

Maidstone Integrated Transport Phase 2 A229 Loose Road – Feasibility

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amey.

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1 Introduction

Following a successful bid to the South East LEP Local Growth Fund, Kent County Council (KCC) secured funding to deliver congestion reduction and improvement schemes in the District of Maidstone with the primary aim to improve journey time reliability.

Whilst several areas within the Maidstone district are to be considered, the section of the A229 Loose Road to the south of Maidstone from its junction with Cripple Street through to its junction with Armstrong Road was subsequently identified as a priority jointly between KCC and Maidstone Borough Council.

Accordingly, Amey, through its KCC Technical and Environmental Services Contract, was commissioned to investigate and develop solutions that have the potential for improving capacity along this section of the A229. The study area is shown on the location plan below.

This report serves to explain the options explored, their merits, costs and deliverability.

MIT PH 2



Location Plan

September 5, 2016

1.1 Methodology

Congestion along this stretch of the A229 results primarily from the restricted nature of the three principal signalised junctions on the route, coupled with the heavy peak traffic demand.

The three principal junctions are evenly spaced and located at (from north to south):

- A229 Loose Road j/w Armstrong Road & Park Way (**Ref: Armstrong Road**)
- A229 Loose Road j/w A274 Sutton Road / Cranborne Avenue (Ref: Sutton Road)
- A229 Loose Road j/w Cripple Street and Boughton Lane (**Ref: Cripple Street**)

The approach has therefore been to explore the potential for improvements at these junctions in the form of either:

- Implementing improved traffic systems techniques (i.e. vehicle detection / movement methods)
- Reconfiguring the existing signal junction layouts within the existing highway boundary (short term delivery)
- Reconfigure the existing signal junction layouts with some land take outside the highway boundary (longer term delivery)
- Consider other junction forms (i.e. roundabouts)

Key also to reducing congestion is to ensure road sections between the junctions do not themselves become restrictive. Options have therefore been developed to address this.

Whilst each of the junctions and road sections has been assessed individually, it will be the combination of improvements along the route that will determine the best overall improvement in journey reliability. This study does not however set out to determine the best combination of improvements but forms the basis from which an overall route improvement scheme can be further investigated.

2 Existing Conditions

2.1 Overview

The A229 Loose Road forms part of a strategic route between Medway and East Sussex, with links via the A21 to Hastings.

The section under consideration is approximately 1.3km in length comprising a four-lane single carriageway (2 lanes in each direction) to the north of the Armstrong Road junction continuing southwards to the Sutton Road junction where it reverts to a two-lane single carriageway up to and beyond the cripple street junction. It is residential in nature with numerous direct vehicle access points. The road is presently street lit and subject to a speed limit of 30mph. Footways are present along both sides throughout.

Photographs of the relevant sites were taken on a sunny and dry day and can be located in Appendix D.

Its strategic nature stems from the fact that there are no practical alternative routes for traffic into or out of Maidstone in the south. Traffic demand is therefore high with significant congestion at peak times. Often, fairly trivial incidents can trigger serious congestion.

Furthermore, a number of bus services use this corridor with bus stops at regular intervals north and south bound. All the stops are **'on carriageway' resulting** with increased congestion and sometimes poor driver discipline.

Due to the congestion, several local 'rat-runs' have been established to the detriment and reduced safety on local roads.

2.2 Key Layout constraints

There are several key layout constraints at each of the signalised junctions that restrict and impact on traffic movement leading to increased congestion on this section of the A229.

Armstrong Road junction

Lane 2 southbound is marked for Loose Road ahead and right turn traffic into Armstrong Road. The right turn storage is about 2 to 3 vehicles before these block the way ahead. Additionally, right turn traffic that has passed the stop line can only clear in the intergreen, with further right turn traffic continuing to block the route ahead. As a consequence, regular users tend not to use lane 2, in the knowledge that in all likelihood, they will be blocked and unable to progress southwards.

Lane 2 northbound is a dedicated right turn into Park Way. All northbound traffic is limited to lane 1 use only, limiting the potential capacity of the road. Furthermore, on the southern approach is a junction with Plains Avenue. Northbound right turning traffic wanting access to Plains Avenue need to wait in lane 2 as there is insufficient width to provide a dedicated right turn hatched area.

As a direct result of the level of congestion that is experienced, Armstrong Road and Park Way, which are residential roads, **are at times used as 'rat runs' to avoid the** congestion and delays through the town.

Sutton Road junction

All the controlled moves, except Sutton Road, are a single lane, which limits the capacity through the junction. Northbound exit blocking on Loose Road, as a result of queuing back from Armstrong Road junction further hampers progress.

Cripple Street junction

The side roads Cripple Street and Boughton Lane are offset from each other by about 30m resulting in long inter-greens.

The junction capacity is also limited by single lane stop lines along Loose Road. A lack of carriageway width along the departure section for north and southbound cannot provide a suitable merge length to safely accommodate 2-lane stop lanes.

2.3 Traffic Flows

A manual traffic turning count at each of the three junctions was undertaken on Saturday 18th and Wednesday 22nd of June 2016. A summary illustration of the results is given in Appendix A.

The following observations are noted;

Armstrong Road junction

- Average queue lengths southbound on the A229 are 85m (AM Peak), 100m (PM Peak) and northbound 60m (AM Peak), 36m (PM Peak)
- 65% of traffic is straight on traffic on the A229
- 83%_of traffic enters the junction on the A229 approaches

Sutton Road Junction

• Average queue lengths southbound (lane 2) on the A229 are 120m (AM Peak) and 80m (PM Peak)

- Average queue lengths northbound on the A229 are 145m (AM Peak) and 72m (PM Peak) and on Sutton Road 156m (AM Peak) and 180m (PM Peak)
- 45% of traffic is through traffic on the A229
- 75% of traffic enters the junction on the A229 approaches

Cripple Street

- Average queue lengths southbound on the A229 are 66m (AM Peak) and 72m (PM Peak) and northbound 48m (AM Peak) and 42m (PM Peak)
- 62% of traffic is through traffic on the A229
- 78% of traffic enters the junction on the A229 approaches

It should be noted that major road works associated with the Maidstone Gyratory Project were being undertaken during this period. It is unknown what the effect of these works is upon the traffic pattern along the various transport corridors.

2.4 Existing Traffic Systems

All of the signal controlled junctions are in the Maidstone Urban Traffic Control (UTC) area and as such have a permanent connection to the Kent UTC Centre, currently located at the KCC offices at Aylesford. At present none of the junctions being considered are under direct UTC control, the connection being for monitoring purposes only.

SCOOT - (Split Cycle and Offset Optimisation Technique) was recently introduced between Sutton Road and Armstrong Road junctions. This was trialled by KCC in an attempt to provide some continuity of traffic flow through the two junctions. KCC reported that the trial was unsuccessful, providing a worsening of traffic conditions when SCOOT was operational.

The reason speculated was the quantity of side roads and private accesses, along with a number of bus stops, meant that the vehicle cruise time required for SCOOT to work became unpredictable.

SCOOT is no longer operating in this section and by implication is unlikely to work elsewhere along this corridor. It has therefore not been considered further.

At the Cripple Street junction the traffic signals operate under Microprocessor Optimised Vehicle Actuation (MOVA). The benefit is the ability to respond to a sudden increase in traffic at certain times.

2.5 Utilities

Extensive utility apparatus is present along the road corridor records of which have been obtained through NRSWA C2 enquiries. Appendix B includes drawings to illustrate the extent and density of utility plant present.

3 Improvement Options

3.1 Description and Assessment of Options

A number of improvement options have been investigated to establish their potential to deliver some degree of improvement in the traffic flow along the road corridor. Each option considers one particular area or section along the route and, whilst potentially offering improvements in their own right, must be assessed in combination with other options to ensure improvement for the route as a whole is achieved. Drawing Nos. 4300504/000/07 & 08 serve to indicate how combinations of each of the improvements might be possible, however other combinations are equally possible.

Each of the options has been sufficiently developed to indicate the approximate extent and nature of works required. Copies of drawing numbers 4300504/000/03 to 08 can be found in Appendix B.

3.2 Junction Improvements Options Testing – Assessment Overview

It is widely acknowledged and evidenced that the existing A229 corridor to the south of Maidstone town centre suffers from significant congestion and delay during highway peak periods. In particular the study area, between the junctions of A229 Loose Rd/Park Way/Armstrong Rd to the north and A229 Loose Rd/Cripple St/Boughton Lane to the south, observes excessive queues and the interaction of traffic between the junctions due to their close proximity.

In order to provide a comparison between potential mitigation options at each of the junctions, and to inform the design process, it has been necessary to undertake junction capacity assessments. These capacity assessments take the form of stand-alone assessments, in the first instance, to allow a sifting exercise of initial options and the identification of a reduced number of feasible options at each junction location.

The assessments have been undertaken using industry standard software ARCADY for roundabouts and LinSig for signal controlled junctions. The traffic flow inputs to the assessments have been taken directly from junction turning count surveys (JTC) undertaken in June 2016. The AM and PM peak periods were identified from the data and the peak hour vehicle movements were used to inform the assessments both with and without the proposed improvement options. No forecast growth has been applied to the traffic data as the assessments are not intended to provide a forecast of future junction operation but are simply intended to provide a direct comparison between proposed options in terms of impact upon highway capacity.

It should be noted that the 'without scheme' or 'Existing' junction capacity assessments are not intended to be representative of existing traffic conditions at the junctions. The reason for this is that, by their nature, JTC's only capture traffic which has successfully travelled through the junction within the identified peak hours. In heavily congested conditions, as is the case at these junctions, the JTC's are unlikely to fully capture the latent traffic demand which is either queuing on approach to a particular junction or may use an alternative route due to perceived congestion issues. As such, the existing junction assessments should not exceed operational capacity when based upon JTC data even if the junction regularly observes peak hour congestion and delays.

Furthermore, it is considered that the use of stand-alone junction assessments for this study area would not fully replicate either existing or forecast traffic conditions due to the level of congestion and the interaction of queueing vehicles between the junctions. It is intended that a more comprehensive corridor assessment will be undertaken once the number of proposed options has been reduced in order to help identify the most appropriate package of improvements for the corridor as a whole.

Option 1A Drawing No.4300504/000/03

This option aims to provide a dedicated right turn lane for traffic turning into Armstrong Road from Loose Road all within the existing highway boundary. It is achieved by relocating the pedestrian crossing to the southern side of the junction allowing the northern central island to be reduced in size to accommodate the right turn lane.

Whilst increasing storage, it will still be limited but would be expected to free the southbound lane 2 from right turning traffic to some degree, with a better distribution of traffic across both lanes on the southbound approach to the junction as a result.

Given the limited storage gained, lane 2 blocking is likely to continue to occur at times if the current signal operation remains unchanged. Currently, right turning drivers are looking for a gap in the oncoming traffic in which to judge if it is safe to turn. An option could be to allow the right turn into Armstrong Road to have its own signal phase and so reduce the occurrence of lane 2 blocking. A consequence is that when comparing a fixed cycle time, green time will be removed from other approaches to service the right turn. Appendix C includes a results summary table of the signal modelling carried out (Linsig) to examine this scenario (Ref: Option 1 - 1 Lane). The results indicate that the Mean Maximum Queue (MMQ) on the Loose Road southern approach (lane 1) during the AM peak would significantly increase, indicatively from 56 vehicles to 120 vehicles. Saturation flows will also occur on the southern approach meaning that not all vehicles will disperse in one green cycle. This would however allow only a nominal mean maximum queue reduction southbound on Loose Road.

