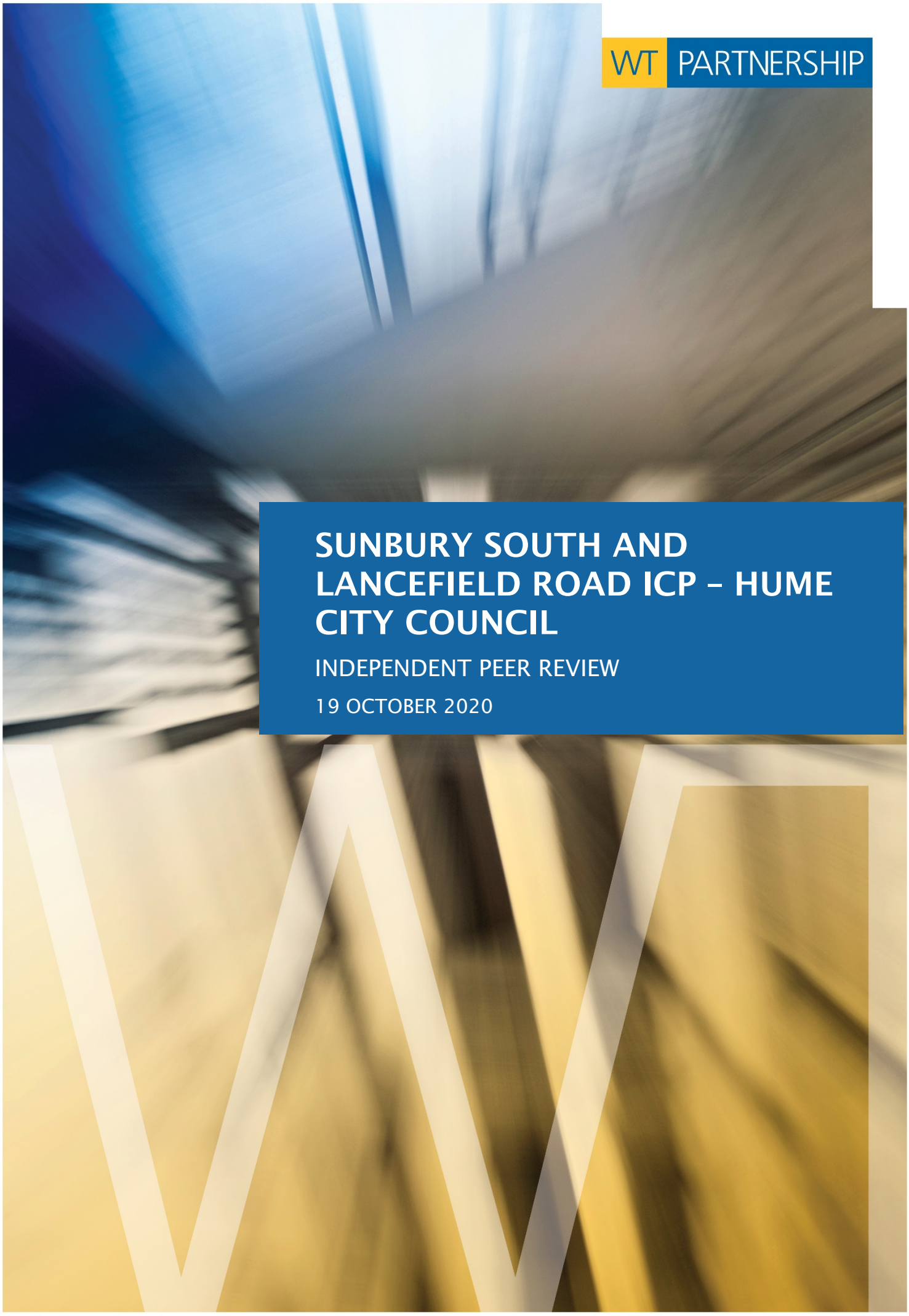

WT PARTNERSHIP

# SUNBURY SOUTH AND LANCEFIELD ROAD ICP – HUME CITY COUNCIL

## INDEPENDENT PEER REVIEW

19 OCTOBER 2020

# CONTENTS



# APPENDICES

# 1 INTRODUCTION

## 1.1 DECLARATION

1.1.1 I, Lance Weatherell, am an Associate of WTP Australia Pty Ltd (WT), an Australian owned quantity surveying practice. A copy of my Curriculum Vitae ("CV") is attached to this report at Appendix B.

