



**C152 Burwood Road, Hersham,  
Walton on Thames, KT12 4AA  
Highway Safety Measures  
Feasibility / Outline Design Report**

**October 2013**

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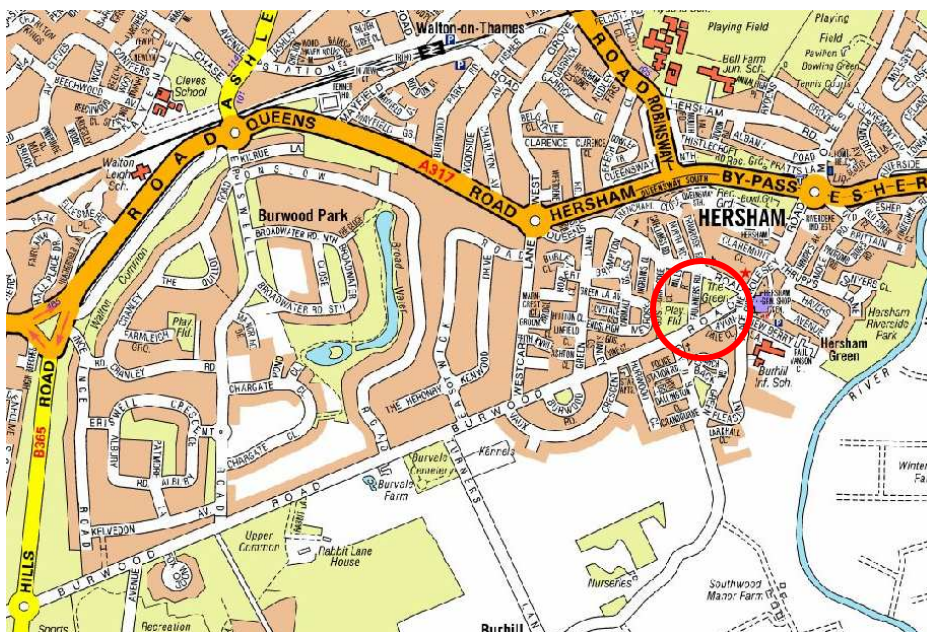
## 1. INTRODUCTION:

Burwood Road runs approximately east to west linking Seven Hills Road to Molesey Road in Hersham. The western section of Burwood Road between Seven Hills Road and Turners Lane is a straight single carriageway road with one lane in each direction and is subject to a speed limit of 40mph. The eastern section between Turners Lane and Molesey Road is also a relatively straight single carriageway road with one lane in each direction but is subject to a lower speed limit of 30mph.

The full length of Burwood Road is illuminated by a continuous system of street lighting.

A petition was submitted to the November 2012 meeting of the Local Committee, signed by 190 residents which highlighted safety concerns generally. These included the speed of vehicles, the lack of 30mph repeater signs, traffic calming and crossing points on the C152 Burwood Road. The petition also requested a 20mph zone encompassing Molesey Road from Thrupps Lane to Queens Road, and extending into Burwood Road, to its junction with Green Lane and to include Pleasant Place. Additionally requested were extra signs, painted speed roundels on the carriageway and a zebra crossing in the vicinity of Lilliput Nursery and the Church. Further background information is included within the design brief that is attached as appendix A.

The purpose of this report is therefore to assess the feasibility of any improvements so that the most appropriate solution is introduced. Based on the description of works in the design brief, the main focus of this report is on the eastern section of Burwood Road as highlighted below.



## **2. SITE ANALYSIS:**

Footways are present along both sides of Burwood Road within the eastern (30mph) section, between Molesey Road and the western junction of Vaux Crescent. The footway then continues on the northern side only until Turners Lane, which is also where the speed limit changes from 30mph to 40mph. Footways then continue along both sides of the road from Turners Lane to Squires Plant Nursery, where the southern footway stops again. From this point onwards the footway network continues only on the northern side to the junction with Seven Hills Road.

The carriageway between Seven Hills Road and Turners Road has recently been surface dressed and is therefore in good condition, as are the road markings. The 30mph speed limit begins at Turners lane, where there are yellow backed 30mph terminal signs and a painted 30mph roundel on a patch of red coloured surfacing. The signage is in good condition but the red patch and carriageway surface underneath are in poor condition. The road at this location measures 6.0m wide.