Converting to MOVA operation, whilst in theory may provide some benefits, the limited right turn storage will block ahead traffic if the cycle time is too long, thereby reducing the benefits of MOVA operation. All new signal installations will however continue to be connected **to UTC 'in station' at KCC offices at Aylesford.**

It should be noted that there will be potential problems placing signal equipment as the north island is no longer available for siting some of the signal equipment. Alternative positions will need to be considered although provision of a 1.5m island may be possible on the north side, but will limit the available exit width northbound.

Option 1B Drawing No.4300504/000/03

This option provides an additional nearside northbound lane on the approach to and through the junction that, whilst providing additional capacity, will reduce the occurrences upstream of lane swapping due to lane 2 currently being a dedicated right turn in to Park Way. Two traffic lanes will therefore be able to proceed northbound unhindered. This option can be combined with option 1A to provide an overall improvement in north- south movements at this junction.

Appendix C includes a results summary table of the signal modelling carried out (Linsig) to examine this scenario (Ref: Option 1 - 2 Lane). The results indicate a significant reduction in the MMQ on the Loose Road southern approach, indicatively down from 56 vehicles to 16 (AM peak). Saturation flows are not achieved meaning that all vehicles will disperse on one green cycle.

Widening will however impact on 14 frontage properties with loss of garden space and the need for retaining walls to accommodate level changes and re-establish garden boundaries. Alterations to utility works will also be necessary and potentially significant. Any improvements to the Sutton Road junction are likely to increase traffic demand on the southern approach to this junction. This would make Option B much more desirable and necessary to ensure overall reductions in delay are achieved.

Option 2 Drawing No.4300504/000/03

There is adequate verge to widen Park Way to allow a 2 lane stop line to be introduced. This will provide approximately 30m additional storage for vehicles.

Widening will improve the immediate capacity and may help reduce the required green time here that could be redistributed to other phases. The results of traffic modelling summarised in Appendix C (Ref: Option 2) reflects this, showing a small improvement in reduced queues all round.

The existing 'no right turn' would be expected to remain in place. The available additional storage produced for left turn vehicles is however limited and could be blocked where ahead traffic is dominant.

Widening will make the pedestrian crossing a little more onerous as the crossing length is longer and being uncontrolled requiring a pedestrian to judge a safe gap in which to cross.

The widening will affect underground services, so the cost may become prohibitive for the benefits gained.

Option 3 Drawing No.4300504/000/04 (roundabout)

Consideration has been given to the potential for a roundabout at the Armstrong junction. The layout developed has been designed to generally satisfy geometric design standards whilst minimising land take. Pedestrian crossings points would need careful consideration and may need to be generally sited away from the roundabout and signal controlled for safety and operational reasons. Crossing locations have not been assessed at this stage however they will clearly have an impact on traffic flow in the vicinity of the roundabout.

Capacity assessments have been modelled using the ARCADY software package the results of which are tabulated below.

The assessments undertaken use the June 2016 junction turning counts but do not allow for forecast growth or the effects of traffic reassignment that may occur should improvements to the A229 be implemented (i.e. **attract current 'rat-running' traffic)**.

Arm	AM		PM		Saturday	
Arm	Queue	RFC	Queue	RFC	Queue	RFC
Arm 1 – A229 Loose Rd (n)	56	1.06	105	1.15	14	0.95
Arm 2 – Park Way	47	1.37	41	1.30	33	1.28
Arm 3 – A229 Loose Rd (s)	22	0.98	5	0.83	9	0.91
Arm 4 – Armstrong Rd	1	0.32	1	0.43	1	0.38

(Note: A junction is operating at full capacity when the RFC on one or more arms is 1.0 or greater. An RFC value of 0.85 or less is a general preferred level and indicates that the approach in question is operating within theoretical capacity)

The results show that all arms except Armstrong Road experience severe congestion and queueing. Traffic demand and the imbalance of flows is simply too great for the roundabout to operate efficiently. Such a scheme will result in greater congestion than currently experienced with the added complication of providing suitable and safe pedestrian crossings. Some land acquisition will also be necessary although this appears not to be too onerous.

Option 4 Drawing No.4300504/000/05

Similar in nature to Option 1B, an additional nearside northbound lane on the Loose Road approach to the junction will create approximately 150m of additional storage for northbound traffic as well as provide lane continuity through the junction. It requires a strip of land from some twenty properties on the west side of Loose Road, impacting private gardens and accesses. Improvements in capacity for northbound traffic will effectively half queue lengths however any such improvement in capacity would be lost downstream if Option 1B (2 lanes north bound at Armstrong Road) is not implemented. Appendix C includes a results summary table of the traffic modelling work (Linsig) carried out (Ref: Option 4 - 2 Lane).

Cranborne Avenue is the minor link into this junction and allows access to a substantial residential area. The local road network within the residential area serviced by Cranborne Avenue limits the practical access onto Loose Road. The exit forms one of the few safe right turns on to Loose Road, with subsequent access into Maidstone. This particular junction will be investigated further at outline design stage.

Option 5 Drawing No.4300504/000/05 (roundabout)

The Sutton Road junction is a particularly difficult site to develop a roundabout solution that can operate both efficiently and safely without significant impact on adjacent properties. The acute angle between the Sutton Road and Loose Road approaches effectively renders any realistic roundabout option unworkable without demolition of the Wheatsheaf public house.

Drg. No. 4300504/000/05 shows what might be possible but with some land acquisition required from adjacent properties. The layout does however have several shortcomings including some undesirable geometry aspects including a lack of vehicle deflection on some of the approaches, poor entry angles and a particularly tight and onerous exit manoeuver southbound into Loose Road. Furthermore, large HGVs would be unable to transit from Sutton Road into Loose Road southbound. These vehicles will be obliged to turn using the full 360° of the whole roundabout.

All these aspects can lead to unpredictable flow conditions on the approaches and circulatory carriageway which is likely to have safety implications. Only through increasing the roundabout size can these aspects realistically be overcome, which would require demolition of the Wheatsheaf public house.

A capacity assessment of the roundabout as shown is tabled below and reveal that Cranborne Ave and the A274 Sutton Rd experience severe congestion and queueing. This is due to the significant southbound flows from the A229 Loose Rd (s) which would prevent traffic on these arms from entering the roundabout. As a result of this the A229 Loose Rd (s) has plenty of opportunity to enter the roundabout and the modelling suggests no delay or queueing would occur on this arm. The A229 Loose Rd (n) is approaching full capacity.

Arm	AM		PM		Saturday		
AIII	Queue	RFC	Queue	RFC	Queue	RFC	
Arm 1 – A229 Loose Rd (n)	16.9	0.96	57	1.05	13	0.94	
Arm 2 – Cranborne Ave	59	7.75	119	9999*	29	3.02	
Arm 3 – A274 Sutton Rd	3	0.72	107	1.19	6	0.87	
Arm 4 – A229 Loose Rd (s)	3	0.74	3	0.76	3	0.74	

Controlled pedestrian crossings in the vicinity of the roundabout would almost certainly require signal control on safety grounds. These will be required to replace those facilities lost by the removal of the existing traffic signals. These will clearly have an impact on traffic flow.

Option 6 Drawing No.4300504/000/06

This option, as part of a 2 lane option northbound, examines how the provision of 2 northbound lanes along Loose Road from south of Boughton Lane to the Wheatsheaf can be best achieved through minimising land acquisition. This involves alternate carriageway widening sections on the both the east and west side utilising existing highway verge where possible.

Overall, land acquisition from some 37 front gardens will be required generally in the form of a 3m strip across the garden boundary.

At the southern end the Cripple street junction is the most recent junction to be fitted with traffic signals. It operates MOVA and it is considered unlikely that any changes to the signal phasing / staging can be introduced to increase efficiency. The inclusion of an additional lane northbound will clearly increase capacity and reduce queue lengths by around half on this approach. Appendix C includes a results summary table of the traffic modelling work (Linsig) carried out with the additional lane (Ref: Option 6 - 2 Lane).

Armstrong Road to Sheal's Crescent (northbound)

A recent temporary diversion route instigated by a road closure elsewhere in Maidstone enabled a free-flow slip from Upper Stone Street onto Sheal's Crescent to be installed. This allowed a merge from Upper Stone Street with a single lane from Loose Road northbound. This served to prevent any queues forming southbound on Upper Stone Street as the need to give-way at Loose Road had been removed. In addition, by removing the need to give-way, it removed the difficulty often encountered here with traffic being able to safely merge with the free flowing traffic on Loose Road as it approaches on the sharp left hand bend.

The temporary arrangement operated satisfactory with Loose Road restricted to 1 lane northbound from Armstrong Road.

It is possible for this arrangement to be made permanent by road markings as indicated on Drawing No. 4300504/000/08. Should widening options allow Loose Road northbound to be 2 dedicated running lanes then the link from Upper Stone Street can only remain as a **'Give W**ay' as is presently.

3.3 Road Safety Audit

The Stage 1 Road Safety Audit report undertaken to examine each of the options under consideration is included in Appendix D. The main observations are noted below.

At the Armstrong junction comments in the report focus on pedestrian safety in relation to the provision of pedestrian crossing facilities. This is an important consideration as any upgrading of, or addition, crossing facilities will impact on junction capacity. Depending on the scheme option to be considered further, pedestrian requirements would need to be further investigated to ensure proper and safe facilities can be provided without prohibitively diminishing the benefits of the capacity improvements.

At the Sutton Road junction, the introduction of an additional lane northbound (Option 4) has raised concern with the potential for increased congestion at the junction due to traffic backing up downstream from the proceeding junction, and how this might result in accidents due to driver frustration or poor judgement. This further highlights the need to consider not just the merits of each option in isolation, but how they will interact with adjacent junctions and sections.

Concern has also been raised with the reduced forecourt size used for customer parking at the local shops on the western side. Measures would be needed to ensure drivers can turn safely without leaving the forecourt. This could lead to reduced customer parking.

The auditor has recognised the option for a roundabout at the Sutton Road will not cater for the traffic anticipated nor provide the appropriate geometry to make it operationally safe. Signalisation of the roundabout, as recommended by the auditor, is seen as unworkable due to a lack of storage space on the roundabout, or indeed considered appropriate.

Further reference is made to the unsuitability of pedestrian crossings at the roundabout. As previously mentioned, it is considered that controlled pedestrian crossings would need to be sited away from the roundabout.

The site visit was undertaken during the school summer holidays, and on a day when the weather conditions were excellent. At two of the locations, namely Armstrong Road / Park Way and Cripple Street / Boughton Lane a number of cyclists were seen using the footway (at least five cyclists at each site, with no cyclists observed using the carriageway).

It is possible that given the nature of the surrounding area at these locations that cyclists are regular road users. Several of the cyclists seen at the Cripple Street / Boughton Lane junction were wearing Sainsburys uniforms indicating that some of their employees may cycle to work either on a regular or occasional basis.

It is recommended that the provision of a minimum (unobstructed) 3 metre width shared use pedestrian and cycle footway is included within the remit of the scheme for Loose Road or alternatively an on-road cycle lane is provided along Loose Road to include provision for cyclists at junctions. The minimum width of the cycle way will be determined by the volume and average speed of traffic using Loose Road.

Only minor road marking omissions have been highlighted for the proposed improvements shown for the section south of the Sutton Road junction to Cripple Street.

