objectives: (See expanded section at end of document)

- To improve safety and encourage more cycling and walking.
- To enhance its status as a quiet, minor road for local people.
- To encourage through traffic to use the A12 bypass.
- To reduce average traffic speed (to gain compliance with speed limit).

Funding

Construction of the scheme was made possible by Tesco Stores, who provided £75,000 of funding for the new footway along the road. Sustrans provided £40,000 for the cost of the shared-use paths adjacent to the junction with Anson Road and the marking of cycle lanes. Suffolk County Council (SCC) covered the remaining cost of resurfacing part of the road and the gateway treatments and signs, etc. from the LTP budget, of approx. £20,000.

Description of scheme



SCC originally investigated the possibility of providing a shared use footway/cycleway to keep both pedestrians and cyclists off the carriageway, but to make the facility safe for shared use would have required a path of at least 3m wide. This would have meant taking road space and narrowing the carriageway to an extent where two large vehicles would have been unable to pass. The chosen layout therefore includes cycle lanes on the carriageway that can be used by vehicles when clear, to enable drivers to pass safely at any point along the road.

The final scheme, installed in July 2005, has a 6.5m carriageway width, split between two 1.5m cycle lanes and a single 3.5m central traffic lane. On one short section it narrows to just below 6m width, with 1.3m cycle lanes and a 3.2m central lane.

The layout chosen recognises that some large vehicles and buses need to use the road and at peak times traffic flows can be heavy. A separate footway for pedestrians has been constructed and advisory cycle lanes marked on each side of the carriageway to cater for cyclists, leaving a single central lane for vehicles.

The cycle lanes are 'advisory', which means that vehicles may over-run them when the lanes are clear of cyclists, to pass oncoming traffic when necessary. The purpose of the cycle lanes is to define the space that cyclists need on the road and to raise the motorists' awareness of the presence of cyclists and the requirement to keep clear and not overtake too closely.

Safety

Some individuals have raised concerns about the safety of the new layout. It might be helpful to consider the operation of the network of minor roads throughout the county. Felixstowe Road is part of approximately 3000 miles of 'C' and 'U' class roads in Suffolk and in many places these roads include sections of single carriageway where vehicles have to pull in and wait for oncoming traffic to pass. These roads generally have a low accident record because the majority of drivers behave in an appropriate manner to the conditions and visibility on the road. The single carriageway on Felixstowe Road has the advantage that vehicles can pass at any point along the road. If cyclists are present on the road ahead of them then drivers should slow down and wait behind the cyclists until the road is clear of oncoming traffic and it is safe to overtake. In the past many cyclists were intimidated by drivers trying to overtake them at the same time as avoiding oncoming traffic. This led to dangerous situations when the cyclists (and pedestrians) were squeezed against the edge of the road.

From the feedback received so far and from the experience of SCC design staff using the road by bicycle themselves, it is apparent that the new layout has achieved an improvement in driver behaviour when cyclists are present on the road. Pedestrians, who previously had to walk along the edge of the road, are now able to use the new footway. There has been an increase in these sustainable forms of travel since the scheme was installed.

This type of road layout has been used successfully in various locations around the



UK, including other sections of the National Cycle Route promoted by Sustrans. Other examples include Cotmer Road, Lowestoft, Great Oakley, Essex (NCN 1). Faversham, Kent (NCN 4), Bristol Road, Scunthorpe and numerous examples from the continent where this layout is becoming increasingly common on many minor roads.

A stage three Safety Audit has been carried out and small amendments have been implemented to meet various minor points raised in the report.

There is always a period of adjustment as drivers become accustomed to using a new layout and during this time the operation of the road will continue to be closely monitored and traffic counts carried out. However, there have not been any incidents since the scheme was installed.

Monitoring

Monitoring has been carried out at regular intervals on Felixstowe Road since before this scheme was constructed. This has shown a steady rise in traffic levels as drivers diverted onto this road to avoid the A12 roundabout, very low pedestrian levels (as then no footway) and a static level of cyclists (mostly the more experienced cycling commuters).

