

A307 Portsmouth Road, Esher

Pedestrian Refuge Island

Feasibility Report

February 2018



SURREY

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1. INTRODUCTION:

The Highways Design & Delivery Team was commissioned by the North East Area Highways Manager to undertake a study to investigate the feasibility of providing a new pedestrian refuge island on A307 Portsmouth Road in Esher, to improve access to the bus stops near the Scilly Isles roundabout.

The study was funded by Elmbridge Local Committee at their meeting held on 19 December 2016.

This report considers the existing conditions at the site and evaluates two possible options for improvement together with a 'do nothing' option.

2. SITE ANALYSIS:

2.1 Location

A307 Portsmouth Road provides a strategically important route linking Kingston upon Thames, to the north-east, with Esher and Cobham to the south-west. Both these towns have links to the A3, at Esher Common and Painshill respectively.

At approximately the mid-point between Kingston upon Thames and Cobham, A307 Portsmouth Road passes through the Scilly Isles roundabout, at the junction with A309 Hampton Court Way/Kingston Bypass. The A309 provides a link to the A3 at Hook and also to Staines via Hampton Court.

A plan showing the local road network is shown in Figure 1 below.

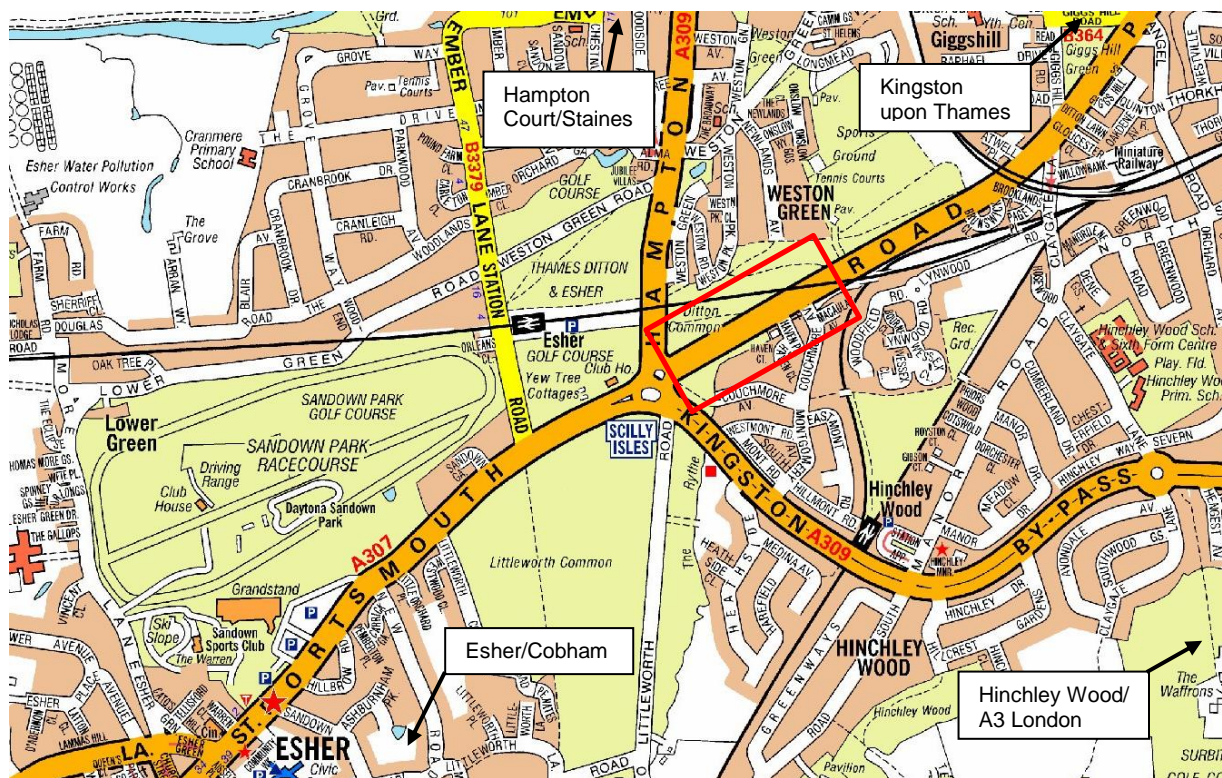


Figure 1 – Local Road Network

As a consequence of the site's location on the strategic road network, A307 Portsmouth Road carries a high volume of traffic, including a significant proportion of commercial vehicles. This makes it potentially difficult for pedestrians, especially the elderly, those with disabilities, or children, to find suitable gaps in the traffic to cross the road safely without some form of assistance. In peak hours traffic regularly queues back along the A307 Portsmouth Road from the Scilly Isles roundabout, which increases the difficulty for pedestrians, especially in the dark.