3.4 Environmental Assessment

Appendix E contains an Environmental Scoping Assessment the main observations of which are;

- The site is located within an Air Quality Management Area (AQMA) where approximately 600 houses are classified as 'relevant receptors'. Further assessments will therefore be needed to examine the effects of the change in road layout and traffic flow
- Noise sensitive receptors for this site include approximately 600 houses.
 Further assessments will therefore be needed to examine the effects of the change in road layout and traffic flow
- There are no known impacts associated with archaeology and cultural heritage aspects.
- There are no landscape effects associated with any of the proposed options
- There are no known ecology or nature conservation impacts with any of the proposed options. However, a site walkover by an ecologist is recommended to assess the potential for protected species onsite.

3.5 Cost Estimates

Preliminary cost estimates for construction, property & other project costs are given in Tables 3, 4 & 5 In Appendix F for the various options.

Rates and prices used for construction costs are based on construction projects of a similar size and nature and are at current day prices – (September 2016/Q3 2016). Construction is assumed in year 2020 and an inflation rate of 3% has been used.

An allowance of 25% has been added for Principal Contractors Preliminaries (based on previous experience) and a contingency and risk allowance of 10% has been added for design refinements. VAT is excluded.

Details of the valuation of property compensation costs (Table 4) are provided in report ref: J513730, dated 15th September 2016, and included in Appendix F.

4 Traffic System Improvements

SCOOT (Split Cycle and Offset Optimisation Technique)

This has been trialled and found not to give the expected benefits. The inability to predict travel times was the reason quoted for SCOOT not operating as expected, being caused by the presence of private driveways and bus stops. This will not change, so it is considered that there is no likely benefit from reintroducing SCOOT.

MOVA (Microprocessor Optimised Vehicle Actuation)

The criteria used for MOVA to work efficiently is very similar to SCOOT, insofar that it requires a predictable travel time from the outer detection loops to the stop lines. The nature of the junctions of Loose Rd with Armstrong Road and with Sutton Road (The Wheatsheaf) is that there are private access points and bus stops within the detection area, which detract from the efficiency of MOVA operation.

This does not prevent MOVA operation being installed, but the benefits are unlikely to be any better than the operating system already in use.

5 Conclusion

The aim of this feasibility report is to consider and review options that will offer some confidence for consistent journey times along this transport corridor.

There are known problems which could be addressed without taking land, but would need an acceptance of reduction of highway standards. This is principally at the Armstrong Road junction where blocking of southbound lane 2 by right turn traffic into Armstrong Road should help promote better use of the available highway.

Capacity is limited where signal controlled junctions are provided with a 1 lane stop line. Some capacity improvement can be achieved by introducing a 2 lane stop line where currently, only 1 exists. If installed locally to the signals, adequate merging is required when leaving the junction. However, in such situations, if downstream junctions are not equally improved, any benefits gained locally can be quickly diminished.

Improvements that are totally within the existing carriageway are unlikely to attract Statutory Undertakers plant diversion works, so may be readily deliverable.

Improvements where carriageway encroaches into existing footway or verge is highly likely to attract Statutory Undertakers plant diversion works. Enquiries made to all main Statutory Undertakers have revealed the presence of some significant utility plant. The cost of alterations to these is difficult to accurately estimate without further enquiries with the relevant companies, but as a major transport corridor, the importance status of these services is likely to be high.

Land acquisition will be necessary to execute many of the options presented. The nature of many of the expected property boundaries means that there will be a large number of small plots where garden frontages are required. Additionally, environmental issues will arise where the kerb line is physically moved closer to an existing property.

The choice between options will ultimately depend on the priorities placed on aspects such as cost, land use, environmental impact, local concerns and many other comparative factors.

Overall, it would appear that only through carriageway widening in conjunction with traffic signal control at junctions can tangible improvements in journey time reliability be achieved. Roundabout options appear viable, however the high disparity in traffic flow between approaches renders them inefficient. Non-motorised users will also not be particularly accommodated well at the roundabouts.

Appendix A Manual Traffic Turning Count

Appendix B Option Drawings

Appendix C Signal Modelling (Linsig) Results Comparison

Appendix D Photographs

Appendix E Environmental Scoping Assessment

Appendix F Cost Estimates

Weekday AM Peak



Weekday PM Peak





Saturday AM Peak



Saturday PM Peak





Extracted from Linsig results optimised to a maximum 120 seconds cycle or 90% degree of saturation. Queue lengths in 'PCUs' and rounded to the nearest whole number.

BQ at Red: - Back of the uniform queue at the end of the red.

MMQ:- Mean Maximum Queue. DofS:- Degree of Saturation.

ARMSTRONG ROAD JUNCTION

EXISTING

Weekday	AM			PM			12hr			
-	BQ at Red	MMQ	DofS	BQ at Red	MMQ	DofS	BQ at Red	MMQ	DofS	
Loose Rd (N)-1	12	20	75.6	13	28	87.4	15	43	96.3	
Loose Rd (N)-2	11	18	78.3	8	14	86.7	2	5	84.4	
Park Way	7	11	84.5	7	10	83.5	6	9	76	
Loose Rd (S)-1	15	56	100.4	14	38	94.2	13	35	91	
Loose Rd (S)-2 RT	8	12	82.4	6	9	80.5	6	10	84.1	
Armstrong Rd	4	10	93.9	5	12	93.7	5	11	90	
8	Су	Cycle Time 120			Cycle Time 120			Cycle Time 120		

EXISTING	100						9			
Saturday		AM			PM		12hr			
	BQ at Red	MMQ	DofS	BQ at Red	MMQ	DofS	BQ at Red	MMQ	DofS	
Loose Rd (N)-1	9	14	59.7	8	13	74.2	6	9	56.7	
Loose Rd (N)-2	10	16	65.7	8	15	80.7	7	11	63	
Park Way	6	9	80.5	4	6	84.5	4	7	81.8	
Loose Rd (S)-1	14	38	93.4	9	22	89.2	10	24	89.3	
Loose Rd (S)-2 RT	7	11	78	3	3	38.6	4	5	59.4	
Armstrong Rd	5	12	94	3	6	83.2	3	7	85.7	
	Су	cle Time 1	20	C	Cycle Time 83			Cycle Time 88		

OPTION 1 - 1 LANE

Weekday	S	AM		PM			12hr			
-	BQ at Red	MMQ .	DofS	BQ at Red	MMQ	DofS	BQ at Red	MMQ	DofS	
Loose Rd (N)-1	10	17	66.8	10	17	67	8	12	53.9	
Loose Rd (N)-2	10	17	67	10	17	67.4	8	12	54.1	
Loose Rd (N)-RT	1	1	15.3	2	2	20.1	2	2	20.7	
Park Way	7	12	89.2	7	10	83.5	6	9	80.4	
Loose Rd (S)-1	23	120	115	17	61	103.1	16	126	101	
Loose Rd (S)-2 RT	9	32	113.9	6	13	97.7	6	16	95.4	
Armstrong Rd	5	25	113.2	5	18	102.2	5	20	97.3	
	Су	cle Time 12	20	Су	Cycle Time 120			Cycle Time 120		

OPTION 1 - 1 LANE

Saturday	12	AM			PM		12hr			
	BQ at Red	MMQ	DofS	BQ at Red	MMQ	DofS	BQ at Red	MMQ	DofS	
Loose Rd (N)-1	9	13	56.1	7	11	62.7	7	10	48.8	
Loose Rd (N)-2	9	13	56.5	7	11	62.9	7	10	49.1	
Loose Rd (N)-RT	1	1	11.1	1	2	28.7	1	2	17	
Park Way	6	9	80.5	4	6	79.7	5	7	71.9	
Loose Rd (S)-1	20	85	108.7	10	23	89.4	13	31	89.7	
Loose Rd (S)-2 RT	9	26	108.3	3	6	85.9	6	10	88.7	
Armstrong Rd	5	17	102.1	3	7	876.2	4	8	85.3	
	Су	cle Time 12	20	C	Cycle Time 87			Cycle Time 116		

ARMSTRONG ROAD JUNCTION (Cont)

Weekday	AM				PM			12hr		
	BQ at Red	MMQ	DofS	BQ at Red	MMQ	DofS	BQ at Red	MMQ	DofS	
Loose Rd (N)-1	12	21	80.3	12	20	78.8	10	16	68.2	
Loose Rd (N)-2	12	21	80.3	12	21	78.9	10	16	68.4	
Loose Rd (N)-RT	1	1	11.2	1	2	16.1	2	2	15.3	
Park Way	7	10	80.3	6	8	65.3	6	7	57	
Loose Rd (S)-1	10	16	67.4	9	13	58.4	9	13	61.8	
Loose Rd (S)-2	10	17	70.6	10	14	62.8	10	15	65.7	
Loose Rd (S)-3 RT	8	11	80.6	6	8	76	6	8	68.1	
Armstrong Rd	4	7	80.6	5	8	78.7	5	7	68.1	
	Cycle Time 120			Cy	Cycle Time 120			Cycle Time 120		

OPTION 1 - 2 LANE

Saturday	AM				PM			12hr		
-	BQ at Red	MMQ	DofS	BQ at Red	MMQ	DofS	BQ at Red	MMQ	DofS	
Loose Rd (N)-1	11	17	73.8	7	12	68.9	9	13	62.1	
Loose Rd (N)-2	11	17	73.9	8	13	69.2	9	13	62.3	
Loose Rd (N)-RT	1	1	8	1	2	23.9	1	1	12	
Park Way	6	8	59.5	4	5	66.4	5	6	53.9	
Loose Rd (S)-1	10	15	69.5	5	7	45.9	8	11	54.6	
Loose Rd (S)-2	11	16	72.5	6	9	52.7	9	13	59.2	
Loose Rd (S)-3 RT	7	11	75	3	4	68.7	5	7	60.5	
Armstrong Rd	5	8	74.8	3	5	67	4	6	61.2	
2	Cvcle Time 120			C	Cycle Time 87			Cycle Time 116		

OPTION 2

Weekday	AM			PM			12hr		
	BQ at Red	MMQ	DofS	BQ at Red	MMQ	DofS	BQ at Red	MMQ	DofS
Loose Rd (N)-1	12	21	76.6	9	17	71.3	11	23	83.3
Loose Rd (N)-2	10	17	78.3	8	14	72.9	4	6	74.7
Park Way	5	9	83.6	4	5	71.8	3	4	63.5
Loose Rd (S)-1	14	42	95.1	11	30	90	11	29	89.5
Loose Rd (S)-2 RT	7	11	77.4	5	7	69.1	5	7	72.2
Armstrong Rd	4	10	92.1	5	7	86.6	4	8	83.5
	Cycle Time 120			Cycle Time 103			Cycle Time 103		

OPTION 2									
Saturday		AM		PM			12hr		
	BQ at Red	MMQ	DofS	BQ at Red	MMQ	DofS	BQ at Red	MMQ	DofS
Loose Rd (N)-1	8	12	58.9	8	14	76.3	6	10	60.6
Loose Rd (N)-2	8	12	59.3	8	14	76.9	6	10	61.1
Park Way	3	4	65.3	2	3	51.3	2	3	51.6
Loose Rd (S)-1	1 11	31	89.5	9	21	87.2	9	23	89.8
Loose Rd (S)-2 RT	7	10	75.6	3	3	38.6	4	5	56
Armstrong Rd	5	8	85.7	3	5	61.4	3	4	60.2
	Су	Cycle Time 107			Cycle Time 83			Cycle Time 83	

OPTION 4 – 2 Lane (Northbound) Extracted from Linsig results optimised to a maximum 120 seconds cycle or 90% degree of saturation. (Scenario 7 to 12)

