

West of England Rapid Transit
Ashton Vale to Temple Meads via Bristol City Centre
Responses to Capital Costs Review

Issue Category	Issue	Response
Risk Items: City Centre	<p><u>Section D – Victoria Street/Temple (Temple Meads Interchange)</u></p> <p>An allowance of £1.1M has been made in respect of Statutory Undertakers. We understand that this allowance has been made on the basis that the statutory services will not require major lowering or diversion costs because the proposed new signalled junction arrangement reverts back to a road layout that was in place prior to the current gyratory system and hence, with the exception of an existing 850mm diameter combined sewer, service diversions are not expected to incur major costs. The allowance of £1.1M has however been made without the benefit of any estimates and as such, represents a major financial risk</p>	<p>The QRA for the city centre estimate has included tolerances of up to 160% to take in to account the level of design work undertaken to date.</p> <p>The total risk contingency on the final scheme estimate is £16.7million (outturn prices) which is 35% contingency for risk.</p>
	<p>It appears that the [following] measured works have been under measured:</p>	
	<ul style="list-style-type: none"> The approximate area of general site clearance shown on drawing 102 is circa 20,000 m2 (excluding the development sites) but only 5,000 m2 has been priced. No allowance has been made for demolishing the existing buildings on the Portwall Lane East development sites 	<p>Agreed. The latest version of the spreadsheet has the corrected site clearance of 18,000 m2. The BRT proposals do not require the removal of any buildings in area D. Demolition (if any) will be carried out as part of that proposed development</p>
	<ul style="list-style-type: none"> Only 30m2 of breaking up existing carriageway and pavement has been measured 	<p>Agreed. Yes only 30m2 of footway was shown but that item was covered in the series 600 (601 – 609) items. The series 200 item has now been deleted.</p>
<ul style="list-style-type: none"> Whilst it is difficult to be accurate with the information currently available, drawing 102 appears to indicate a total area of circa 15,000 m2 of new carriageway/resurfacing of existing. Only a total of circa 7,000m2 has been priced 	<p>Agreed. This item has been remeasured. The total carriageway area is 11458m2. The area required on the sketch layout is 7500m2 because Temple Gate and part of Temple Street would remain intact. This includes all new carriageway and resurfacing. This could be potentially be reduced at design stage depending on the vertical alignment.</p>	

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	<ul style="list-style-type: none"> The approximate length of new kerbs shown on drawing 102 is circa 2,700 m but only 1,100 m has been priced 	<p>Agreed. This item has been remeasured as 2400m. Much of the kerbing alterations on Temple Gate could be designed out as they are cosmetic and the sketch incorporated an improved layout with more bus lane. This would reduce the need for site clearance, kerbing and footway construction.</p>
	<ul style="list-style-type: none"> The area of the islands created by the revised road layout is circa 9,000 m² (including the development sites) but only a total of circa 6,000m² of footpaths, grass seeding and shrub planting has been priced. In addition to this, the footpaths to the areas between the new road layout and existing adjacent buildings/site boundaries will require either localised making good or total replacement. 	<p>This has been checked and a figure (excluding the development areas) of 5829m² confirmed. It is considered that this figure could be reduced further to approx 4000m² by value engineering. It is therefore not intended to alter this quantity.</p>
<p>Risk Items: Ashton Vale to Bristol City Centre</p> <p>Main areas of concern are:</p>	<p>Working over and alongside the existing railway. Discussions will be required with Rail Track in order to determine the extent of their requirements and costs associated with the proposed works adjacent to the rail tracks</p>	<p>Preliminary discussions with Network Rail have been undertaken and they have advised on the bridge solution rather than an at-grade crossing. We need further discussions with Network Rail but are of the view that as we have a large allowance for closure of what is a minor, infrequently used freight line, we should have some flexibility and will check on the level of usage as it is monitored on the RMS system.</p>
	<p>The allowance for works to the existing bridges (Aston Avenue and swing bridge). Investigation works will be required to determine the extent of works required and whether the allowances are adequate.</p>	<p>Ashton Avenue Bridge costs are based on an actual quotation received by Bristol City Council for the strengthening of the Bridge, Additional sums have been added for the construction of appropriate surfacing.</p> <p>Detailed investigation is advisable for Prince Street Bridge however limiting this to single way traffic</p>
	<p>The allowance for the new footbridge seems inadequate for a 90m by 5m wide footbridge and will need to be reviewed</p>	<p>Halcrow Structures team has reviewed and have revised their estimate. £800k has now been included in the works figure.</p>
	<p>The level of contamination in the excavated material, the estimate includes for large quantities of removal. Ground investigation would enable the allowances to be confirmed or reduced if the contamination can be reclassified as non hazardous</p>	<p>This came from the Halcrow environment team and may be cautious so the risk tolerances could be reduced but for prudence has been left as is. Ground investigation will be undertaken at the next stage.</p>

