Appendix 4

South Road Bridge Widening

Highway Services

London Borough of Ealing

June 2022

1.0 Introduction

1.1 South Road Bridge carries South Road (A3005) over the Great Western Main Rail Line in Southall and has a north bound and a south bound traffic lane, and one south bound bus lane.

Southall existing railway station entrance is located on the east side of South Road Bridge.

Image 1: South Road Bridge location

1.2 With the considerable volume of new housing currently being developed in Southall over the next decade, additional measures and infrastructure is required to reduce traffic congestion and to encourage more active travel. South Road bridge widening has been long proposed as a measure to help reduce the congestion on A3005 and the adjacent road network.

2.0 Background

2.1 The widening of the South Road Bridge is a S106 planning obligation on the Green Quarter site (formerly Southall Gas works) and was secured in 2010 in prior to Crossrail. However, in 2015, responsibility for the delivery of this project passed to the Council as part of the GLA's 'housing zone' agreement, facilitated by the GLA funding of £11.875m.

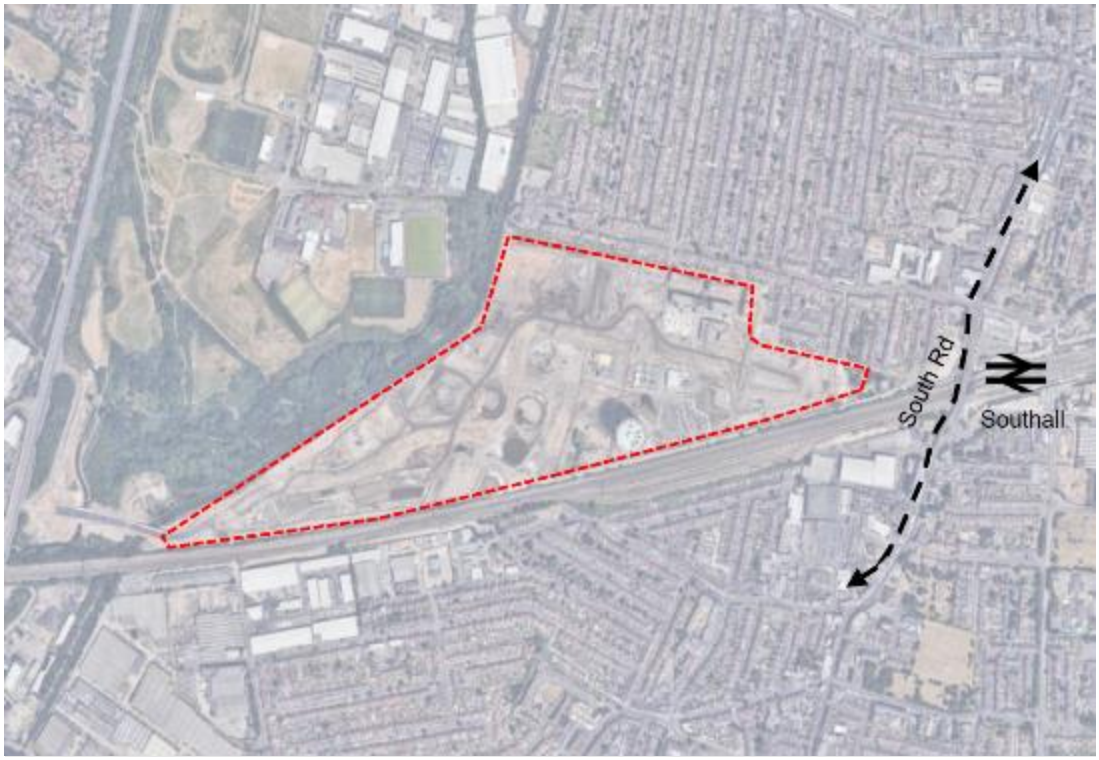

Image 2: Southall Gas Works site boundary shown in red line

2.2 In September 2018, Members agreed the decision to appoint Balfour Beatty as the main contractor and proceed to commission the 'preconstruction' phase of work. The feasibility study was delivered in 2018 and the detailed design was carried out by Highways consultants for the contractor Balfour Beatty in 2019 and 2020.

2.3 The NEC4 construction contract offer price and programme was delivered by Balfour Beatty in December 2020 and was reviewed in talks with Network Rail on method, programme and cost in 2021.

The main points of concern raised by Network Rail for discussion in 2021 were based on:

- Type of bridge design
- Construction methods
- Programme duration
- Contract rates

2.4 The Council worked with Balfour Beatty, the engineering bridge design consultant and Network Rail to try and identify efficiencies in design and construction methods to reduce costs and the length of the programme. However no significant measures were found that could be used on the project to enhance deliverability and value for money. To date, a spend of £2.58m of the budget was incurred towards the feasibility, detailed design, and pre-construction stages. Therefore, officers in discussion with lead Members consider that the Council should not commission any further technical or design work on this project, to avoid abortive costs and close the project.

3.0 Contract Bid Costs

3.1 Balfour Beatty submitted two contract bid offers in December 2020. The two offers gave the Council the option to go with either an NEC4 Option A or an NEC4 Option C. (n.b. the New Engineering Contract (NEC) is a UK formalised system from the Institution of Civil Engineers that guides the drafting of documents on civil engineering, construction and maintenance projects for the purpose of obtaining tenders, awarding and administrating contracts.)