EXISTING	20			8					
Weekday	AM			PM			12hr		
	BO at Red	MMO	DofS	BO at Red	MMO	DofS	BO at Red	MMO	DofS
Sutton Rd-1	6	10	84.3	8	13	87.6	7	11	84.4
Sutton Rd-2	7	12	87.4	9	15	89.9	8	14	88.3
Loose Rd (N)-1 AH	11	22	88.6	11	20	72.9	10	17	77.8
Loose Rd (N)-2 RT	11	20	88.1	14	28	88.9	10	19	87.4
Loose Rd (S)-1 AH	10	19	79	10	16	60.8	8	14	66.1
Loose Rd (S)-2 RT	4	7	86.4	5	9	88.4	4	7	83.1
Cranborne Rd	3	5	84.3	3	4	73.3	2	3	64.2
	Cycle Time 95			Cycle Time 120			Cycle Time 96		

EXISTING									
Saturday	AM			PM			12hr		
	BO at Red	MMO	DofS	BO at Red	MMO	DofS	BO at Red	MMO	DofS
Sutton Rd-1	7	12	86.1	6	10	86.8	5	9	82.8
Sutton Rd-2	9	14	88	7	12	89.1	6	11	85.7
Loose Rd (N)-1 AH	10	17	78.2	10	18	83.1	9	16	84.4
Loose Rd (N)-2 RT	10	19	89.2	10	19	89	9	17	89
Loose Rd (S)-1 AH	10	17	77.1	7	10	53.8	7	11	63.9
Loose Rd (S)-2 RT	4	8	89.6	3	6	83.6	3	5	73.4
Cranborne Rd	2	3	61.5	2	2	50.7	2	2	46.6
	Cycle Time 97			Cycle Time 92			Cvcle Time 84		

PROPOSED

Weekday	i a	AM			PM		12hr		
,	BO at Red	MMO	DofS	BO at Red	MMO	DofS	BO at Red	MMO	DofS
Sutton Rd-1	6	10	85.1	8	13	87.9	7	11	85.4
Sutton Rd-2	7	12	86.6	9	15	89.7	8	13	87.3
Loose Rd (N)-1 AH	11	22	88.6	11	20	72.9	10	17	77.8
Loose Rd (N)-2 RT	11	20	88.1	14	28	88.9	10	19	87.4
Loose Rd (S)-1 AH	5	7	40.5	5	6	31.4	4	6	34.2
Loose Rd (S)-2 AH	5	7	39.9	5	6	30.5	4	5	33.1
Loose Rd (S)-3 RT	4	7	86.4	5	8	88.4	4	7	83.1
Cranborne Rd	3	5	84.3	3	3	73.3	2	3	64.2
	Cycle Time 95			Cycle Time 120			Cycle Time 96		

PROPOSED				-					
Saturday	AM			PM			12hr		
	BO at Red	MMO	DofS	BO at Red	MMO	DofS	BO at Red	MMO	DofS
Sutton Rd-1	7	12	86.1	6	10	87	5	9	83.2
Sutton Rd-2	9	14	88	7	12	88.8	6	11	85.3
Loose Rd (N)-1 AH	10	17	78.2	10	18	83.1	9	16	84.4
Loose Rd (N)-2 RT	10	19	89.2	10	19	89	9	17	89
Loose Rd (S)-1 AH	5	7	39.9	3	4	27.9	4	5	33.1
Loose Rd (S)-2 AH	5	6	38.6	3	4	26.8	3	4	32
Loose Rd (S)-3 RT	4	8	89.6	3	6	83.6	3	5	73.4
Cranborne Rd	2	3	61.5	2	2	50.7	2	2	46.6
2	C	cle Time 9	7	Cycle Time 92			Cycle Time 84		
OPTION 6 – 2 LANE (northbound)

Extracted from Linsig results optimised to a maximum 120 seconds cycle or 90% degree of saturation. (Scenario 1 to 6 with pedestrians every cycle)

EXISTING

Weekday	AM			PM			12hr		
-	BQ at Red	MMQ	DofS	BQ at Red	MMQ	DofS	BQ at Red	MMQ	DofS
Loose Rd (S)	12	21	78.9	11	19	71.4	10	17	74
Cripple St	6	13	96.4	5	11	96.7	4	8	88.2
Loose Rd (N)	14	36	96.6	14	38	96.7	11	25	88.5
Boughton Ln	6	12	96	6	10	91.7	4	8	87.9
6	Cycle Time 120		Cycle Time 120		Cycle Time 106				

EXISTING

Saturday	AM			PM			12hr		
-	BQ at Red	MMQ	DofS	BQ at Red	MMQ	DofS	BQ at Red	MMQ	DofS
Loose Rd (S)	12	21	82.8	8	13	68.3	8	13	77.5
Cripple St	5	8	86.8	3	6	85.3	3	6	86.8
Loose Rd (N)	12	24	89	10	22	89.4	8	18	89.2
Boughton Ln	5	9	88.6	2	3	68.2	3	6	84.4
<u>1</u>	Cycle Time 110		Cycle Time 91		Cycle Time 82				

Includes a right turn indicative arrow on Loose Rd (N) for moves into Cripple Street

PROPOSED

Weekday	AM			PM			12hr		
	BQ at Red	MMQ	DofS	BQ at Red	MMQ	DofS	BQ at Red	MMQ	DofS
Loose Rd (S)-1	7	9	47.5	6	8	42.5	6	8	45.6
Loose Rd (S)-2	7	9	47.5	6	8	42.3	6	8	45.5
Cripple St	6	13	96.4	5	11	96.7	4	8	88.2
Loose Rd (N)	14	36	96.6	14	38	96.7	11	25	88.5
Boughton Ln	6	12	96	6	10	91.7	4	8	87.9
	Cycle Time 120		Cycle Time 120		Cycle Time 106				

PROPOSED

Saturday	AM			PM			12hr		
	BQ at Red	MMQ	DofS	BQ at Red	MMQ	DofS	BQ at Red	MMQ	DofS
Loose Rd (S)-1	7	9	51.4	5	6	44.3	5	6	54.6
Loose Rd (S)-2	7	9	51.1	5	6	43.9	5	6	54
Cripple St	5	8	86.8	3	6	85.3	3	6	86.8
Loose Rd (N)	12	24	89	10	22	89.4	8	18	89.2
Boughton Ln	5	9	88.6	2	3	68.2	3	6	84.4
	Cycle Time 110		Cycle Time 91		Cycle Time 82				

Modelling Definitions Traffic Signals

Traffic signals are modelled using 'Linsig' software package.

Comparison of Queue Lengths between existing and as measured, as the back of the uniform queue at the end of the red, measured in 'pcus'. This was undertaken to demonstrate that the modelling replicates as far as practicable, the behaviour of traffic at each junction. Any comparison is indicative only, so where modelling shows queues on a magnitude that correlates approximately with measured queues, then there can be reasonable confidence with the model.

It should be noted that this is only one measurement of many for queue lengths. Traffic will be arriving at the end of the queue all the time, possibly at a rate greater than the ability of the signals to discharge.

These definitions are extracted from the Linsig Guide.

Back of Uniform Queue at the end of Red (PCU).

The extent of the Uniform Queue on a Lane at the time of the end of the Lane's controlling Phase's red period. Traffic may continue to add to the back of the queue whilst the queue is clearing leading to a Maximum Back of Uniform Queue greater than the queue at the end of red. The 'Back of Uniform Queue at the end of Red' allows only for the variation of the queue within a typical cycle and does not include Random and Oversaturation queues.

Mean Maximum Queue (PCU).

The Mean Maximum Queue is the sum of the Maximum Back of Uniform Queue and the Random & Oversaturation Queue. It represents the maximum queue within a typical cycle averaged over all the cycles within the modelled time period. When a Lane is oversaturated the Maximum Queue within each cycle will grow progressively over the modelled time period. This means that the Mean Maximum Queue will be approximately half the final queue at the end of the modelled time period.

Degree of Saturation (%).

The Degree of Saturation of the Lane. This is defined as the ratio of Flow to Capacity for the Lane. This is fairly important as maximum efficiency occurs at 90%. When this figure is exceeded the modelling becomes unstable

A229 Loose Road / Armstrong Road / Park Way



View north from Armstrong Road towards Loose Road.



View north towards traffic lights at Loose Road / Armstrong Road.



View east towards Park Way.



Pedestrian Crossing of Loose Road north of Armstrong Road



Pedestrian crossing of Loose Road, north of Park Way.



View west towards Armstrong Road.



View north towards Maidstone on the approach to traffic signals.

Loose Road to 'The Wheatsheaf'.



Loose Road viewed north.



View east to Plains Avenue.



View North towards Maidstone.



View south towards 'The Wheatsheaf'. Note stationary bus.



View north towards Maidstone, exiting 'The Wheatsheaf' junction.

Loose Road / Sutton Road – 'The Wheatsheaf'.



View north from Sutton Road pedestrian crossing.



View east on Cranborne Avenue



View south along Sutton Road from the signal stopline.



Junction controlled area, view north from the Public House.



View north, Loose Road stopline for conflict with Sutton Road.



View south, Loose Road pedestrian crossing,

'The Wheatsheaf to Cripple Street / Boughton Lane



View north, towards 'The Wheatsheaf'.



View south, Loose Road from 'The Wheatsheaf'.



View north, towards Maidstone, from a point opposite Osborne House.



View north, junction with Wheatsheaf Close.



Loose Road view south at the Fire Station.



Loose Road view north at the Fire Station.



View north, exit from Loose Road / Cripple Street Traffic Signals.

Loose Road / Cripple Street / Boughton Lane



View south, junction with Boughton Lane.



View west, junction with Cripple Street.



View north, Loose Road / Boughton Lane / Cripple Street signalised junction



View north, Cripple Street junction with Loose Road.



View south, Cripple Street junction with Loose Road.



Document Control Sheet

Project Title:	MIT PH2 Location 1 - Wheatsheaf to Cripple Street.
Project Number:	CO04300504
Document / Report Title:	Environmental Scoping Assessment
Document / Report Number:	ESA

Issue Status/Amendment	Prepared	Reviewed	Approved
Revision 00	Name: O. Ockenden	Name: J. Taylor	Name: J. Taylor
	Signature:	Signature:	Signature:
	Oline Ockinden	Ataylar	Ataylor
	Date: 28/07/2016	Date:	Date:
Revision (Enter Details of Amendment)	Name:	Name:	Name:
	Signature:	Signature:	Signature:
	Date:	Date:	Date:
	Name:	Name:	Name:
	(print)	(print)	(print)
	Signature:	Signature:	Signature:
	Date:	Date:	Date:



Environmental Scoping Assessment

	Name	Position	Date
Prepared by	O. Ockenden	Environmentalist	28/07/2016
Checked by	J. Taylor	Principal Environmentalist	
Received by		Project Manager	

Project No:	CO04300504	Scheme Title:	MIT PH2 Location 1 - Wheatsheaf to Cripple Street.		
Project description					

Introduction: Kent County Council has commissioned AMEY to investigate solutions to the congestion and junction issues on the A229 from south of Cripple Street to just north of Armstrong Road, Maidstone.

The proposed solution options so far include new roundabouts, tweaking the existing signals and layouts at Armstrong Road, The Wheatsheaf junction and at Cripple Street/Boughton Lane. Widening and thus doubling of existing carriageway on the northbound lane only. **Each option is to be weighted for its** impacts on existing properties and land take against the benefits of alleviating traffic congestion.

Location: The site is located between grid reference TQ 76463 53423 and TQ 76577 54428.



Timescale: The commencement date and duration of the project are unknown.

Traffic Management: Unknown measures are to be taken during the construction to manage traffic flow.



Emissions and Waste: It is anticipated that the emissions and waste generated by the works may include excess construction material and emissions from onsite vehicles.

