

**Decision Session – Executive Member
for Transport & Planning**

17 August 2017

Report of the Corporate Director of Economy & Place
Portfolio of the Executive Member for Transport & Planning

A19 Pinch Point Scheme Phase 2 – Crockey Hill

Summary

1. This report presents a design proposal for the second phase of the Pinch Point Scheme concerning the A19 south transport corridor and asks for approval from the Executive Member to implement the proposed engineering works situated at the junction of the A19 and Wheldrake Lane, at Crockey Hill.

Recommendations

2. The Executive Member is asked to:
 - i. Note the results of the public consultation relating to Phase 2 of the A19 Pinch Point Scheme, as shown at **Annex A**;
 - ii. Approve the proposed design for Phase 2 works at Crockey Hill, as shown at **Annex B**, and direct Officers to proceed to implementation.

Reason: The recommended design offers the best deliverable solution to increasing the southbound vehicular capacity of the A19 through Crockey Hill, whilst relieving some of the exit-blocking currently experienced at the A64/A19 Fulford Interchange.

Background

3. City of York Council (CYC) were awarded £1.93m from the DfT's Pinch Point fund to address congestion in the A64/A19 Fulford Interchange area in 2013. An additional £500k of match funding was added to the project by the council to bring the total budget to £2.43m. The principal

aim of the DfT's pinch point fund was to support growth by tackling congestion through capacity improvements. It should be noted that CYC do not manage the traffic signals at this location. These were introduced by Highways England primarily to reduce the risk of queuing traffic on the off slip roads extending onto the dual carriageway.

4. Phase 1 of the project to reduce northbound queuing approaching and through the A64/A19 Fulford Interchange by increasing the number of inbound lanes approaching the roundabout was completed in the summer of 2015. This has resulted in reduced journey times accessing the A64 and A19 into York from the south. The flood defence elements of the Pinch Point project, to reduce the risk of high river levels affecting the A19, are currently under construction as part of the Germany Beck housing development scheme.
5. However for outbound traffic leaving York the problem of traffic queues, particularly during the evening peak, remains. Thus Phase 2 of the Pinch Point Scheme now seeks to improve capacity and reduce congestion southbound on the A19 and through the A64/A19 Fulford Interchange.
6. Considerable work has been undertaken to understand the root-cause of this congestion. During this exercise it became clear that the most significant issue was that outbound traffic was prevented from entering the circulatory carriageway of Fulford Interchange by vehicles already queuing within the interchange. This appeared to be the *principal symptom*, with drivers struggling to find sufficient gaps within traffic already queuing on the interchange at busy times.
7. However, the *principal cause* of these queues was exit-blocking at the southerly A19 exit towards Selby, which reduced the effectiveness of the roundabout priority, especially impacting on traffic from York. And this issue in turn could be attributed to traffic being capacity-constrained at the signalised Crockey Hill junction, causing a queue to propagate back onto Fulford Interchange.
8. Recognising the effect of the Crockey Hill junction, CYC amended the traffic signal timings at Crockey Hill to help to reduce PM peak congestion and thereby maximise southbound A19 throughput (in December 2015). This improved the operation of Fulford Interchange to some extent and reduced the length and duration of the southbound queue leaving York. However, the same issues still remain owing to an underlying capacity constraint caused by the junction layout.

9. Over 20,000 vehicles use the A19 at Crockey Hill every day. The junction at times operates at or above its capacity (of 1,200 vehicles per hour in one direction) and as such there are often queues which can cause sections of the A19 and its junctions to block. The network here is generally operating over capacity during the PM peak, with no room to accommodate future growth. It is appreciated that Fulford Interchange can also experience some operational issues during the AM peak, inter-peak and weekend-peak also. However, the congestion that occurs during the PM peak (between 16.00 and 18.00) is a daily occurrence and is considered to be the most significant issue at the junction.
10. The junction at Crockey Hill was signalised in October 2006 to address a significant accident cluster site. A roundabout intersection was considered at the time but ruled out due to the excessive amount of land-take required to accommodate a compliant layout.

