

[Draft 2 for discussion]

## **Foxton Level Crossing – Road Users**

### **Introduction**

The Meldreth, Shepreth and Foxton Rail Users Group has previously published 2 documents describing the operation of Foxton Crossing and pedestrian routes through the crossing.

These are available here <http://melbourn.org.uk/railusergroup/foxton-level-crossing/>

This document describes Foxton Crossing for a Road User. It aims to record facts about the crossing to help further discussion rather than judging whether there are safety or economic reasons for making changes to the crossing.

A series of videos have been filmed by 'Track Access' based at Shepreth to record traffic on the road crossing (there are more details of these in the final section of the report):

<http://vimeopro.com/davidreedmedia/foxton>

The following topics are covered in the report:

- Plan of the crossing
- Approaching the Crossing from Foxton Village
- Gate Closing Sequence and Vehicle stopping time
- Speed limit
- Cyclists
- Road Congestion
- Videos of Foxton Crossing

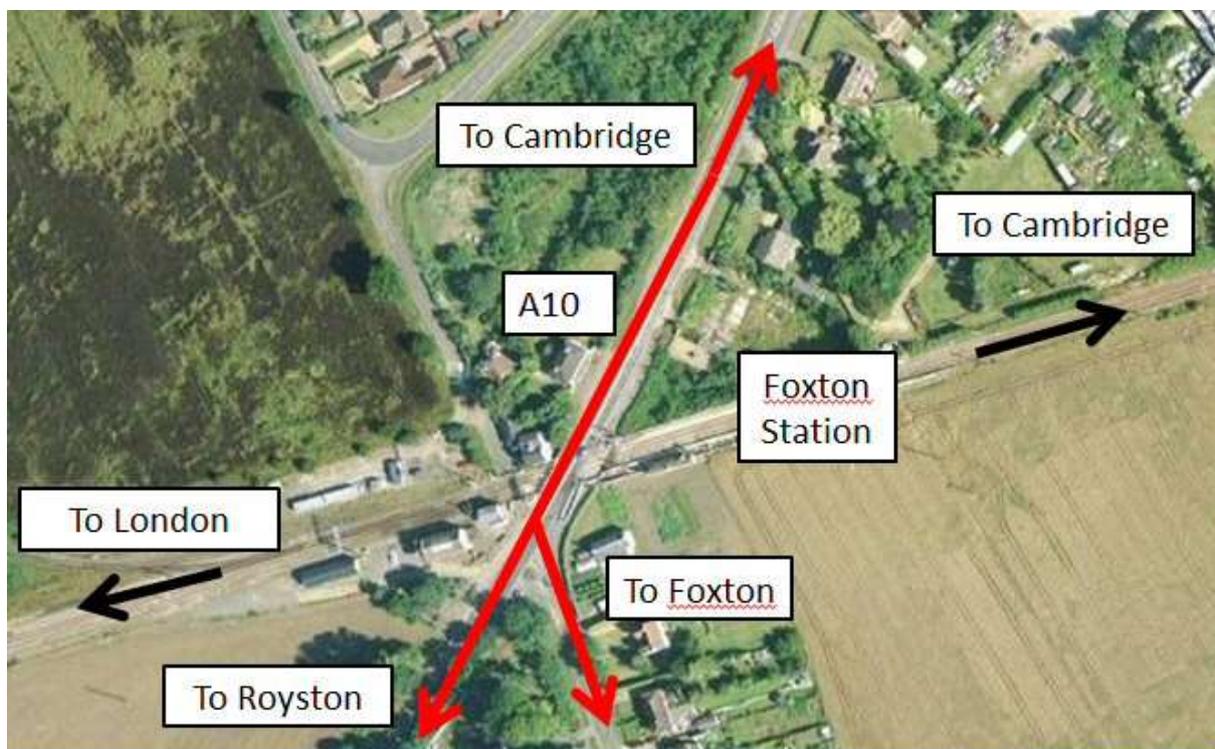
For any comments or feedback please contact the Rail User Group at

[railusergroup@melbourn.org.uk](mailto:railusergroup@melbourn.org.uk)

## Plan of the Crossing

The crossing is located at the London End of Foxton Railway Station and takes the busy A10 (marked in Red in the aerial photograph below) across the busy London Kings Cross to Cambridge Railway (marked in Black). Just to the Foxton side of the crossing Station Road diverges to the South leading to the village itself, with the main road continuing towards Royston.

The crossing is controlled from the adjacent Signal Box which has a clear view of the crossing. The crossing has barriers across the full width of the road, and the signals are not cleared for trains to pass until the signalman has confirmed that the crossing is clear of both vehicles and pedestrians at the end of the gate closing sequence.



