

CABINET	AGENDA ITEM No. 4
2 FEBRUARY 2015	PUBLIC REPORT

Cabinet Member(s) responsible:	Councillor Peter Hiller - Cabinet Member for Planning and Housing Services	
Contact Officer(s):	Simon Machen - Director of Growth and Regeneration	Tel. 01733 453475

A1139 Fletton Parkway junction 17 A1(M) to junction 2 road widening scheme, contamination and drainage issues

R E C O M M E N D A T I O N S	
FROM : Councillor Peter Hiller	Deadline date : <i>Enter relevant date of Council meeting if item is to be referred to full Council</i>
<p>For Cabinet to:</p> <p>1. Approve Balfour Beatty to undertake the additional works necessary to complete the A1139 junction 17 A1(M) – junction 2 widening scheme and</p> <p>2. Authorise the virement of £4.502m to the project budget from the various budgets detailed within this report.</p>	

1. ORIGIN OF REPORT

- 1.1 This report is submitted to Cabinet from the Cabinet Member for Planning and Housing Services.

2. PURPOSE AND REASON FOR REPORT

- 2.1 The purpose of this report is to seek approval for the completion of the A1139 Fletton Parkway junction 17(A1M) to junction 2 road widening scheme, to seek approval for virements to cover the increased cost of the scheme and to provide background information explaining the reasons why the cost of delivering the scheme has increased from the original target cost.
- 2.2 This report is for Cabinet to consider under its Terms of Reference No. 3.2.1 'To take collective responsibility for the delivery of all strategic Executive functions within the Council's Major Policy and Budget Framework and lead the Council's overall improvement programmes to deliver excellent services'.

3. **TIMESCALE** (If this is not a Major Policy item, answer **NO** and delete second line of boxes).

Is this a Major Policy Item/Statutory Plan?	NO
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4. BACKGROUND INFORMATION

The strategic importance of the scheme

- 4.1 Whilst Peterborough's parkways have served the city well there are now significant capacity issues on the network given the levels of recent and planned growth. Over the last 6 years some £22.5m has been invested in upgrading the A1139 through Peterborough. However, further improvements were required between J17 of the A1(M) and J2 of the A1139, as well as improvements to those junctions themselves, to unlock planned and consented growth. The road also serves growth in districts to the east of Peterborough. The section between junctions 17 and 2 is a pinch point and is congested during peak hours.
- 4.2 Great Haddon is a key strategic urban extension located adjacent to the A1139 and the A1(M). This site when developed will deliver:
- 5,300 new houses
 - 324,500 sqm employment space
 - 11,500 sqm retail space and community facilities (leisure, schools and health)
 - Around 9,050 new jobs

Without the work on the A1139 the Highways Agency would not have supported the planning application for the site. Without this support it would not have proceeded

- 4.3 The employment and residential elements of Great Haddon include development thresholds beyond which no further development can take place without full implementation of the A1139 road widening scheme. This was loaded in favour of the employment site with the trigger on the housing element set low, to the extent that the development consortium were unlikely to bring the site forward until there was certainty about both funding and timing. Critically, the Great Haddon development takes all of the existing capacity on the A1139. In practice this means that other strategic growth sites in the city cannot come forward until the road widening scheme is implemented.
- 4.4 Even without the widening scheme, this section of the heavily trafficked A1139 required major structural maintenance work within the next 3 to 4 years. Costs for this were estimated at £9m and would have potentially involved having to close each side of the carriageway in turn to implement the works, causing significant traffic disruption. Attempts were made to secure funding from the government for this maintenance in 2010/11 with the submission of a major maintenance major scheme business case, but the bid was unsuccessful. To be clear, if the council had simply waited and incurred this structural maintenance work then this would not in itself have met the Highways Agency's requirements outlined above.
- 4.5 The strategic importance of the scheme has been recognised by both the government and the Greater Cambridgeshire Greater Peterborough Local Enterprise Partnership (LEP). The council has secured significant funding towards the cost of the scheme including a £4.5m Local Pinch Point grant from the Department for Transport (DfT), a £1.5m grant from the Growing Places Fund through the LEP, and £3m of Growing Places Fund loan through the LEP (to be repaid in instalments from 2018 from future community infrastructure levy income). In addition, £3.8m of S106 funding has been secured from the Great Haddon development. Of the current scheme budget of £13.5m. Over 80% (nearly £11m) is externally funded, (although the council is in practice forward funding an element of this.)

