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## HORLEY NORTH EAST SECTOR

Bus Corridor Options  
Surrey County Council

07/05/2013

Revision 5

2013-08-23

## Quality Management

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# Horley North East Sector

## Bus Corridor Options

07/05/2013

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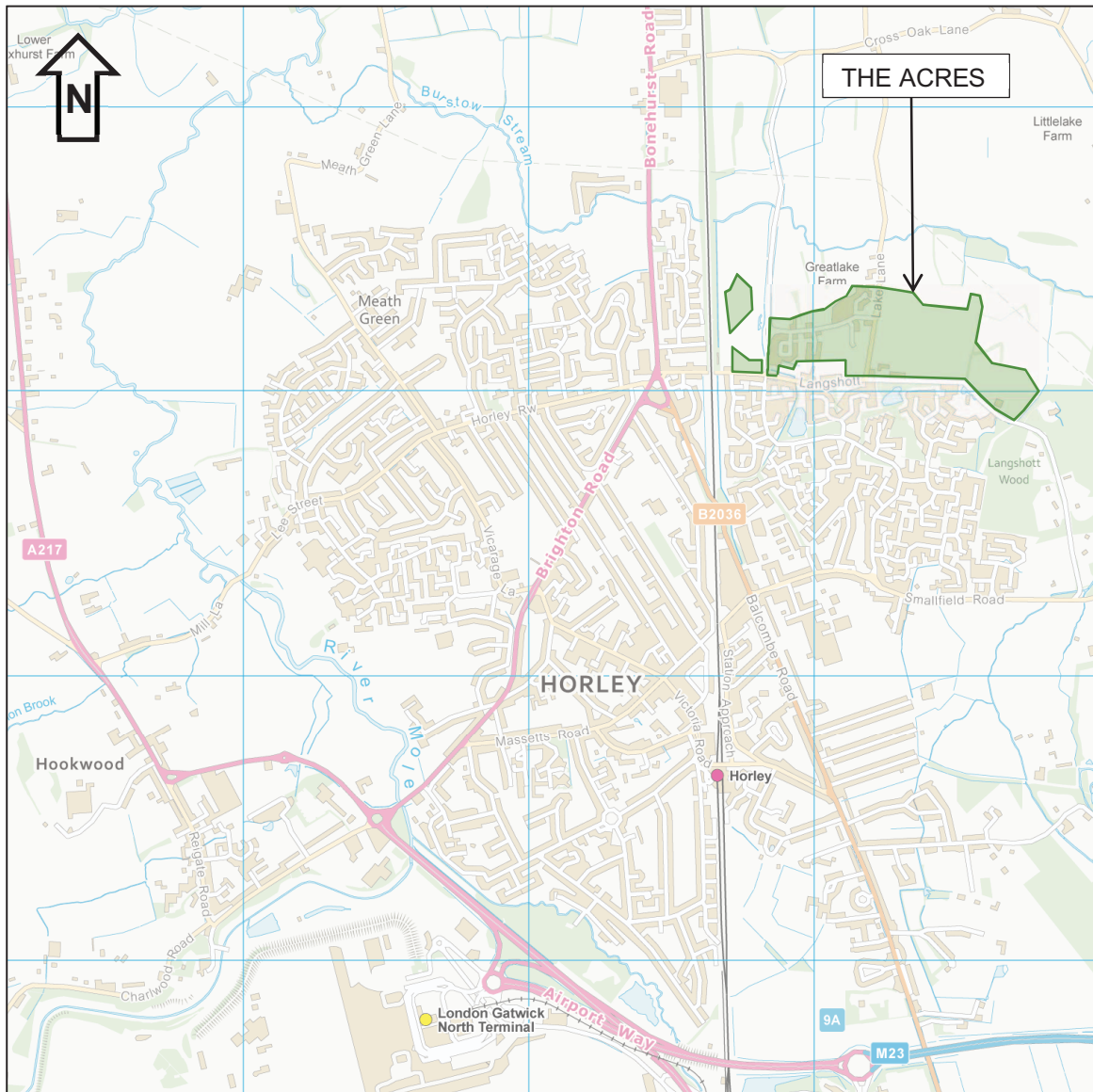
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# 1. Executive Summary

- 1.1 This report discusses the options for the provision of bus services to the Horley NE Sector development, known as 'The Acres'.
- 1.2 Three options have been considered for the provision of the bus services:
- Option 1 – Existing provision retained;
  - Option 2 – Bus enters and exits The Acres via Orchard Drive:
    - Alternative 2A – Bus uses a circular route within The Acres;
    - Alternative 2B – Bus turns in a turning area within The Acres;
  - Option 3 – Bus enters the development via Orchard Drive and exits via Langshott (in accordance with the Planning Permission):
    - Alternative 3A – No improvement to Langshott;
    - Alternative 3B – Passing places are provided along Langshott;
    - Alternative 3C – Passing places are provided along Langshott together with a footway;
    - Alternative 3D – Langshott is widened for two-way traffic and a footway is provided.
- 1.3 Each of the options and alternatives has been scored enabling them to be ranked in order of preference against a set of criteria. The preferred option is Option 3C – the bus exits The Acres via Langshott with Langshott being upgraded with the provision of passing places and footways.
- 1.4 The preferred option for the bus gate is a physical barrier. It is recommended that a sump buster and deterrent paving are considered in more detail and the one which provides the most resilient and cost effective solution is implemented.
- 1.5 In addition to the above, this report considers four options for the layout of the junction between Langshott/Orchard Drive/Wheatfield Way:
- Retain the existing priorities;
  - Change the priorities so that the north-south route has priority;
  - Change the priorities and introduce a stagger on Langshott;
  - Provide a mini roundabout.
- 1.6 Further work is required including, but not limited to, turning counts and speed surveys prior to making a recommendation with regards to the Langshott/Wheatfield Way/Orchard Drive junction.

## 2. Introduction

- 2.1 This report identifies and assesses various options for a bus route serving the Horley North East Sector development, known as and referred to in this report as 'The Acres'.
- 2.2 The report considers options for the on-site and off-site bus infrastructure and assesses these against a range of criteria.
- 2.3 Figure 2.1 shows the location of The Acres development in the context of the local area.



**Figure 2.1 – Location of The Acres**

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- 2.4 This report also identifies and assesses five options for the layout of the existing junction between Langshott, Orchard Drive and Wheatfield Drive where there is a reported issue with vehicle compliance with the existing layout.

2.5 The structure of this report is as follows:

- Section 3 – Background to the development and the provision of the bus route.
- Section 4 – Summary of the options for the bus route provision.
- Section 5 – Description of the options.
- Section 6 – Option 1 – Retain existing provision
- Section 7 – Option 2 – Bus enters and exits via Orchard Drive
- Section 8 – Option 3 – Bus enters via Orchard Drive and exits via Langshott
- Section 9 – Bus only access measures
- Section 10 – Description and evaluation of the options for the Langshott/Orchard Drive/Wheatfield Way junction
- Section 11 – Recommendations.

### 3. Background

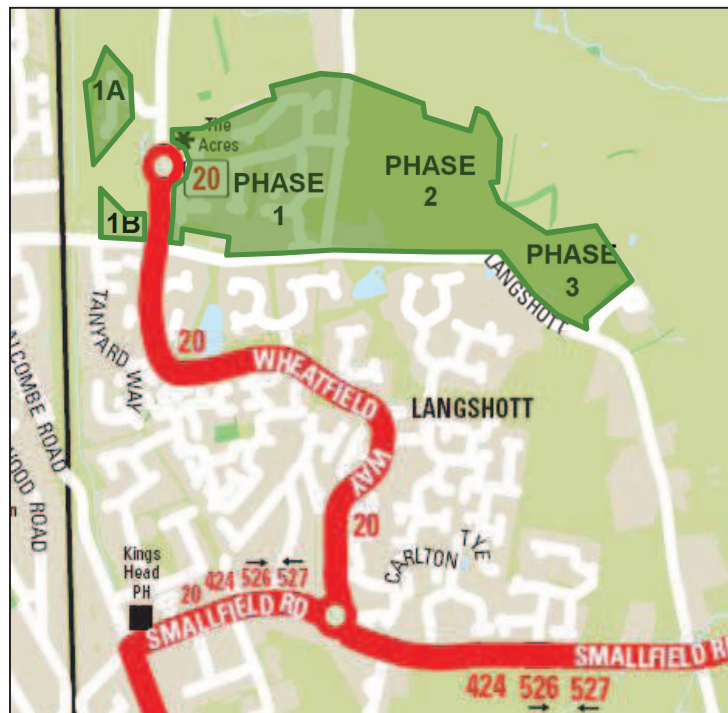
3.1 The Horley Masterplan is the development of 2,600 homes to be located in two new neighbourhoods, the North East Sector and the North West Sector, as well as a number of small sites within the existing urban area. The Horley Masterplan formed part of the First Alteration to the Borough Local Plan. Work began on this in 1995, with the consultation draft published in 1998 and the Initial Deposit Draft and Revised Deposit Draft in 2000. A public inquiry was held in early 2001. The Inspector's Report in 2001 supported the principles of the Horley Masterplan and of the two main housing allocations in Horley. However, the Inspector recommended carrying out further work on the flooding and transport models. Further studies were completed and evaluated and the proposed modifications were placed on deposit in 2004. Full Council on the 17 February 2005 resolved to adopt the First Alteration, which came into effect on the 7 April 2005 when the Notice of Adoption was published

3.2 A key aim of the Horley Masterplan is to achieve a 20% modal reduction in normal peak hour traffic movements from the new housing developments. The plan contains strategies to increase the number of local trips made by foot, bike and bus, to minimise the impact of development on traffic congestion at major junctions in Horley. In particular policy Hr21 of Reigate and Banstead Borough Council Local Plan 2001 requires the provision of a high quality bus routes and priorities in conjunction with the two new neighbourhoods.

3.3 Outline Planning Permission (P/04/01178/OUT) for the North East Sector, known as the Acres, was granted in 2006. The Acres comprises 710 dwellings, a primary school, a community centre and a 60 unit Extra Care Facility. Phase 1 is complete and fully occupied with Phase 2 and Phase 3 under construction and due for completion in 2015, with the school opening in 2014.

3.4 The Fastway bus service is an integral part of the North East Sector development, linking the Acres to Horley Town Centre, Gatwick and Crawley, operated by Metrobus. The Fastway buses operated by Metrobus date from 2000 and have Euro 4 engines for which the emissions are well under that required for the London Low Emission Zone. These are to be replaced with new buses with Euro 5 engines later this year. The bus service operates seven days a week between 05:00 and 23:00, with up to 3 buses an hour. A condition was imposed on the Outline Planning Permission (P/04/01778/OUT) that the bus stops provided within the development should be accessible to residents and no further than 400 metres or 5 minutes' walk from any new dwelling, in order to meet the best practices set out in the Department for Transport Guidance 'Inclusive Mobility'.