Phase 2 methodology

11. AECOM were commissioned to undertake work to identify what intervention would provide greatest benefit to the operation of Fulford Interchange and southbound A19 traffic. Robust data was collected, i.e. traffic flows; signal timings; saturation flow; and queuing. LinSig modelling was initially used, following by a more detailed microsimulation VISSIM model. A number of potential interventions were modelled and which considered specific objectives – i.e. impact on A64 off-slip operation; A19 southbound journey times; and resilience against 10% traffic growth. These options were:
 - a. Junction and capacity improvements at Crockey Hill;
 - b. New right-turn facility ('ghost island') provision at A19 / Howden Lane junction;
 - c. Full signalisation of the A19 Selby Road as it enters Fulford Interchange;
 - d. Additional all-red phase introduced at Fulford Interchange;
 - e. Fulford Interchange two lane A19 exit southbound, to subsequently merge 150m south of the interchange;
 - f. Two lanes introduced southbound all the way from Fulford Interchange to Crockey Hill.
12. It was found that the only interventions which met all of the objectives were Options (a) and (f) which improved journey times significantly without impacting on the A64 slips. Option (b) demonstrated a very

small improvement also. The other proposals had varying degrees of negatively impacting on journey times and the operation of the A64 off-slips, and were subsequently dropped. Although Option (f) – dualling between Fulford Interchange and Crockey Hill – was the most successful at reducing congestion, this would be a considerably larger and prohibitively expensive scheme, significantly beyond the available budget. As such, the recommendation was to focus on Option (a) – capacity and resilience improvements at Crockey Hill.

Phase 2 proposed scheme

13. To improve southbound journey times and reduce the potential for queues to propagate back to Fulford Interchange blocking the roundabout exit, additional capacity is required at the junction of the A19 with Wheldrake Lane, at Crockey Hill. A proposed layout design has now been developed and which is shown at **Annex B**.
14. In summary, this proposed scheme comprises carriageway widening to provide an additional southbound lane on approach to, and through the junction. The two lanes will subsequently merge back into a single lane south of Wheldrake Lane. It is proposed that on the southbound approach to the junction that lane 1 will be left-turn and ahead; with lane 2 being ahead only. Northbound lane(s) remain materially unaltered; however the right-turn into Wheldrake Lane will now be signalled separately to address safety concerns. All works will be within Highway boundaries, although some utility diversions are required, with footways realigned.

Phase 2 predicted impact upon traffic

15. Modelling and microsimulation of the above proposed scheme has demonstrated the following anticipated benefits, assuming 10% of southbound traffic now use the additional lane:

Option	Degree of Saturation	Practical Reserve Capacity	Mean Max Queue (PCUs)
Existing	100.6%	-11.7	62
Existing plus additional right-turn phase into Wheldrake Lane	108.7%	-20.8	117
Proposed scheme	84.3%	+6.8	23

Option	Time	Average Delay	Journey Time*	Average Delay	Journey Time*
		BASE DEMAND		BASE + 10% growth	
Existing	16.00-17.00	52 sec	03 m 05 s	128 sec	06 m 08 s
	17.00-18.00	142 sec	06 m 42 s	212 sec	08 m 25 s
Proposed scheme	16.00-17.00	33 sec (-19 sec)	02 m 09 s (-00 m 56 s)	39 sec (-89 sec)	02 m 15 s (-03 m 53 s)
	17.00-18.00	32 sec (-110 sec)	02 m 10 s (-04 m 32 s)	39 sec (-173 sec)	02 m 20 s (-06 m 05 s)

* Between A19(s) stop line from York at Fulford Interchange, to Crockey Hill

16. The outcomes of the modelling are highlighted below:

- Capacity increased, improving junction throughput and resilience.
- Mean maximum queue lengths (southbound) 63% shorter, reducing likelihood of queues blocking back to and through Fulford Interchange.
- For current traffic conditions, journey times reduced by 30% between 4pm and 5pm; and 68% between 5pm and 6pm.
- For future forecasted traffic (*growth of 10%*), journey times reduced by 63% between 4pm and 5pm; and 72% between 5pm and 6pm.
- For current traffic conditions, average additional delay reduced by 37% between 4pm and 5pm; and 77% between 5pm and 6pm.
- For future forecasted traffic (*growth of 10%*), average additional delay reduced by 70% between 4pm and 5pm; and 82% between 5pm and 6pm.
- Due to now having spare capacity, average hourly delay becomes constant and reliable, without the huge ranges in delay experienced now at different times of the day. This provides a level of future-proofing for this corridor and gives it the opportunity to absorb occasional increases in traffic (i.e. unusual events / nearby road-closures (such as flooding on Naburn Lane) etc).

Ecology

17. Recognising that it was likely that some loss of trees and thus habitat would be required within the western verge for proposed carriageway widening, an external ecological specialist was commissioned to undertake an Extended Phase 1 Habitat Survey at Crockey Hill, in addition to an Arboricultural Assessment Report (to British Standard 5837:2012).