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General Comments: City Centre	<p>Section A – Redcliff Hill – We were advised that the costs associated with this section would be borne by others (i.e. Developers costs). Given that this is the case, we would therefore question the necessity/logic of including the nominal allowances for Series 100: Traffic Safety & Management, Series 200: Site Clearance and Series 1200: Traffic Signs and Road Markings Highway Lining and Signing (total of £34K currently allowed).</p>	<p>The relative timing of the completion of the development and start of construction is not certain. However it may be necessary to carry out modest adjustment of road markings, hence the allowance.</p>
	<p>Section C – Portwall Lane/Temple Street – We were advised that the costs associated with this section would be borne by others (i.e. Developers costs). Given that this is the case, we would therefore question the necessity/logic of including the nominal allowances for Series 100: Traffic Safety & Management, Series 200: Site Clearance and Series 1200: Traffic Signs and Road Markings Highway Lining and Signing (total of £92K currently allowed).</p>	<p>The relative timing of the completion of the development and start of construction is not certain. However it may be necessary to carry out modest adjustment of road markings, hence the allowance.</p>
	<p>Section H – Penn Street, Horsefair & Union Street – Section H appears to be limited to the over marking of sections of existing carriageway to form a new bus lane along The Haymarket. The allowance of circa £270K for this limited amount of work is excessive but note that an allowance of £96K for general site clearance has been incorporated. This allowance needs to be reviewed. The area of new coloured surfacing appears excessive. Drawing 001–2f refers to the provision of a new proposed signalised junction (Union Street & The Horsefair). No allowance appears to have been made for this in the costings.</p>	<p>The estimate has been adjusted in response to these comments. The total for section H is now approximately £88k.</p>
	<p>Section J – Colston Avenue – Rupert Street – Broad Quay – Drawing 107 refers to the provision of a new Bus Gate. We note that an allowance of circa £15K appears to have been made for work to the signals as part of the ITS works. No allowance however appears to have been made for remodelling of the existing central pedestrian refuge island to form the new bus gate. We note that an allowance of circa £10K appears to have been made for work to the signals as part of the ITS works but none of the works to the pedestrian island (a to i above) appear to have been included. We assume that the existing traffic lights at the junction of Baldwin Street and The Centre will not be affected by the proposed modifications to the road layout as no costs appear to have been included for this.</p>	<p>Items have been included in the revised estimate including substantially more for traffic signal alterations and for island construction.</p>

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	<p>Section K – Lower Broad Quay – From drawing DH0245-001-2f, Section K all appears to be as existing. We therefore query the requirement for the current allowance of circa £31K.</p>	<p>The estimate has been adjusted in response to these comments. The allowance is now approximately £7k.</p>
	<p>Section L – Prince Street – Drawing 001-2f notes that the road layout at the junction of Prince Street and The Grove is to be altered. No alteration works appear to have been included in the costings.</p> <p>We assume that the 'Area to be Pedestrianised' will not form part of this project as no costs appear to have been included for this.</p> <p>Drawing 001-2f notes that the Princess Street Bridge is to be altered to provide bus and cyclist access only. No alteration works appear to have been included in the costings if for example, the existing lane width restriction bollards need to be relocated to allow bus access. We understand that the Princess Street Bridge is still operational and would also query the effect on the bus timetable when this bridge is opened to permit vessel access.</p>	<p>Tracking suggests that the Rapid transit can manoeuvre around this junction with only minimal works. An additional allowance (15%) for provision of small works that is thought adequate in this instance.</p> <p>An allowance of £65,000 for provision of new signals has been added.</p> <p>It is considered that pedestrianisation will have been introduced in this location by the time of the works construction. It is shown to indicate how the system is to operate.</p>