3.5 The bus route was considered as part of the Horley Masterplan, with an indicative route shown to enter the development via Orchard Drive and exit the site via a bus only access onto Langshott. This was considered by an independent Planning Inspector as part of Reigate and Banstead Borough Council's Local Plan First Alteration 2001. The Outline Planning Permission for the Acres

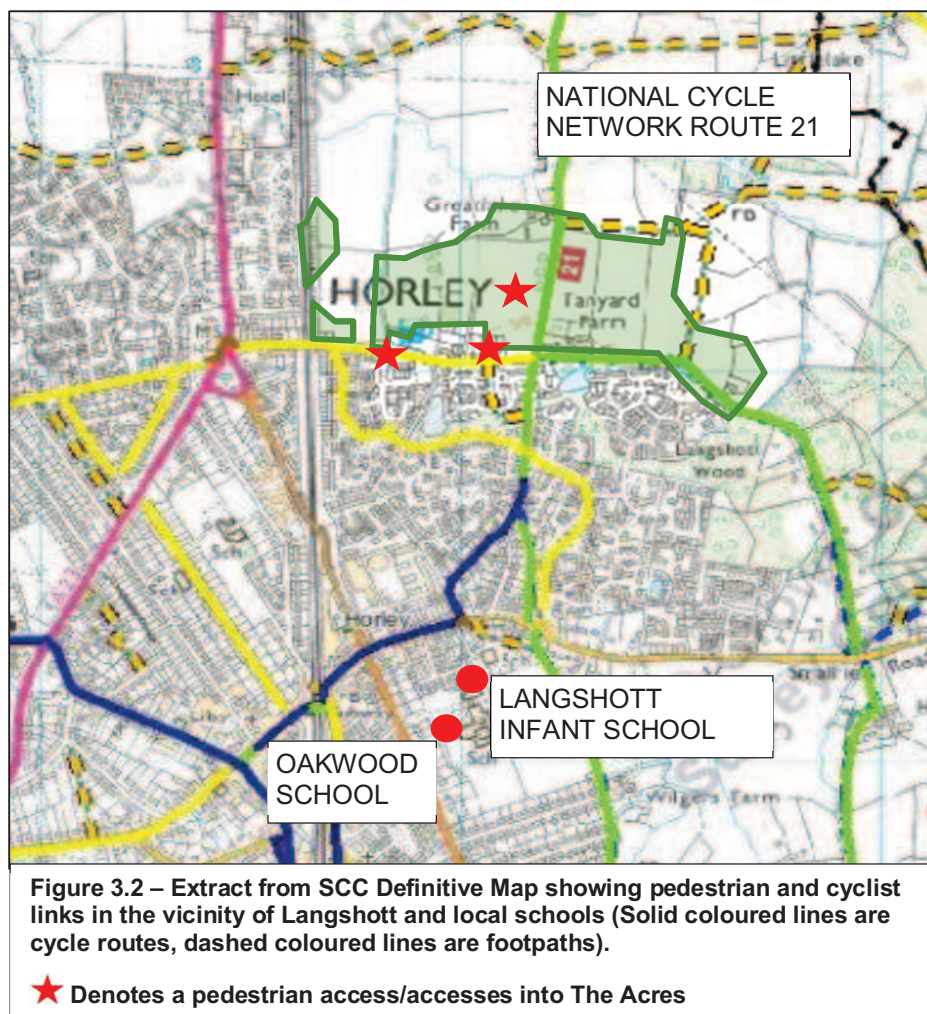


**Figure 3.1 – Extract from SCC Horley and Gatwick Airport Bus Routes Map Showing the existing Fastway Route 20 serving the NE Sector**



incorporated this extension of the Fastway Bus Route 20 and the route was secured in the Section 106 Agreement and subsequent reserved matters applications. The bus currently enters the development, but only as far as the roundabout on Orchard Drive where it turns around. It should be noted that this was only ever envisaged as a temporary arrangement until such time as the bus service could safely enter the site. Figure 3.1 illustrates the bus route in the vicinity of the development.

- 3.6 Langshott is a public highway and forms part of the local infrastructure. It is a metalled pavement with only a short section of footway. Pedestrians, cyclists and vehicles mostly share the pavement. There is limited street lighting, drainage and the carriageway surface is in poor repair. There is no signed speed limit along Langshott, so in the absence of street lighting and any repeaters the national speed limit would apply. However it is understood that a 40mph speed limit is in force. In effect vehicle speeds along Langshott are constrained by the character of the road.
- 3.7 Langshott is a narrow country lane generally between 4 and 5 metres wide. The current semi-rural nature of Langshott, the geometry and reduced maintenance has led to some local concern over its general suitability as a bus route. One of the primary issues raised by residents of Langshott is how a bus can safely exit the development onto Langshott without endangering pedestrians. Concerns relate to the fact that there is only a short length of footway between Wheatfield Way and Easter Barn. After this point pedestrians have to walk in the carriageway. There are several pedestrian and cycle access that link directly to Langshott. These include public footpath definitive number 383 and the National Cycle Route 21. Figure 3.2 shows the pedestrian links onto Langshott and the two local schools (Langshott Infant School and Oakwood School) in the vicinity.



- 3.8 A collection of residents from the Acres have expressed concerns regarding the bus turning within the development. They wish to see the bus enter the site via Orchard Drive and exit via Langshott, in accordance with the planning permission for the North East Sector and on the basis of which they bought their homes.
- 3.9 In response to these issues, Surrey County Council has commissioned a bus route study to be undertaken considering the options of the bus route serving the Acres.

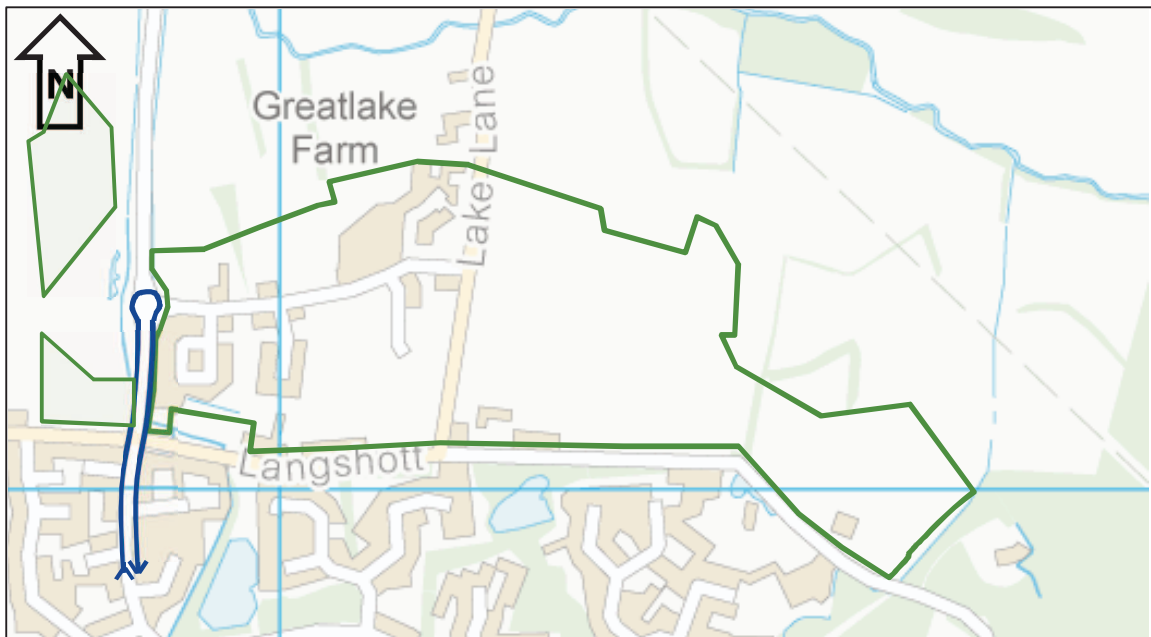
## 4. Bus Route Provision Options

4.1 Three options have been considered for the bus route provision for the development.

- Option 1 – Retain existing provision;
- Option 2 – Bus enters and exits the development via Orchard Drive;
- Option 3 – Bus enters the development via Orchard Drive and exits via Langshott.

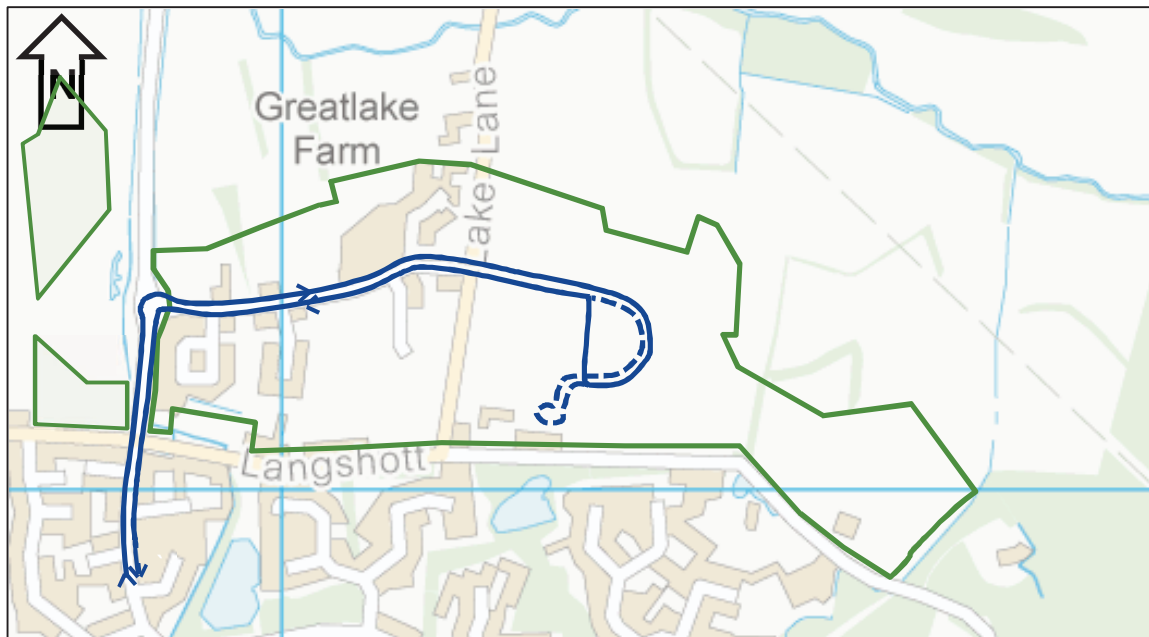
4.2 These are shown on Figures 4.1 to 4.3 below.

4.3 Section 5 of this report describes the evaluation process and sections 6-8 analyses each option in accordance with the assessment criteria.