18. No protected species were discovered on site. However with the potential for bat roosts, it was recommended that 6 mature oak trees (towards the north of the site) which were deemed to have significant value as habitat were either retained if possible, or else a later activity survey be undertaken during the summer months, and if roosts were discovered a license to fell these trees would be required from Natural England. Other trees within the western verge were self-establishing sycamores of little value.
19. Both Japanese Knotweed and Himalayan Balsam were recorded on site. It was recommended that a specialist contractor be employed to remove these off site prior to construction of any scheme.
20. An amphibian method statement has been produced to reduce potential impacts of any species using nearby water bodies for breeding, particularly the common toad.
21. No further bird specific surveys are necessary. As standard however, all trees and shrub removal should be undertaken outside of bird nesting season (i.e. March-July).
22. Following the receipt of the report the designers reviewed the draft layout to reduce the impact on vegetation in the area. Specifically relating to the 6 mature oak trees, the design team revisited the proposed arrangement and redesigned the alignment to successfully avoid impacting on the 6 trees in question. It is recognised that the loss of many of the remaining trees (sycamores) in the western verge will lead to a short-term reduction in the *treescape* of this area, thus we have commissioned the ecological specialist to recommend a plan for compensatory planting post-scheme-construction.

Utilities

23. A number of service diversions are required to facilitate construction of the proposed scheme, with associated costs shown below:
 - British Telecom – £16k
 - Northern Gas Networks – £75k
 - NPG – £10k

Cost

24. The estimated cost for phase 2 works is £1,079k. As stated above, this includes £101k of required service diversions. The available budget for the A19 pinch point scheme remaining within CYC's approved Transport Capital Programme is £1,084k.
25. It should be noted at this time that the estimated cost illustrated above includes an indicative £60k for full carriageway reconstruction of the middle of the junction. However, there is a risk that this particular cost could rise, potentially to as much as £120k, depending on the emerging condition of the existing carriageway and its sub-base. This can be accommodated within the £90k contingency element of the cost estimate but would reduce the funding available for other unforeseen costs.

Road Safety Audit

26. As standard, a stage 1 Road Safety Audit has been undertaken on the proposed design. A redacted copy, including designer's response, is attached at **Annex C**. Subject to approval, the proposed design will subsequently be subject to a stage 2 Road Safety Audit later in 2017 – and before construction on the scheme proceeds.

Optional new path

27. A number of responses to the public consultation (outlined later in this report) and a response from the Ward Councillor requested a new pedestrian and cycle facility, continuing the path in the western verge of the A19 as far north as the veterinary practice, farm shop / cafe, approximately 300 metres to the north of the junction. The current path currently terminates just south of the junction where it crosses the road to the eastern verge. It is argued that a new extended facility would further promote walking and cycling, avoiding the need to negotiate the busy junction. However the numbers anticipated to use a facility would be very low.
28. Officers have investigated this potential addition to the scheme and have judged it feasible, but with an obvious additional cost – approximately £65k. A drawing of this option can be seen at **Annex D**. Officers have judged that this option would exceed the available budget for this scheme. If the Executive Member deems that this is a desirable addition to the scheme, the budget will need to be increased.

A64 / A19 Fulford Interchange

29. Recognising the fact that some of the issues at the A64/A19 Fulford Interchange are not entirely attributable to Crockey Hill, but to the insufficient gaps in traffic which the Highways England (HE) controlled slip-road signals allow, CYC have been working with HE in an attempt to improve this. This situation is especially noticeable during off-peak and weekends where there are no southbound A19 queues causing exit-blocking.
30. There are now proposals for HE to install above ground detection (i.e. cameras) on the A64 off slip roads, which would potentially allow an adjustable inter-green (all red) period during less busy times, allowing more traffic to enter the interchange from Selby Road. This is being progressed directly with HE.

Consultation

Public Consultation

31. Public consultation was undertaken during May 2017 with 127 individual responses received from members of the public and users of the existing A19 corridor. Specific points raised have been collated into common themes and can be seen at **Annex A** along with an Officers response to each. However, these can be summarised into the following most popular points which received 10 or more comments each:

Comment	Response
Concerns over merge arrangement / merges don't work and/or make things less safe.	Merge arrangements are widely used throughout the UK and specifically in York have been successfully used on the A1237 Outer Ring Road. The additional lane southbound through the junction is required for the desired capacity improvement and due to available highway width and position of services can not continue further south than the current proposed design.
It is the existing signals at Crockey Hill which are the main problem – i.e. Wheldrake Lane is	The existing traffic signals operate under a MOVA system whereby the A19 is prioritised over Wheldrake Lane (WL). However once a certain queue length develops at WL, that phase is triggered. It is recognised that the induction