1.1.2 WT provides specialist consultancy services to the construction and engineering industries. The principle services provided by WT are cost management and quantity surveying, asset and facilities management, project controls and contract support services.

1.1.3 In preparing this report I have had regard to the duties and responsibilities set out in the Planning Panels Victoria, 42. Guide to Expert Evidence, Expert Witnesses, April 2019.

1.1.4 I have made all enquiries which I believe are desirable and appropriate and no matters of significance which I regard as relevant have to my knowledge been withheld from the Panel.

1.1.5 This report does not purport to prove facts. All references to facts are to be read as references to assumed facts. Facts have been assumed for the purpose of carrying out the cost estimates and reaching the conclusions contained within this report. When a fact has been assumed based on the readings of a document, a reference to that document is generally provided to that document in the relevant section of this report.

1.1.6 I understand that the immediate use of this statement is for Planning Panels Victoria.

19 October 2020

Date

Mr Lance Weatherell

## 1.2 EXPLANATION OF EXPERTISE

1.2.1 In my role as a quantity surveyor I provide independent advice to both private and government clients offering independent assurance/validation that the estimates submitted as a representation of the construction costs for projects are market-related and relative to those that would be received in a competitive tendering environment.

## 1.3 BRIEF DESCRIPTION OF THE MATTER

1.3.1 WT Partnership (WT) have been engaged by Hume City Council to prepare independent cost estimates and provide a comparator to VPA's cost estimates on numerous bridges and roads included as part of the Sunbury South and Lancefield precincts.

## 1.4 INSTRUCTIONS

1.4.1 WT has been commissioned by Hume City Council to prepare independent cost estimates for seven Lancefield and Sunbury South bridges. Bridges included LR-BR-01 to LR-BR-03 (inclusive) and SS-BR-01 to SS-BR-04 (inclusive). In addition to bridge estimates, WT also prepared an estimate for one Sunbury South road, SS-RD-04 which was split into five sub-sections, SS-RD-04-01 to SS-RD-04-05 (inclusive). These estimates where produced to determine any differences to those costings provided by the VPA.

## 1.5 EXTENT OF WT PARTNERSHIP TENURE

1.5.1 I was engaged by Hume in April 2019. I undertook a review of designs provided by GHD and participated in two meetings with the GHD. At those meetings myself and GHD discussed differences in approach and reached a position of joint agreement. On 17 May 2019, the Sunbury and Lancefield Bridges Independent Cost Estimate Review No. 1 was issued to City of Hume.

## 1.6 DOCUMENTS EXAMINED BY WT PARTNERSHIP

1.6.1 In preparing this report, I have been provided with, and have examined the following relevant documents:

| AUTHOR | DATE(S) | REV NO. | DESCRIPTION |
|---|---|---|---|
| VPA | 02.08.2018 | Rev E | GHD Drawing No. 2113308A-CIV-1130 – Layout Plan – Ultimate Layout – SS-RD4 |
| VPA | 17.04.2019 | Rev F | GHD Drawing No. 2113308A-CIV-1131 – Alignment Plan – Ultimate Layout – SS-RD4 Sheet 1 |
| VPA | 17.04.2019 | Rev F | GHD Drawing No. 2113308A-CIV-1132 – Alignment Plan – Ultimate Layout – SS-RD4 Sheet 2 |
| VPA | 17.04.2019 | Rev K | GHD Drawing No. 2113308A-CIV-1133 – Alignment Plan – Ultimate Layout – SS-RD4 Sheet 3 |
| VPA | 17.04.2019 | Rev H | GHD Drawing No. 2113308A-CIV-1134 – Alignment Plan – Ultimate Layout – SS-RD4 Sheet 4 |
| VPA | 17.04.2019 | Rev F | GHD Drawing No. 2113308A-CIV-1135 – Alignment Plan – Ultimate Layout – SS-RD4 Sheet 5 |