This project requires a Screening Opinion (EIA Regulations) (DMRB Vol.11 Sec.2 Part2 HD 47/08)	YES	NO
This project requires a Record of Determination (Applicable to Highways England work only) (IAD 126/15)	YES	NO
This project requires environmental permissions, licenses or consents (ENVT-EnvtAssess-PL-02)	YES	NO

Very Likely:

Highway / footway/cycleway / car park diversion or closure - The Highways Act, 1980 New Roads and Street Works Act, 1991

What statutory procedures are involved?

Impacts Public Right of Way

Planning permission (via application to LPA under the Town and Country Planning Act 1990)

References

Highways England (formerly the Highways Agency) Design Manual for Roads and Bridges (DMRB) Volume 11 (Environmental Assessment) Section 3 (Environmental Assessment Techniques). http://www.standardsforhighways.co.uk/ha/standards/dmrb/vol11/section3.htm.



IDE	NTIFICATION OF POTENTIAL ENVIRONMENTAL EFFECTS
	AIR QUALITY
Assessment methodology:	 Desk-based assessment (DBA); 350m search radius (200m for permanent effects) Sources: Background maps for NO2 and PM10 <u>http://uk-air.defra.gov.uk/data/laqm-background-home</u> Designated sites <u>http://magic.defra.gov.uk/Login.aspx?ReturnUrl=%2fMagicMap.aspx</u> Air Quality Management Areas (AQMA)s <u>http://uk-air.defra.gov.uk/aqma/maps</u>
Key baseline conditions:	 The site is located within an AQMA. The works will take place on the road and therefore the ambient air quality environment is likely dominated by traffic. The relevant receptors for this site include approximately 600 houses. There are 3 Schools, no hospitals and 1 church within the search area. The type of development is traffic flow remodelling.
Key construction activities:	 Site clearance; Demolition; Excavation; Signing; Lighting; Kerbing; Road marking.
Temporary effects:	 Increase in dust and fine particulates associated with the construction phase. Increased exhaust fumes from plant movements.
Permanent effects:	Potential change in road layout and traffic flow.
Mitigation / contro	ol measures:
Adoption of Best	Practicable Means to keep dust and fumes to a minimum.
Further action/ass	essment required? YES NO
Further assessment i result of the above-de Construction dust imp and construction dust	in accordance with DMRB Vol.11 Sec.3 Part1 HA203/07 Air Quality is necessary as a etailed potential permanent effects and the presence of relevant receptors within 300m pact assessment in accordance with IAQM Guidance on the assessment of demolition t

Rev: 2



	NOISE AND VIBRAT	ΓΙΟΝ			
Assessment methodology:	 DBA; 300m search radius. Sources: Noise Maps England <u>http://services.defra.gov.uk/</u> Planning Practice Guidance Noise <u>http://planningguidance.planningportal.gov.uk/bloc</u> 	wps/portal/noise g/guidance/noise/noise-gui	dance/		
Key baseline conditions:	 The noise sensitive receptors for this There are 3 Schools, no hospitals and The site is within a Noise Important and 	site include approxim d 1 church within the Area.	nately 600 houses. search area.		
Key construction activities:	 Site clearance; Demolition; Excavation; Signing; Lighting; Kerbing; Road marking. 				
Temporary effects:	Increase of noise and vibration for th	ne duration of the wor	ĸ.		
Permanent effects:	Change in traffic flow may alter local	noise environment.			
Mitigation / contro	l measures:				
 Noise and vibration to be controlled as far as reasonably practical to protect sensitive receptors. Use of Best Practical Means to reduce noise levels during construction. Follow work hours agreed in advance with the Local Authority. 					
Further action/assessment required?YES					
A noise and vibration methodology and mit Further assessment i necessary due to the	specialist should undertake BS5228 calcu igation methods to be employed. n accordance with DMRB Vol.11 Sec.3 Pa proximity of relevant receptors and the po	llations in order to info nt7 HD213/11 –rev1 l tential permanent effe	orm construction plant, Noise and Vibration is ects detailed above.		



ARCHAEOLOGY AND CULTURAL HERITAGE							
Assessment methodology:	DBA; 300m & 1km search radius. Sources: • http://list.english-heritage.org.uk/mapsearch.aspx • http://www.heritagegateway.org.uk/Gateway/CHR/ • http://www.pastscape.org.uk/ • (Local County SMRs/HERs websites)						
Key baseline conditions:	 There are no worl within the inner 3 There are four list 	d heritage sites, coi 00m or outer 1km s ed buildings within	nservation areas or h search radius. 300m featured in Ta	nistorical landscapes able 1 below:			
	Name:	Rating:	Reference	Distance:			
	Osborne House		1336204	22m			
	Municipal Cemetery Lodge	II	1225443	164m			
	Cemetery Chapel	П	1086290	286m			
	Shernold House	II	1224648	300m			
	 There are a further park and garden v Further records of Roman coins and 	er 14 listed buildings within 1km of the si any archeologically axes.	s, 1 scheduled monu te. / significant finds inc	ment and 1 registered			
Key construction activities:	 Site clearance; Demolition; Excavation; Signing; Lighting; Kerbing; Road marking. 						
Temporary effects:	No effects predict	ed.					
Permanent effects:	No effects predict	ed.					
Mitigation / contro	ol measures:						
 Onsite training should include awareness of the risk of encountering archeologically important finds. Should any potential historic finds be found on site, the advice and guidelines in DMRB Vol. 11 Section 3, Part 2 – Cultural Heritage must be adhered to. Scheme planning should aim to avoid interfering with trees and listed buildings walls. 							
Further action/ass	sessment required?		YES	NO			



LANDSCAPE EFFECTS			
Assessment methodology:	DBA; 300m search radius. <i>Sources:</i> • U.K: <u>http://www.legislation.gov.uk/all</u> • Landscape institute: <u>http://www.landscapeinstitute.org</u> • Kent Landscape Information System: <u>www.kent.gov.uk/klis</u>		
Key baseline conditions:	 The site is not within an Area of Outstanding Natural Beauty. The site is not within a National Park. The Landscape Character Area of the site is listed as 120 – Wealden Greenland There are no Tree Preservation Orders on site. The site is not within a Conservation area. 		
Key construction activities:	 Site clearance; Demolition; Excavation; Signing; Lighting; Kerbing; Road marking. 		
• Temporary visual impact of plant, vehicles, materials and other work related paraphernalia.			
Permanent • None predicted. effects: • None predicted.			
Mitigation / control measures:			
 Limit the time plant, machines and materials are stored on site. 			
Further action/assessment required? YES NO			



ECOLOGY AND NATURE CONSERVATION			
Assessment methodology:	DBA; 2km search radius. Sources: • All U.K wide and national ecological legislation http://jncc.defra.gov.uk/page-1376		
	Ecology society http://www.britishecologicalsocie	ty.org/	
	CIEEM guidelines http://www.cieem.net/data/files/Resource_Library/Technical_Guidance_Series/EcIA_Guidelines/TGSEcIA-EcIA_Guidelines-Terestrial_Freshwater_Coastal.pdf		
	• National Diodiversity Map Search https://data.noi	T.Org.uk/Site_Datasets	
Key baseline conditions:	 There are no Local Nature Reserves within the search area. There are no Special Areas of Conservation within the search area. There are no Marine Management Zones within the search area. There are no National Nature Reserves within the search area. There are no RAMSAR sites within the search area. There are no SSSI within the search area. There are no protected areas known for bat habitats within a 30km search area. There are no Ancient Woodlands within the search area. 		
Rey construction activities:	 Site clearance; Demolition; Excavation; Signing; Lighting; Kerbing; Road marking. 		
Temporary effects: • None predicted.			
Permanent effects: • None predicted.			
Mitigation / control measures:			
 Site walkover is required by an ecologist to assess the potential for protected species onsite. Any disturbance of trees or shrubs must be done outside of the nesting season. 			
Further action/ass	essment required?	YES	NO
This project requires Habitats Regulations Assessment / YES NO Assessment of Implications on European Sites (AIES) Screening? NO			



GEOLOGY, SOILS AND CONTAMINATED LAND			
Assessment methodology:	DBA; 300m search radius. <i>Sources:</i> • Geological Conservation Review <u>http://jncc.defra.gc</u> • <u>http://www.netregs.org.uk/</u> • <u>http://www.gov.uk/contaminated-land</u> • <u>http://mapapps2.bgs.ac.uk/geoindex/home.html</u> • <u>http://maps.environment-</u> <u>agency.gov.uk/wiyby/wiybyController?x=357683&y=3</u> <u>= off⟨=_e&topic=waste#</u> • Specialists in Land Condition <u>http://www.silc.org.uk/</u>	ov.uk/page-4172 55134&scale=1&layerGroup	s=default&ep=map&textonly
Key baseline conditions:	 The site has been previously excavated. There is a closed landfill site on Armstrong Road of an unknown age and composition, 40m away. The site sits on bedrock of Hythe Sandstone with a surface geological deposit of Head. 		
Key construction activities:	 Site clearance; Demolition; Excavation; Signing; Lighting; Kerbing; Road marking. 		
Temporary effects:	• Any contaminated material if mishandled and spread could cause further contamination to other receptors.		
Permanent • No effects predicted.			
Mitigation / control measures:			
 Consult with the Geotechnical team in regards to contaminated land. All hazardous materials should be segregated and be securely contained. 			
Further action/assessment required?YESNO			NO

Rev: 2 Date: © Amey plc



DRAINAGE AND THE WATER ENVIRONMENT			
Assessment methodology:	 DBA; 300m search radius. Sources: EA indicative water environment maps <u>http://mag</u>agency.gov.uk/wiyby/wiybyController?ep=maptopic Magic <u>http://www.magic.gov.uk/</u> 	os.environment- is⟨=_e	
Key baseline conditions:	 There is no risk of flooding. There is a principle aquifer without a There are no local watercourses. 	ground water protec	tion zone on site.
Key construction activities:	 Site clearance; Demolition; Excavation; Signing; Lighting; Kerbing; Road marking. 		
Temporary effects:	 Potential for spills from fuel and oils. However, provided containment proc impacts from spills is low. 	edures are followed t	he potential for
Permanent effects:	 Potential permanent increase of impermeable surface area. Potential for the local road drainage to be altered. 		
Mitigation / control measures:			
 Fuel, oil and other chemicals are to be stored properly to minimize pollution risk. Spill kits should be available in the event of an accidental spill. Best practice should be applied to the method and risk assessments for substances that are used during construction. 			
Further action/ass	essment required?	YES	NO
Preliminary Appraisa	l of drainage and the water environment.		



MATERIALS & WASTE			
Assessment methodology:	DBA Sources: <u>http://ec.europa.eu/environment/eussd/</u> <u>http://ec.europa.eu/environment/waste/index.htm</u> <u>http://www.netregs.org.uk/</u> <u>https://www.gov.uk/browse/environment-country</u>	<u>m</u> yside/recycling-waste-man	agement.
Key baseline conditions:	 Surplus waste materials may include asphalt, hard core, concrete, electronic waste and metals. A Site Waste Management Plan is recommended if the scheme costs more then £300,000. 		
Key construction activities:	 Site clearance; Demolition; Excavation; Signing; Lighting; Kerbing; Road marking. 		
Temporary effects:	 Energy use from fuels. Emissions to the atmosphere. Generation of waste. Material transportation. 		
Permanent effects:	 Depletion of raw materials Waste taken to landfill No significant effects predicted. 		
Mitigation / control measures:			
 Source local materials to minimise transportation costs. Best practice to be applied Licenced Waste Contractor should be used Segregation of waste should be applied Reuse and recycling 			
Further action / assessment required?YESNO			NO
Site Waste Management Plan recommended? YES NO			
A SWMP is recommende	ed when a scheme costs are to exceed £300,00	00.	