<p>triggered far too readily, stopping the A19 flow.</p>	<p>loops on WL can on occasion be overrun from vehicles turning from A19, triggering WL unnecessarily. The new signals will be upgraded, utilising above ground detection to correct this, in addition to making them more reactive and adaptive to peak-time traffic conditions.</p>
<p>Replace signals at Crockey Hill with a roundabout.</p>	<p>The size and geometry (i.e. entry and exit flares) of a potential roundabout means that it would be far too large than the available adopted highway would allow. Significant land purchase would also be required to facilitate this option, significantly beyond the available budget for this scheme. Furthermore a roundabout would not be appropriate for such a major/minor road junction.</p>
<p>Welcome the proposals.</p>	<p>Noted.</p>
<p>Agrees that congestion here needs addressing.</p>	<p>Noted. This scheme is designed to address some of the congestion currently experienced southbound on the A19 and at the A64/A19 Fulford Interchange.</p>
<p>The congestion is caused by Fulford Interchange, not at Crockey Hill.</p>	<p>Observations and modelling of the existing network here have shown that although Fulford Interchange congestion is a symptom of the problem, it is not the root cause. The seeding point for the queues has been identified as at Crockey Hill. We are working with Highways England to address other issues experienced at the Interchange.</p>
<p>Concerns over removal of trees.</p>	<p>The proposed alignment of the design has been adjusted to save the 6 mature oak trees which were identified by the ecological consultant as being of high value. Other self-established sycamore trees are deemed to have little value and would be replaced by a compensatory planting scheme of an appropriate nature. Also it is likely that trees and shrubs at the very back of the highway boundary would not need to be felled, retaining some degree of screening.</p>

Scheme is expensive – Money should be used elsewhere.	Funding for this scheme originates from the DfT's Local Pinch Point grant which was received to address congestion related schemes on the A19 to the south of the city.
Scheme will not make a difference.	Modelling shows that there will be a marked improvement in capacity at Crockey Hill, leading to less exit-blocking at Fulford Interchange.
Speeding and overtaking concerns.	Two southbound lanes gives the opportunity for drivers to choose which lane to use if travelling straight ahead and potentially overtake slow moving vehicles (i.e. tractors) more safely. The speed limit would remain at 40mph.
Lack of pedestrian and cycle facilities.	An option has been drafted which includes a new shared-use footpath between the highway junction and the veterinary practice to the north of Crockey Hill. This would be to the back of the western verge and be for pedestrians and cyclists. However this option is more expensive than a scheme without an additional path and the potential usage would be very low.
Suggestion to have lane 1 as left-turn only, with lane 2 as ahead – no merge.	Such a scheme would not result in the required increase in capacity. This option was initially modelled and showed that there was no capacity benefit.
No issue / existing junction works fine now.	Evidence shows that this junction operates at full capacity during peak times and this is insufficient for current and future demand.
Concern over disruption and roadworks during construction.	Inevitably with any major highway scheme there will be some degree of disruption, although these will be scheduled to keep disruption to a minimum (i.e. off-peak working where possible).

32. It should also be noted that a common response from residents who live at Deighton Grove Lane (3 properties) and Deighton Grove (6 properties) was that they were concerned with accessing their properties safely while waiting to turn right off the A19, especially at the end of a two-lane merge.

33. Acknowledging these comments, the design team strived to make the central hatched area (for vehicles waiting to turn right into Deighton Grove Lane) as wide as practicable and managed to increase this slightly to 2.1 metres wide. This area would also be afforded some protection being in the shadow of a replaced wider pedestrian island. The layout by the entrance to Deighton Grove remains materially unchanged from the existing layout and unlike Deighton Grove Lane, it is not wide enough to incorporate a new designated area / hatching for turning vehicles.

Parish Council responses

34. Deighton Parish Council was invited to comment on the proposals, along with neighbouring Parish Councils. Comments received are summarised below, although the Officers responses to each have been covered in the public consultation (above and at **Annex A**):
- **Fulford Parish Council (PC)** – Broadly supportive as it is felt that the proposals may help alleviate the current congestion experienced. However changes are also needed to the signal sequencing at Fulford Interchange. Suggests that a third lane on approach to the interchange from the north for left-turners onto the A64 (E).
 - **Escrick PC** – Concerned that the proposed scheme will speed traffic down to next pinch point at Escrick.
 - **Wheldrake PC** – Struggling to understand how flow and throughput will be improved with this scheme. At substantial cost.