The contract and previous council approvals

- 4.6 A Cabinet Member Decision Notice (CMDN) to appoint Birse Civils Limited/ Balfour Beatty as the construction contractor for the scheme was approved in December 2013. This CMDN gave authorisation to award a contract for construction up to a target cost value of £11m.

- 4.7 In January 2014 Birse submitted an indicative target cost of £13.915m for the scheme, but this included an additional potential risk figure of over £1m attached in the form of a client risk register, to cover technical unknowns. This indicative submission was in excess of the £11m referred to above. Following a detailed assessment of pricing the scope of the scheme was reduced to ensure affordability.
- 4.8 A second CMDN was raised for the approval of Birse as the construction contractor for a target cost of just under £12m, reflecting the assessment of pricing referred to above. The second CMDN came into effect on 12 February 2014 and Birse were subsequently awarded a contract through the Midlands Highway Alliance's (MHA) Medium Schemes Framework 1 Contract under NEC3 Option 3. Contractor mobilisation occurred in the middle of February 2014.
- 4.9 The use of a target cost contract is common in the construction industry. It provides a genuine estimate of all recoverable costs, materials, labour, profit etc as well as identifying a value for risk items that are to some extent unknown at the point of agreeing the target cost. There can be unforeseen items that occur during the construction of a scheme that change the scope of the original works. These items are referred to as 'compensation events' and are discussed, costed and if agreed change the value of the project target cost. The use of a target cost contract facilitates a 'pain gain' mechanism and encourages both parties to actively manage the contract due to the potential benefits and risks of delivering a project below or over the agreed target cost. The pain or gain is shared between both contractor and client and is calculated comparing the actual costs with the most recently revised and agreed target cost.
- 4.10 The alternative is a fixed price contract but this option is significantly more complex to negotiate and all risks are priced into the cost by the contractor. This approach has a number of shortcomings:
- For major infrastructure schemes this can increase cost by some 30%, with any abnormal costs still borne by the client.
 - The procurement process itself adds time and cost to the process.
 - The council would have been at risk of losing external funding for the project.

Cost increase

- 4.11 This is one of the largest and most complex road schemes that the council has ever undertaken, and it forms a critical part of the infrastructure necessary to grow the city. Without this widening scheme the city's growth potential would be significantly curtailed given the impact on the A1M junction and the capacity restrictions of the A1139. Since the scheme commenced a number of significant issues have occurred which have resulted in the submission of legitimate early warning notices (EWN) and compensation events (CE) by the contractor. This has resulted in an estimated increase in cost of £4.502m above the project budget. The significant issues include:
- The discovery of extensive amounts of contaminated soil throughout the scheme.
 - The very poor condition of existing drainage which has resulted in the need for extensive repair work.
 - The need for major road surface crack repairs throughout the scheme.
 - Replacement of sub-standard road construction at the tie-in point at the east end of the scheme between junctions 2 and 3, to facilitate integration with central reserve works.
- 4.12 The cost of the scheme has escalated from the original estimate at the target cost stage. The majority of the cost listed in the compensation events described below were already inherent either in the ground or existing infrastructure, but not obvious, predictable or accessible. The council has endeavoured to mitigate costs wherever possible, but has been hampered by tight working conditions, minimum road space constraints, the programme critical path and the need to ensure the free flow of traffic. The extra expenditure above the

target cost is necessary in order to complete the scheme to an acceptable and safe standard and provide an asset that will last for at least the next 20 years.