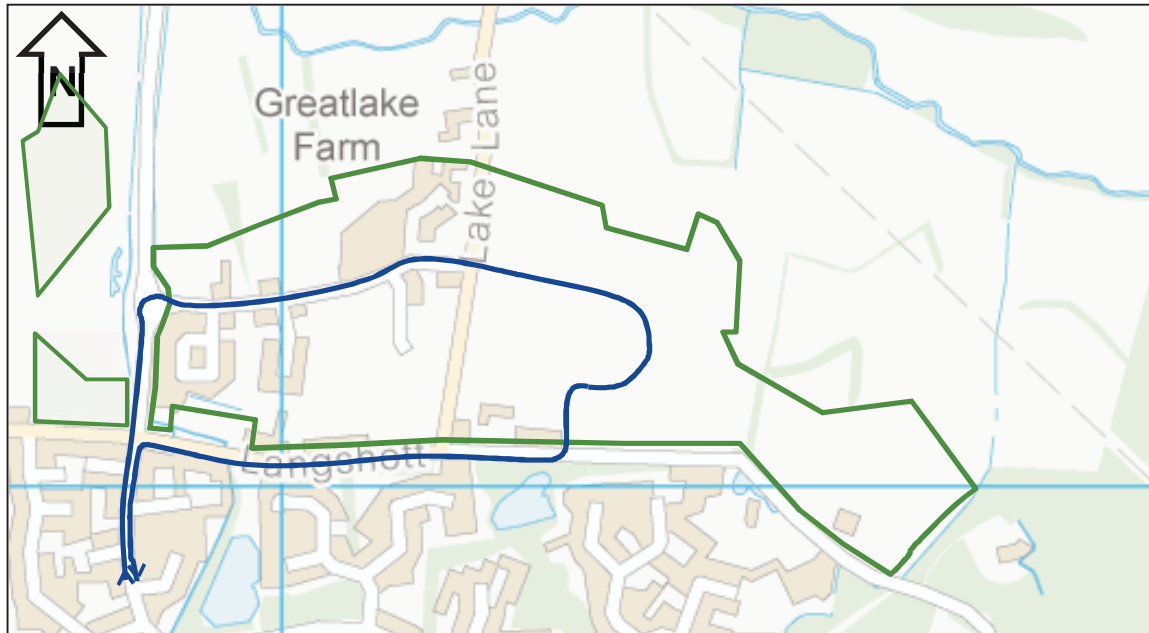
**Figure 4.1 – Option 1: Retain Existing Provision**

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**Figure 4.2 – Option 2: Bus Route Provision where bus enters and exits via Orchard Drive (alternative route via a turning area shown in a dashed line)**

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**Figure 4.3 – Option 3: Bus Route Provision where bus enters via Orchard Drive and exits via Langshott**

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## 5. Option Assessment

- 5.1 In order to compare, contrast and evaluate the options identified in Chapter 4 an Assessment Criteria was established. The criteria have been chosen to provide a comprehensive and relevant range to assess the varying options for the bus route.
- 5.2 For each criteria a rating score and weighting has been established to provide a consistent approach for the assessment and comparison of the options. This has primarily been based on Surrey County Council's Local Transport Plan Objectives:
- *Effective transport: To facilitate end-to-end journeys for residents, business and visitors by maintaining the road network, delivering public transport services and, where appropriate, providing enhancements.*
  - *Reliable transport: To improve the journey time reliability of travel in Surrey*
  - *Safe transport: To improve road safety and the security of the travelling public in Surrey*
  - *Sustainable transport: To provide an integrated transport system that protects the environment, keeps people healthy and provides for lower carbon transport choices.*
- 5.3 The Assessment Criteria is set out in table 5.1 and provides a clear explanation of the issues being considered under each heading.

Table 5.1 – Bus Corridor Options: Assessment Criteria

Bus Corridor Options: Assessment Criteria		Score	Weight	Comment
Patronage	How many potential passengers are within 400m of a bus stop?*	3 99 - 100% or more of people (1,687 - 1,704 people)	15%	<ul style="list-style-type: none"> <li>Increasing bus patronage will contribute to a key objective of the Horley Master Plan - to achieve a 20% modal shift of peak hour traffic onto alternative modes of transport.</li> <li>The greater the use of bus services the less impact there will be on the local highway network.</li> <li>Increasing bus patronage will assist in making the bus service run on a commercial basis therefore requiring less or no public subsidy.</li> </ul>
	*Assumption of 2.4 persons per average household. Therefore 710 households equates to 1,704 people.	2 50% - 99% of people (852-1,686 people)		
		1 Less than 50% of people (0 – 851 people)		
Accessibility	Accessibility for residents: Are all households within 400m of a bus stop?	3 99 - 100% of households (703-710 households)	10%	<ul style="list-style-type: none"> <li>All households should be no more than 400m from a bus stop to ensure adequate accessibility. This is a planning condition of the outline planning permission.</li> <li>Surrey County Council has a statutory duty to consider the impact on equalities. People on lower incomes, those with disabilities and the elderly for example tend to be more reliant on public transport.</li> </ul>
	*Assumption 710 households.	2 50% - 99% of households (355 – 702 households)		
		1 Less than 50% of households (0 – 354 households)		
Effect on bus operations	Access to key facilities: Are all key community facilities in the neighbourhood within 400m of a bus stop?	3 Yes	5%	<ul style="list-style-type: none"> <li>Both residents of the Acres as well as the wider population in Horley will use key community facilities, such as the school, community centre and local shops.</li> <li>These facilities should be no more than 400m from a bus stop.</li> </ul>
		2 Partly		
		1 No		
Effect on bus operations	What is the effect on bus operations?	3 Most advantages	10%	<ul style="list-style-type: none"> <li>A bus service needs to be reliable along the entire length of its route.</li> <li>Key factors that will affect bus operations include: the provision of layovers/terminus points, adequate turning, geometry etc.</li> </ul>
		2 Some advantages/disadvantages		
		1 Least advantages		

Bus Corridor Options: Assessment Criteria			
Criteria	Score	Weight	Comment
Landscape impact	3	5%	<ul style="list-style-type: none"> <li>What impact is there upon the existing landscape including trees, hedges, verges, open space, ditches and the general streetscene?</li> </ul>
	2		
	1		
Highway safety	3	15%	<ul style="list-style-type: none"> <li>What impact will there be on the safety of users of the public highway, particularly more vulnerable users such as pedestrians and cyclists?</li> </ul>
	2		
	1		
Technical construction feasibility	3	15%	<ul style="list-style-type: none"> <li>What works will be required to facilitate the bus e.g. widening of carriageway, carriageway reconstruction, drainage improvements etc and how feasible are these?</li> </ul>
	2		
	1		
Residential amenity	3	5%	<ul style="list-style-type: none"> <li>How will proposals affect access and parking arrangements and the proximity to residential properties?</li> </ul>
	2		
	1		
Legal feasibility	3	15%	<ul style="list-style-type: none"> <li>Are there any legal issues that need to be considered? For example does it conform to existing permissions, Section 106 and 38 agreements? Would works fall within the limits of the public highway? Would the option require Traffic Regulations Orders?</li> </ul>
	2		
	1		
Cost	3	5%	<ul style="list-style-type: none"> <li>What is the estimated cost of the option and how does this compare to the benefits that might be derived?</li> </ul>
	2		
	1		

## 6. Option 1 – Retain existing provision

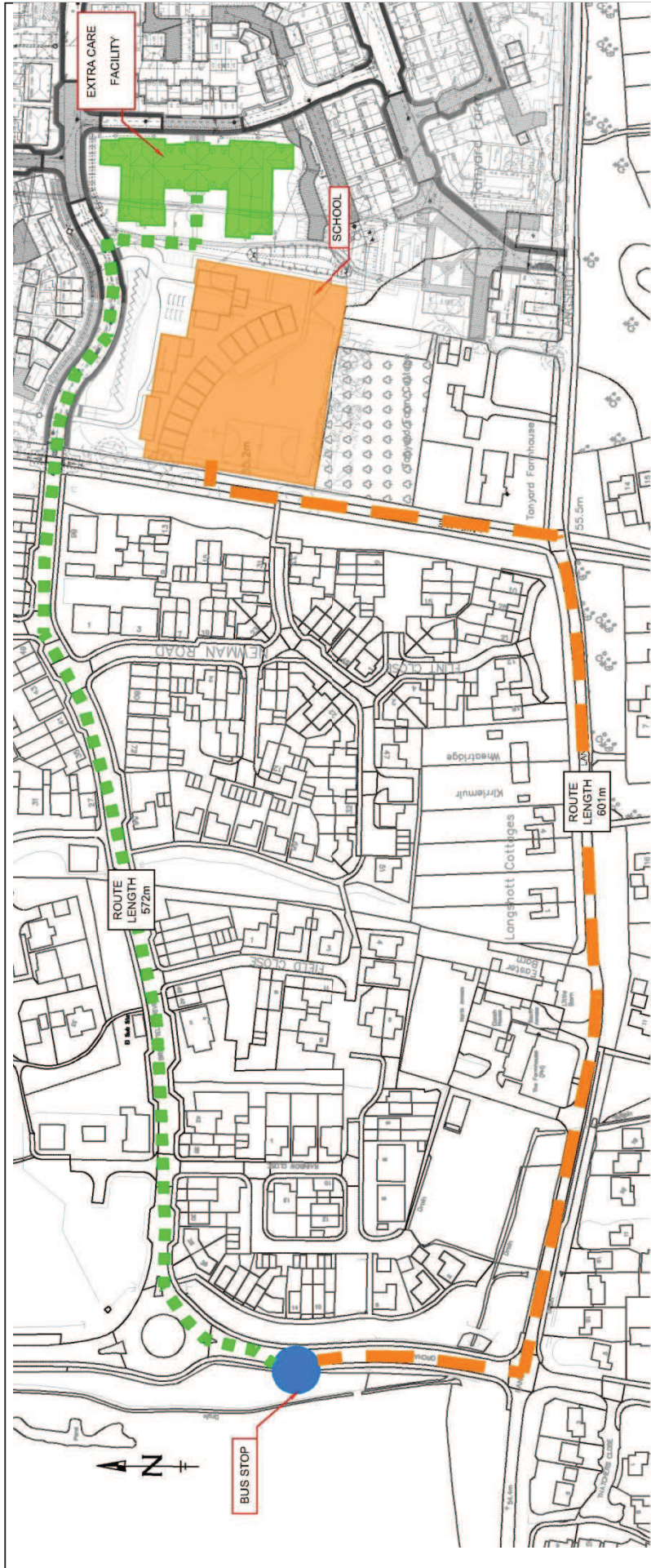
- 6.1 The bus currently enters the development as far as the roundabout on Orchard Drive where it turns around. It should be noted that this was only ever envisaged as a temporary arrangement until such time as the bus service could safely enter the site.
- 6.2 The bus stop is located on the west side of Orchard Drive in advance of the roundabout. This stop is up to 1,000 metres from the furthest extent of the development.
- 6.3 Figure 6.1 shows the location of the bus stop on Orchard Drive and its relation to The Acres. It also shows the locations of the school and the extra care facility both of which require good bus access.
- 6.4 The Assessment of Option 1 is set out in Table 6.1.



Table 6.1 – Option 1 Assessment

Option 1: Existing Provision Retained		
Criteria	Score	Comment
Patronage	1	285 households are within 400m of a bus stop, which equates to 684 people or only 40% of those within the neighbourhood.
Accessibility	1	285 households are within 400m of a bus stop and as such 60% of households would not have suitable access to the bus service. This would adversely affect those people who are more reliant on bus services such as the elderly, people with disabilities and people on lower incomes.
	1	None of the key community facilities are within 400m of a bus stop.
Effect on bus operations	2	This arrangement has been operational for a number of years and the bus operator has not reported any significant problems. It provides a terminus where the bus can lay over for a period of time, which assists in improving the reliability of the service. However this was only envisaged to be a temporary arrangement until such time as the bus service could serve the entire neighbourhood when construction works were substantially complete.
Landscape impact	3	No change to existing landscape for the bus stop is already in situ.
Highway safety	3	Surrey Police report no concerns in terms of highway safety.
Technical construction feasibility	3	No construction work would be required.
Residential amenity	3	There is a limited amount of residential properties at this locality and all are set back from Orchard Drive. There would be no need to alter existing access or parking arrangements.
Legal feasibility	2	This does not comply with either the planning permission or the Section 106 agreement which shows the bus route extending through the site and onto Langshott. To pursue this arrangement would require a Deed of Variation to the Section 106 Agreement and an amendment to the Planning Permission. The developers are under no obligation to alter their permission or revise their planning permission. RBBC, as local planning authority, would also need to agree to any change.
Cost	3	No remedial works would be required. However the legal costs would have to be paid for by Surrey County Council, for the developers are under no obligation to alter their planning permission or vary the Section 106 Agreement.