## Approaching the Crossing from Foxton Village

If the crossing is approached from Foxton Village, the route is along Station Road which merges with Royston Road directly before the crossing.

The road user needs to check the crossing lights on the main road (Royston Road) when approaching from this direction as no repeater of the crossing lights is provided for this sideroad.



(Image courtesy of Google Streetview)

Here is an example of a crossing light repeater at Farnham Station viewed from a side road which merges just before the crossing, although in this case the main crossing light (under the 'Green Dot') is side on so not visible at all from the sideroad. The extra set of 'repeater' lights for the side road is just to the right of the red dot.



(Image courtesy of Google Streetview)

## Gate Closing Sequence and Vehicle Stopping Time

This section describes how the operation of the crossing will appear to road users, and how the light and barrier sequence compares to the expected stopping time for a car.

The Highway Code describes how road users should use a level crossing.

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Controlled crossings. Most crossings have traffic light signals with a steady amber light, twin flashing red stop lights (see 'Light signals controlling traffic' and 'Warning signs') and an audible alarm for pedestrians. They may have full, half or no barriers.

- you **MUST** always obey the flashing red stop lights
- you **MUST** stop behind the white line across the road

▶ Download 'Light signals controlling traffic' (PDF, 80K) 

▶ Download 'Warning signs' (PDF, 117K) 

▶ Help with PDF files



- keep going if you have already crossed the white line when the amber light comes on
- do not reverse onto or over a controlled crossing
- you **MUST** wait if a train goes by and the red lights continue to flash. This means another train will be passing soon
- only cross when the lights go off and barriers open
- never zig-zag around half-barriers, they lower automatically because a train is approaching
- at crossings where there are no barriers, a train is approaching when the lights show

Network Rail also provide this guide to Level Crossings with full barriers:

<http://www.networkrail.co.uk/level-crossings/types-of-level-crossing/barrier-crossings/>

The gate closing sequencer is described in detail in the Rail User's Group's earlier document describing the crossing.

Here are times measured directly from the crossing at Foxton:

1. 0.00secs Yellow light and audible warning
2. 3.25secs Red light
3. 8.25secs Entrance barrier starts to close
4. 14.75secs Entrance barriers closed, exit barriers start to close,
5. 22.00secs Gates fully closed. Audible warning stops.

The Highway Code provides a table of stopping distances which can be used to calculate how long a car will take to get through the crossing if it is just beyond the safe stopping distance.

### Typical Stopping Distances



At 50mph (22.4 metres per second), the typical stopping distance is 53 metres so a car which is just beyond this point when the yellow light illuminates will take 2.4 seconds ( $53 \div 22.4$ ) to reach the crossing. A car would therefore pass through the lights before they changed to red (3.25 seconds after the yellow is first illuminated) which in turn is 5 seconds before the barriers start to close.

### Speed Limit

The speed limit through the crossing is 50 mph.

### Cyclists

Cyclists share the road with car traffic with no special provision unless they choose to dismount and use the pedestrian crossings through the wicket gates instead.