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	<p>Section O – Temple Way – The allowance of £100K for statutory undertakers could prove to be inadequate given that there are existing telecommunication services that will require diverting in order to accommodate the Southern length of carriageway widening. At the junction of Temple Way and Old Market Roundabout the road widening works will be carried out over an existing pedestrian underpass and adjacent to an existing retaining wall. We raise the query as to whether these existing structures are able to withstand the revised loadings that will be placed upon them without the need for any alteration/strengthening works</p>	<p>No separate allowance has been made. It is included in the £110,000 allowed for works to signals. Part of the allowance of £110,000 has been made for provision of works to the existing signal crossing on the north bound approach to the roundabout. An additional allowance (15%) for provision of small works that is thought adequate in this instance.</p> <p>It was anticipated no changes would be made at this signal junction other than the introduction of the bus gate. This is a preliminary estimate. This is an identified risk to be addressed at detail design stage. Appropriate additional risk allowances have been made to address this potential problem.</p> <p>It should be noted that removal of kerbs is included in the £27,000 for site clearance. There are 4 shelters, the one by the City Inn would probably not be relocated and the re-siting of the other ones would be covered by the contingency for smaller items. Any new shelters would be supplied under the Public Transport agreement Other items of street furniture include several lamp columns, legible city signing, trees and some signs are covered by item 201 and 207. The footway paving is being taken up and reused. The estimate included an element of double counting, series 200 item 206 will. Renewal of guard rail will be covered by the smaller items allowance. With the bus gate option the island remains intact as the bus lane would have a 1:10 taper leaving the existing alignment. This will be refined at detailed design stage.</p>

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	<p>Section P – Grove Road – Existing parking ticket machines will have to be removed.</p> <p>No allowance for this appears to have been made in the costings albeit an allowance of £19K has been made for general site clearance which will be sufficient to cover these works. The existing signal controlled pedestrian crossing with central physical island limits the Eastbound carriageway to approximately 5m wide. This does not appear to be sufficiently wide enough to accommodate both a bus lane and another vehicle traffic lane hence the two lane arrangement shown on drawing 001-2f does not appear viable with the existing layout. The costs do not appear to allow for any alteration works to this crossing (i.e. removal of the existing central physical island).</p> <p>There is an existing bus stop opposite the Thekla that protrudes into the carriageway. No works to this bus stop (items a to d above) have been included.</p> <p>Full required works for the proposed signalised junction between the end of The Grove and Welshback do not appear to be included.</p>	<p>This is a preliminary estimate and a general allowance has been made for site clearance that is thought adequate for removal of these isolated items.</p> <p>The restriction is acknowledged however this is a preliminary estimate and a general allowance has been made for site clearance and an additional allowance (15%) for provision of small works which is thought adequate in this instance. In this case it is unlikely to be possible to provide a mid way refuge for pedestrians. An allowance of £110,000 has been made for provision of new signals and £6500 a cantilever mast arm.</p> <p>An additional allowance (15%) for provision of small works that is thought adequate in this instance. Items have been included in the revised estimate.</p> <p>This is a preliminary estimate and a general allowance has been made for site clearance that is thought adequate for removal of these isolated items. An additional allowance (15%) for provision of small works that is thought adequate in this instance. Items have been included in the revised estimate.</p>
	<p>Many of the drawings refer to the provision of new BRT Stops. No allowance appears to have been made for these in the costings.</p>	<p>Items have been included in the revised estimate.</p>
<p>General Comments: Ashton Vale to Bristol City Centre</p>	<p>Whilst an allowance for traffic management has been included, this only equates to about 6%. In our opinion an allowance for preliminaries, which would include for site welfare, H&S, Traffic management etc should be in the order of 20% (Including OH&P). The City Centre Loop estimate contains an allowance equating to 20%.</p>	<p>Much of the works will be built as closed sites and £220,000 in TM costs has been allowed for this. The health and safety is included in the rates under the design and build contract proposed.</p>

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	<p>No allowance for restricted off peak or night time working has been allowed. While this would not be applicable to all sections, it would have to be considered for sub sections C, D, E, F, G and H. The City Centre Loop estimate contains an allowance equating to 15%.</p>	<p>We have not included for night time working on the segregated corridor section. It is considered that there is no need for night working in view of the fact that as Cumberland Road/Ashton Avenue is lightly trafficked for much of the day there may be a need for some temporary closures and this has been allowed for. This was discussed with BCC Network Management informally. Detail will depend on how the contractor intends to do the works and will need to be included in a Code of Construction Practice.</p>
	<p>An allowance of 20% is shown on the "seg corridor (sum)" page, but this has not been carried forward to the cost summary.</p>	<p>Contingency has not been included in base estimates as this was then put through QRA for risk provision.</p>
	<p>No allowance has been made for Consultancy Fees (preparation) associated with the Ashton Vale estimated costs. The City Centre Loop estimate contains an allowance equating to 20% for preparation (Design, CDM and safety audits).</p>	<p>Preparatory costs, including detailed design, have been calculated separately from the capital costs estimate.</p>
	<p>No allowance has been made for Consultancy Fees (Supervision) associated with the Ashton Vale estimated costs. The City Centre Loop estimate contains an allowance equating to 5% for supervision.</p>	<p>Preparatory costs, including detailed design, have been calculated separately from the capital costs estimate. As we are proposing a Design and Build contract and the rates for the main sectional construction allow for the design time then the only real design costs are detailed design for the signals the current layouts have been tracked etc so just need detectors etc adding and some client approval time for testing etc. The sums included for site supervision of the Centre equate to an allowance that is sufficient for the entire project given the limited size of the site and linked nature of the proposals.</p>