Contaminated soil

- 4.13 The standard UK industry procedure was undertaken to ascertain the soil conditions and risk of contaminated materials in the early stages of the project. There was nothing to indicate the level of contamination later discovered. Shortly after starting work in the central reserve (phase 1) further investigations were carried out and soil tests revealed that widespread fluoride contamination was present throughout the central reserve. Widespread contamination of this nature is virtually unheard of in the road construction industry and could not have been predicted.
- 4.14 The scheme then moved on from the central carriageway to verge works (phase 2) in November 2014. Initial soil testing indicated that the majority of the material in the verge was inert, but approaching the upper threshold limit for acceptance in that category. On reviewing the data the landfill operator asked for more extensive testing which revealed significant levels of contamination including sulphate, total dissolved solids and total organic carbon, all of which exceeded the threshold for inert at the majority of the sites tested.
- 4.15 Anecdotal evidence now suggests that contaminated material was imported when the road was originally constructed and may have been related to the brick manufacturing industry, when environmental considerations relating to soil and material use were far less strict. An option to try and retain the contaminated material on the wider site was ruled out due to the potential environmental damage that could have been caused, the additional costs incurred through a delay in the overall programme, and the severe traffic delays that would have resulted. The disposal costs were negotiated at £45 per cubic metre for contaminated soil as opposed to £10 per cubic metre for inert material, giving an increased cost to the scheme budget of approximately £35 per cubic metre.
- 4.16 The total additional cost from contaminated soil disposal is £1.38m. Council officers have met with DfT representatives and have submitted a bid for additional funding to cover the majority of the cost of contaminated soil disposal. The Cabinet Member for Planning and Housing Services has also written to Shailesh Vara MP asking for his support for the bid.

Design changes

- 4.17 It has been necessary to undertake a review of certain design elements of the project. The required design changes subsequently lead to changes in the construction requirements of the scheme including:
- Additional central reserve drainage to allow the retained carriageway and the proposed widened carriageway formation layers to drain independently of each other, thus preventing a potential weak spot forming due to water gathering at the interface.
 - A temporary surface in the new widened area is required to maintain two lanes of traffic whilst verge works are being carried out. The temporary surface will subsequently be planed out after verge works, prior to full width resurfacing.
 - These extra works introduced a delay of 32 days to the programme critical path as the drainage had to be installed before pavement construction materials could be laid.
- 4.18 These changes have resulted in an additional cost of £736,000.

Condition of the existing drainage system, verges and safety barriers

- 4.19 The existing road drainage system was in a far worse condition than anticipated and has required extensive repair work throughout the scheme. There have also been a number of issues in the highway verges relating to existing or planned drainage infrastructure and kerbing which has resulted in an additional cost of £928,000. Issues have included:

- Many existing gullies and drainage chambers were in a poor structural condition and have had to be reconstructed.
- Existing safety barriers at junction 1 have had to be replaced and concrete footings for many verge safety barriers have failed structural 'push' tests necessitating their replacement.
- The length of the construction programme has increased due to the extent of extra verge and safety barrier works.

Crack repairs

- 4.20 Peterborough's parkway asset is dated and the need for structural maintenance is increasing. Significant cracks in the carriageway were discovered and a reinforcing material was added to give certainty regarding programme length, cost and future structural integrity. The additional cost involved in these repairs is £380,000.

Environmental issues

- 4.21 Extra work has been required to secure agreement for the works from Natural England. The site is next to a Site of Special Scientific Interest (SSSI) with a significant Great Crested Newt population. Extensive negotiation was required to agree mitigation measures and successfully gain a newt licence. Additional costs of £59,000 have been incurred on issues including environmental specialist fees and a financial contribution to Froglife, to implement mitigation measures for habitat improvement.

Extent of works at junctions 2 to 3

- 4.22 When tying in the end of scheme alignment works to the existing infrastructure, it was discovered that the hard strip adjacent to the central carriageway was originally built with flexible material that does not meet today's standards. This could only be seen once the excavation beneath the surface had been undertaken. Problems were also experienced with removing the safety barrier foundations in the hardened central reserve, which were substantial and protruding into the hard strip construction. To maintain the structural integrity of the road and to provide solid infrastructure to integrate the central reserve works, it was necessary to carry out full depth reconstruction of the hard strip and replace the hardened central reserve prior to installing a modern road restraint system. It was also necessary to install a length of narrow filter drainage in support of replacement infrastructure. Apart from the safety barrier, none of this work was included in the original cost and it has added an extra 11 days to the critical path programme and an additional cost of £469,000.