Staggered bus stops are located on either side A307 Portsmouth Road, north –east of the Scilly Isles roundabout, close to Littleworth Lodge. The north-eastbound and south-westbound stops are approximately 80 and 120 metres from the roundabout respectively.

Passenger Transport Group have confirmed that these stops are used by the following services:

- Route 715 Guildford to Kingston upon Thames (Stagecoach). Monday-Saturday service, between 6.06am and 6.47pm (NE bound), 06.54am and 7.39pm (SW bound).
- Route 513 Downside to Kingston upon Thames (Repton Coaches). Monday-Friday only, shopper service between Cobham and Kingston upon Thames, running two off-peak journeys each way.
- Route 458 Staines to Kingston upon Thames (Hallmark Connections). Monday-Sunday service, between 6.52am and 7.25pm (NE bound), 7.35am and 7.49pm (SW bound) weekdays, reduced service at weekends.

The A307 Portsmouth Road is bounded on its northern side by Ditton Common (CL 267) and on its southern side by Littleworth Common (CL 266). Public footpath number 26b crosses Littleworth Common, between Couchmore Avenue and A307 Portsmouth Road, and an informal path continues across Ditton Common. This provides a route for pedestrians walking towards Hampton Court Way and Weston Green. Esher Sixth Form College is located in Weston Green, and this route is used by students wishing to access bus services.

2.2 Existing Road Layout

A307 Portsmouth Road, between the Scilly Isles roundabout and the junction with Couchmore Avenue, is a 9.7m wide two-way single carriageway with 1.2m wide on-carriageway advisory cycle lanes marked on both sides.

The road has a straight horizontal alignment over this length and a vertical alignment that falls gently towards the north-east.

The road is lit and subject to a speed limit of 40mph. There are no waiting restrictions in operation.

Footway widths on both sides of the road are approximately 1.8m, as far as the south-west bound bus stop. At that point only the footway on the northern side continues, the southern footway terminates at the bus stop.

There are no private driveways or vehicle accesses in the vicinity of the existing bus stops. The nearest access is the private driveway of Littleworth Lodge, adjacent to the roundabout entry.

For pedestrians wishing to cross A307 Portsmouth Road, between the Scilly Isles roundabout and the junction with Couchmore Avenue, existing facilities are provided as follows:

- An uncontrolled crossing at the roundabout splitter island (0.9m crossing width x 1.8m wide island, no tactile paving).
- A pedestrian refuge island (2.0m crossing width x 2.0m wide island, with tactile paving) near the request stop south-west of the junction with Couchmore Avenue. Remaining lane widths are approximately 3.8m (1.0m advisory cycle lane, 2.8m wide running lanes)

A location plan showing the key existing features of the site together with site photos are shown in Figures 2-8 below.