The recently implemented surface dressing continues eastwards from the speed limit gateway to Westcar Lane at which point the road measures 6.0m wide. Along this length the properties are set fairly well back meaning the road is generally tree lined in character.

From Westcar Lane eastwards to Queens Road the carriageway has been completely resurfaced, hence is in very good condition as are the road markings. Throughout this section the road varies in width between 5.5m and 7.5m. There are generally property frontages on both sides of this section of the road albeit some of these, particularly between Turners Lane and Burwood Close are set back behind wide verges and footways.

Located at the eastern end of Burwood Road are St Peters Church and Lilliput Children's Nursery. The nursery is open from 08:00 to 18:30 and currently has around 155 places for children between 0 and 5 years of age. St Peters Church also runs a number of activities for children of a similar age from the Church Hall.

### **3. DATA COLLECTION:**

#### **3.1 Statutory Authorities Plant Request;**

The following Statutory Authorities were approached with a level C2 Enquiry in October 2013. It should be noted that C2 enquiries are preliminary enquiries only and that depth of cover and possible costs of diversion would have to be established at the detailed design stage, prior to construction:

- 1 National Grid Gas
- 2 BT
- 3 EDF Energy (electricity)
- 4 Affinity Water
- 5 Scottish and Southern (electricity)
- 6 Thames Water
- 7 Virgin Media
- 8 Traffic Signals (SCC)
- 9 Linesearch (petroleum and high pressure gas)
- 10 South East Water
- 11 Sutton and East Surrey Water

The following Statutory Authorities do not have any apparatus in the area:

- 12 Scottish and Southern (electricity)
- 13 Traffic Signals
- 14 South East Water
- 15 Sutton and East Surrey Water

Referring to the Statutory Authority plans, there could potentially be diversionary or protective works for all eleven of the authorities who have apparatus in the area. In practice, it is likely that most of the conflict could be overcome at detailed design stage but there may still be statutory authority works required. Costs for such works can only be identified at the detailed design stage.

Copies of the C2 replies are available upon request.

### 3.2 Vehicle Survey Analysis;

As detailed in the Department for Transport's (DfT) Local Transport Note 1/95: The Assessment of Pedestrian Crossings, part of the assessment for pedestrian crossings is to measure the speed of vehicles on each approach to the proposed crossing. The 85<sup>th</sup> percentile speed is the speed at which 85% of drivers will travel at or below.

Vehicle speed surveys were undertaken on 25 September 2013 using a hand held speed detection radar. Speed data was collected at two locations and the table below provides a summary of the speed surveys:

Between Pleasant Place and Burhill Road	85 <sup>th</sup> percentile mean speed
Eastbound traffic	30
Westbound traffic	31

Between Green Lane and Westcar Lane	85 <sup>th</sup> percentile mean speed
Eastbound traffic	39
Westbound traffic	37

The speed information above was collected during free flowing traffic in order to provide evidence of the highest vehicle speeds and it clearly shows a difference between the area around Lilliput Nursery and further to the west. This difference is perhaps explained to some extent by the change in character of the road. The eastern end generally experiences regular on street parking, which provides a traffic calming effect but site observations show that the on street parking tends to finish at Burwood Close and hence it tallies that vehicle speeds are higher to the west.

Traffic is free flowing apart from along the length of Burwood Road between Burhill Road and Pleasant Place, where vehicles regularly slow or even stop to give way to opposing traffic in order to pass the on street parking. Site observations during peak hours show that speeds are definitely affected by the on street parking and in fact many vehicles are travelling slower than the existing 30mph speed limit. The speed data above indicates that even during periods when the on street parking is reduced, vehicle speeds are still generally compliant.

It is a concern that the measured speeds further west are higher than the 30mph speed limit and this needs consideration.

Observations of the traffic conditions indicate that Burwood Road experiences moderate flows, made up of all classes of vehicles up to and including HGVs although HGVs are not a regular occurrence. Faulkner's Road has a much lower traffic flow.

Investigations indicate that some of the vehicles parked on Burwood Road and in Faulkner's Road are those of Nursery staff. This keeps the Nursery's car park relatively free for use by parents and the car park was observed to be very well used during peak hours. Whilst displacing some vehicles to the surrounding streets, this arrangement provides a far safer environment for dropping off and collecting children as they are relatively well contained whilst moving between car and building and visa versa. A number of the vehicles parked on street are also associated with parents taking their children to and from some of the activities run in the Church Hall.