EFFECTS ON ALL TRAVELLERS			
Assessment methodology:	DBA <i>Sources:</i> • Sustainable transportation <u>http://www.sustrans.or</u> • The DMRB guidelines <u>http://www.dft.gov.uk/ha/s</u>	rg.uk/ tandards/dmrb/index.htn	1
Key baseline conditions:	 The works take place in Maidstone. The works take place on the A229. The works will likely affect commuter traffic. 		
Key construction activities:	 Site clearance; Demolition; Excavation; Signing; Lighting; Kerbing; Road marking. 		
Temporary effects:	Traffic management may add to journey time.		
Permanent effects:	rmanent • Safer and faster travel. 'ects: • Safer and faster travel.		
Mitigation / control measures:			
Give prior notice to residents about the potential for disruption.Utilise informative signage.			
Further action/assessment required?YESNO			
Consultation with district council and local residents to discuss proposed plans.			



EFFECTS ON THE COMMUNITY AND PRIVATE ASSETS			
Assessment methodology:	DBA Sources: • Compulsory purchase of private or MoD property http://www.legislation.gov.uk/ukpga/2004/5/contents • The DMRB guidelines http://www.legislation.gov.uk/ukpga/2004/5/contents		
Key baseline conditions:	• It is unknown if there is any interest	in the works from the	local people.
Key construction activities:	 Site clearance; Demolition; Excavation; Signing; Lighting; Kerbing; Road marking. 		
Temporary effects:	Potential disruption to traffic and ped	estrians.	
Permanent effects:	nanent cts:• Improved access on and off the altered junctions to the A229.		
Mitigation / control measures:			
 Disruption to all users should be minimised. Alternate route management should be considered. Advance notice for the works should be given along with planned duration. 			
Further action/assessment required?YESNO			
Consultation with sta	keholders about the potential disruption.		



Property Cost Estimate

MIT Wheatsheaf to Cripple Street



A list of Partners is available upon request



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Date of Inspection 6 September 2016

Date of Report 15 September 2016

Date of PreviousThis is the first property costReportestimate prepared by BrutonKnowles in respect of thisscheme

Maidstone Kent ME14 1XX

BK Ref: J513730



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1. The Scheme

- 1.1 The scheme is the Wheatsheaf to Cripple Street improvement project, part of the Maidstone Integrated Transport Phase 2 project.
- 1.2 The scheme is based on road widening and junction alterations to Loose Road, with several options as to the extent of the scheme and including one or two roundabouts.
- 1.3 The northern end is close to 90 Loose Road and extends to near 445 Loose Road at the southern end, if Option 6 is chosen. This would cover approximately 1.3km.
- 1.4 The scheme requires the acquisition of strips of land in order to provide enough space for widening the carriageway. Most of this land is made up of small areas of front gardens taken from residential properties, but the frontages of some commercial properties are also affected.
- 1.5 The route of the scheme and the surrounding areas were inspected by Jonathan Scott-Smith on 6 September 2016. We have not entered any private land or inspected the inside of any building, or made contact with any owner or occupier.



2. Terms of Instruction and Scope of This Report

- 2.1 In accordance with your instructions we have provided an estimate of the compensation payable in respect of this scheme, for:
 - a) The acquisition of land required for the scheme, using compulsory powers, or by agreement with compulsory powers in the background;
 - b) The temporary use of any land using compulsory powers, or by agreement with compulsory powers in the background;
 - c) Where appropriate, any additional areas which are reasonably likely to be acquired by agreement. Any such areas are described in this report;
 - d) Any reduction in claimants' retained land due to severance or injurious affection, or any increase due to statutory or non-statutory betterment;
 - e) Disturbance costs including crop loss;
 - f) Home Loss, Basic Loss and Occupiers Loss payments as appropriate;
 - g) Claims where no land is taken, under S10 of the Compulsory Purchase Act 1965 (execution of the works) and Pt 1 of the Land Compensation Act 1973 (use of the scheme);
 - h) Surveyors' fees incurred by claimants and the acquiring authority.
- 2.2 This report is presented to Kent County Council and may not be used or relied on by any other person or by the client in relation to any other matters not covered specifically by the scope of this report. It has been prepared by Bruton Knowles.
- 2.3 This report is an estimate of the compensation which would be payable to landowners and occupiers if this scheme is built. It is not a formal valuation of any property and should not be relied upon as such.
- 2.4 This report replaces any previous Property Cost Estimate prepared by Bruton Knowles in respect of this scheme. It is based on the plans provided and the areas of land taken as shown on these plans, or otherwise estimated where figure have not been provided. It should be noted that these may change between the date of this report and the date of Notice to Treat or General Vesting Declaration, either of which will determine the interests to be valued for compensation purposes.



3. Basis of Valuation

- 3.1 The assessment of compensation for land taken is in accordance with Section 5 of the Land Compensation Act 1961, which broadly requires the acquiring authority to pay the open market value of the property, assuming a willing seller, at the valuation date but assuming that the scheme is not taking place. Where there is no normal market for the type of property being acquired the compensation may be assessed on the basis of equivalent reinstatement elsewhere. Compensation has not been assessed on that basis unless specifically noted in this report. The valuation date will be the date of entry or the date of the GVD.
- 3.2 Disturbance claims including are assessed on the basis of the losses incurred by the claimant as a result of their land being taken. Claimants are expected to mitigate their losses.
- 3.3 Claims under Pt 1 of the Land Compensation Act 1973 arise where no land is taken but the property is depreciated by one or more physical factors, typically noise and lighting. Where available, we have based our assessment on data contained within your environmental reports, or otherwise in accordance with our experience of similar schemes. It should be noted that there are several agents specialising in this type of claim and they are likely to submit claims, often in large numbers, for properties unlikely to suffer any depreciation. Such claims will, however, need to be assessed and processed and we have included an allowance for fees for doing this work. The assessment and valuation date is normally one year after the scheme opens to traffic.
- 3.4 Claims under Section 10 of the Compulsory Purchase Act 1965, for depreciation caused by the execution of the works, where no land is taken, are not common. We have assumed that no compensation will be payable under Section 10 although accommodation works to some driveways at the northern end of the scheme will be needed to mitigate this.

4. Drawings and Documents

- 4.1 In preparing this report we have relied on the Land Plan drawing 4300504/000/02 and Option drawings 4300504/000/02, -04, -05 and -06.
- 4.2 The land take areas shown in the land plan are different in some respects to the schematic drawings shown in the Option plans. As instructed we have based our estimates on the Option drawings where these are different.

5 General Assumptions and Exclusions

5.1 Accommodation Works

We have assumed that accommodation works will be provided in accordance with normal practice, such as the construction of replacement accesses, fencing to severed areas, and reinstatement or alteration of existing drainage and water supplies, or in accordance with



any details which have been provided. Where necessary we will comment on specific items. We have not allowed for the cost of providing accommodation works.

5.2 Land Use

Our report assumes that the current uses of land will continue or would continue in the absence of the scheme, unless specifically referred to.

5.3 <u>Utilities</u>

Unless instructed and referred to in this report we have made no allowance for the cost of relocating any underground or overhead utility equipment, or any claims from the equipment owners. Where the surface of the land is owned or occupied by a utility company we have allowed for compensation on the same basis as with any other owner or occupier.

5.4 Special Classes of Land

Where land is to be acquired from owners against which compulsory powers do not usually apply, such as the Crown or the National Trust, we have assumed that the owners will sell by agreement with compensation assessed as if compulsory powers had been applied.

5.5 <u>Disturbance</u>

Occupiers are entitled to compensation for all costs reasonably incurred in being 'disturbed' from their property as a result of the scheme. They are required to mitigate these costs as far as reasonably possible. The assessment of this head of claim has been made based on information which may be limited or incorrect, or which may change between the date of this report and the date they are dispossessed.

For this report we have allowed £500 per residential claimant, primarily being an allowance for their own time and any costs in dealing with the land sale, and garden plants and similar matters, including use of a working area in addition to the land acquisition.

5.6 <u>Surveyors' Fees</u>

We have made an allowance for the acquiring authorities' and claimants' surveyors' fees incurred in preparing and negotiating compensation claims, including any fees which may be incurred prior to entry with the aim of mitigating the amount claimed and/or the effects of the scheme on the claimant. Unless referred to in this report we have made no allowance for fees incurred to date or any work undertaken in connection with the planning process. The fee basis we have allowed is £1,500 per landowner from whom land is acquired, and £750 per claim for fees incurred by KCC in negotiating it.

5.7 Pre-scheme ground investigations and fees.

Unless otherwise instructed we have not made any allowance for pre-scheme ground investigations or fees.



5.8 Legal costs and tax

We have made no allowance for any legal costs, SDLT, VAT or other taxes incurred unless specifically referred to in this report.

5.9 Tribunal and Court Costs

We have made no allowance for any reference to any tribunal or court proceedings in respect of any matters contained within this report.

5.10 Disposal value

We have made no allowance for the disposal value of any additional land acquired as part of this scheme unless specifically referred to in this report.

5.11 Claims under Pt 1 of the Land Compensation Act 1973

Our report assumes that claims will be received in respect of all eligible properties within the vicinity of the scheme even though the environmental data may indicate that many of these will not be upheld. The acquiring authorities' surveyors fees incurred in dealing with these have been allowed for.

5.12 Site Compounds

We have made no allowance for any site compounds, storage areas or other matters normally negotiated directly between landowners and construction companies unless these areas are included within the scheme proposals.

5.13 <u>Reinstatement of Temporary Areas</u>

We have assumed that temporary areas identified for use during the construction period will be properly reinstated and handed back to the owner or occupier within the projected construction timetable.

5.14 Minerals

We have made no allowance for the value of any minerals removed during the construction of the scheme, unless specifically referred to. Where minerals are taken as part of the works the compensation will be assessed under the Mining Code.

5.15 Land Contamination

Unless specifically referred to we have made no allowance for the effects of any contamination.

5.16 <u>Works Outside the Scheme</u>

We have made no allowance for the effects of any associated works not forming part of this scheme, such as road widening undertaken elsewhere to deal with projected alterations in traffic flows resulting from the scheme, and which may otherwise give rise to compensation claims.



6 Details of the Scheme and Comments on Specific Issues

6.1 The scheme will take small areas of garden from a large number of houses along Loose Road, some from adjoining roads and some landscape and hardstanding from some commercial areas. The houses are a mixture of detached and semi-detached, two storey houses and bungalows, varying in condition and none of any architectural merit. Properties at the southern end of the scheme tend to be of better quality and better located than those at the north and centre.

6.2 Option 1A

Option 1A comprises alterations within the existing carriageway to include a southbound turning lane, removal of existing traffic island and alterations to signals and pedestrian crossing. This option requires no third party land or carriageway widening and will not on its own result in any compensation being paid.

6.3 Option 1B

This part of the scheme is the widening of the Loose Road northbound lane to create a left turn lane, on the south side of Armstrong Road, and a corresponding widening on the north side of the junction. This will require the acquisition of part of the front gardens from 14 houses, totalling 350m2.