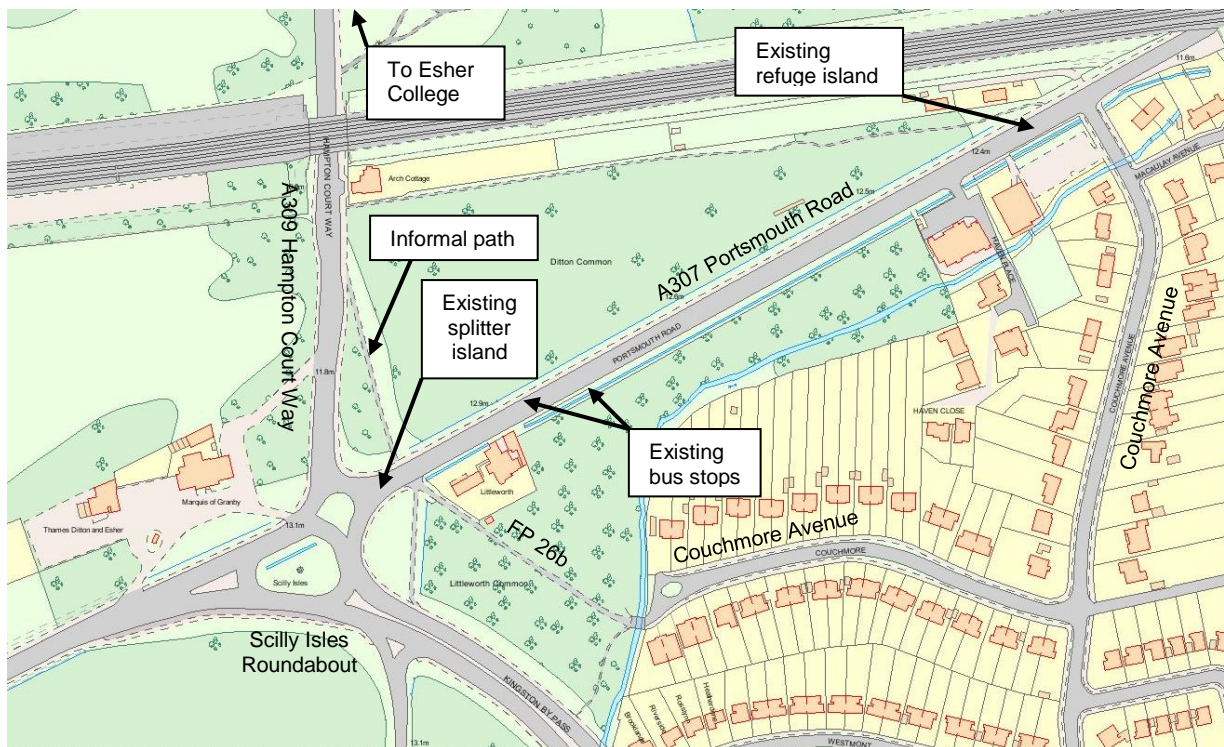


Figure 2 – Location Plan Showing Key Existing Features



Figure 3 – Photo A307 Portsmouth Road (bus stops SW bound)



Figure 4 – Photo A307 Portsmouth Road (bus stops NE bound at Littleworth Lodge)



Figure 5 – Photo A307 Portsmouth Road (pedestrian refuge at Couchmore Avenue)



Figure 6 – Photo A307 Portsmouth Road (Scilly Isles roundabout splitter island)



Figure 7 – Photo A307 Portsmouth Road (PM peak SW bound)



Figure 8 – Photo A307 Portsmouth Road (pedestrian crossing between bus stops)

3. DATA COLLECTION:

3.1 Personal Injury Collision Data

Analysis of collision data for the most recent four-year period, between 1 January 2013 and 30 April 2017, shows a total of two personal injury collisions occurred on A307 Portsmouth Road, between the Scilly Isles roundabout and the junction with Couchmore Avenue. Full details of the collisions are shown in Appendix A.

Both of the collisions were slight in severity. One involved a driver losing control late at night near to the pedestrian refuge island at Couchmore Avenue. The driver in that collision tested positive when given a breath test. The other collision involved a pedestrian being injured while crossing the road near to the Scilly Isles bus stops, at the end of the morning peak hour.

A summary of the data for the two collisions is tabulated below:

Description of Collision	Ref.	Severity	Conditions	Time/ Month	Year
Pedestrian's foot run over when crossing road	EL04657/ 13	slight	light/dry	09.16 Mar	2013
Loss of control (positive breath test)	EL75694/ 17	slight	dark/dry	00.02 Apr	2017

Table 1 – Personal Injury Collision Data

When the police attend personal injury collisions they assess and log the contributory factors that lead to the collision. The table below shows all the factors that led to the collisions that have been recorded at this site during this period. Some collisions have more than one factors attributed to them.