Since installation of the new layout monitoring has been carried out on three occasions (in September, October '05 & March, April, June '06). This has shown a substantial reduction in overall vehicle flows, down by approximately 1100 vehicles per day.

There has been positive feedback from cyclists and pedestrians using the route. Cycle numbers were static over the winter but have recently shown an increase of 6.5% from April to June last year, as the more 'tentative' cyclists are gradually encouraged back by the improved facilities. (See also 'Objectives of the Scheme 1.' at the end of this document).

Pedestrian numbers have increased by 12% during the same period. It should not be overlooked that while Felixstowe Road is seen as a cycle scheme, in fact the majority of the money was spent on the new footway, not the cycle lanes.

Support and opposition

A number of e-mails from cyclists have been received confirming that they find the new layout an improvement. We have also received a small number of objections which fall roughly into two groups: Firstly the cyclists who complain we have not done enough to improve their safety and request more radical measures such as closing the road to vehicular traffic. This type of measure was investigated but lacked wider support and would inconvenience many essential service providers. Secondly, the motorists who object to the presence of the cycle lane markings on the carriageway, which they feel are unsafe. It may be that the real problem



here is that these individuals are accustomed to driving at higher speed, based on the assumption that there is always space to pass oncoming vehicles at any point, with little awareness of the possible presence or safety of cyclists. These complainants are therefore (unwittingly) acknowledging the effectiveness of the scheme in encouraging them to slow down and anticipate the presence of cyclists on the road ahead.

Another common objection by motorists was the perceived

'waste of public money' on a scheme which they (personally) didn't want, but usually they are unaware of the external sources of the majority of funding.

One anomaly is that even opponents of the scheme have welcomed the provision of the new footway as a 'good thing', even though pedestrian use is currently still very low and the footway consumed the vast majority of the funds. The marking of the cycle lanes is really the only contentious aspect of the scheme, although this appears to have had the maximum benefit to users for the minimum cost of two white lines.

Objectives of the scheme and results to date:

1) Encourage more cycling and walking on this route by improving the facilities for those modes.

Result: The 12-hour count in October '05 recorded 183 cyclists using the road. This represents a 22% increase, compared to the count from July 2003. This is a very good result, given that countywide cycling growth is static. The growth of cycling makes a significant contribution to reduction of CO2 emissions and congestion.

2) Increase driver awareness that this is a primary cycle route (part of National Cycle Route 1) and encourage drivers to behave more carefully when overtaking cyclists, (compared to the previous situation - which was frequently intimidating for cyclists).

Result: A higher percentage of drivers are waiting behind cyclists when oncoming traffic is present, before overtaking. The majority of cyclists that have commented on the new layout are pleased and feel it has made a significant improvement. (Although it is acknowledged that no road layout can stop the small minority of speeding or aggressive drivers).

3) Encourage more through traffic to use the A12 bypass. (To reduce the large increase in traffic on Felixstowe Road over the last 5 years).

Result: Vehicle numbers on this road increased steadily for several years but after the scheme was installed they fell by approx. 1100 vehicles per day. Total vehicle flows on the road (at approx. 4,500 vpd) are now at the lowest recorded level since before the year 2000. However, it is accepted that the road can still be busy, especially at peak times when there are queues to join the A12. Ultimately the solution to this problem will come if more people choose to travel sustainably. The encouragement of walking and cycling on Felixstowe Road is a step in the right direction.

4) Reduce average traffic speeds (at least to gain compliance with the speed limit).

Result: The monitoring data is not showing any significant change in average speed levels, which are currently at 32.5 mph (average mean combined flows). However, when traffic levels reduce, average speed often increases, so maintaining the same average may in fact signify a modest improvement.

Various visual speed reduction measures have been employed, such as gateway structures, patches of buff surfacing combined with 30 mph roundels and 'SLOW' markings. This reinforces the message to drivers to comply with the speed limit and proceed with care on the road. It has not been possible to use vertical speed reduction measures such as speed humps or cushions because street lighting levels are currently insufficient and because the road is a bus route.

Enforcement

The local Police beat officer has agreed to visit the road regularly to check on driver behaviour and use a mobile speed gun if necessary.

