Lincolnshire County Council

Cycling England Local Authority Professional Support Service

Scheme NCN Route 1 Crossing Langrick Bridge over the River Witham

Adviser: Tim Pheby (Transport Initiatives)

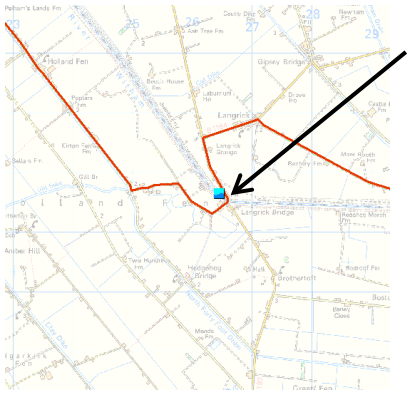
Report checked by Alex Sully – November 2006

Introduction: This report has been prepared in response to a request from Mary Powell of Lincolnshire County Council to the Cycling England Local Authority Professional support service.

Methodology: The adviser has:

- Studied photos and plans of the bridge,
- Visited Langrick Bridge on 10th Nov with Mary Powell and Nicola Jones, Sustrans East Midlands manager
- Visited bridges and traffic signal junctions in York to compare and contrast different approaches and look for ideas.

Background: Lincolnshire County Council and Sustrans are working to improve National Cycle Route 1 (NCN1) between Lincoln and Boston, with a new traffic free path and some rural lanes.



NCN1 crosses the River Witham at Langrick Bridge on the B1192. Langrick Bridge was built in 1907 and after an assessment in 1992 a scheme was carried out to restrict traffic to single way working by installing traffic signals. There are three signal stop lines by the bridge one to the north by Witham Lodge and 2 to the south. This scheme was to protect the bridge from heavy vehicles, the B1192 having a high proportion of HGV traffic. As part of the scheme the road over the bridge was narrowed.

At Langrick Bridge, northbound cyclists will leave the new traffic free path, travel along the B1192 to cross the River Witham and turn right into a minor road. Southbound cyclists will cross the bridge with the signals and turn right either at the Ferry Boat in or onto the B1184. .

The advice sought from Cycling England centred on how best to improve the crossing and turning arrangements for the benefits of cyclists.