Central reserve and other extra works

- 4.23 There were a number of issues that arose that were either outside or more than the target cost allowance adding £550,000 to the scheme cost including:
- Carriageway maintenance and pothole repair to the lanes that remained open to traffic
 - Required changes to the quantity and type of material used in the central reservation area
 - Additional reconstruction work required due to unforeseen condition of infrastructure.
 - A significant increase in utility diversion costs for Virgin media services.

£142k of these costs relate to organisations other than Birse/Balfours

Overall budget position

- 4.24 The total budget allocated to deliver the scheme is £13.498m. This includes:
- The £12m construction contract cost (Birse).

- £1.498m for initial design/estimating work undertaken by Atkins, subsequent detailed scheme design and supervision by URS, utility diversion, speed cameras, and council staff fees.

The effect of the issues set out above and the subsequent impact on the overall programme (additional days, changes to traffic management, materials etc) has produced a revised total predicted cost of the scheme of £18m, representing an increase in the total cost of £4.502m. This breaks down as follows by organisation:

- £4.360m for Birse/Balfours for construction works
- £0.142m for organisations relating to costs outlined in para 4.23 above

Proposed funding solution

4.25 It is proposed that the additional cost of the scheme is funded as follows:

- £2.1m of capital corporate funding originally allocated to phase 1 of the Bourges Boulevard public realm improvement scheme is transferred to the Fletton Parkway scheme. The council has successfully bid for an additional £2.1m of funding towards phase 1 of the Bourges Boulevard scheme. The funding was originally allocated by the Shadow Local Transport Board. This funding has now been passed to the LEP and the LEP has endorsed the preallocations.
- £1.072m of capital corporate growth funding for 2014/2015 which has been held back as a contingency is transferred to the Fletton Parkway scheme. None of this funding has been allocated to named schemes.
- £1.33m of corporate public realm capital funding for 2014/2015 which has been held back as a contingency is transferred to the scheme. None of this funding has been allocated to named schemes.

4.26 As the additional funding is being vired from existing budgets, the council will not need to borrow more overall than previously outlined in the Medium Term Financial Strategy (MTFS).

4.27 As set out above, the council has also bid to the DfT for additional grant funding of £1.334m to cover the abnormal contaminated soil costs on site. DfT holds a central contingency for grant funded schemes and considers funding submissions towards the end of each financial year. If the bid is successful the need for funding from the second and third budgets identified above would be significantly reduced.

5. CONSULTATION

5.1 The scheme was included in the Peterborough Long Term Transport Strategy (2011-2026) and Local Transport Plan 3 (2011-2016) documents. Extensive consultation was carried out before publication to obtain the views of interested parties, including stakeholders and members of the public. The specific scheme has been widely consulted on within the council and is included in the MTFS, has an approved business case and environmental screening approval. Consultation with external stakeholders includes the Highways Agency, LEP, DfT, and utility service providers. On 7 November 2013 a public engagement event was held in Orton Library and a further event was held in Serpentine Green shopping centre on 12 November 2013.

6. ANTICIPATED OUTCOMES

6.1 That Cabinet approves the increase in expenditure necessary to complete the scheme and the transfer of associated budgets.

6.2 The scheme construction will be completed without further cost increases and become fully operational by mid May 2015.