**Figure 6.1 –Location of Orchard Drive Bus Stop**

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## 7. Option 2 – Bus enters and exits the development via Orchard Drive

- 7.1 This option will require buses to turn around within the development.
- 7.2 Two alternatives have been considered for the bus to turn around within the development:
- Alternative A – Bus uses a circular route within the development; and
  - Alternative B – Bus turns in a turning area.
- 7.3 Turning using a three-point turn has been ruled out as this would require the bus to reverse which is unsafe. Additionally, the bus operator (Metrobus) and the Surrey County Council Transport and Travel team have both indicated that this would not be acceptable.
- 7.4 With both alternatives it would be necessary to identify a space where a bus could layover. This would require a layby to be provided somewhere within the development. This may prove difficult to achieve as the majority of the Phase 2 development along Brookfield Drive has been constructed.
- 7.5 Parking controls would be required throughout the site in order to prevent indiscriminate parking blocking the passage of buses through the development. This would need to be discussed and agreed with the developer. It should be noted that some residents of the Acres have expressed concerns regarding buses both entering and exiting the development via Orchard Drive, in particular the impact on car parking.
- 7.6 If the bus were to enter and exit via Orchard Drive it would be beneficial for bus stops to be provided on both sides of the road, so that an incoming bus could set passengers down and then pick up passengers on its way back out of the Acres. The internal road layout of the Acres has not been designed for the provision of bus stops on both sides of the road. To provide them at this stage would be problematic due to the lack of suitable locations and the potential impact it would have on residents who have already purchased their homes

## Alternative A

- 7.7 A circular route has been identified within the development as shown in Figure 7.1. The buses will enter and exit the development via Orchard Drive, carrying out a loop along Blacksmith Road the Department of Transport guidance 'Manual for Streets' shows a minimum road width of 5.5m for two way road capable of allowing a bus to comfortably pass a car. Blacksmith Road is only 5.0m wide and therefore it would be necessary for this road to become one-way, or be a single carriageway road with passing places
- 7.8 The Assessment of Alternative A is set out in Table 7.1.

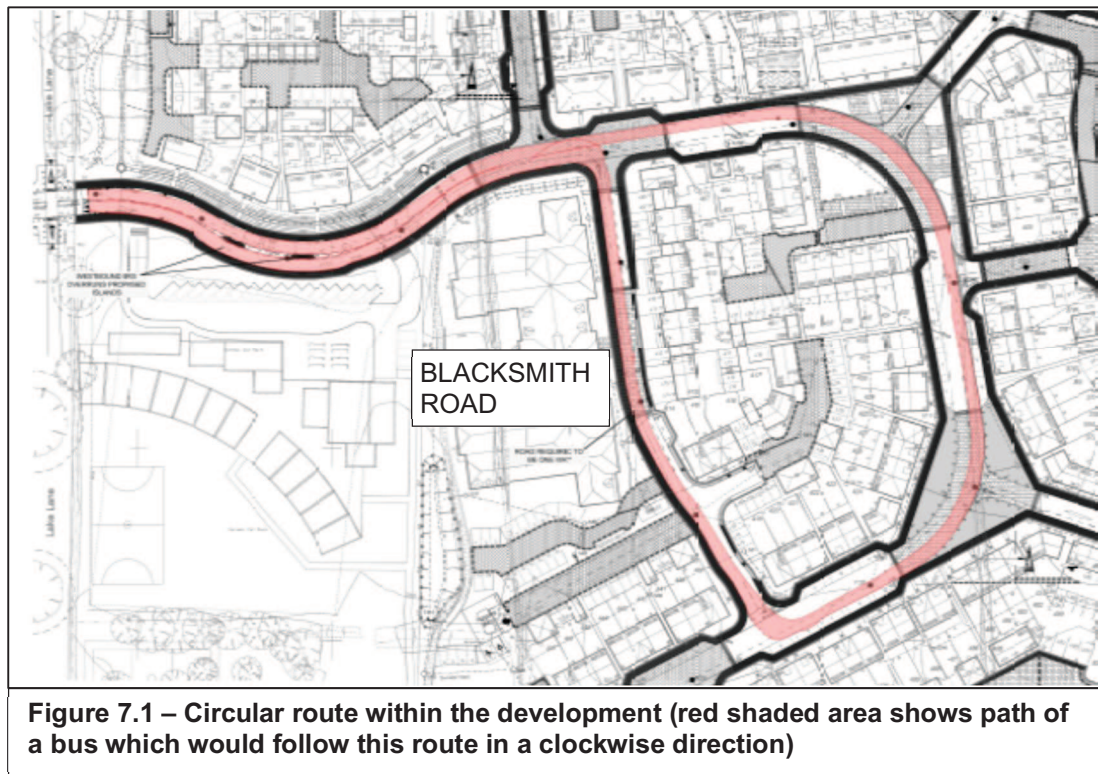


Table 7.1 –Option 2A Assessment

Option 2A: Bus enters and exits the development via Orchard Drive: Bus uses a circular route within the Acres		
Criteria	Score	Comment
Patronage How many potential passengers are within 400m of a bus stop?	3	All 710 households are within 400m of a bus stop, equating to 1,704 people, which maximises potential patronage.
Accessibility Are all households within 400m of a bus stop?	3	All 710 households are within 400m of a bus stop, which maximises accessibility.
Accessibility Are all key community facilities within 400m of a bus stop?	3	All key community facilities are within 400m of a bus stop which maximises accessibility.
Effect on bus operations What is the effect on bus operations?	1	<p>If the bus were to enter and exist via Orchard Drive it would be beneficial for bus stops to be provided on both sides of the road, so that incoming buses could set passengers down and then pick passengers up on its way back out of the Acres. However, the internal layout has not been designed for bus stops to be provided on both sides of the road and to provide those at this stage would be problematic, due to the lack of available space</p> <p>A layover point would need to be provided within the site. Normally a layover would be provided at the route end, but in this particular option the bus is operating on a loop and therefore there is no defined terminus. If a layover is not provided at the terminus, wherever it is located some passengers would be disadvantaged by having to wait on board the bus while there was a recovery period for timetabling.</p> <p>Blacksmith Road is not wide enough for a bus layover to be provided. If a layover point could not be provided within the site the bus service would be more susceptible to delays, impacting on the reliability of the service.</p>
Landscape impact What impact is there upon the existing landscape?	3	This would not have any impact on the current landscape of Langshott for no works would be undertaken. Nor would it effect the landscaping in the Acres.
Highway safety What impact will there be on highway safety	2	Surrey Police raised concerns about the safety of frequent buses passing through roads that had not been originally designed to facilitate them (e.g. Blacksmith Road)



**Option 2A: Bus enters and exits the development via Orchard Drive: Bus uses a circular route within the Acres**

Criteria		Score	Comment
Technical construction feasibility	What is the technical feasibility of construction?	1	The Department of Transport guidance 'Manual for Streets' shows a minimum road width of 5.5m for a two-way road capable of allowing a bus to comfortably pass a car. Blacksmith Road is only 5.0m wide and therefore it would be necessary for this road to become one-way, or be a single carriageway road with passing places. There is insufficient land available to provide passing places and a bus layover, for the houses and extra care scheme have already been constructed. Blacksmith Road was not originally designed for buses, both in terms of road thickness and the presence of raised tables.
Residential amenity	How will the proposal impact on existing properties?	1	It would be necessary for this road to become one-way or be a single carriageway road with passing places. The presence of continuous accesses to properties would make this disruptive to residents and as such is unlikely to be acceptable to the developer. Additionally, the properties only have one parking space each and there is only one visitors' parking space for the entire road.  It should be noted that Blacksmith Road has been constructed and the properties are occupied. Routing the bus along Blacksmith Road would therefore create disturbance to local residents.  Surrey Police have raised concerns about the potential displacement of car parking from Blacksmith Road to other areas.
Legal feasibility	Are there any legal issues that could impact the proposal	1	It does not comply with either the planning permission or the Section 106, which shows the bus route extending through the site and onto Langshott. This option would require a Deed of Variation to the S106 Agreement and an amendment to the Planning Permission.  Parking controls would be required throughout the site in order to prevent indiscriminate parking blocking the passage of buses. This would have to be agreed by the developer and a TRO would be required. Whilst the Police no longer have responsibility for parking enforcement, they are still responsible for obstruction offences. Surrey Police have raised concern that if the bus could not pass parked vehicles they would be relied upon to take enforcement.
Cost	What is the estimated cost of the proposal?	3	Blacksmith Rd has been constructed to an approved specification and the developer would have no legal obligation to carry out works to the road in order to facilitate the bus.  £50,000 (allowance to provide bus layby and works to Blacksmith Road).

## Alternative B

- 7.9 An area turning the bus has been identified in the vicinity of the neighbourhood centre. Figure 7.2 shows that it may be possible for a bus to turn in this area, whilst maintaining the car parking spaces currently shown, if two spaces are realigned. It would however be necessary to move the recycling area and take out the proposed landscaping.
- 7.10 The space available to make the turn has been assessed based on a 12 meter long, 2.55 meter wide bus, which is the 'standard' bus as defined by Transport for London. The space available to turn is very tight and would leave little or no margin for driver error.
- 7.11 The Assessment of Alternative B is set out in Table 7.2.