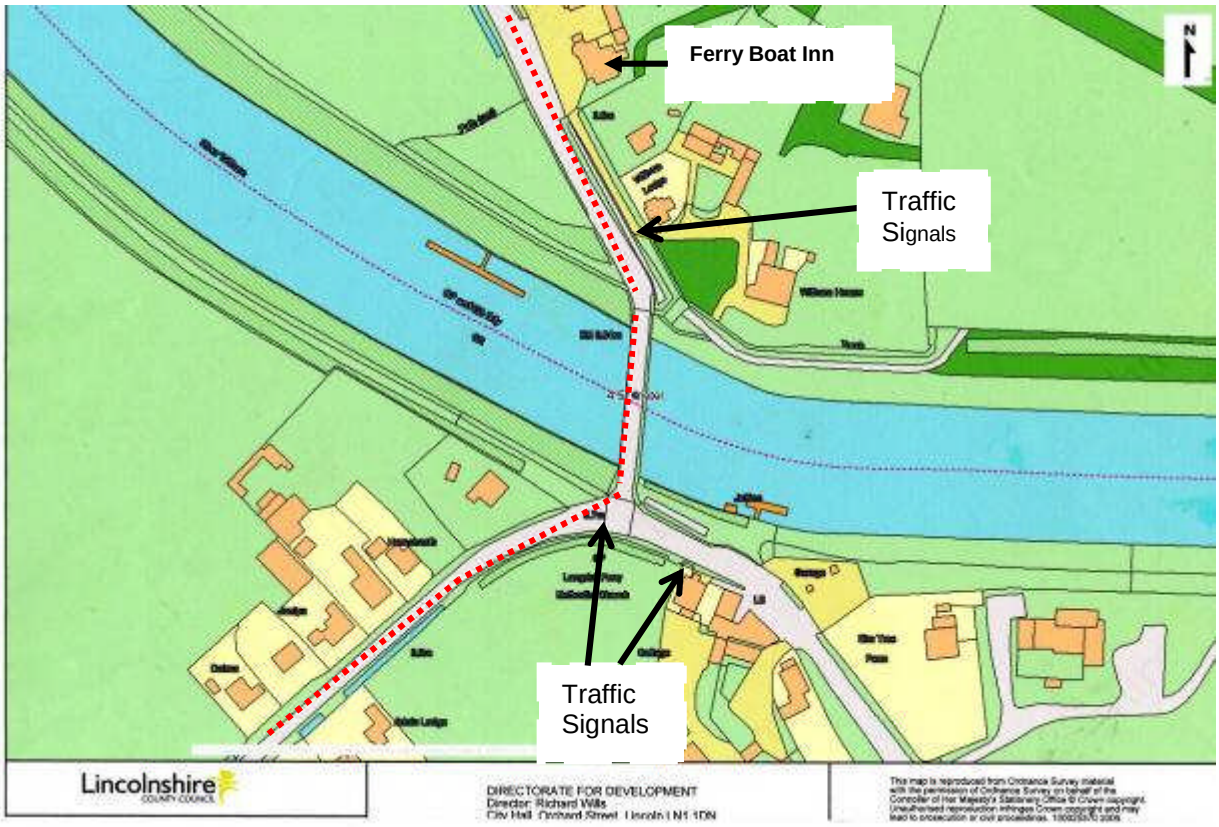


Figure 1 - Langrick Bridge

..... **National Cycle Route 1**

Options for improving cycle access over Langrick Bridge

Four options have been considered for improving cycling access across Langrick Bridge

1. Install Advanced Stop Lines (ASLs) for cyclists on the bridge approaches and increasing the time that cyclists have to cross the bridge