Collision Contributory Factors	Number
Impaired by alcohol	1
Pedestrian failed to look properly	1
Pedestrian crossed road masked by stationary or parked vehicle	1

Table 2 – Collision Contributory Factors

The Police and Surrey County Council do not collect or hold 'damage only' collision data, and therefore any such incidents are not included in this summary. Injury categories are defined by the Department for Transport 'Instructions for the Completion of Road Accidents Reports from non-CRASH Sources' document, which can be found at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/230596/stats20-2011.pdf

3.2 Speed

A manual speed survey was undertaken on Tuesday 21 November 2017 between 10.00am and 11.00am, using a hand held radar device. This was intended to provide an indicative measurement of existing speeds in free flow conditions.

The full results are shown in Appendix B. A summary of the average mean and 85th percentile speeds in each direction is tabulated below:

Location	85%ile (NE bound)	Mean (NE bound)	85%ile (SW bound)	Mean (SW bound)
Between bus stops near to Scilly Isles roundabout	38	34	34	31

Table 3 – Traffic Speed Data (mph)

The results indicate that average mean speeds are compliant with the limit currently in force. The low speeds recorded are probably due to the close proximity of the test site to the roundabout.

3.3 Extent of Public Highway

The Highways Information Team was consulted to determine the extent of the publically maintainable highway in the vicinity of the site. This information is shown in Appendix C.

The highway boundary on the northern side of A307 Portsmouth Road typically extends to just beyond the back of footway, where it adjoins Ditton Common. On the southern side of the road, it extends to the property boundary of Littleworth Lodge and to the back of the drainage ditch, where it adjoins Littleworth Common.

3.4 Pedestrians

A pedestrian count to establish demand and desire lines has not been undertaken as part of this study. If needed, a count could be arranged for the estimated cost of £450.

Site observations indicate that in the morning peak, a number of passengers disembark at the north-eastbound bus stop and then walk across Ditton Common towards Weston Green. In the evening peak, a similar number of pedestrians were observed walking back across Ditton Common from the Weston Green direction. Most of these crossed A307 Portsmouth Road and waited at the south-westbound bus stop. Some crossed at the roundabout splitter island and others closer to the bus stops. This was made difficult by the queueing vehicles and the heavy traffic conditions. At the time of the observations it was also dark. It is assumed that the majority of these pedestrians were Esher College students.

Apart from bus passengers, observations indicate that pedestrian traffic at this location is low, with only a few pedestrians, dog walkers and cyclists crossing in the vicinity of Littleworth Lodge.

3.5 Cyclists

A traffic survey has not been undertaken as part of this study. However, site observations indicate that the existing on-carriageway facility is well used, with a regular flow of cyclist in both directions, particularly in the peak hours.

3.6 Utility Apparatus

New Roads and Street Works Act C2 enquiries were issued through Kier Services to determine the presence and location of utility apparatus. Record plans are referenced in Appendix D but have not been included in the report due to the amount of information received. If copies of these records are needed they can be provided on request.

Where proposed works could potentially affect existing utility apparatus, either necessitating diversion or protection works, further enquiries would need to be issued to the respective companies to establish the feasibility, cost and duration of such works. For that reason it is not possible to provide estimated costs at this stage.

4. DISCUSSION AND OPTIONS:

Design options have been prepared to achieve the two main objectives of the brief.

- To provide a new pedestrian refuge island on A307 Portsmouth Road, near to the Scilly Isles roundabout.
- To improve access to the bus stops.

A 'do nothing' option has also been included in the study, due to the low number of personal injury collisions involving pedestrians crossing the road at this location.

Design options have not yet been submitted for Stage 1 Road Safety Audit, nor have they been circulated to colleagues in Passenger Transport Group for their comments. The terms of reference for road safety audits are as described in Departmental Standard HD19/15 which can be found at: <http://www.standardsforhighways.co.uk/ha/standards/dmr/vol5/section2.htm>

It should be noted that designs have been based on OS mapping supplemented by site measurements. This would normally provide sufficient information to determine the feasibility of proposals. However, in situations where space is critical, the need for more accurate topographical information may be highlighted below.

Options 1 and 2 show alternative proposals for the construction of a new pedestrian refuge island. Because of the presence of existing cycle facilities, these options have been designed with particular reference to current cycle guidance/best practice, taking into consideration the class of road, the traffic conditions, and the speed of traffic.