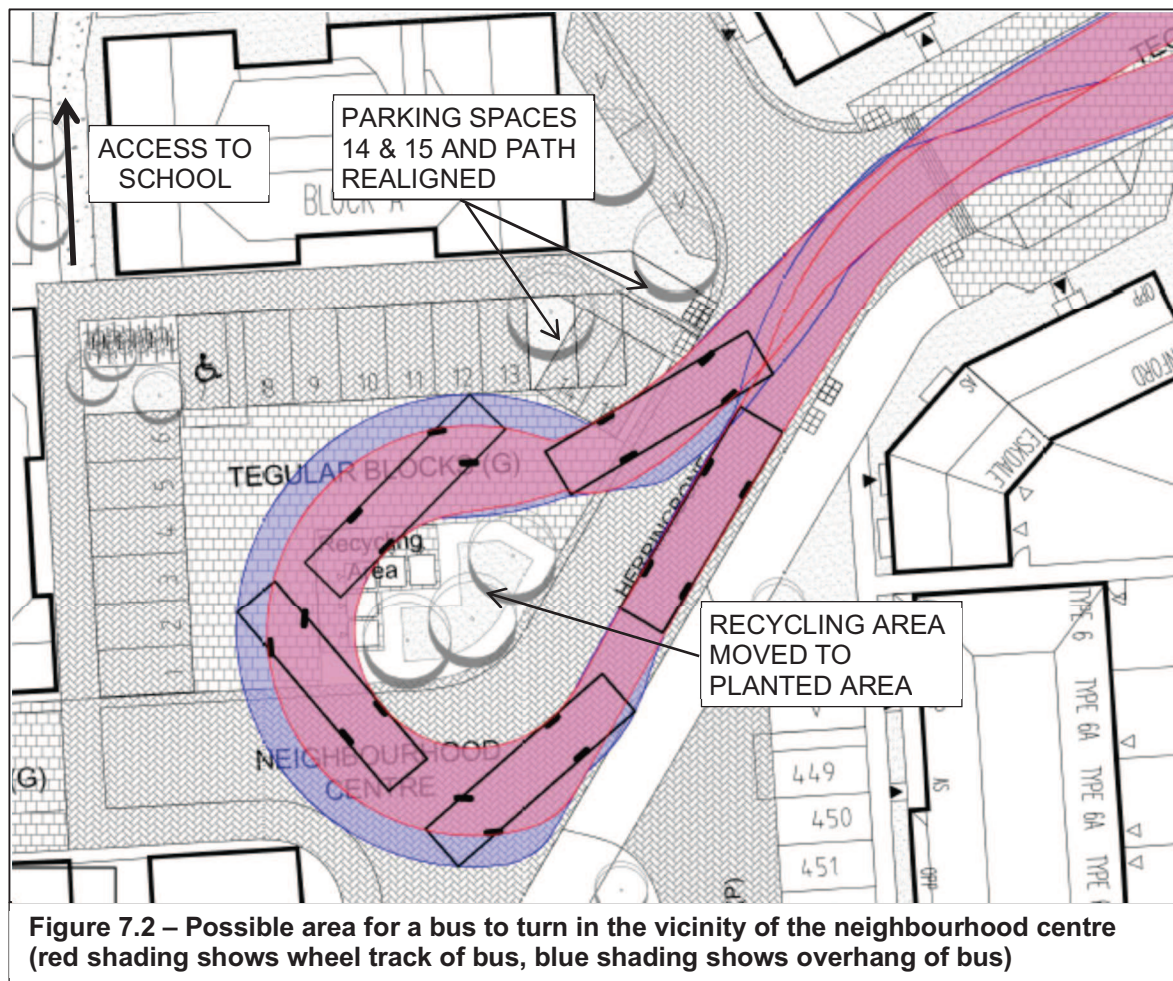


Table 7.2 – Option 2B Assessment

Option 2B: Bus enters and exits the neighbourhood via Orchard Drive: Bus turns in a turning area within the Acres		
Criteria	Score	Comment
Patronage How many potential passengers are within 400m of a bus stop?	3	All 710 households are within 400m of a bus stop, equating to 1,704 people, which maximises potential patronage.
Accessibility Are all households within 400m of a bus stop? Are all key community facilities in the neighbourhood within 400m of a bus stop?	3	All 710 households are within 400m of a bus stop, which maximises accessibility. All key community facilities are within 400m of a bus stop which maximises accessibility.
Effect on bus operations What is the effect on bus operations?	2	This option provides a bus terminus, which means that passengers would not be disadvantaged by having to wait on board the bus while there was a recovery period for timetabling. The provision of a layover would also improve reliability of the bus service. However this proposal would require cars to park within the marked spaces. A badly parked car or indiscriminate parking could prevent the bus from turning, potentially causing delay to the bus service.  If the bus were to enter and exist via Orchard Drive it would be beneficial for bus stops to be provided on both sides of the road so that incoming buses could set passengers down, layover at the end point of the route and then pick passengers up on its way back out of the Acres. This is possible, as the bus would follow the same route to exit the development. However, the internal layout has not been designed for bus stops to be provided on both sides of the road and to provide them at this stage would be problematic, due to the lack of available space.
Landscape impact What impact is there upon the existing landscape?	3	This would not have any impact on the current landscape of Langshott for no works would be undertaken. Nor would it affect the landscaping in the Acres.
Highway safety What impact will there be on highway safety	1	The area proposed for turning the bus will be heavily used, particularly at school drop-off and pick-up time, and by people using the local shops/community centre. Therefore there will be an increased likelihood of conflicts between buses, cars and pedestrians, particularly at peak times. Surrey Police consider that any aspect of the design that puts large vehicles in potential conflict with most vulnerable road users should obviously be avoided.  The space available to make this turn is very tight and would leave little margin for driver error. This may result in the bus having to undertake potentially unsafe reversing maneuvers. Surrey Police consider that this would not be acceptable, because in these terms error potentially means collision and with that brings the possibility of injury.



Technical construction feasibility	What is the technical feasibility of construction?	1	Whilst in theory the bus could turn in this area, space is very limited and would leave little margin for driver error. As the developers have already commenced the construction of the roads and the adjacent buildings are now in situ there is no opportunity to increase the size of this area. In addition the proposal requires cars to be parked in the marked spaces, for any badly parked car or indiscriminate car parking could prevent the bus from turning.
Residential amenity	How will the proposal impact on existing properties?	3	No identified impact on residential amenity.
Legal feasibility	Are there any legal issues that could impact the proposal	1	<p>It does not comply with either the planning permission or the Section 106 Agreement, which shows the bus route extending through the site and onto Langshott. This option would require a Deed of Variation to the S106 and an amendment to the Planning Permission.</p> <p>Parking controls would be required throughout the site in order to prevent indiscriminate parking blocking the passage of buses. This would have to be agreed by the developer and would require a TRO. Whilst the Police no longer have responsibility for parking enforcement, they are still responsible for obstruction offences. Surrey Police have raised concern that if the bus could not pass parked vehicles they would be relied upon to take enforcement</p> <p>The neighbourhood centre layout has been constructed with an approved layout and the developer would have no legal obligation to carry out works to facilitate the bus.</p>
Cost	What is the estimated cost of the proposal?	3	£25,000 (allowance for works to turning area)



## 8. Option 3 – Bus enters the development via Orchard Drive and exits via Langshott

- 8.1 This section considers the upgrading of Langshott which would be required if buses exit The Acres onto Langshott. It would be necessary to upgrade Langshott between the exit from the development and the junction with Orchard Drive/Wheatfield Way, a length of approximately 500 metres.
- 8.2 In all cases a bus gate would be required at the exit point from the development onto Langshott. This is described in Section 9.
- 8.3 Figure 8.1 shows the existing layout of Langshott.
- 8.4 Four alternatives have been considered for the upgrading of Langshott:
- Alternative A – Do-nothing;
  - Alternative B – Provision of passing places between the bus gate and Wheatfield Way;
  - Alternative C – Kerbed footway on one side of the carriageway with passing places between the bus gate and Wheatfield Way, including horizontal deflection traffic calming;
  - Alternative D – Widening Langshott to 5.5m wide with a 2.0m wide footway.
- 8.5 It is recommended that parking restrictions should be implemented along the length of Langshott between Orchard Drive and the bus gate with all the alternatives. This will prohibit parking on the carriageway which would impede the passage of buses. It would be important for the restrictions to be enforced to ensure compliance with them. No restrictions would be required east of the bus gate so dog walkers would be able to park in the verges along this length. Parking restrictions could take the form of either double yellow lines along the required lengths or an area wide parking restriction.
- 8.6 The proposed operation of the bus service allows for the layover of buses at the end of the route for timetabling and driver welfare purposes. With all of the alternatives for this option there is no point where the bus could layover having dropped off all of its passengers prior to picking up passengers and leaving The Acres.
- 8.7 Langshott residents have expressed concerns over this option in terms of the impact on road safety along Langshott, particularly for pedestrians, and also environmental intrusion.
- 8.8 Outline cost estimates have been prepared based on outline design proposals. These cost estimates do not make any allowance for any utilities diversions that may be required.



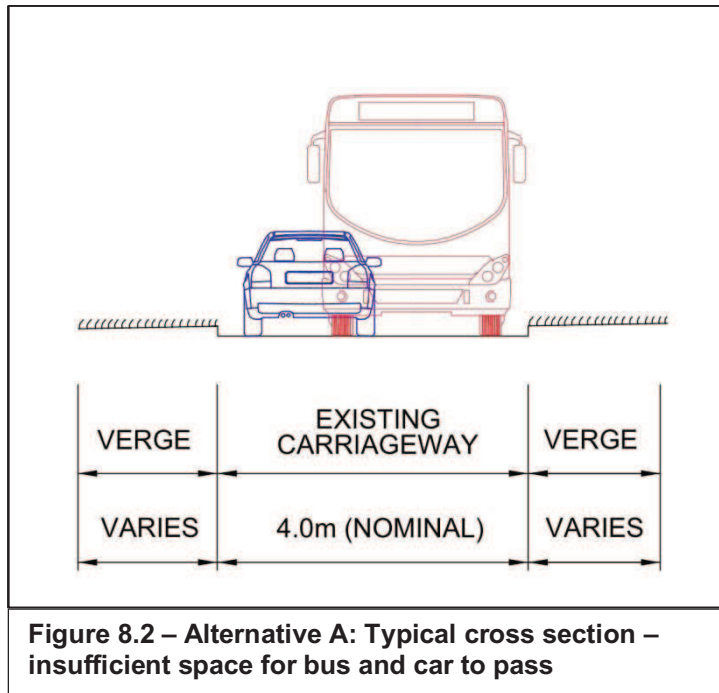
**Figure 8.1 – Existing layout of Langshott**

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## Alternative A – Do nothing

### Description

- 8.9 No works would be undertaken to Langshott.
- 8.10 Figure 8.2 shows a typical cross section through this solution.



- 8.11 The Assessment of Alternative A is set out in Table 8.1.

Table 8.1 – Option 3A Assessment

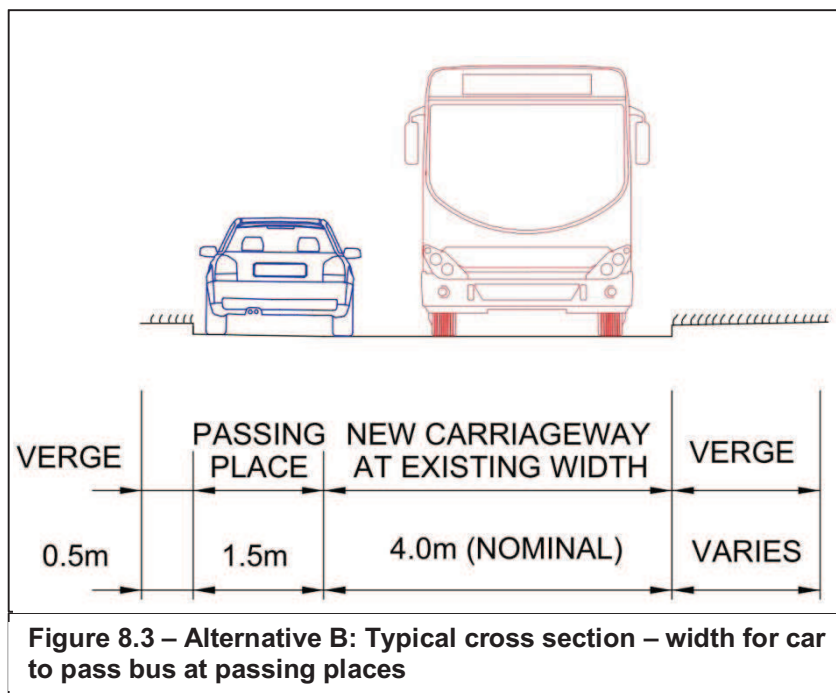
Option 3A: Bus enters neighbourhood via Orchard Drive and exists via Langshott: <u>No improvements to Langshott</u>			
Criteria	Score	Comment	
Patronage	3	All 710 households are within 400m of a bus stop, equating to 1,704 people, which maximises potential patronage.	
Accessibility	3	All 710 households are within 400m of a bus stop, equating to 1,704 people, which maximises potential patronage.	
	3	All 710 households are within 400m of a bus stop, which maximises accessibility.	
	3	All key community facilities are within 400m of a bus stop which maximises accessibility.	
Effect on bus operations	1	As with option 2A, this arrangement would form a loop and therefore there would be no defined terminus. As such although efficient, it reduces reliability.	
		The lack of passing places would potentially cause delay to the bus service, as the bus would have difficulties passing oncoming traffic.	
Landscape impact	2	This would not have any impact on the current landscape of Langshott for no works would be undertaken. Nor would it affect the landscaping in the Acres.	