2. Widen the footway on the bridge by further narrowing the carriageway to discourage vehicles from overtaking cyclists

3. Improve cycle signing of National Cycle Route 1 (NCN1) to make the route clearer to users and other road users.

4. Install a new foot/cycle path along side the bridge

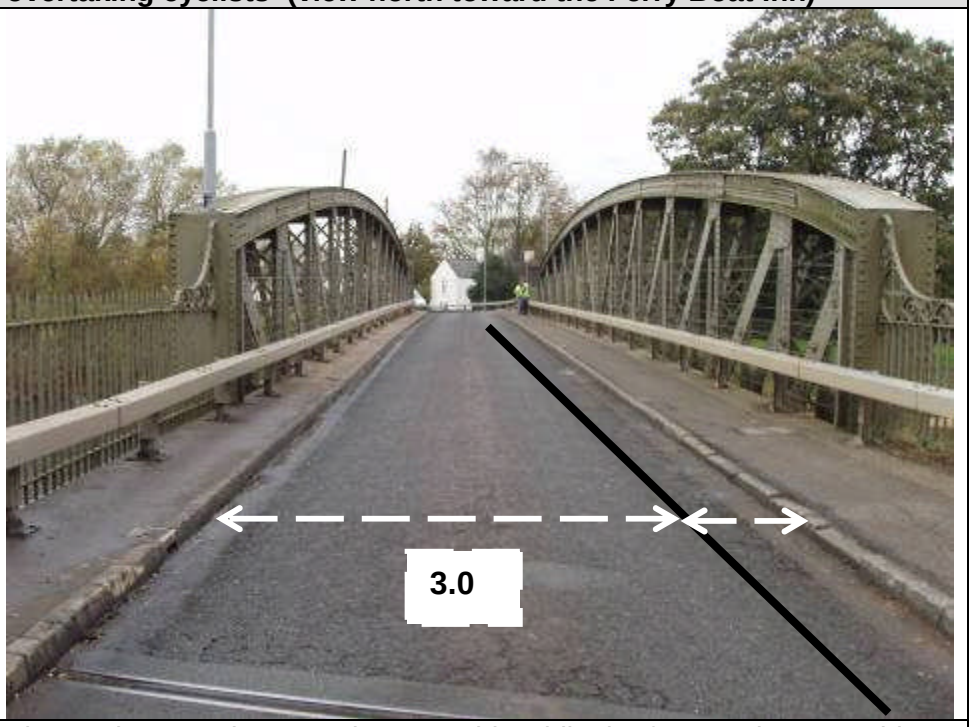
Option 1

1	**Advanced Stop Lines at traffic signals on Ferry Bridge Inn Side – Ferry Road**	
1.1	 This would require an additional traffic signal or relocation of the secondary signal by the bridge	The existing stop lines for traffic are set back a long way from the bridge to accommodate the turning circles of large HGV's, and so cyclists will either a) wait and be overtaken whilst they ride up to the bridge or b) cycle past the lights and wait nearer the bridge
1.2	 This example from Clifton Green in York the cyclists are given a green cycle symbol light to get ahead of the first red signal. The advanced stop line is 12m in front of the motor vehicle stop line	Setting the advanced stop lines for cyclists much nearer the bridge would enable cyclists to keep ahead of traffic going over the bridge – these lights could also be set to give cyclists a head start to ensure they can get over the bridge before traffic catches up with them. On site it was not possible to cycle across the bridge from the Ferry Bridge Inn side on the north side and turn right without the lights changing. In the short term the signal timings should be checked and extended to enable cyclists to make this manoeuvre.

Option 1

1	Advanced Stop Lines at traffic signals on Ferry Lane Side	
1.3		Here an standard Advanced Stop line would enable left turning cyclists to get ahead of the traffic and so get onto the bridge first It would also help cyclists going straight on to position themselves ahead of traffic.
		The stop line for motor vehicles is moved 4-6m back from its present position to create a cycle reservoir - a cycle logo and a lead in cycle lane is required. No adjustment to the traffic signal positions is needed although the planting around the primary signal head could do with a trim.

Option 2

2	Narrowing the carriageway on the Bridge to discourage vehicles overtaking cyclists (view north toward the Ferry Boat Inn)
2.1	
2.2	The carriageway is currently 3.7m wide while the footway is 0.5m wide on the left of this picture and 1.2m wide on the right side. With present carriageway widths cars and HGV drivers can be tempted to overtake cyclists over the bridge which could be intimidating to cyclists, especially the less experienced. It would be possible widen the footway by 0.7m over the bridge to narrow the road to 3.0m This would have the effect of slowing traffic and discourage drivers from trying to overtake cyclists. It would also provide a 1.9m wide footway on one side which would improve conditions for pedestrians and provide space for less confident cyclists to wheel cycles across the bridge.

Option 3

	Signing improvements
3.1	
	The existing road signs have had National Cycle Network Route 1 signs added below them but are fairly small. There is space on the sign to include them on the existing road sign which may also make other road users more aware that cyclists are using the bridge.
3.2	
	It may be worth considering branding the route by naming it as well as providing destination and distance information to supplement the route number as shown on the sign above. Having larger signs will also make them more visible to other road users.