### **3.3 Pedestrian Analysis;**

Pedestrian movements across Burwood Road in the vicinity of Lilliput Nursery and St Peters Church are relatively low, which can in some way be attributed to the parking arrangements of the Nursery. However, there is clearly a demand for pedestrians to cross in this vicinity but the presence of the on street parking greatly reduces visibility for both pedestrian and motorists. This is not helped by the parking, which regularly blocks the existing dropped kerbs to the front of the Church Hall.

Suitable gaps in the traffic are available for pedestrians to cross but as pedestrians are forced to cross between parked cars they were observed to generally be hesitant. All of these factors combined to make crossing the road in this location hazardous.

Site observations indicate that the majority of pedestrian crossing movements across Burwood Road occur anywhere between the Church Hall entrance and the access to the Nursery car park.



### 3.4 Collision Data;

The recorded collision data shows that there were 5 collisions along the whole length of Burwood Road during the period 2009 to 2012. These are broken down as follows;

Location/near to	Collisions	Date	Nature
Eriswell Road	2	27/02/2010 09/10/2010	Slight Fatal
Vaux Crescent	1	17/5/2010	Slight
O/S Church Hall	1	24/06/2011	Slight
Faulkners Road	1	04/12/2009	Slight

All of these collisions are random, unrelated and have not been recorded as speed related.

## **4. DISCUSSION AND OPTIONS:**

The brief makes reference to a petition requesting a 20mph zone encompassing Molesey Road from Thrupps Lane to Queens Road, and extended into Burwood Road to its junction with Green Lane and to include Pleasant Place. Currently this area is subject to a 30mph speed limit, which is the appropriate limit for this type of road and by itself, the personal injury accident record does not justify reducing the speed limit to 20mph. Current guidance states that 20mph speed limits must be self enforcing and experience has shown that this can only be achieved by the installation of severe traffic calming measures. Such measures usually involve vertical deflection such as speed cushions and raised tables, which are expensive and not generally well received by the public. In fact, there is now a public demand for some previously constructed measures at other sites to be removed.

Surrey Police have also produced guidance, which suggests the most appropriate conditions for 20mph speed limits are in residential areas where the infrastructure is for residential use only (not thoroughfares, feeder or through routes) where it is clear to non-local motorists that the speed limit is 20.

20mph speed limits can also be 'advisory' whereby signage indicates the advisory speed limit during periods when the accompanying amber lights are flashing (morning and afternoon peaks). Advisory speed limits are not enforceable and do not affect the actual speed limit so rely on motorists adhering to the advised limit.

Currently, Surrey County Council does not have an approved policy in relation to advisory 20mph speed limits so in order to help inform the drafting of such a policy, a number of trials are now being undertaken. The results of these trials and any conclusions are not yet available so with this in mind it is not recommended that an advisory 20mph speed limit be progressed in this location at this time.

Whilst the introduction of a 20mph speed limit (permanent or advisory) is not being permanently dismissed, based on the current guidance it is perhaps a more suitable approach to investigate an alternative package of highway improvement measures. Such a package has the potential to be achieved sooner, would be less detrimental to the local environment, is likely to be more acceptable to local residents and should have a greater cost benefit.

Working from west to east, the options that could make up such a package of improvements are:

#### **4.1 Improving the gateway at the change from 40mph to 30mph;**

Where the speed limit reduces from 40mph to 30mph just east of Turners Lane the gateway feature could be improved. The existing signage already benefits from yellow backing but requires replacing. The red carriageway surfacing is badly worn and would benefit from being replaced. The carriageway requires resurfacing in order to provide a sound surface for a new red patch onto which a new 30mph roundel can be painted. Edge lines to provide a visual narrowing could also be considered. This would be a simple and cost effective measure to improve the conspicuousness of the step down in speed limit.

Estimated cost £12,500

#### **4.2 The provision of additional Vehicle Activated Signs;**

The data included in section 3.2 shows that speeds between Turners Lane and Burhill Road are higher than the 30mph speed limit but current guidance does not permit 30mph repeater signage or the provision of painted 30mph 'repeater' roundels. In order to provide a reminder of the speed limit to motorists, the installation of additional Vehicle Activated Signs should be considered. Suggested locations are on lamp columns 14, 17, 28 and 29 in order to provide two for each direction of flow. These could be in the format of Speed Limit Reminder signs with additional SLOW DOWN legend. Complementary SLOW road markings could also be applied.