The contract bids offered were for the same construction work but differ in that:

- NEC4 Option A is a **priced contract with activity schedule.**
- NEC4 Option C is a **target contract with activity schedule.**

3.2 The feasibility study that was delivered in 2018 was developed and costed on the basis of Network Rail not objecting to a large number of short and medium duration rail possessions. Numerous short duration rail possessions would have enabled construction to be programmed to take place over 18 months, for a construction cost of approximately £12m plus contingency costs (these costs included Network Rail possessions, insurance, legal, miscellaneous utility costs and project management.)

3.3 However, the construction contract offer price and programme that was delivered by Balfour Beatty in December 2020 was significantly different in approach to the feasibility study in that Network Rail (and their rail operator) could only commit to granting access to request long duration rail possessions at Christmas each year. A limited number of short and medium duration rail possessions would also be available during the year, that the project would need to request on a case-by-case basis.

3.4 This change, in the approach to using available rail possessions (i.e. multiple short overnight rail possessions between 2am and 4:30am over 18 months, versus 5 long duration Christmas Day / Boxing Day possessions over 5 years) has meant that the construction programme length has increased, and subsequent costs have increased to the following:

- Option A: £20.0m (£19,998,688.96)
- Option C: £21.1m (£21,079,203.64)

3.5 On top of the cost of the base contract offers, there would also need to be funds available to cover other items:

- Rail Possessions - 3,700K (3.7M), costs charged by Network Rail to facilitate rail possessions.
- Project Contingency - 2,478K (2.5M), to cover unknown and miscellaneous items not foreseen in design phase.
- Insurance costs - 1,100K (1.1M), the project would need to be insured for construction over a live rail line.
- Utility Costs (Electrical + Gas + Water) - 850K, costs to pay for any additional works or diversions required by electrical, gas or water utilities.
- Project Management Costs - 400K, costs for managing the project, site inspections, design reviews, quantity surveying, legal, programme monitoring.

SUB TOTAL £8.528M

TOTAL £29.607m (£21.079m + £8.528m)
n.b. Inflation costs over 5 plus years not included.

4.0 Stakeholder Engagement

4.1 The contract bid offers from Balfour Beatty were reviewed and discussed in meetings and a workshop with Network Rail, Balfour Beatty, WSP and Aecom in 2021.

Network Rail raised the possibility that the construction method and bridge design could be improved to enable the programme length and costs to be reduced based on:

- Type of bridge design
- Construction methods
- Rail possessions
- Contract rates

5.0 Options Considered – Technical Challenges

5.1 The first part of a workshop happened on 02 November 2021 and the main points of discussion for the first part of the workshop were:

- Detailed design of proposed South Road Bridge widening and possible alternative design options.
- Construction methods, rail possessions, programme and alternative construction methods.

5.2 Network Rail proposed an alternative lifting operation using smaller cranes placed on the road bridge. This would negate the need for using large cranes and swinging loads over the railway lines. It would also enable the contractor to utilise some medium length Network Rail possessions to potentially increase rail possession efficiency and reduce the duration of the construction programme.

5.3 However, after Balfour Beatty carried out a high level review of potential changes to the construction method, taking into account a possible Network Rail proposal to offer more medium length rail possessions to try and reduce the duration of construction programme; the use of more medium length rail possessions was found not to be a feasible alternative that could be used to reduce the length of the programme, without then introducing significant risk to the programme duration.

5.4 This assessment was also the case for the need to remove the two redundant gas main pipelines that are attached to the west side of the South Road bridge. Both gas mains would need to be removed before any of the main works started, and a better solution to resolve transfer of ownership, utility infrastructure responsibility, programme duration and best method to remove the gas mains was not found.

Options Considered – Construction Costs and Methods

5.5 The second part of the workshop was a confidential workshop on 02 November 2021 between Council and Network Rail.

The main points of discussion for the second part of the workshop were:

- The cost of construction appears to be excessive.
- The duration of the construction programme appears to be excessive.

5.6 Network Rail advised that their recent basic "unit area costs" for what they considered to be similar bridge constructions in rural and low-density suburban areas were considerably lower than for the South Road Bridge widening current cost.

5.7 The Council, in talks with Balfour Beatty, reviewed the Network Rail sample bridge costings, designs and construction methods in comparison with what is required for the current site. It was found that the sample bridge sites discussed with Network Rail were generally greenfield or rural sites with limited adjacent infrastructure. The sample bridge sites, were therefore considered not closely comparable to the South Road bridge location, being in a highly urbanised location with major infrastructure, and the construction methods and costs could not be replicated.

6.0 Proposal

6.1 It is recommended for the South Road Bridge widening proposals:

- Not accept either "NEC4 Option A" £20.0m (£19,998,688.96) or "NEC4 Option C" £21.1m (£21,079,203.64) bid offers from Balfour Beatty to construct the South Road Bridge widening

Proposal Reasons

6.2 Reasons for the above proposal include:

- Total project cost is estimated at £29.6m (£21.1m plus contingency costs) as against the available budget of £11.875m, and the project is assessed as not being value for money.

- The construction programme would cover 5 calendar years, a significantly longer duration than the 18 months previously anticipated in feasibility stage and would mean major disruption to the local Southall area.

- The construction of the bridge widening would require a continuous 16-month one way road closure over the bridge. This would cause significant congestion in the area for all highways users including local London Bus services with a further impact on a wider area of west London.