## Road Congestion

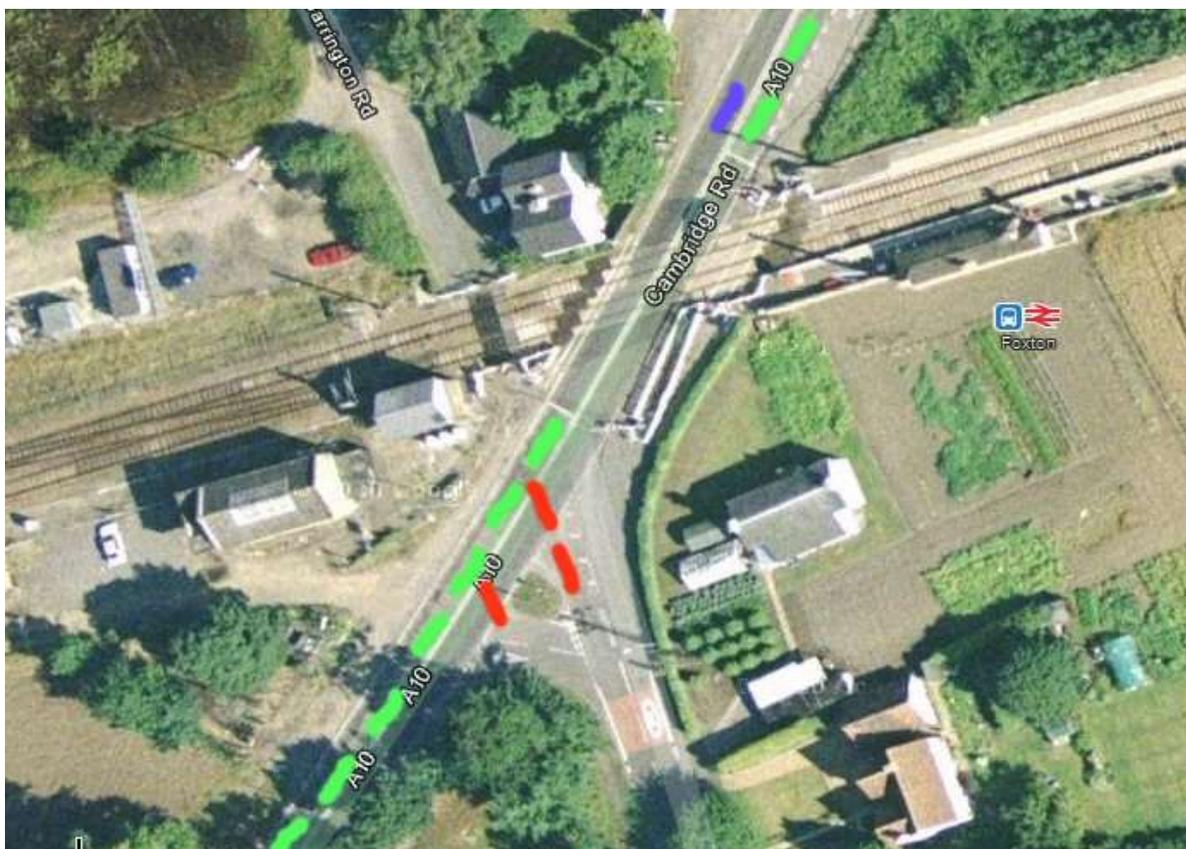
Foxton Crossing has 15000 vehicle movements a day and 500 pedestrians crossing a day. At busy times of the day 8 trains an hour pass through the crossing with 4 of them stopping at Foxton Station. The barriers are typically down for a minimum of 2½ minutes for each train which leads to queues of traffic building up. This is made worse by the proximity of the Station Road/Royston Road junction just by the crossing as is described below.

The congestion is not a direct safety issue as the crossing is controlled from the signal box next to the crossing, and the signals are not cleared for the trains to pass unless the crossing has been confirmed to be clear. However, the congestion does put extra pressure on the operation of the crossing.

It is the second most misused Level Crossing in the Eastern area (after Lakenheath). There were 64 prosecutions in 2010 for motorists going through red lights or barriers.

The following diagram shows how the approach to the crossing can end up being blocked by vehicles. These situations do clear as the crossing opens although they will delay traffic from clearing on the main road.

The example below shows vehicle in green queuing on the main road while vehicles in red wait to merge with the traffic on the main road to avoid having to wait until all the traffic on the main road has cleared (which at busy times can be very prolonged especially if another train arrives before the crossing has cleared). An even more complex situation occurs if an ambulance arrives from the Cambridge direction as it will overtake the traffic and wait in the position marked in Blue but may be blocked by the congestion on the Royston side of the crossing.



## Videos of Foxton Crossing

A series of videos have been filmed by 'Track Access' based at Shepreth to record traffic on the road crossing. They can be viewed here:

<http://vimeopro.com/davidreedmedia/foxton>

There are 9 videos, summarised below. The times are in minutes and seconds and are the elapsed time through the video (and don't relate to the counter on the video images themselves).

### **Move 1 "Station Road to A10 Cambridge - Crossing Activated"**

00:17-00:37 Crossing closes

02:35 Train passes

02:54-02:58 Crossing opens

04:41 Traffic moves from Station Road

### **Move 2 "A10 to Cambridge (at 50mph)"**

00:30 Driving across the crossing

### **Move 3 "A10 to Royston (at 50mph)"**

00:41 across the crossing

### **Move 4 "A10 to Cambridge Crossing activated"**

00:10-00:30 Crossing closes

01:50 Train passes

02:00-02:04 Crossing opens

### **Move 5 "A10 to Royston Crossing Activated - Late Crossing"**

00:14-00:18 Crossing closes - cars crossing until just before the crossing red light.

02:36 Train passes

02:51-02:55 Crossing opens

### **Move 6 "Emergency Vehicle"**

00:13 Emergency vehicle crosses when the road is clear

### **Move 7 "Queuing Over Crossing"**

00:22 Queuing either side of the crossing - there is no yellow box junction but the cars are treating the crossing as if there is one

### **Move 8 "Double Train Pass"**

01:34 First train passes

02:14 Second train passes

02:24-02:27 Crossing opens

### **Move 9 "Rushing to catch a train"**

00:15-00:37 Crossing closes

02:20 Train passes

02:35 Pedestrian gates unlocked - passengers rush across to catch the train