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## Wateringbury Crossroads

To: **Tonbridge & Malling JTB, 14<sup>th</sup> November, 2019**

Main Portfolio Area:

By: Tim Read – Head of Transportation, KCC

Classification: **For Information**

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### Summary:

Kent County Council (KCC) developed a scheme to reduce congestion at the crossroads in Wateringbury, A26 Tonbridge Road / Bow Road / Red Hill. The junction is used by vehicles aiming to travel between Maidstone, Tonbridge, Nettlestead and East Malling and a number of pedestrians accessing the local amenities. However, the anticipated costs for this scheme are considerably higher than the available funding. There are few other options that can be implemented at the crossroads.

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### 1.0 Introduction and Background

Funding of £300,000 has been allocated from the South East Local Enterprise Partnership (SELEP) to improve the crossroads in Wateringbury to reduce Congestion.

Wateringbury Crossroads is a well-used traffic route and suffers from congestion which leads to pollution. There is limited road space available to make adjustments, but there is some potential to improve capacity at the junction which should see traffic flow more smoothly. The scheme aimed to maximise the potential of the available road-space while making improvements for pedestrians where possible.

#### **The scheme proposed included:**

- A new dedicated right turn lane on the Tonbridge Road heading West towards the junction.
- A new dedicated left turn lane on the Bow Road heading North towards the junction. This would result in a narrower pavement.
- Using 0.5m of Parish land to widen the junction, allowing a vehicle to turn right into Bow Road without impeding the traffic behind.
- Pedestrian phases added to the two remaining arms of the crossing
- Improved traffic signal technology allowing 'reactive' management of the lights to optimise traffic flows.
- Re-surfacing of carriageway and footways.
- May result in the loss of three trees on the Tonbridge Road to accommodate widening. Can be mitigated with replacement tree planting.

### 2.0 The expected benefits

The traffic modelling for the scheme shows that there would be a 50% increase in capacity. However, this would still leave the junction at -20% practical reserve capacity in the AM peak and -14% in the PM peak. Therefore, after any changes are made the junction it will be operating as efficiently as possible but is likely queues will remain at peak times – albeit shorter queues than the current situation.

The proposed scheme offers the best improvement in capacity possible at the junction which Officers have been able to identify within the land available. This is due to the close proximity of the buildings which means additional engineering measures are not currently feasible.

### **3.0 Programme for the works**

It is expected the works would take up to **30 weeks** to complete with considerable disruption to the local road network. This includes up to 15 weeks to divert the utilities.

### **4.0 The cost**

Initial estimates from the utility companies came in at a prohibitively high price. Further development work with the utility companies and trial holes were undertaken to give greater clarity of the expected cost to deliver the scheme. Although the estimates were reduced considerably; the utility diversion costs alone are expected to be around £250,000

Total cost to deliver the scheme including contingency = **£868,000**

To date a total of £56,000 has been spent on design development. To carry out the scheme this leaves a funding shortfall of £624,000 to deliver the scheme. There is no funding stream currently identified to meet that shortfall.

### **5.0 The alternative option**

KCC have explored the potential to upgrade the traffic signals at the crossroads at a lower cost to a full scheme. This would include upgrading controlled pedestrian crossings from far-sided pelican to near-sided puffin type and to implement Microprocessor Optimised Vehicle Actuation (MOVA) control strategy.

It is not possible to model the benefit of installing MOVA. It is generally accepted that MOVA control can improve the practical reserve capacity at a junction by between 5 and 10%, however as the Bow Road approach is uphill KCC would need to increase the detector loop extension times (this is the time it takes for one vehicle to pass over a detector loop before being picked up by the next associated loop) which would partially negate any potential improvements in capacity.

Additionally, whilst puffin crossings can shorten pedestrian crossing times, with their associated on-crossing detectors they can also increase them as well, as they will extend to a set maximum time if there are a large number of pedestrians crossing or if these pedestrians are slow moving.

MOVA has two modes of operation depending on the road conditions – these are *congested* and *uncongested* (free flowing). In free flowing mode the aim of MOVA is to disperse any queues which have built up on a red signal, it then assesses the traffic flows approaching on each arm of the junction and calculates if extending the current green would be beneficial. If it is beneficial then the current green time is extended and the calculation repeated. This continues until there is no benefit in extending the green and the signals move onto the next stage.

When the network is congested MOVA operates in capacity maximising mode. This assesses which approaches are overloaded and how efficiently the green time is being used and seeks to determine a set of signal timings which will maximise the throughput of the junction under the current conditions.

The cost is anticipated to be: **£200,000**

It is expected the works would take up to **8 weeks** to complete with considerable disruption to the local road network.