Estimated cost £13,000

### 4.3 Police enforcement;

Before considering the introduction of costly, wide scale traffic calming features that as previously mentioned are not generally well received by the public, are noisy and detrimental to the environment Surrey Police could be encouraged to undertake increased high profile enforcement. Regular high profile enforcement is an extremely effective method of changing driver behaviour as failure to comply has a direct effect on the individual motorist. Having said that, it is appreciated that resources are limited and there are many other similar sites across Surrey.

Estimated cost £Zero

### 4.4 Improving the school warning signage;

Currently, there is school warning signage in three locations. One is for westbound motorists on Burwood Road, located just west of its junction with Pleasant Place. This consists of a triangular 'children going to school or playground' sign and supplementary 'school' plate and is in good order. The second is for eastbound motorists on Queens Road and is located just west of its junction with Primrose Road. This consists of a triangular 'children going to school or playground' sign and supplementary 'patrol' plate. The supplementary plate is in poor condition. The third is also on Queens Road but for westbound vehicles and is located adjacent to the day centre. This also comprises a triangular 'children going to school or playground' sign and supplementary 'patrol' plate and both signs are worn.

These current signs are not particularly obvious to drivers and the need for such signs on Queens Road is questionable. Any school warning signs should focus on where they will have the greatest impact and this is on Burwood Road, on each approach to Lilliput Nursery. Upgraded school warning signage could easily be installed on both approaches. These should comprise triangular sign ref 545 (children going to school or playground) and supplementary plate ref 546 (school) mounted on a yellow backing board.

With regard to flashing amber lights, current guidance states that these should only be considered where the 85<sup>th</sup> percentile speed is greater than 35mph and that they should not be used near a controlled crossing if this might cause confusion or distraction. A controlled crossing is an option discussed later in this report so flashing amber lights are not recommended.

Suggested locations for the upgraded signage in Burwood Road are on a new post in the northern footway between Burhill Road and Faulkner's Road for eastbound traffic and for westbound traffic, on LC 4 (in place of the existing). Painted SLOW road markings on a red patch would

complement the improved signage and further improve driver awareness. The two sign assemblies on Queens Road could be removed.

Estimated cost £5,000

#### **4.5 Introducing a one way system on Faulkner's Road;**

Vehicles travelling south on Faulkner's Road have a restricted sight line to the right when trying to exit onto Burwood Road due to the bend in Burwood Road and the presence of a boundary hedge. Site observations reveal that motorists regularly edge over the give way road marking in order to improve their visibility, which places them in conflict with motorists on Burwood Road.

At the northern end of Faulkner's Road, the sight line to the left for motorists exiting onto Queens Road is also restricted but to a far lesser degree than that at the southern end. At least the visibility requirement at this location is to view the furthest (eastbound) lane of Queens Road so it is not quite so limited by boundaries that are outside of Surrey County Council's control.

There are no obvious kerb realignment works that could improve this situation at the southern end of Faulkner's Road without having wider implications on Burwood Road but if a one way system were implemented going northbound then there are works that could be undertaken to further improve the available visibility at the northern junction. It should also be noted that an accident did occur at the junction of Faulkner's Road and Burwood Road in 2009 so there is certainly merit in promoting a one way system northbound.

This would be relatively simple to sign at either end and the observed volume of southbound vehicles that would be displaced would not be expected to cause a noticeable negative impact on surrounding routes. Kerb realignment works at the southern 'entry' point could be used to reduce vehicle entry speeds, improve the pedestrian dropped kerbs and provide locations for clear signage. Similarly, at the northern end, kerb realignment works could be used to improve the available visibility, the dropped kerbs and once again provide locations for clearly visible signage.

The introduction of a one way system may also free up some space for additional on street parking to be accommodated. Indications are that this is only likely to be two or three spaces but it could offset some of that lost on Burwood Road should a new crossing facility be provided. This could also be of benefit to the residents and their visitors.

One way systems can generate some negative effects such as the potential for increased vehicle speeds and inconvenience to residents but

in this instance it is unlikely that vehicle speeds will increase significantly due to the nature of the road and the relatively short length. Officers observed very little opposing flow during a number of site visits so as it stands vehicles often travel the entire length of Faulkner's Road unopposed anyway. In terms of inconvenience, the additional route via Queens Road and Burwood Road is not an overly lengthy one but this is something that could only be properly assessed at the public consultation stage.