| AUTHOR | DATE(S) | REV NO. | DESCRIPTION |
|---|---|---|---|
| VPA | 17.04.2019 | Rev G | GHD Drawing No. 2113308A-CIV-1136 – Alignment Plan – Ultimate Layout – SS-RD4 Sheet 6 |
| VPA | 13.08.2018 | Rev C | GHD Drawing No. 2113308A-STR-0401 – Jackson Creek Bridge (LR-BD1) – Alternative Long Option 3, General Arrangement Sheet 1 |
| VPA | 13.08.2018 | Rev B | GHD Drawing No. 2113308A-STR-0402 – Jackson Creek Bridge (LR-BD1) – Alternative Long Option 3, General Arrangement Sheet 2 |
| VPA | TBA | Rev D | GHD Drawing No. 2113308A-CIV-0204 (Rev D) |
| VPA | | Rev A | Aurecon Drawing No. 245435-002-DRG-BR-160-Southern Grade Separation Bridge. General Arrangement |
| VPA | TBA | Rev A | Parsons Brinckerhoff Drawing No. 2113308A-STR-0102 - Jackson Creek Bridge (SS-BD1) Alternative Long Option, Sheet 1 |
| VPA | TBA | Rev B | Parsons Brinckerhoff Drawing No. 2113308A-STR-0103 - Jackson Creek Bridge (SS-BD1) Alternative Long Option, Sheet 2 |
| VPA | TBA | Rev A | Aurecon Drawing No. 245435-0000-DRG-BR-1*0-Harpers Creek Bridge. General Arrangement |
| VPA | TBA | Rev A | Aurecon Drawing No. 245435-0000-DRG-BR-1*0-Harpers Creek Culvert. General Arrangement |
| VPA | TBA | Rev A | Aurecon Drawing No. 245435-0000-DRG-BR-160-Rail Grade Separation Bridge. General Arrangement |

# 2 EXECUTIVE SUMMARY

2.1.1 This report has been prepared at the request of Hume City Council as part of an independent review of the Sunbury South and Lancefield Road ICP being considered by Planning Panels Victoria.

2.1.2 This independent review has considered the cost estimates for seven bridge and one road project only within the Lancefield and Sunbury South precincts. Cost estimates were undertaken and reviewed against estimates as prepared for the exhibited amendment, including identification of any differences in scope and estimated costs.

2.1.3 All costs in this report exclude Goods & Services Tax (GST).

2.1.4 In the absence of any detailed design criteria provided, assumptions have been made as detailed in Section 5 of this report and the detailed cost estimates.

2.1.5 Independent cost estimates were undertaken on bridges LR-BR-01 to LR-BR-03 (inclusive), SS-BR-01 to SS-BR04 (inclusive) and road sections SS-RD4-01 to SS-RD4-05 (inclusive). The cost estimates have been prepared using first principles estimating based upon current day rates (as at May 2019) in addition to benchmarking where available from WT's internal database to derive a base case cost estimate.

2.1.6 Delivery Costs used are generally fixed percentage of the direct construction cost and have widely been accepted. Larger bridge projects such as LR-BR-01 to LR-BR-03 (inclusive), SS-BR-01and SS-BR-04 had an increased allowance of preliminaries from 22% to 25% due to the perceived requirement for a Tier 1 contractor.

2.1.7 The cost estimates have been contingency adjusted using the standard agreed percentage values, namely 20% for bridge projects and 15% for road projects. No Monte Carlo risk-based modelling to provide a P50 and P90 outputs were undertaken.

2.1.8 The contingency allowance has been applied to the construction value only.

2.1.9 No risk workshop and/or register has been developed as an assessment of both inherent and or contingent risk and it is assumed that the contingency percentage applied as part of the 'Delivery' costs seeks to cover those unmeasured items outside of the base case estimate. This is a reasonable assumption given the current level of design.

2.1.10 Detailed estimate cost sheets for the respective projects have been utilised in this review of the transport projects for Sunbury South and Lancefield Road.