Highway safety	What impact will there be on highway safety	1	<p>This option would be detrimental to highway safety. The lack of carriageway width would mean that vehicles would be unable to pass, resulting in large vehicles having to reverse if they came into conflict with a bus. The presence of a ditch over a part of the length of Langshott would also make overtaking/maneuvering potentially hazardous.</p> <p>The existing carriageway construction is in poor condition. Surrey Police have raised concerns regarding the potential break up and potholing of the carriageway surface which could result in damage to vehicles and increase the risk of collision.</p> <p>The Police also cited that pedestrians who currently use Langshott would have to share the carriageway with buses, which would create safety concerns and that there would be potential for conflict between cyclists and large commercial vehicles that suffer from restricted all round visibility.</p> <p>Surrey Police highlighted the benefits of street lighting particularly when the bus service is provided after dark.</p>
Technical construction feasibility	What is the technical feasibility of construction?	2	<p>No construction work would be immediately required, however the existing carriageway construction is in poor condition. Regular trafficking by buses would therefore cause rapid further deterioration of the carriageway which would require regular on-going maintenance work accompanied by associated disruption.</p>
Residential amenity	How will the proposal impact on existing properties?	1	<p>The lack of formal passing places would require oncoming vehicles to either use private driveways or the verge to pass. Trafficking of the verges would cause damage and would be unsightly.</p>
Legal feasibility	Are there any legal issues that could impact the proposal	2	<p>The proposal complies with the Planning consent and Section 106 Agreement. A TR0 would be required to restrict private vehicular access from the development onto Langshott.</p>
Cost	What is the estimated cost of the proposal?	3	<p>The estimated initial capital cost would be nil. However there would be on-going maintenance costs.</p>

## Alternative B – Reconstruction of carriageway and provision of passing places

### Description

- 8.12 The carriageway would be reconstructed to the existing width. Flush kerbs would be provided along each edge of carriageway to provide restraint to the construction.
- 8.13 Passing places would be provided at appropriate locations. These would be arranged such that westbound buses had priority.
- 8.14 Figure 8.3 shows a typical cross section through this solution.



- 8.15 The Assessment of Alternative B is set out in Table 8.2.

**Table 8.2 – Option 3B Assessment**

<b>Option 3B: Bus enters neighbourhood via Orchard Drive and exists via Langshott: Passing places are provided along Langshott</b>		
<b>Criteria</b>	<b>Score</b>	<b>Comment</b>
Patronage	3	All 710 households are within 400m of a bus stop, equating to 1,704 people, which maximises potential patronage.
Accessibility	3	All 710 households are within 400m of a bus stop, which maximises accessibility.
	3	All key community facilities are within 400m of a bus stop which maximises accessibility.
Effect on bus operations	2	As with option 2A, this arrangement would form a loop and therefore there would be no defined terminus. As such although efficient, it reduces reliability.  The provision of passing places would improve bus reliability for it would be easier for oncoming vehicles to pass each other and they could be arranged to give priority to west-bound buses. However, there would still be a potential effect on journey times as the bus might have to wait for an oncoming vehicle to reach a passing place.
Landscape impact	2	There would be very little increase in carriageway area, except for passing places, and so the overall adverse effect on the landscape would be minimal. There would be no effect on the landscaping in the Acres.
Highway safety	1	Surrey Police report there could be potential conflict with large commercial vehicles delivering to the hotel. However it should be noted that the number of commercial vehicles delivering on Langshott is limited.  Surrey Police also report that the speed limit at this point of the road is open to question for there is a lack of streetlights and signage. Excess speed therefore cannot be dealt with by Surrey Police. In addition pedestrians who currently use Langshott would have to share the carriageway with buses, which would create safety concerns. They also highlight that there would be potential for conflict between cyclists and large commercial vehicles that suffer from restricted all round visibility. .  Surrey Police highlighted that the benefits of street lighting particularly when the bus service is provided after dark.  It is considered that some of the Polices concerns could be overcome through detailed design.

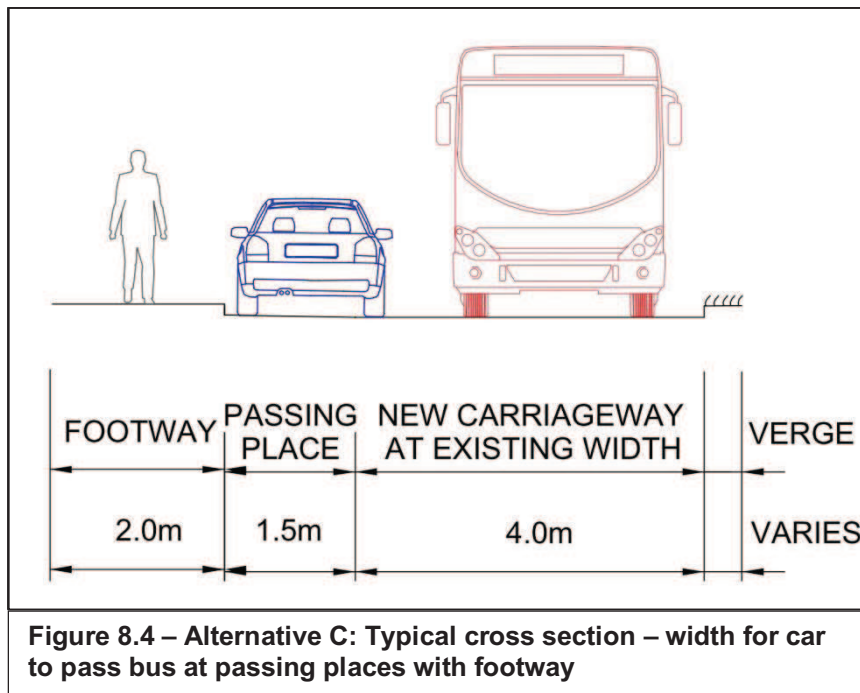


Technical construction feasibility	What is the technical feasibility of construction?	2	This option is technically feasible to construct. There would however be short-term disruption to Langshott due to the lack of working width, which would necessitate a temporary diversion for properties at the Eastern end of Langshott via the development.
Residential amenity	How will the proposal impact on existing properties?	2	The scheme has been designed to include passing places that would be positioned as far as possible away from adjacent properties on Langshott and would not impact on the existing car parking area.
Legal feasibility	Are there any legal issues that could impact the proposal	3	The proposal complies with the Planning consent and Section 106 Agreement. All works are within the limits of the Publicly maintained highway. A TRO would be required to restrict private vehicular access from the development onto Langshott
Cost	What is the estimated cost of the proposal?	2	The estimated cost is £320,000. This is a medium cost solution but would have little benefits over alternative 3A.

## Alternative C – Reconstruction of carriageway, provision of kerbed footway and passing places

### Description

- 8.16 This solution would involve reconstruction of the carriageway and the provision of passing places, as in Alternative B but with the addition of a 2.0m wide footway in the northern verge.
- 8.17 The footway would be in the southern verge between Orchard Drive and Easter Barn to maximise the use of the existing footway over this length. The footway would then be provided in the northern verge up to the location of the bus gate. This would place the carriageway as far as possible from the adjacent properties and not impact on the existing parking area.
- 8.18 Figure 8.4 shows a typical cross section through this solution.



- 8.19 The Assessment of Alternative C is set out in Table 8.3.

**Table 8.3 – Option 3C Assessment**

<b>Option 3C: Bus enters neighbourhood via Orchard Drive and exists via Langshott: <u>Passing places are provided along Langshott together with a footway</u></b>			
<b>Criteria</b>	<b>Score</b>	<b>Comment</b>	
Patronage	3	All 710 households are within 400m of a bus stop, equating to 1,704 people, which maximises potential patronage.	
Accessibility	3	All 710 households are within 400m of a bus stop, which maximises accessibility.	
	3	All key community facilities are within 400m of a bus stop which maximises accessibility.	
Effect on bus operations	2	As with option 2A, this arrangement would form a loop and therefore there would be no defined terminus. As such although efficient, it reduces reliability.  The provision of passing places would improve bus reliability for it would be easier for oncoming vehicles to pass each other and they could be arranged to give priority to westbound buses. However, there would still be a potential effect on journey times as the bus might have to wait for an oncoming vehicle to reach a passing place.	
Landscape impact	2	This would have some impact on the current landscape of Langshott. It would require a footway on the southern verge between Orchard Drive and Easter Barn and a footway on the northern verge between Easter Barn and the Bus Gate, increasing the amount of hard landscaping. Passing places would also be required. There would be no effect on the landscaping in the Acres.	

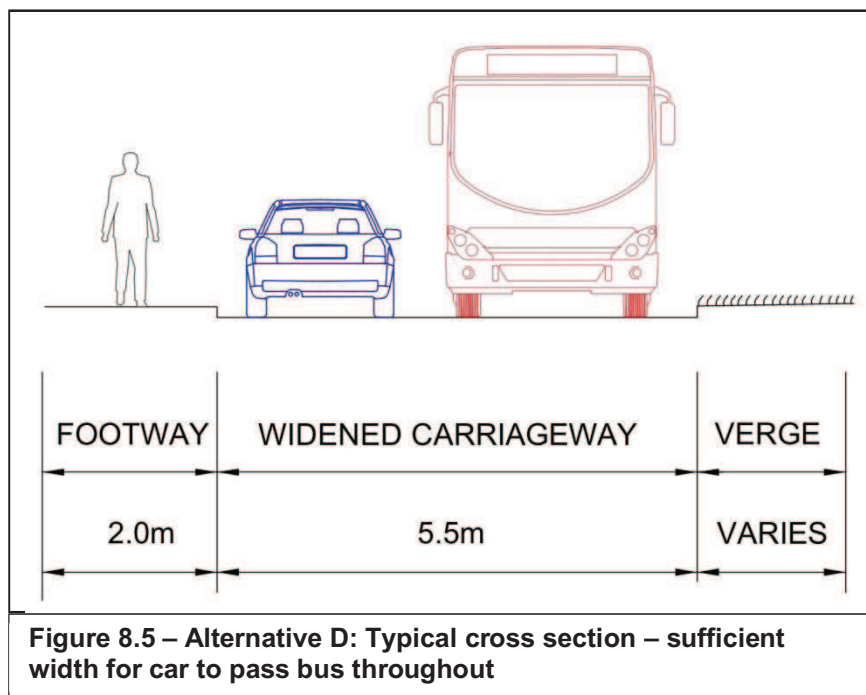


Highway safety	What impact will there be on highway safety	2	<p>This option would significantly improve safety for pedestrians through the provision of a footway. Surrey Police report there could be potential conflict with large commercial vehicles delivering to the hotel; however the number of commercial vehicles delivering on Langshott is limited.</p> <p>Surrey Police also report that the speed limit at this point of the road is open to question for there is a lack of streetlights and signage. Excess speed cannot therefore be dealt with by the Police.</p> <p>Surrey Police highlighted the benefits of street lighting particularly when the bus service is provided during the night. They also advised that there would be potential for conflict between cyclists and large commercial vehicles that suffer from restricted all round visibility.</p> <p>It is considered that some of the Police's concerns could be overcome through detailed design.</p>
Technical construction feasibility	What is the technical feasibility of construction?	2	<p>This option is technically feasible to construct. There would however be short-term disruption to Langshott due to the lack of working width, which would necessitate a temporary diversion for properties at the Eastern end of Langshott via the development.</p>
Residential amenity	How will the proposal impact on existing properties?	2	<p>The scheme has been designed to place the carriageway as far as possible away from adjacent properties on Langshott and not impact on the existing car parking area.</p>
Legal feasibility	Are there any legal issues that could impact the proposal	3	<p>The proposal complies with the Planning consent and Section 106 Agreement. All works are within the limits of the Publicly maintained highway. A TRO would be required to restrict private vehicular access from the development onto Langshott</p>
Cost	What is the estimated cost of the proposal?	2	<p>The estimated cost is £380,000. This is a higher cost solution than Alternative 3B; however, it has significant additional benefits to pedestrians through the provision of the footway.</p>

## Alternative D – Widening of Langshott, including provision of kerbed footway

### Description

- 8.20 This solution would widen Langshott to 5.5 m with a 2.0m footway. The westbound carriageway would be 3.0m wide to cater for buses.
- 8.21 As with Alternative C the footway would be in the southern verge between Orchard Drive and Easter Barn to maximise the use of the existing footway over this length. The footway would then be provided in the northern verge up to the location of the bus gate. This would place the carriageway as far as possible from the adjacent properties and not impact on the existing parking area.
- 8.22 Horizontal traffic calming could be provided to give priority to westbound traffic.
- 8.23 Figure 8.5 shows a typical cross section through this solution.