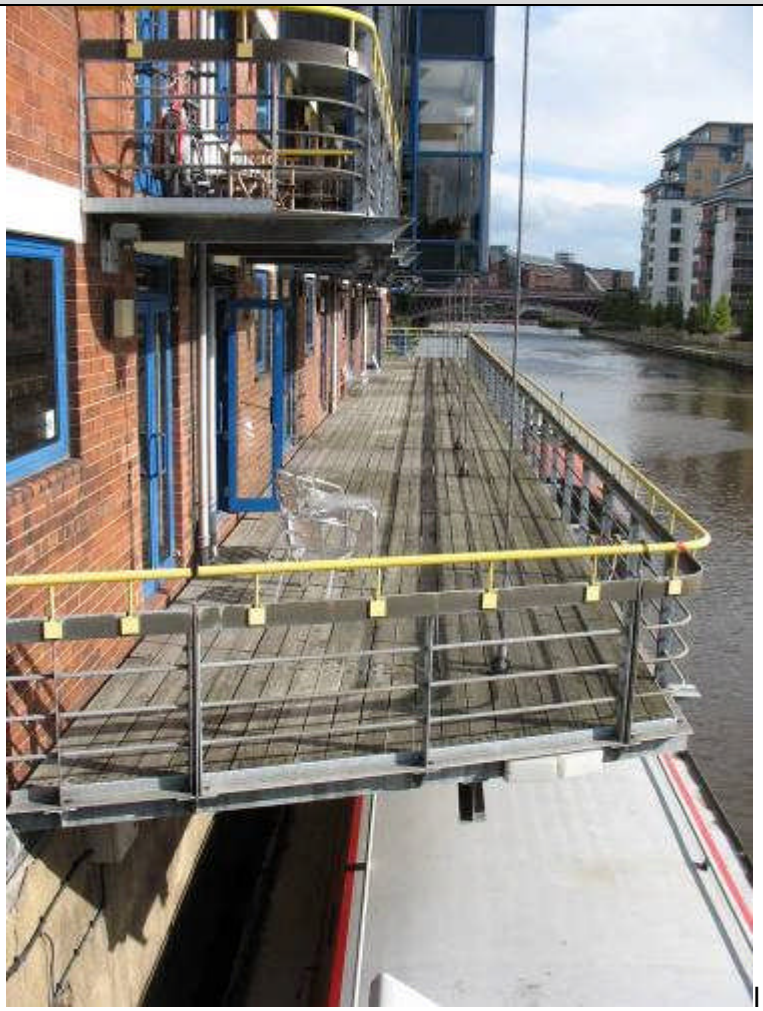
Option 4 A

	New foot/cycle bridge along side the existing bridge – (view from the Northern side left and south side right)
4.1	 
	In the longer term it may be possible to provide a new bridge on the Western side of the existing bridge for pedestrians and cyclists. This side would enable easy access from the Ferry Lane approach but would require a jug handle crossing of the B1192 at the Ferry Boat Inn. The bridge could use brackets on the existing brick peirs to support the main load of the bridge. An example from Wales below shows a similar bridge (Nicola to confirm location) This option would require a proper feasibility study and major funding.
4.2	 Picture from Sustrans

Option 4 B

	New foot/cycle bridge along side the existing bridge – bolt on option
4.3	  
	It may be possible to bolt on a pedestrian/cycle bridge onto the existing structure as in this example from Holgate Bridge over the East Coast Main Line in York. However this would require structural calculations to see if the bridge could take the additional loading.

Option 4 C

	New foot/cycle bridge along side the existing bridge – bolt on option
4.4	 It is also becoming fairly common in new developments along the river fronts in Leeds and York to provide balcony walkways attached to the buildings as this example by Crown Point Bridge in Leeds shows. These systems may be adapted able for Langrick Bridge but would require proper evaluation and structural calculations. It would also require further study of the access arrangements for cyclists and pedestrians on both sides of the bridge.

Recommendations

A number of options have been considered to improve cycle access across Langrick Bridge for National Cycle Route 1. It is recommended that they be considered in the following priority

1. Check the signal timings especially for the movement southbound from Ferry Bridge Inn side to Ferry Lane which involves making a right turn over the bridge. From the site visit there was not enough time for a cyclist to make this movement before the signals changed and northbound traffic started crossing the bridge. Extending the signal timings to enable a cyclist to make this manoeuvre comfortably and safely may require additional loop detection.

2. Install advance stop lines on both sides of the bridge to enable cyclists to get onto the bridge before traffic does. This would require some additional signal heads or relocation of existing ones.

3. Narrow the carriageway and widen the footway over the bridge to slow traffic and discourage drivers from overtaking cyclists.

4. Improve the route signing to include a route name, local destinations and the distance to them as well as the route number.

5. In the longer term commission a feasibility study into a new foot/cycle bridge on the Western side of the bridge either bolted on to the existing structure or using the brick piers to support the load.

Contact for this Project:

Tim Pheby
Transport Initiatives
20 Nunthorpe Crescent
York
YO23 IDU

01904 628 789
tim.pheby@transport-initiatives.com