Current guidance includes:

- Surrey County Council Cycle Facility designer Guidance (Draft)
- Design Guidance: Active Travel (Wales) Act 2013
- Traffic Advisory leaflet 1/97 – Cyclist at Road Narrowings
- Local Transport Note 2/95 – The Design of Pedestrian Crossings

In summary, guidance recommends the following:

- Narrow (below 1.5m) cycle lanes should not be used as they can place cyclists in greater danger from closer overtaking by drivers.
- Pinch points/narrowings should be designed to avoid cyclists feeling squeezed or intimidated by vehicles following close behind.
- Lane widths at pinch points should be 4.0m minimum, 4.5m where the 85th percentile speed exceeds 30mph.
- Pinch points in the critical range between 3.1m and 3.9m should not be used (assuming a straight alignment – greater width might be required on bends).
- Advisory cycle lanes are suitable for roads where the speed limit is 30mph or less.

A full review of cycle facilities along the A307 Portsmouth Road is out of scope for this study and therefore the options proposed assume that existing cycle facilities are to be maintained, even though they may not meet these standards.

4.1 Option 1 – Pedestrian Refuge (1.5m wide) and Retention of On-Carriageway Advisory Cycle Lanes

The measures proposed for Option 1 are shown on Drawing. Nos. PC0805/01

This option includes the following features:

- A new pedestrian refuge island, located at the mid-point between the existing bus stops.
- Retention of the existing 1.2m wide on-carriageway advisory cycle lanes.

The proposed refuge island has been shown with a crossing width of 2.0m to allow sufficient space for two wheelchairs to pass and to provide adequate waiting space for pedestrians crossing the carriageway in two stages. An island width of 1.5m has also been shown to provide a minimum depth for wheelchair users. This width is less than other nearby refuge islands on the same road.

Remaining lane widths of 4.1m, allow for maintaining the existing 1.2m wide advisory cycle lanes, together with running lane widths of 2.9m, on both sides of the refuge island.

A swept path analysis for four vehicle types (car, refuse vehicle, fire appliance and pantechicon) has been undertaken to show if it would be possible for them to negotiate the proposed refuge island when a stationary bus is present. Analysis shows that all vehicle types tested can complete the manoeuvre, traffic conditions permitting. This analysis is shown on Drawing Nos. PC0805/02 and 03. Testing for an articulated vehicle has not been undertaken as it is expected that vehicles of this size would not attempt to pass a stationary bus.

Visibility to and from the proposed crossing points satisfies at least the desirable minimum requirements shown in Table 1 of Local Transport Note 2/95.

Option 1 would require no carriageway or footway widening and could be constructed without affecting the existing bus stops. All work could be completed within the current highway limits.

No changes to the existing highway lighting are anticipated, apart from making a new electrical connection to the proposed refuge island for a high level 'Keep Left' sign and possibly for illuminated bollards. It is also likely that a review of the current system of lighting would be necessary at detailed design stage to ensure that lighting meets current standards.

It is not anticipated that existing utility apparatus would be affected by Option 1. This would need to be confirmed by New Roads and Street Works Act C3 enquiries if this option is progressed.

Conclusion – Option 1 provides a pedestrian refuge island at the mid-point between the existing bus stops and in a position that pedestrians have been observed crossing the road. Whilst it only provides the minimum island width, this can be achieved without the need to widen the carriageway and also allows the existing on-carriageway advisory cycle lanes to be maintained. The dimensions possible within the existing carriageway width do not fully comply with current guidance, but are considered a reasonable compromise given the anticipated level of use. However, it is recommended that a stage 1 Road Safety Audit is carried out before a decision is made if this option is feasible. It is also recommended that colleagues in Passenger Transport Group are consulted.

Approximate Construction Costs: £10,000 - £20,000 (excluding utility works, design/supervision fees, statutory procedures etc.)

4.2 Option 2 – Pedestrian Refuge (2.0m wide) and Local Removal of On-Carriageway Advisory Cycle Lanes

The measures proposed for Option 2 are shown on Drawing Nos. PC0809/04.

This option includes the following features:

- A new pedestrian refuge island, located at the mid-point between the existing bus stops.
- Local removal of the existing 1.2m wide on-carriageway advisory cycle lanes.