- 8.24 The Assessment of Alternative D is set out in Table 8.4.

Table 8.4 – Option 3D Assessment

<b>Option 3D: Bus enters neighbourhood via Orchard Drive and exists via Langshott: <u>Langshott is widened for two way traffic and a footway is provided</u></b>			
<b>Criteria</b>	<b>Score</b>	<b>Comment</b>	
Patronage	3	All 710 households are within 400m of a bus stop, equating to 1,704 people, which maximises potential patronage.	
Accessibility	3	All 710 households are within 400m of a bus stop, which maximises accessibility.	
	3	All key community facilities are within 400m of a bus stop which maximises accessibility.	
Effect on bus operations	2	As with option 2A, this arrangement would form a loop and therefore there would be no defined terminus. As such although efficient, it reduces reliability.  The provision of passing places would improve bus reliability for it would be easier for oncoming vehicles to pass each other and they could be arranged to give priority to west-bound buses. However, there would still be a potential effect on journey times as the bus might have to wait for an oncoming vehicle to reach a passing place.	
Landscape impact	2	There would be very little increase in carriageway area, except for passing places, and so the overall adverse effect on the landscape would be minimal. There would be no effect on the landscaping in the Acres.	

Highway safety	What impact will there be on highway safety	1	<p>Surrey Police report there could be potential conflict with large commercial vehicles delivering to the hotel. However it should be noted that the number of commercial vehicles delivering on Langshott is limited.</p> <p>Surrey Police also report that the speed limit at this point of the road is open to question for there is a lack of streetlights and signage. Excess speed therefore cannot be dealt with by Surrey Police. In addition pedestrians who currently use Langshott would have to share the carriageway with buses, which would create safety concerns. They also highlight that there would be potential for conflict between cyclists and large commercial vehicles that suffer from restricted all round visibility. .</p> <p>Surrey Police highlighted that the benefits of street lighting particularly when the bus service is provided after dark.</p> <p>It is considered that some of the Polices concerns could be overcome through detailed design.</p>
Technical construction feasibility	What is the technical feasibility of construction?	2	<p>This option is technically feasible to construct. There would however be short-term disruption to Langshott due to the lack of working width, which would necessitate a temporary diversion for properties at the Eastern end of Langshott via the development.</p>
Residential amenity	How will the proposal impact on existing properties?	2	<p>The scheme has been designed to include passing places that would be positioned as far as possible away from adjacent properties on Langshott and would not impact on the existing car parking area.</p>
Legal feasibility	Are there any legal issues that could impact the proposal	3	<p>The proposal complies with the Planning consent and Section 106 Agreement. All works are within the limits of the Publicly maintained highway. A TR0 would be required to restrict private vehicular access from the development onto Langshott</p>
Cost	What is the estimated cost of the proposal?	2	<p>The estimated cost is £320,000. This is a medium cost solution but would have little benefits over alternative 3A.</p>

## 9. Bus Only Access Measures

- 9.1 This section considers alternative means of providing a bus gate which would be required as part of a bus only exit from The Acres onto Langshott.
- 9.2 Any exit from The Acres onto Langshott would need to be restricted to buses in order to prevent the over use of Langshott by private vehicles accessing/egressing the development. This would be achieved through the provision of a bus gate, a short length of road for which use is only permitted by public transport vehicles. A separate facility for pedestrians and cyclists would be provided adjacent to the bus gate.
- 9.3 The location of the proposed bus gate is shown in Figure 9.1. This is approximately 150 metres east of Lake Lane.



**Figure 9.1– Location of proposed bus gate (looking from Langshott into The Acres)**

- 9.4 A bus gate would require signing and a Traffic Regulation Order to prohibit unauthorised usage. A bus gate with signing to prevent unauthorised use is shown in Figure 9.2.
- 9.5 Without enforcement measures, the fact that the bus gate would be a relatively short length means that it would be very likely to be abused thus undermining the transport philosophy for the development and increasing traffic levels on Langshott.
- 9.6 Physical enforcement measures could take the form of CCTV



**Figure 9.2 – Bus gate with no physical enforcement, Woking Station**



enforcement or physical barriers such as rising bollards or a lifting barrier, triggered by the approach of an authorised vehicle. Both options would have on-going maintenance costs in addition to the installation costs. The Surrey County Council Traffic Signals team and Surrey Police are against the installation of rising bollards as they are undesirable from a maintenance perspective. Figure 9.3 shows a bus gate with rising bollards which are lowered by approaching buses and other authorised vehicles.



**Figure 9.3 – Bus gate with rising bollards in Knaphill, Woking**

- 9.7 A further option to restrict usage of the bus gate to buses would be to provide a short length of non-mechanical physical restraint. This would take the form of a raised hump within the wheel track too wide for a car to span. An example of this measure, sometimes referred to as a sump buster is shown in Figure 9.4. It would be necessary to provide a parallel cycle/pedestrian track which would require bollards to prevent use by motor vehicles.



**Figure 9.4 – Example of a sump buster (the width of the raised island prevents cars from passing)**

- 9.8 A similar effect could be achieved with the use of deterrent paving with a width such that buses could pass unimpeded but that cars were obstructed.
- 9.9 It should be noted that Surrey County Council has limited funding for the maintenance of a bus gate. As part of the Section 106 funding, £15,000 has been allocated to maintenance of the bus facilities.
- 9.10 Table 9.1 summarises the installation and maintenance costs associated with each of the bus-gate options, together with other considerations.

**Table 9.1 – Evaluation of Bus Gate Options**

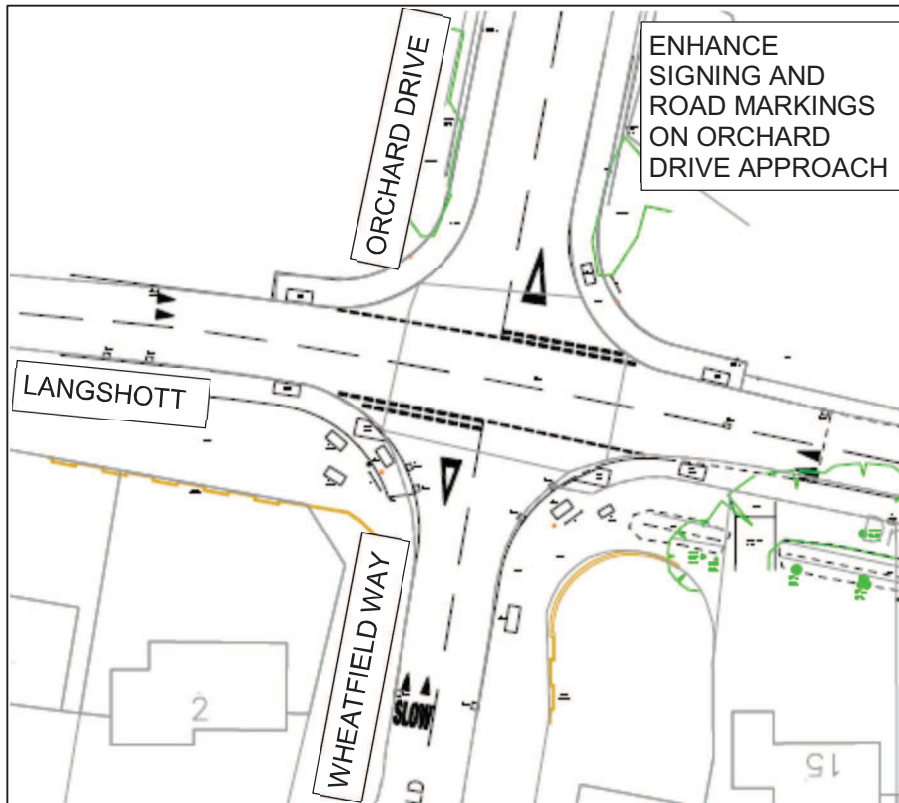
Option	Advantages	Disadvantages	Estimated Outline Cost (construction)	Estimated Outline Cost (operation & maintenance)
Signing only	Low cost solution with negligible on-going maintenance liability.	No physical means of enforcement.	£5,000	Negligible
Physical barrier ( rising bollards)	Provides physical barrier to unauthorised vehicles.	Equipment will require significant on-going maintenance. Failure of equipment may prevent buses from passing, or provide no enforcement. Some form of remote monitoring will be required which may require a fixed communication link.	£30,000 (excluding any costs associated with a fixed communication link)	High
Physical barrier ( rising barriers)	Provides physical barrier to unauthorised vehicles.	Equipment will require on-going maintenance. Failure of equipment would prevent buses from passing, Some form of remote monitoring will be required which may require a fixed communication link.	£20,000 (excluding any costs associated with a fixed communication link)	Medium
CCTV enforcement	Will provide a deterrent without relying on physical measures.	If a wireless communication link is not feasible a fixed communication link will need to be provided. There are known to be issues with network capacity which would need to be addressed.	£50,000 (excluding any costs associated with a fixed communication link)	Medium (CCTV enforcement schemes can be self-funding)
Sump buster physical barrier	Will prevent access by most cars and smaller vans.	Would not prevent unauthorised access by larger vehicles.	£10,000	Negligible