- 6.4 These houses are all set 1 2 m above carriageway level, with the front gardens set behind retaining walls. Most have sloping vehicular driveways, some of which are quite steep, particularly on the north side of the junction. Any land take here will reduce the length of the drives and thus increase the slope unless the new carriageway is raised. All these driveways will need to be reconfigured, the retaining walls rebuilt on the new boundary and other features such as steps replaced. Details will need to be agreed on an individual basis. We have assumed all this work will be done as accommodation works and as a scheme cost.
- 6.5 Working areas will be needed to undertake these works and we have allowed for these being used on a temporary basis.
- 6.6 The scheme will reduce what are already quite small front gardens and take the carriageway slightly closer to the houses, which may increase noise levels and thus lead to some further depreciation. In compiling our estimate we have allowed for garden land at residential development values, some loss in value to the houses and some disturbance costs including the value of garden plants.

6.7 <u>Option 2</u>

This element is the widening of the westbound lane of Park Way, on the east side of the Loose Road junction. No land is required but this could in theory give rise to claims for loss in value due to physical factors (primarily noise) under Pt. 1 of the land Compensation Act 1973.

6.8 Our estimate therefore makes no allowance for any land take or temporary use of third party land. We have allowed for some Pt. 1 claims to be processed but no compensation


paid, as described in the Pt. 1 section below.

6.9 The drawings indicate that Option 2 will be combined with either Option A1 or Option 1B, unless Option 3 is chosen.

6.10 <u>Option 3</u>

This option replaces the current junction with a four-way roundabout. The Option drawings indicate a small amount of carriageway widening and the acquisition of two small areas of garden from Nos. 106 and 113 Loose Road. As instructed our estimate is based on this plan rather than the land plan which shows different areas.

- 6.11 The land take area from No. 106 is not specified on the plan but scaling off appears to be around 9m2. We have allowed a further 10m2 as a working area. No. 106 is a fairly substantial semi-detached house and the area needed lies behind a high brick wall. Our estimate assumes a matching wall will be provided to the new boundary and that there is nothing of significant value hidden behind the wall.
- 6.12 No. 113 is a detached house set behind a brick and stone retaining wall with tall conifers and hardwood trees providing a good screen behind it. The scheme will take the corner of the garden, around 25m2, and result in the loss of some of this tree cover, opening up the house to more noise and visual intrusion from the road, at least until any replacement trees become established. There is no driveway affected but the scheme will require alterations to some steps.
- 6.13 <u>Option 4</u>

Option 4 widens the northbound carriageway of Loose Road between Nos. 346 and 188, to create an additional lane, resulting in two instead of one northbound lanes and extending the right hand turning lane. It will require part of the gardens of 16 houses and part of the frontage of a row of shops and the Kwik-Fit tyre depot, totalling 466m2.

- 6.14 The Kwik-Fit site is accessed directly from Loose Road and also via the side road, North View, and the overall layout will not be affected by the scheme. The land take comprises a small strip of the forecourt which in itself will have an insignificant effect on the business. The main issue will be undertaking the work in such a way as access and thus turnover is unaffected.
- 6.15 The adjoining row of shops comprises a hair stylist, general store, aquatics, general store, florist and flooring supplier. They appear to have residential accommodation above. As with Kwik-Fit the scheme takes a strip of surfaced parking/access from the front of the site without materially affecting the remainder, so the issue is also how the works are undertaken. We have allowed a residential/commercial land.
- 6.16 Further south, strips of garden land will be taken from even numbers 200 220 and 340 346. (No. 220 adjoins No. 340 as the numbering changes at this point). These are mainly semi-detached houses with some detached houses and three bungalows. They are set at about the same level as the carriageway so whilst any front walls and fences will need replacing as accommodation works there will be no issues relating to retaining walls or sloping drives. We have allowed for a small working width in addition to the land take



areas.

6.17 <u>Option 5</u>

This option replaces the current signalised Loose Road/Sutton Road/Cranborne Avenue junction with a four-way roundabout. This would require part of the front gardens of 200 - 206 on the west side of Loose Road and 245 and 247 on the east side of Loose Road, and a small corner from the frontage of No. 1 Sutton Road. The land take areas total 187 m2.

- 6.18 On the west, northbound side, land will be taken from nos. 202/204 and 206/208 which are two pairs of semi-detached houses, at least one of which having had a loft conversion. They are at carriageway level and set behind brick and stone walls, with moderate front gardens.
- 6.19 The scheme will take small areas of the gardens of 200 and 206 and larger parts of the two middle houses. The carriageway will be brought closer to all of them, particularly the two middle ones. They will also be affected by vehicle lights, mainly from northbound traffic from Sutton Road whose lights will shine directly at these four houses as they navigate the roundabout. This could be mitigated by providing higher level replacement walls or adding solid fencing above.
- 6.20 On the eastern side, land will be needed from No. 1 Sutton Road, a small bungalow. The Option plan shows a 'replacement retaining wall' although the garden is pavement level and currently bounded by a timber fence and open metal fencing. The scheme will take 10m of land and bring the carriageway closer to the building. The house will suffer from increased vehicle lighting as southbound vehicles go around the roundabout. There is no vehicular access serving this property.
- 6.21 Also on the east side is 247 Loose Road, on the north side of Cranborne Avenue. This is another bungalow which will be closer to the new carriageway and lose around 25m2 of land. It is served by a vehicular access at the far end of the garden, off Cranborne Avenue, which will not be affected. The house is already affected by headlights from vehicles facing it whilst waiting at the junction opposite and the scheme would not appear to increase this aspect.
- 6.22 <u>Option 6</u>

This option is an enlarged version of Option 4. It has the same start point at the northern end, outside the Kwik-Fit tyre depot but extends much further south, to 432 Loose Road, on the south side of the Cripple Street junction. The carriageway is widened, to include the Option 4 details and, further south, to add a centre hatched area with islands to provide intermittent turning refuges for traffic entering side roads.

- 6.23 962m2 of garden areas will be required from 33 houses on the western side. A total of 970m2 of land will be needed on the eastern side, mainly landscaping frontage to shops, flats and the fire station but including some residential garden.
- 6.24 For compensation purposes, the land take on the western side from the Kwik-Fit depot down to no. 340 Loose Road is the same or very similar to that for Option 4, and same comments apply. A greater amount of land will be needed from nos. 342 to 346, and land



will also be needed from nos. 348 to 372. These are also a mixture of detached and semi-detached houses but this latter section generally comprises much substantial and higher value properties set further back from the road compared with those further north.

- 6.25 Starting with the north end of the land requirements on the eastern side, the first property to be affected is no. 355 Loose Road. This is a semi-detached house set back about 7m from the back of the pavement, and at a higher level. The land take is very small and could be avoided with a very minor design change. If land is taken a replacement retaining wall will be needed due to the difference in levels.
- 6.26 Working south, the next section takes some land from the rear garden of 1, 2, 3 and 4 Wheatsheaf Close. These are insignificant areas but some tree screening will be lost.
- 6.27 Much of the next section, between Wheatsheaf Close and The Farrows, is landscaping and part of the access to the fire station and fire service training section. Given the relationship between KCC and the fire authority we have made no allowance for any compensation payable for this area. The remainder is open grass landscaping serving The Farrows, which are two blocks of flats. The loss of a small strip here will have no material significance to the flats although you should expect to receive Pt.1 claims from the flat leaseholders. This is referred to in the Pt. 1 section below.
- 6.28 The final, southernmost section of this option takes a strip of open landscaping to the front of a new Sainsbury's (shown on the Option plan as an ambulance station, which has been demolished) and the Boughton Parade row of shops. These comprise a pharmacy, takeaway pizza and Chinese, hair stylist, estate agent and newsagent. None of these businesses will be affected by the scheme, and the landscaping is in a different ownership anyway.

6.29 Claims under Part 1 of the land Compensation Act 1973

The are several national agents specialising in this type of claim and it is not uncommon to receive large numbers of claims, covering a wide area, even if simple logic or environmental modelling suggests no depreciation will have occurred. All these claims need to be processed and professionally defended, which will incur a cost.

- 6.30 It is difficult to predict the number of claims which will be received as, unlike with land taken, there is no clear boundary to where these may be submitted from. Our estimate assumes claims will be received in respect of all the houses opposite or close to the altered sections of highway and from which no land has been taken, and that these will cost \pounds 100 in fees per claim to reject. However, if a large number of easily defendable claims are received KCC may be able to negotiate a lower price or may choose to deal with these in-house.
- 6.31 We have not been provided with any environmental data for this scheme and have assumed traffic volumes and speed limits are unaltered, and that any additional or replacement street lighting is of a modern design with limited light-spill and thus no additional physical factors able to cause any depreciation. Thus all the claims received will be rejected and no compensation paid.



6.32 Looking at the individual options:

Option 1A does not involve any highway widening, and if the height is changed as part of the scheme this will not give rise to any greater physical factors. We have assumed no claims in respect of this element.

Option 1B does widen the Loose Road. We have allowed for 13 claims from houses opposite.

Option 2 widens Park Way. We have allowed for eight claims.

Option 3 alters the carriageway to create the roundabout. We have allowed eight claims.

Option 4 widens the western side of the carriageway. We have allowed for 30 claims.

Option 5 alters the carriageway to create the roundabout. We have allowed for 20 claims.

Option 6 is the most comprehensive, with a long section of widened carriageway. We have allowed for 60 claims from houses and a further 30 claims from The Farrows flats.

6.33 Our overall view is that the agents will be unable to demonstrate any loss in value due to the physical factors and that all claims will be rejected.

7 Comments on Compensation Estimate

- 7.1 Due to the nature and extent of the areas of land required for the various options comprising this scheme, and the limited information available, the compensation estimate should be considered with some caution. This applies in particular to the loss in value to properties from which land is taken (injurious affection) for which we have applied a 1% reduction in value to most properties losing some frontage, tailing off to .25% at the ends, and some larger amounts to a few properties more seriously affected.
- 7.2 Similar comments apply to Pt.1 losses where no land is taken. It is possible that an environmental assessment will show some increases in noise, but experience indicates this is unlikely to be at a level likely to cause any losses.
- 7.3 We have made no allowance for any claimable loss of trade by the commercial properties on the assumption that the works will be undertaken in such a way that customer access will be made available at all times during normal trading hours.



Appendix One Compensation Estimates

Option 1B	
Land Acquisition	£87,500
Injurious Affection	£32,900
Disturbance	£7,000
Basic Loss	£6,563
Occupier's Loss	£4,500
Claimants Agents' fees	£21,000
KCC Agent fees	£10,500
Pt.1 compensation	£0
Agents' fees on Pt. 1 claims	£0
KCC fees on Pt. 1 claims	£1,300
Total	£171,263

Option 3	
Land Acquisition	£8,500
Injurious Affection	£23,800
Disturbance	£1,000
Basic Loss	£638
Occupier's Loss	£600
Claimants Agents' fees	£3,000
KCC Agent fees	£1,500
Pt.1 compensation	£0
Agents' fees on Pt. 1 claims	£0
KCC fees on Pt. 1 claims	£800
Total	£39,838

Option 4	
Land Acquisition	£116,500
Injurious Affection	£47,238
Disturbance	£11,000
Basic Loss	£8,738
Occupier's Loss	£6,600
Claimants Agents' fees	£33,500
KCC Agent fees	£17,000
Pt.1 compensation	£0
Agents' fees on Pt. 1 claims	£0
KCC fees on Pt. 1 claims	£3,000
Total	£243,576



Option 5	
Land Acquisition	£8,500
Injurious Affection	£68,350
Disturbance	£3,000
Basic Loss	£3,506
Occupier's Loss	£1,800
Claimants Agents' fees	£9,000
KCC Agent fees	£4,500
Pt.1 compensation	£0
Agents' fees on Pt. 1 claims	£0
KCC fees on Pt. 1 claims	£800
Total	£99,456

Option 6	
Land Acquisition	£116,500
Injurious Affection	£47,238
Disturbance	£11,000
Basic Loss	£8,738
Occupier's Loss	£6,600
Claimants Agents' fees	£33,500
KCC Agent fees	£17,000
Pt.1 compensation	£0
Agents' fees on Pt. 1 claims	£0
KCC fees on Pt. 1 claims	£6,000
Total	£246,576



Appendix Two

Photographs





Houses on NE side of Armstrong Road junction, where alterations to driveways and parking areas will be needed for Option 1B.