Estimated cost £35,000

#### **4.6 Introducing a crossing facility on Burwood Road;**

Pedestrian dropped kerbs with tactile paving exist adjacent to the Church Hall entrance but they are regularly blocked by parked vehicles, visibility for both pedestrians and motorists is poor and there is regular puddling at the southern dropped kerb during periods of rainfall. The northern footway is also narrow at approximately 1.2m wide so these factors combined and the fact that this location does not serve the Nursery well makes the existing facility unsuitable so an improved facility is required.

Considering the needs of people travelling to and from both the Church Hall and Nursery, it would be prudent to locate any improved crossing facility further to the west so as to be in more of a central location. The effect of any improved crossing facility on parking must also be considered so the suggested location is therefore at the western end of St Peters Church Hall.

Providing a central pedestrian refuge is not considered appropriate as the island is required to be a minimum of 2m wide, leaving less than 5.5m of road width to be split into two running lanes. This option also does not allow for the adjacent footways to be locally widened, which would be beneficial.

The Department for Transport's Traffic Advisory Note 1/95 states that where pedestrian flows are relatively low and traffic flows are no greater than moderate, then a zebra crossing may be suitable. Burwood Road also meets the speed criteria for a zebra crossing as the 85<sup>th</sup> percentile speeds at the suggested location are below 35mph. Because there is no vehicle actuation period, which would be the case for a signal controlled crossing, delays to pedestrians are minimal as they can establish precedence by stepping onto the crossing. Indications are that there are gaps in the traffic where pedestrians could cross but the installation of a Zebra crossing will ensure crossing can be done safely and will move the emphasis more onto pedestrian safety. Even if people are unsure of crossing, this type of facility gives them the opportunity to wait at the side of the road until vehicles give way.

The installation of any 'controlled' crossing will introduce delays to vehicular traffic but it is felt that in this instance a Zebra crossing should keep this to a minimum as it will only be in use for the time pedestrians take to cross and the pedestrian demand is relatively low.

The opportunity could be taken to narrow the road, which would act as a traffic calming 'narrowing', reduce the width across which pedestrians are required to cross and allow the footways on either side of Burwood Road to be widened.

On street parking will be reduced due to the presence of a new crossing but the proposal looks to strike a balance and some parking could be retained where it is safe to do so. This is in recognition that the current parking acts as traffic calming feature and that if it were to be completely displaced those vehicles are likely to lead to parking problems in other nearby roads. The suggested crossing location does not require the nursery's car park access to be relocated and also provides better protection from on-street parking to the driveways of numbers 3 and 5, which at present have extremely limited visibility.

The section of Burwood Road covering the proposed crossing location has recently been resurfaced so the road is not in need of any repairs to accommodate a Zebra crossing.

Although street lighting exists in the vicinity of the proposed crossing it may be necessary to upgrade some of the street lighting to provide acceptable lighting levels. To further assist with this, combined lamp column / Belisha beacons should be used. It is likely that some of the Statutory Authority services will need to be diverted or protected, in particular in order to accommodate the new Belisha beacons. No costs have been obtained for these elements.

The presence of a Zebra crossing could also have a positive effect on vehicle speeds.

Estimated cost £75,000

## **5. RECOMMENDATION:**

It is recommended that a package of highway safety improvements be promoted comprising the proposals described in items 4.1 to 4.6 namely;

- Improving the gateway at the change from 40mph to 30mph
- Providing additional Vehicle Activated 30mph Signs
- Encouraging police enforcement
- Improving the school warning signage
- Introducing a one way system on Faulkner's Road
- Introducing a Zebra crossing outside Lilliput Nursery

The total estimated cost is in the region of £140,000

The recommended package of works does not eliminate the possibility of introducing traffic calming features at any future stage should the situation change and/or a need be justified.

Many of the proposals making up this recommendation could be progressed relatively soon after funding was made available. If only partial funding were to be available then this approach provides the flexibility for a phased implementation starting with the most desirable elements as agreed with stakeholders.

Proposed layout designs are attached as appendix B. (Annex B & C of Local Committee report).

## **6. APPENDICES:**

**A) Design Brief**

**B) Drawings showing proposed options:**

Dwg PC0346\_05 – Proposed gateway upgrade and VAS

Dwg PC0346\_06 – Proposed works around Lilliput Nursery and St Peters Church Hall

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