The proposed refuge island has been shown with a crossing width of 2.0m similar to Option 1, but with a wider island width of 2.0m to provide a more comfortable depth for pedestrians and wheelchair users (with personal assistant). This island width matches other nearby refuge islands on the same road.

As a consequence of the wider island, the on-carriageway advisory cycle lanes on both sides of the road are shown removed locally. This is because maintaining the 1.2m wide advisory cycle lanes would result in running lane widths of only 2.65m, which would be significantly below current guidance and could place cyclists in danger from closer overtaking by drivers. Even without the cycle lanes, Option 2 would still result in the remaining lane widths being just within the critical range that should not be used.

These dimensions assume that no carriageway widening is included in Option 2. A further option including carriageway widening could be considered, if necessary, but the additional costs and disruption involved would be difficult to justify given the anticipated level of use and the collision history.

A swept path analysis for four vehicle types (car, refuse vehicle, fire appliance and pantechicon) has been undertaken to show if it would be possible for them to negotiate the proposed refuge island when a stationary bus is present. Analysis shows that all vehicle types tested can complete the manoeuvre, traffic conditions permitting. This analysis is shown on Drawing Nos. PC0805/05 and 06. Testing for an articulated vehicle has not been undertaken as it is expected that vehicles of this size would not attempt to pass a stationary bus.

Visibility to and from the proposed crossing points satisfies at least the desirable minimum requirements shown in Table 1 of Local Transport Note 2/95.

Option 2 would require no carriageway or footway widening and could be constructed without affecting the existing bus stops. All work could be completed within the current highway limits.

No changes to the existing highway lighting are anticipated, apart from making a new electrical connection to the proposed refuge island for a high level 'Keep Left' sign and possibly for illuminated bollards. It is also likely that a review of the current system of lighting would be necessary at detailed design stage to ensure that lighting meets current standards.

It is not anticipated that existing utility apparatus would be affected by Option 2. This would need to be confirmed by New Roads and Street Works Act C3 enquiries if this option is progressed.

Conclusion – Option 2 provides a pedestrian refuge island at the same position as Option 1, but with an increased island width to make it more comfortable for pedestrians and wheelchair users. The island width matches other nearby refuge islands on the same road, but the remaining lane widths are insufficient to maintain the existing on-carriageway advisory cycle lanes. The anticipated level of use and collision history do not justify carriageway widening, and the benefits of a wider refuge island compared with Option 1 are considered to be outweighed by the disbenefits of interrupting the existing cycle facility, which appears to be well used.

Approximate Construction Costs: £10,000 - £20,000 (excluding utility works, design/supervision fees, statutory procedures etc.)

4.3 Option 3 – Do Nothing

This option maintains the existing arrangement at the site.

Conclusion – Option 3 provides no improvements but can reasonably be considered due to the low pedestrian crossing demand and the collision history. However, the importance of the A307 Portsmouth Road on the strategic road network and the high traffic volumes mean the potential for personal injury would remain with this option. A proportionate improvement scheme would therefore be justified at this location.

Approximate Construction Costs: £0

5. SUMMARY AND RECOMMENDATION:

The A307 Portsmouth Road is a strategically important route on Surrey's highway network and carries a high volume of traffic. Consequently, this makes it difficult for pedestrians, especially those who are more vulnerable such as children, the elderly and those with visual impairment, to find suitable gaps to cross the road safely. The wide carriageway and close proximity to the Scilly Isles roundabout increases the difficulty for pedestrians, especially in the dark.

Existing uncontrolled crossing points are provided at the roundabout splitter island and at the pedestrian refuge near to the junction with Couchmore Avenue, but there are no intermediate facilities in the vicinity of the existing bus stops.

Site observations indicate that a number of bus passengers walk from the bus stops to Weston Green in the morning and return again in the evening. These pedestrians were observed crossing the road at the splitter island and between the bus stops. It is assumed that the majority of these pedestrians are students at Esher College.

It is recommended that a pedestrian count is undertaken to measure the current level of use and the demand for a new crossing. If there is sufficient justification to proceed with an improvement scheme, it is recommended that Options 1 is developed further, subject to consultation with colleagues in road safety audit and Passenger Transport Group.

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