2.1.11 WT's Independent Contingency adjusted cost estimate of bridge projects LR-BR-01 to LR-BR-03 (inclusive), and SS-BR-01 to SS-BR-04 (inclusive) is **$165,449,638**. This is less than the VPA's Cost Estimates of **$166,353,643** by **$906,006** or 0**.54%.**

2.1.12 WT's Independent Contingency adjusted cost estimate of road project(s) SS-RD4-01 to SS-RD4-05 is **$55,038,362**. This is less than the VPA's Cost Estimates of **$55,622,708** by **$584,346** or 1**.05%.**

2.1.13 The cost of bridge project LR-BR-01is $98,847,358 or approximately 60% of the total bridge cost estimates. A contributing factor for the cost of this bridge and its high rate per $m^2$ is the requirement for large 50m spans across Jacksons Creek. The design calls for 3 No. large steel box girders to support the bridge deck across these large spans.

2.1.14 The cost of road project SD-RD4-05 represents a significant portion of the overall total cost of the road projects being $17,565,007 or approximately 32% of the total road cost estimates. A contributing factor for the cost of this road and its high rate per m2 is large volume of earthworks and retaining walls due to the current design.

2.1.15 Costs are based upon current day costs excluding escalation.

2.1.16 We highlight that due to the conceptual nature of the documentation provided we would assume the level of accuracy to be in the order of +/- 30%.

2.1.17 A detailed breakdown of all our cost estimates are attached as Appendix A.

# 3 REVIEW OF BENCHMARK INFRASTRUCTURE COSTINGS

The table below is a summary comparison of the risk adjusted costs for Sunbury and Lancefield bridge projects.

| CODE | DESCRIPTION | BY VPA TOTAL COST (INCLUDING DELIVERY) (A) | BY WTP TOTAL COST (INCLUDING DELIVERY) (B) | DIFFERENCE (A - B) | |
|---|---|---|---|---|---|
| | | $ | $ | $ | % |
| LR-BR-01 | Sunbury Ring Road: Northern Link - Jacksons Creek Crossing - Construction of 2 Lane Bridge (50m span steel box girders) | 98,905,515 | 98,847,358 | 58,157 | 0.06% |
| LR-BR-02 | Sunbury Ring Road: Northern Link Grade Separation - Construction of 2 Lane Road Underpass of Rail Line | 9,653,567 | 10,065,442 | (411,875) | (4.27%) |
| LR-BR-03 | Balbethan Drive Grade Separation - Construction of 2 Lane Road Overpass of Rail Line | 9,488,005 | 9,065,949 | 422,056 | 4.45% |
| SS-BR-01 | Sunbury Ring Road: Northern Link - Sunbury Ring Road: Southern Link - Jacksons Creek Crossing - Construction of 2 Lane Bridge | 27,950,062 | 26,531,351 | 1,418,710 | 5.08% |
| SS-BR-02 | Sunbury Ring Road: Southern Link - Harpers Creek East Crossing - Construction of 2 Lane Bridge | 1,851,961 | 1,914,056 | (62,096) | (3.35%) |
| SS-BR-03 | Sunbury Ring Road: Southern Link - Harpers Creek West Crossing - Construction of Culvert | 388,462 | 380,980 | 7,482 | 1.93% |
| SS-BR-04 | Sunbury Ring Road: Southern Link Grade Separation - Construction of 2 Lane Road Underpass of Rail Line | 18,116,071 | 18,644,500 | (528,429) | (2.92%) |
| **TOTALS** | | **$166,353,643** | **$165,449,638** | **($904,006)** | **0.54%** |

The table below is a summary comparison of the risk adjusted costs for Sunbury South and road projects.