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Other Items: Main areas of concern	<p>ITS – No allowance appears to have been made for the following items:</p> <p>a) Ducting and chambers associated with the traffic signalisation.</p> <p>b) Builders work in connection with the remaining ITS, CCTV, RTI and ticket machine installations.</p> <p>c) Series 100 : Traffic Safety & Management – Health and safety, site welfare facilities, Chapter 8 – temporary traffic management etc. Note: 20% applied to the measured works costs for these items in the City Centre Loop costings.</p> <p>d) Series 100 : Restricted working off peak and night time. Note: 15% applied to the measured works costs for this in the City Centre Loop costings.</p> <p>e) Contingencies associated with the ITS estimated costs. Note: whilst a 20% allowance for contingencies has been made on the 'ITS' spreadsheet, the allowance has not been carried forwards to the Cost Summary. Note: 15% applied to the measured works and Series 100 costs in the City Centre Loop costings.</p> <p>f) Consultancy Fees associated with the ITS estimated costs. Note: 20% applied to the measured works and Series 100 costs in the City Centre Loop costings.</p> <p>g) Supervision Fees associated with the ITS estimated costs. Note: 5% applied to the measured works and Series 100 costs in the City Centre Loop costings</p>	<p>a) These are included in the main rate items under rogue items.</p> <p>b) Costs are included in the costs of CCTV RTI etc, the costs assumed for stops includes for suitable ground preparation.</p> <p>c) All rates are inclusive of preliminary items, TM will be shared with the main contractors costs and will be negligible given the closed nature of much of the site.</p> <p>d) There is little need for off peak working etc as the works are not especially invasive and much work (cabinets etc can be done with out affecting the flow of traffic.</p> <p>We have not included for night time working on the segregated corridor section (indeed for many sections it would be prohibited). It is considered that there is no need for night working in view of the fact that as Cumberland Road/Ashton Avenue is lightly trafficked for much of the day there may be a need for some temporary closures and this has been allowed for. This was discussed with BCC Network Management informally. Detail will depend on how the contractor intends to do the works and will need to be included in a Code of Construction Practice.</p> <p>e) contingencies related to the ITS contract items are a lower order of risk than for the civil elements this has been allowed for in the QRA process that has allocated appropriate risk to the project.</p>
	<p>General Comments – Seg Corridor (Summ) 'tab'</p> <p>Inclusion of Temple Meads and City Centre</p>	<p>These costs refer to a different City Centre Scheme than the one being put forward. This has now been amended and the legacy items removed from the schedules.</p>
	<p>A lump sum allowance of £1,750,000 has been included for 'Land' but we have no indication as to what this is for or how it has been calculated</p>	<p>Details provided in cost update.</p>

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	<p>A lump sum allowance of £80,000 has been included for 'Ticket Machines' but we have no indication as to how it has been calculated. There may be an element of double counting however in that the ITS 'tab' also includes an allowance of £350K for Ticketing machines (complex).</p>	<p>Details provided in cost update. The 80,000 sum has been removed from the cost summary.</p>
	<p>Where figures have not been carried forward correctly to the Cost Summary, allowances have currently not been included for:</p> <p>a) Preparation (Design, CDM and Safety Audit) and Supervision Fees associated with the City Centre estimated costs.</p> <p>b) Contingencies associated with the Segregated Corridor estimated costs.</p> <p>c) Preparation (Design, CDM and Safety Audit) and Supervision Fees associated with the Segregated Corridor estimated costs.</p>	<p>As we are proposing a Design and Build contract and the rates for the main sectional construction allow for the design time then the only real design costs are detailed design for the signals the current layouts have been tracked etc so just need detectors etc adding and some client approval time for testing etc.</p> <p>The allocation of time is the equivalent of £1,587,145 Which is considered sufficient for the CDM and Design of the standard items especially considering that the main contract is to be let on a design and build basis.</p>
	<p>No allowances have been included for the Optimism Bias percentage additions that will be required in order to achieve the 50% and 80% confidence levels noted on the Cost Summary</p>	<p>Optimism Bias is subsequently addressed through appraisal process.</p>
	<p>No allowances have been made in respect of tender price fluctuations from 3rd Qtr 2008 to the estimated start on site date and beyond</p>	<p>This is included through the QRA process.</p>