	Deterrent paving		Will deter access by most cars and smaller vans.	Would prevent passage by police/paramedic cars. Would not prevent unauthorised access by larger vehicles. Will not be as effective as a sump buster barrier.	£10,000		Negligible
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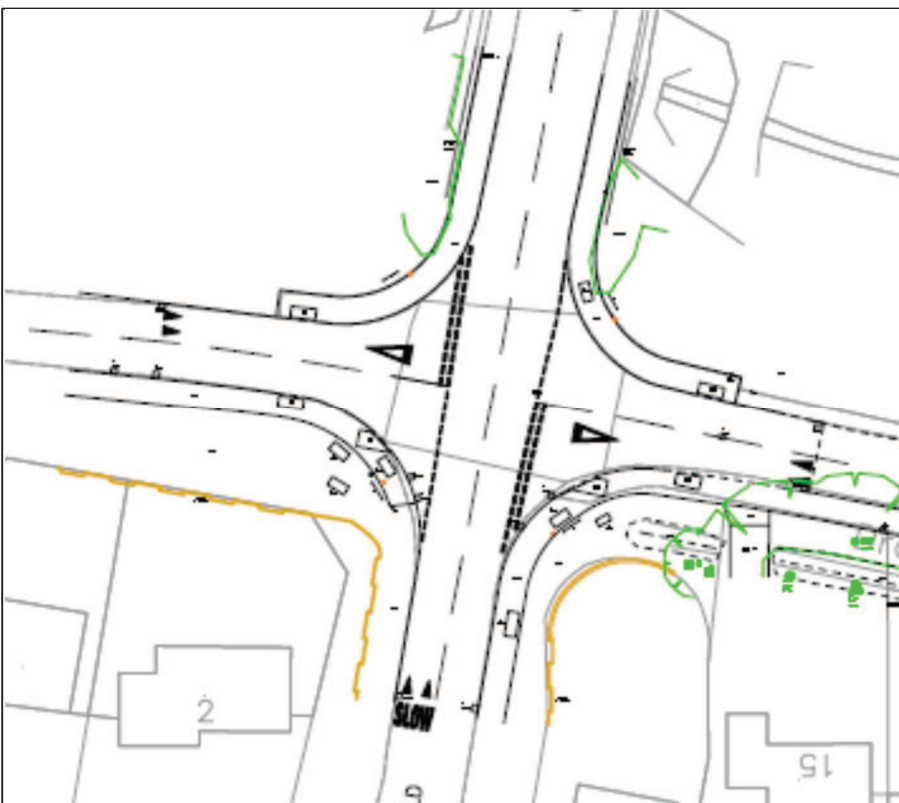


## 10. Langshott / Orchard Drive / Wheatfield Way Junction

- 10.1 A further issue has been identified with the priority of the junction between Langshott and Orchard Drive/Wheatfield Way. Currently vehicles on Orchard Drive to the north and Wheatfield Way to the south have to give-way to traffic on Langshott. Local councillors have raised concerns regarding the operation of this junction. A Stage 3 Road Safety Audit was carried out on this junction in 2012 and a number of recommendations have been implemented. Despite this, the safety of this junction is still considered to be an issue.
- 10.2 The concerns primarily relate to the through visibility that is provided to vehicles travelling in the north-south direction which seemingly indicates priority at the junction. Additionally, the junction is relatively lightly used at present as the development is not fully occupied. When traffic levels increase to their design levels it is likely that compliance with any junction layout will be improved. In any event it will be necessary to improve the junction to facilitate the Fastway bus.
- 10.3 Four options for addressing the safety issues at this junction have been considered:
- Option 1 – Retain the existing priorities but enhance the signing to further reinforce the road layout.
  - Option 2 – Changing the priority at the junction so that traffic on Langshott has to give-way to traffic on Orchard Drive/Wheatfield Way.
  - Option 3 – Change the priority at the junction and introduce a stagger on the Langshott approaches to interrupt the through visibility along Langshott, through the junction.
  - Option 4 – Change the junction to a mini roundabout, within the existing junction footprint.
- 10.4 A full roundabout has not been considered as the land take required for this would make it unfeasible as it would be necessary to take land from the properties to the south of Langshott either side of Wheatfield Way. It would also require reconstruction of the culvert under Orchard Drive.
- 10.5 A simple change of priorities at this junction so that the north-south route has priority over the east-west route along Langshott may not solve the problems that occur at this junction as the approaches to the junction along Langshott are equally straight.
- 10.6 A mini roundabout would be unlikely to address the through visibility issues at the junction as it would not be possible to provide any entry deflection to the roundabout. However, it would mean that traffic on all entries would have to give way to traffic from the right. A mini roundabout was envisaged as part of the initial planning application.
- 10.7 These proposals need to be reviewed in light of the traffic modelling undertaken for this junction as part of the traffic impact assessment for the development. This will identify whether the turning movements at the junction support the various options. For example a roundabout would require relatively balanced flows on each arm.
- 10.8 The land to the north of Langshott either side of Orchard Drive is flood plain compensation land. It has therefore been assumed that it would be undesirable to have anything other than a minor impact on these areas This will restrict the amount of land which is available for highway development.
- 10.9 Figures 10.1 to 10.4 illustrate the five options described above.
- 10.10 Table 10.1 summarises and evaluates the options. An estimate of the outline cost for each option has been included in this evaluation.



**Figure 10.1 – Option 1: Retain existing priorities but provide additional signing on the Orchard Drive approach**



**Figure 10.2 – Option 2: Change priorities so that give-way lines are on Langshott**



Figure 10.3 – Option 3: Change priorities and introduce a stagger on Langshott (to get full benefit in terms of blocking visibility stagger would be the other way)

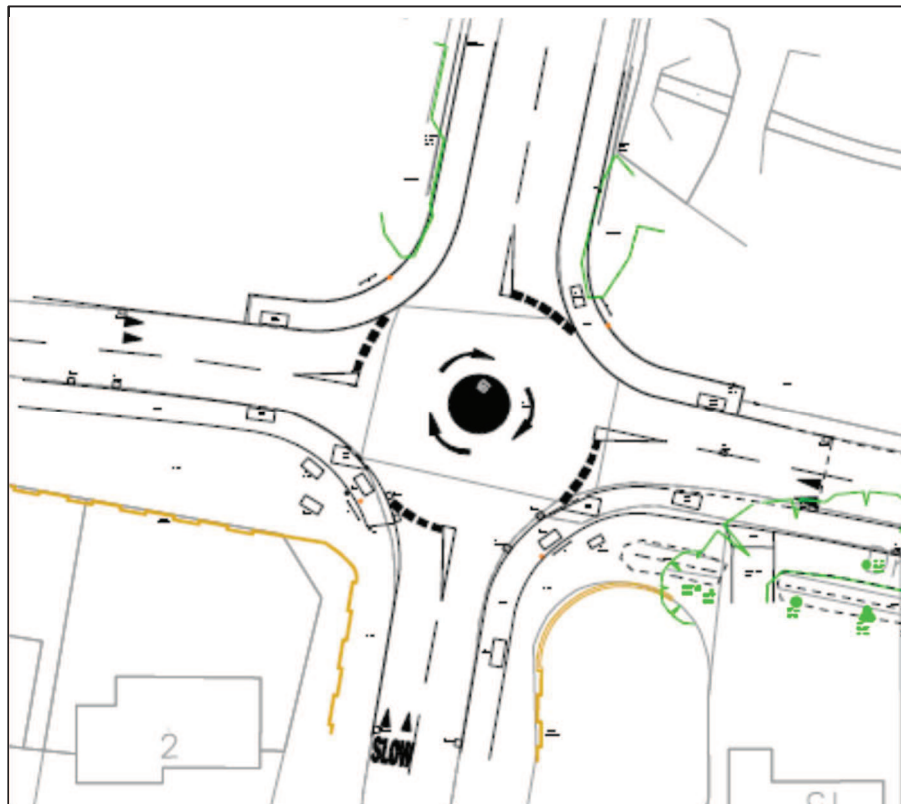


Figure 10.4 – Option 4: Mini-roundabout

Table 10.1 – Evaluation of Junction Layout Options

Option	Advantages	Disadvantages	Estimated outline cost	Environmental impact
1	Retain the existing priorities but enhance the signing to further reinforce the road layout.	Additional signing may not fully address existing problems.	£5,000	Negligible adverse impact.
2	Changing the priority at the junction so that traffic on Langshott has to give-way to traffic on Orchard Drive/Wheatfield Way.	Changing the priority may create similar problems but for traffic on Langshott instead. Change of priorities may adversely affect buses turning left out of Langshott into Wheatfield Way.	£10,000	Negligible adverse impact.
3	Change the priority at the junction and introduce a stagger on the Langshott approaches in an attempt to reduce the through visibility along Langshott, through the junction	Extensive works to realign Langshott approaches. Change of priorities may adversely affect buses turning left out of Langshott into Wheatfield Way. Stagger cannot be provided in the direction which would maximise the obstruction to the through visibility.	£50,000 (excluding utility diversion costs).	Slight adverse impact on flood compensation area.
4	Change the junction to a mini roundabout, within the existing junction footprint.  Low cost option. Raised dome in centre of roundabout may improve the visibility of the junction.	May not address through visibility problems. Four arm mini-roundabouts not considered to be good practice.	£15,000	Negligible adverse impact.

## 11. Recommendations

### Bus route options

- 11.1 Each of the options has been scored enabling them to be ranked in order of preference, please refer to table 11.1.
- 11.2 From the evaluation of the three options and alternatives, it is considered that the preferred option is 3C - the bus exits the Acres via Langshott with Langshott being upgraded with the provision of passing places and footways. Option 3C has the benefits of providing good access to the bus service in compliance with the Horley Masterplan and planning permission for the site. In terms of upgrading Langshott it is considered that full widening of the lane is not appropriate considering the number of buses proposed. However the current condition requires it to be reconstructed and passing places provided to allow vehicles to pass each other. Although option 3C is a higher cost solution than 3B, it has significant additional benefits to pedestrians through the provision of the footway, which will link into the existing rights of ways and pedestrian access points on Langshott.

### Langshott/Orchard Drive/Wheatfield Way Junction

- 11.3 As part of the works to Langshott it will be necessary to improve the junction to facilitate buses turning left into Wheatfield Way. It is recommended that further traffic modelling of this junction with the full development flows and accident analysis is carried out to determine which option provides the most appropriate junction solution.

### Bus Gate

- 11.4 It is recommended that the physical barrier options- sump buster and deterrent paving are considered in more detail and the one which provides the most resilient and cost effective solution is implemented.



Table 11.1 - Evaluation of Options

Theme	Criteria	Overall Weight	Option 1		Option 2a		Option 2b		Option 3a		Option 3b		Option 3c		Option 3d	
			Score	Weighted	Score	Weighted	Score	Weighted	Score	Weighted	Score	Weighted	Score	Weighted	Score	Weighted
Patronage	How many potential passengers are within 400m of a bus stop?	15	1	15	3	45	3	45	3	45	3	45	3	45	3	45
Accessibility	Are all households within 400m of a bus stop?	10	1	10	3	30	3	30	3	30	3	30	3	30	3	30
	Are all key community facilities within 400m of a bus stop?	5	1	5	3	15	3	15	3	15	3	15	3	15	3	15
Effect on bus operations	What is the effect on bus operations?	10	2	20	1	10	2	20	1	10	2	20	2	20	2	20
Landscape impact	What impact is there upon the existing landscape?	5	3	15	3	15	3	15	2	10	2	10	2	10	1	5
Highway safety	What impact will there be on highway safety?	15	3	45	2	30	1	15	1	15	1	15	2	30	3	45
Technical construction feasibility	What is the technical feasibility of construction?	15	3	45	1	15	1	15	2	30	2	30	2	30	2	30
Residential amenity	How will the proposal impact on exiting properties?	5	3	15	1	5	3	15	1	5	2	10	2	10	2	10
Legal feasibility	Are there any legal issues that could impact the proposal?	15	2	30	1	15	1	15	2	30	3	45	3	45	2	30
Cost	What is the estimated cost of the proposal?	5	3	15	3	15	3	15	3	15	2	10	2	10	1	5
	<b>Total</b>	100	22	215	21	195	23	200	21	205	23	230	24	245	22	235

## ITEM 14

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