7. REASONS FOR RECOMMENDATIONS

- 7.1 The cost of building the scheme has increased from the original estimate at the target cost stage. The majority of the additional costs listed above were already inherent either in the ground or in existing infrastructure, but not obvious, predictable or accessible.
- 7.2 The council has endeavoured to mitigate costs wherever possible, but has been hampered by tight working conditions, minimum road space constraints, the need to ensure free flowing traffic, and the programme critical path. The extra expenditure above the target cost is necessary in order to complete the scheme to an acceptable standard and provide an asset that will serve the city for at least the next 20 years. Importantly, the scheme has attracted significant external funding in recognition of its strategic importance. Furthermore, the council would have faced an estimated cost of £9m to carry out major structural repairs to this section of Fletton Parkway within the next 3 to 4 years if the widening scheme had not progressed (a cost significantly in excess of the council's contribution to the widening scheme).
- 7.3 The implications of not approving the extra expenditure to complete the scheme are outlined in section 8 below.

8. ALTERNATIVE OPTIONS CONSIDERED

- 8.1 Further scope reduction was considered at the target cost stage, such as not upgrading street lighting, but was discounted as it would have left a future maintenance liability and a burden on revenue budgets. Moreover the lighting was programmed for replacement in the near future and co-ordinating the works with the widening scheme reduced cost and mitigated further disruption on the strategic road network. As outturn costs increased consideration was also given to not upgrading the existing verge drainage. However, it was recognised that the poor condition of the drainage was a large contributory factor in the previous deterioration of the road structure and that drainage upgrade was necessary to guarantee the future structural integrity of the road.
- 8.2 Solutions to mitigate contaminated soil disposal costs were fully explored. Areas within the scheme were examined to see if soil could be sympathetically integrated into existing landscaped areas. The only realistic area for relocating large quantities of soil was the landscaped areas within the roundabout at junction 1. A proposal was investigated and priced but was discounted given risks to the overall programme, limited cost savings, environmental constraints and the potential traffic impacts on the strategic road network and A1(M) through the need for severe traffic management.
- 8.3 The option of not completing the scheme had to be discounted given the need to maintain a safe highway.
- 8.4 Consideration was given as to whether the council should run a separate procurement exercise as a result of the increase in project costs. This was discounted because its contract with Balfour Beatty is made on the terms of an NEC3 Option C Target Contract with Activity Schedule. This form of contract provides for Balfour Beatty to give to the council an 'early warning' of any matter that could increase its prices. Following an 'early warning' and where it is assessed by the project manager that a 'compensation event' has occurred, the council is notified of the 'compensation event'. Balfour Beatty is entitled to receive payment for the 'compensation event', once agreed by the council.
- 8.5 Also, the council would have incurred significant additional cost to run the procurement exercise including but not exclusively, procurement and contract costs and delays and demobilisation of Balfour Beatty, mobilisation of the new contractor and associated delays. This would also have prolonged the works and the impact on motorists in the area.

9. IMPLICATIONS

Financial implications

- 9.1 Due to the various issues discussed above, valid compensation events have been submitted by the contractor. These have resulted in increases in soil disposal costs, material costs and programme delays. The scheme outturn cost is now estimated to be £4.502m higher. Extra funding of £1.344m is being sought from DfT to mitigate the contaminated soil disposal costs. Other internal funding sources have been identified to address the budget shortfall (see paragraph 4.23 above). The scheme cannot progress to completion without the necessary increase in budget. Approval is sought to vire the relevant sums to the scheme budget.
- 9.2 As a matter of course any amendment to a contract awarding CMDN is referred to Internal Audit for review. The review in this case is underway and the position will be reported to Audit Committee as part of the regular reporting of Internal Audit work.

Legal implications

- 9.3 The council as the highway authority has a legal responsibility under the Highways Act 1980 to provide a road that is safe and fit for purpose. The legal implications are contained in the body of the report and there are no adverse legal implications.

10. BACKGROUND DOCUMENTS

Used to prepare this report, in accordance with the Local Government (Access to Information) Act 1985)

December 2013 Cabinet Member Decision Notice to appoint Birse Civils Limited as the construction contractor for a target cost scheme of £11m:

<http://democracy.peterborough.gov.uk/ieDecisionDetails.aspx?ID=867>

February 2014 Cabinet Member Decision Notice to appoint Birse Civils Limited as the construction contractor for a target cost of just under £12m:

<http://democracy.peterborough.gov.uk/ieDecisionDetails.aspx?ID=898>.