106 Loose Road, showing high garden wall and corner due to be taken by Option 3





113 Loose Road, showing garden wall and trees which would be taken by Option 3



Kwik-Fit site at 188 Loose Road and part of adjoining shops.





200-204 Loose Road would lose frontage to roundabout Option 5



428-432 would lose part of their already small front gardens to Option 6





The southern part of Option 6 affects a mixture of house types and sizes, typically larger than those at the northern end of the scheme.

	OPTION 1A Armstrong Rd j/w Park Way	C Ar j/v	DPTION 1B mstrong Rd w Park Way	Ar j/	OPTION 2 rmstrong Rd w Park Way	OPTION 3 (R/bout) Armstrong Rd j/w Park Way		OPTION 4 (N/bound widening) The Wheatsheaf		OPTION 5 (R/bout) The Wheatsheaf		OPTION 6 (Widening N/bound) Cripple St - Armstrong Rd		Sheal's Crescent (Road markings	
DESCRIPTION	AMOUNT(£)		AMOUNT(£)		AMOUNT(£)	1	AMOUNT(£)	AMOUNT(£)		AMOUNT(£)		AMOUNT(£)			AMOUNT(£)
Preliminaries	£ 49,500	£	102,000	£	18,600	£	165,000	£	77,000	£	100,000	£	310,000	£	2,600
Site Clearance	£ 2,600	£	4,000	£	1,600	£	9,000	£	3,500	£	11,000	£	24,000	£	-
Fencing	£ -	£	-	£	-	£	-	£	-	£	-	£	-	£	-
Safety Fencing	£ 3,680	£	3,700	£	1,600	£	-	£	800	£	-	£	7,100	£	-
Drainage	£ 6,550	£	16,500	£	2,400	£	72,000	£	12,000	£	63,000	£	60,000	£	-
Earthworks - General	£ 2,100	£	24,500	£	4,500	£	50,000	£	30,000	£	24,500	£	131,000	£	-
Pavements	£ 64,500	£	84,000	£	30,000	£	190,000	£	106,000	£	127,000	£	320,000	£	-
Kerbs Footways & Paved Areas	£ 3,500	£	16,000	£	5,500	£	50,000	£	20,000	£	33,000	£	95,000	£	-
Traffic signs	£ 2,600	£	4,600	£	1,500	£	15,000	£	800	£	9,600	£	27,000	£	-
Road Markings	£ 2,750	£	2,750	£	1,800	£	3,000	£	1,000	£	5,000	£	7,250	£	10,500
Lighting	£-	£	3,500	£	-	£	8,400	£	2,800	£	7,000	£	13,300	£	-
Electrical Work	£ -	£	5,000	£	-	£	13,200	£	4,000	£	11,200	£	19,000	£	-
Signals	£ 76,600	£	78,850	£	14,500	£	-	£	14,800	£	-	£	160,000	£	-
Landscaping & Ecology	£ -	£	-	£	-	£	80	£	-	£	150	£	-	£	-
Accommodation Works	£ -	£	96,250	£	-	£	145,000	£	62,700	£	35,000	£	174,000	£	-
Statutory Undertakers - Diversions	£ 10,000	£	75,000	£	50,000	£	300,000	£	750,000	£	1,500,000	£	1,500,000	£	-
Contingencies	£ 43,000	£	88,000	£	16,500	£	142,500	£	67,000	£	85,000	£	269,000	£	3,300
ESTIMATED CONSTRUCTION TOTAL	£ 267,380	£	604,650	£	148,500	£	1,163,180	£	1,152,400	£	2,011,450	£	3,116,650	£	16,400

Table 3 - Construction Costs

	OPTION 1A Armstrong Rd j/w Park Way	OPTION 1B Armstrong Rd j/w Park Way	OPTION 2 Armstrong Rd j/w Park Way	OPTION 3 (R/bout) Armstrong Rd j/w Park Way	OPTION 4 (N/bound widening) The Wheatsheaf	OPTION 5 (R/bout) The Wheatsheaf	OPTION 6 (Widening N/bound) Cripple St - Armstrong Rd	Sheal's Crescent (Road markings)
DESCRIPTION	AMOUNT(£)	AMOUNT(£)	AMOUNT(£)	AMOUNT(£)	AMOUNT(£)	AMOUNT(£)	AMOUNT(£)	AMOUNT(£)
Land Aquisition	£-	£ 87,500	£ -	£ 8,500	£ 116,500	£ 8,500	£ 116,500	£ -
Injurious Affection	£-	£ 32,900	£ -	£ 23,800	£ 47,238	£ 68,350	£ 47,238	£ -
Disturbance	£ -	£ 7,000	£ -	£ 1,000	£ 11,000	£ 3,000	£ 11,000	£ -
Basic Lost	£-	£ 6,563	£ -	£ 638	£ 8,738	£ 3,506	£ 8,738	£ -
Occupier's Loss	£-	£ 4,500	£ -	£ 600	£ 6,600	£ 1,800	£ 6,600	£ -
Claimant's Agents fees	£ -	£ 21,000	£ -	£ 3,000	£ 33,500	£ 9,000	£ 33,500	£ -
KCC Agents Fees	£-	£ 10,500	£ -	£ 1,500	£ 17,000	£ 4,500	£ 17,000	£ -
Pt.1 Compensation	£-	£ -	£ -	£ -	£ -	£ -	£ -	£ -
Agents fees on Pt.1 Claims	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -
KCC fees on Pt.1 Claims	£-	£ 1,300	£ -	£ 800	£ 3,000	£ 800	£ 6,000	£ -
ESTIMATED LAND COSTS	£ -	£ 171.263	£ -	£ 39.838	£ 243.576	£ 99.456	£ 246.576	£ -

Table 4 - Property Costs

	OPTION 1A Armstrong Rd j/w Park Way	OPTION 1B Armstrong Rd j/w Park Way	OPTION 2 Armstrong Rd j/w Park Way	OPTION 3 (R/bout) Armstrong Rd j/w Park Way	OPTION 4 (N/bound widening) The Wheatsheaf	OPTION 5 (R/bout) The Wheatsheaf	OPTION 6 (Widening N/bound) Cripple St - Armstrong Rd	Sheal's Crescent (Road markings)
DESCRIPTION	AMOUNT(£)	AMOUNT(£)	AMOUNT(£)	AMOUNT(£)	AMOUNT(£)	AMOUNT(£)	AMOUNT(£)	AMOUNT(£)
Estimated Construction Costs	267,380	604,650	148,500	1,163,180	1,152,400	2,011,450	3,116,650	16,400
Outline Design Costs	35,000	40,000	50,000	100,000	30,000	120,000	150,000	-
Planning and Consultation Costs	5,000	6,000	10,000	20,000	10,000	20,000	30,000	-
Detailed Design fees	70,000	70,000	70,000	100,000	50,000	100,000	120,000	5,000
Supervision Fees	25,000	25,000	30,000	30,000	10,000	30,000	30,000	500
Surveys and Studies	-	-	-	-	-	-	10,000	-
Ecology Studies	-	-	-	-	-	-	-	-
Advance Works	5,000	5,000	5,000	10,000	8,000	20,000	35,000	500
Accommodation Works	-	-	-	-	-	-	-	-
KCC fees on Pt.1 Claims	-	-	-	-	-	-	-	-
ESTIMATED SUB TOTAL COSTS	407,380	750,650	313,500	1,423,180	1,260,400	2,301,450	3,491,650	22,400
Inflation to 2020 3%	48,886	90,078	37,620	170,782	151,248	276,174	418,998	2,688
GRAND TOTAL	456 266	840 728	351 120	1 503 062	1 411 648	2 577 624	3 910 648	25.088

















OPTION 1B

Widening on west side to enable two northbound through lanes with a right turn lane into Park Way and right turn for traffic travelling Southbound into Armstrong Road in addition to two lanes for through traffic.

Refer to Drg.No.4300504/000/03.

OPTION 2

Widening of Park Way on the north side to enable through lane and left turn lane at junction. No right turn. Refer to Drg.No.4300504/000/03.

OPTION 5

Roundabout at the Wheatsheaf Junction. Refer to Drg.No.4300504/000/05.

OPTION 6

Widening to enable two lanes northbound on A229 Loose Road from Boughton Lane to the Wheatsheaf Junction. Refer to Drg.No.4300504/000/06.

0	50	10(L)	15	50	200 m
SCALE	1 : 2000					

Rev	Revision details	Chkd	Appd	Date			
Drawı	Drawn: TWM		Preliminary				
Desig	Design: .		For comment				
Chkd:	: MJM	For	For tender				
Appd:	: AMF	For	For construction				
Date:	23.09.2016	As	As constructed				
		Oth	er				





Project Name Maidstone Integrated Transport Phase 2

Drawing Title Composite Scheme Options -Option 1B, Option 2, Option 5 & Option 6

Dimensions : m Original Drawing Size: A1 Scale : 1:2000 Copyright © Amey

Drawing No 4300504/000/07

Client

Rev 0

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Surface Water Sewer

Foul Water Sewer

Southern Gas Networks - Low Pressure Main

Southern Gas Networks - Medium Pressure Main

UK Power Networks Service Underground Cable

UK Power Networks High Voltage Underground Cable

UK Power Networks Low Voltage Underground Cable

Date

Virgin Media Cable .

Rev Revision details	Chkd Appd Dat
Drawn: TMW	Preliminary
Design: .	For comment
Chkd: MJM	For tender
Appd: AMF	For construction
Date: 23.09.2016	As constructed
	Other

Client

Project Name

7,



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Maidstone Integrated Transport, Phase 2

A229 Loose Road / Park Way/ Armstrong Road Roundabout - Option 3 Statutory Undertakers Original Drg Size : A3 Dimensions :

Scale : 1:500 Copyright C Amey

Drawing No 4300504/000/10 Rev 0





NOTE

The drawing is supplemented by actual survey information at the junctions of Loose Road with Armstrong Road, Sutton Road and Cripple Street. Where street ironwork can be positively identified with ownership, the interpretation of the records is suitably adjusted. This is limited to BT Openreach (labelled BT) and Virgin (labelled CATV).

For other undertakers, chambers are plotted as close as possible to that shown on the supplied records.

Foul and surface water sewer positions taken from hard copy (paper

This drawing is a composite indicating the general extent and density of underground services in areas of interest. It is not to be used as a definitive record and NRSWA protocol must be followed prior to any works commencing on site.

CUTLINEZ

Client



50 m SCALE 1:500

Rev	Revision details		Chkd	Appd	Date			
Drawn	Drawn: TMW		Preliminary					
Desigr	ı: .		For comment					
Chkd:	MJM		For tender					
Appd:	AMF		For construction					
Date:	23.09.2016		As constructed					
			Oth	ner				



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Project Name Maidstone Integrated Transport Phase 2

Drawing Title A229 Loose Road Option 6

with Statutory Undertakers Plant

AD	Original Drawing Size : A1	Dimensions : m	
	Scale : 1:500	Copyright © Amey	
	Drawing No		Rev
	4300504/000/12		0