Member & CYC Officer Comments

35. Internal consultation was also undertaken with Members and Officers of the council, and the responses have been summarised below:
- **Cllr S Mercer (Ward Cllr)** – Broadly supportive. Requests a new footpath between the junction and the farm shop / cafe. Could the interchange/A64 slip signals be adjusted to incorporate a longer inter-green to allow more egress from Selby Rd on to the Interchange.
 - **Cllr K Aspden** – Local residents in Fulford likely to be supportive of the potential traffic benefits. Could an additional lane be provided for left-turners onto the A64(E) from Selby Rd. Please provide advance notice of likely disruption and delays along this corridor.

- **Cllr A Reid** – Happy with principal of proposals. Supports specific comments raised by Ward Cllr(s).
- **Cllr A D’Agorne** – For outbound congestion why not consider signals for joining the interchange from the north and a filter left-turn onto the A64(E). Remove double parking on Fulford Main Street.
- **CYC Environmental Health** – Alterations should result in highway moving west by ~2 metres, but nearest residential property is over 50 metres away, so unlikely to result in additional noise levels (~0.3dB which is insignificant). Whilst trees/bushes do not have any significant acoustic benefit, they do have a psychoacoustic effect in that noise appears lessened if you can not see the source. Thus some screening would be beneficial.
- **CYC Ecology** – Trees at Crockey Hill are an area of deciduous woodland Priority Habitat by Natural England. If unable to avoid removing these trees then this need mitigating by planting of new trees to maintain the extent of habitat. Bat roosts need considering.

Options

36. There are 3 available options available to the Executive Member:

- A) Approve the design as shown at **Annex B** and instruct Officers to proceed to construction.
- B) Approve the design as shown at **Annex D** and instruct Officers to proceed to construction, with the recognition that additional funding will be required for the addition of the western foot/cycle path.
- C) Do not approve any design.

Analysis

37. It is considered that southbound congestion on the A19, especially during the PM peak, is one of the biggest traffic-related issues (away from the City Centre) faced by York. The proposed design has the scope to significantly improve traffic conditions to the south of the city as well as ensuring the network can cope with future growth. Option A (layout shown in **Annex B**) is therefore the recommended option.
38. Owing to the low anticipated use and the funding gap the layout including an additional footway shown in **Annex D** (Option B) is not recommended.

39. Option C, to do nothing in the area, is not recommended as the journey time delays in the area would remain and the grant funding allocated to the scheme would potentially have to be returned to the DfT.

Council Plan

40. “A Prosperous City For All”; “A Focus on Frontline Services”. The proposed A19 Pinch Point (phase 2) scheme at Crockey Hill supports the prosperity of the city by improving the effectiveness, safety and reliability of the transport network, which helps economic growth and the attractiveness for visitors and residents. Enhancements to the efficiency of the network, in this case the increasing of capacity on a major road, will directly benefit all road users by improving the reliability and accessibility to other council services across the city.

Implications

Financial

41. It is proposed to fund the scheme using the Local Transport Plan allocation and the A19 Pinch Point Grant. An allocation of £1,084k is included in the Transport Capital Programme to deliver this project in 2017/18.

Human Resources (HR)

42. There are no HR implications

One Planet Council / Equalities

43. All junctions and highway schemes are designed with equalities in mind.

Legal

44. There are no legal implications.

Crime and Disorder

45. There are no Crime and Disorder implications.

Information Technology

46. There are no Information Technology implications.

Property

47. There are no Property implications.

Other

48. Disruption during construction – Constructing this scheme inevitably means a high level of work within and adjacent to the Highway, with an associated level of delay and disruption to vehicular traffic. Such works will be scheduled and planned to minimise this disruption and sufficient information and notice will be given to affected parties.

Risk Management

49. There are no known significant risks associated with any option presented in this report. Project Risks are recorded in the Project Risk Register and are handled by the Project Team and monitored by the Transport Board.

Contact Details

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Report **Date** 07.08.17
Approved

Specialist Implications Officer(s):

There are no specialist implications.

Wards Affected:

All of the proposed works are within the Wheldrake Ward, although the northern limits of the works are immediately adjacent to the Fulford & Heslington Ward boundary.

Background Papers:

Report to Executive – 20 January 2015:

“Pinch Point Scheme, A19 south Transport Corridor, phase 1”

Annexes

Annex A – Summary of public consultation comments & responses

Annex B – Proposed design for phase 2 Pinch Point scheme at Crockey Hill

Annex C – Stage 1 Road Safety Audit for proposed scheme

Annex D – Scheme design incorporating optional path within western verge

Abbreviations

CYC - City of York Council

Cllr - Councillor

DfT - Department for Transport

HE – Highways England

PC – Parish Council

WL – Wheldrake Lane