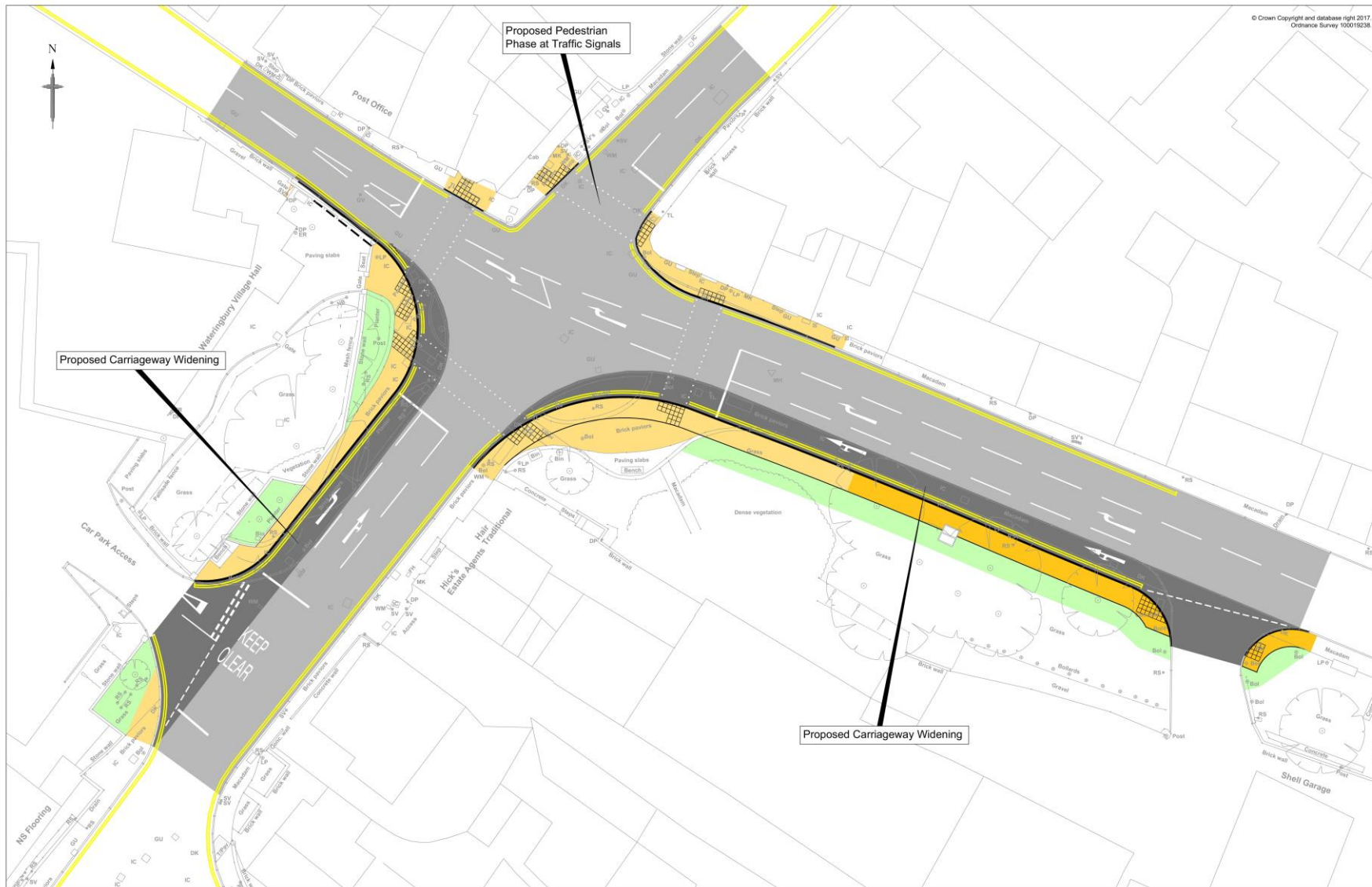
### 6.0 Next Steps

The full scheme has a considerable funding shortfall so cannot be progressed at the present time.

The traffic signal upgrade scheme does not provide value for money to progress this scheme at with limited expected benefits.

Therefore, KCC intends to engage with the Local Parish community and Tonbridge & Malling Borough Council to determine if any suitable interventions can be designed for the Wateringbury Crossroads within the constraints of the Congestion Management funding criteria. It should be noted that if a significantly different scheme is proposed then this will require a change request to SELEP for approval – with no guarantee of a successful outcome.

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**A26 TONBRIDGE ROAD/BOW ROAD/RED HILL, WATERINGBURY  
PROPOSED MODIFICATION TO EXISTING JUNCTION - OPTION A**