| CODE | DESCRIPTION | BY VPA TOTAL COST (INCLUDING DELIVERY) (A) | BY WTP TOTAL COST (INCLUDING DELIVERY) (B) | DIFFERENCE (A - B) | |
|---|---|---|---|---|---|
| | | $ | $ | $ | % |
| SS-RD4-01 | Sunbury Ring Road: Jacksons Hill Creek Crossing - South - SS-RD-04-01 (Approx. length 1580m, excluding Intersections) | 12,672,310 | 12,343,926 | 328,384 | 2.59% |
| SS-RD4-02 | Sunbury Ring Road: Jacksons Hill Creek Crossing - South - SS-RD4-02 (Long Options, approx. length 630m, excluding intersections) | 6,040,117 | 6,115,158 | (75,041) | (1.24%) |
| SS-RD4-03 | Sunbury Ring Road: Jacksons Hill Creek Crossing - South - SS-RD4-03 (Long Options, approx. length 955m, excluding Intersections) | 14,895,574 | 15,319,944 | (424,370) | (2.58%) |
| SS-RD4-04 | Sunbury Ring Road: Jacksons Hill Creek Crossing - South - SS-RD4-04 (Long Options, approx. length 235m, excluding Intersections) | 3,855,678 | 3,694,328 | 161,350 | 4.18% |
| SS-RD4-05 | Sunbury Ring Road: Jacksons Hill Creek Crossing - South - SS-RD4-05 (Long Options, approx. length 330m, excluding Intersections) | 18,159,029 | 17,565,007 | 594,022 | 3.27% |
| **TOTALS** | | **$55,622,708** | **$55,038,362** | **($584,346)** | **1.05%** |

Intersection works have not been included within the independent road estimate reviews.

# 4 ESTIMATE METHODOLOGY

The methodology that we have assumed in the preparation of the estimates are as follows:

## 4.1 COST ESTIMATES

4.1.1 Identification and review of the appropriate drawing(s) for each respective item as per the information /documentation provided (Section 1.5 refers).

4.1.2 Identification and quantification of the various measurable components that make up the cost estimate for each respective item (i.e. area of pavement / bridge deck, length of kerb / pipework, etc.).

4.1.3 Where alternate units of measurement have been used in the preparation of our cost estimates or where new items have been added, it has been noted in our detailed comments.

4.1.4 Cost estimates are generally based upon 'first principles' estimating methods based upon current day rates and reflect the 'base case (or 'most likely') cost estimate. These have been benchmarked against rates from current projects of a similar nature within our cost database.

4.1.5 Delivery costs have been included as a percentage consistent with those applied by the VPA.

## 4.2 RISK

4.2.1 Measured items within the cost estimates have been quantified and costed on the information available and cost estimates would be presumed to be "most likely" costs.

4.2.2 Cost estimates have been contingency adjusted using the VPA nominated percentage value, namely 20% for bridge projects and 15% for road projects.

4.2.3 Contingency allowance has been applied to the construction value only.

4.2.4 No direction was provided to request the production of Probabilistic cost estimates using Monte Carlo or similar type simulation software to deliver P50/P90 value outcomes.

4.2.5 No risk workshop(s) and/or risk register(s) has been developed as an assessment of both inherent and or contingent risk and it is assumed that the contingency percentage applied as part of the 'Delivery' costs seeks to cover those unmeasured items outside of the base case estimate. This is a reasonable assumption given the current level of design.

# 5 ESTIMATE INCLUSIONS & ASSUMPTIONS

The assumptions that we have used in the preparation of the estimates are as follows:

## 5.1 GENERALLY

5.1.1 As the drawings issued represent generic transport projects, the cost estimates assume natural site profiles.

5.1.2 Estimates have been measured using a standard work breakdown structure to enable reconciliation of costs. Due to the level of design, many assumptions have been made regarding in ground conditions, structure types, structure size, spans, etc. Differing assumptions made by both parties were discussed at review meetings and where possible alignment of assumptions and final agreement between WT Partnership and VPA was realised.

5.1.3 The Estimate assumes competitive lump sum tender for the whole of the works from suitably qualified contractors.

## 5.2 BRIDGES

### 5.2.1 BRIDGE LR-BR-01

The following assumptions are reflected in our bridge cost estimates:

- Deck Length 490 m
- Deck Width 16 m
- Deck Area 7,840 $m^2$
- Bored Piles 1200 Diameter x 20000 long 50 Mpa Concrete Bored Piles Including Reo Rate say 220kg/$m^3$ - Assume 10 No. per pile cap
- Pile Cap 16000 long x 2500 wide x 2400 deep with 40Mpa Concrete and Reo Rate say 150kg/$m^3$
- Pier Columns 12000 wide x 2500 thick 40 Mpa Concrete Pier Column including Reo Rate of say 240kg/$m^3$
- Crosshead 1200 wide x 1000 deep 40 Mpa including 200kg/m3 & top say 15,000 wide x 3500 deep including reo rate 300kg/$m^3$
- 3 No. 3000 deep steel box girders comprising 32 mm thick Top Flange, 60 mm thick Bottom Flange & 16 mm thick Web/Sides + Bracing (as advised by GHD +(10% Bolts & Connections allowance)
- Deck Slabs 150 mm thick 40 Mpa including Reo Rate of 280kg/$m^3$
- Approach Slabs 350 mm thick 50 Mpa including Reo Rate of 250kg/$m^3$ [2 No.]
- On Structure Barriers - High Containment
- Pavement profile is 195 mm thick asphalt in 3 layers
- Off Structure Barriers - Medium Containment & Armco Type
- Street Lighting Pole mounted – 35 m centres / both sides
- Architectural Screens (say 1800 high) – 980 m - Rate of $600/m is low
- Access Road to Laydown Points – 1,250 $m^2$
- Additional Lay Down Points for Cranage – 1,800$m^2$
- Extra Over Foundations for Rock Excavation (Assume 30% in Rock) – 789 $m^3$
- Increase in Head Contractor Preliminaries (22% to 25%)

### 5.2.2 BRIDGE LR-BR-02

The following assumptions are reflected in our cost estimate:

- Deck Length 22 m
- Deck Width 13 m
- Deck Area 291 $m^2$
- Earthworks – Bulk Cut to Road Under Rail Bridge
- 1200 diameter x 10000 long 50 Mpa Concrete Bored Piles including Reo Rate say 200kg/$m^3$
- Prestressed Super T Beam 2200 wide x 1200 deep x 120 thick overall with a 700 mm wide x 350 mm thick base

- Deck Slabs 200 mm thick 40 Mpa including Reo Rate of 280kg/m$^3$
- Steel & Gridmesh cantilevered walkway to both sides of bridge
- Approach Slabs 350 mm thick 50 Mpa including Reo Rate of 250kg/m$^3$ [2 No.]
- On Structure Barriers - High Containment
- Retaining Walls 200 thick - (Inside of Bored Pile)
- 50mm thick asphalt pavement
- Handrails to sides of cantilevered walkways
- Medium Containment/Crash Barriers to underside of bridge against retaining walls
- Allowance for Lighting (Soffit Mounted to bridge deck soffit)
- Drainage Slots & Droppers to Creek Below (say 50 m centres)
- Drainage to Approach Slabs
- Drainage to lowered road under
- Sump Pump & Pit
- Rail Related Items Below (including).
    - a. Lowering of Track & Ballast (Assume + 100 m each way both sides)
    - b. Rail Signalling Adjustments
    - c. Rail Occupation Costs - Vline - 2 Weekend allowance
    - d. Rail Occupation Costs - Vline - 2 Full Week closure allowance
- Architectural / Anti Throw Screens (say 1800 high)
- Signage
- De-watering works
- LXRA - Project Management / On Costs 16% allowance
- Extra Over for Rock Excavation 30%
- Increase in Head Contractor Preliminaries (22% to 25%)

### 5.2.3 BRIDGE LR-BR-03

The following assumptions are reflected in our cost estimate:

- Deck Length 20 m
- Deck Width 15 m
- Deck Area 299 m$^2$
- Earthworks – Bulk Cut for Rail Under Approach (Assume Lowering Rail 1m deep x 100m each approach of bridge included)
- Earthworks – Bulk Fill for Road Approach (500m3 Assumed) to raise road bridge over rail.
- 1200 diameter x 10000 long 50 Mpa Concrete Bored Piles including Reo Rate say 200kg/m$^3$. 4 No. under each abutment beam
- Prestressed Super T Beam 2200 wide x 1000 deep x 120 thick overall with a 700 mm wide x 350 mm thick base
- Deck Slabs 200 mm thick 40 Mpa including Reo Rate of 280kg/m$^3$
- Approach Slabs 350 mm thick 50 Mpa including Reo Rate of 250kg/m$^3$ [2 No.]

- On Structure Barriers - High Containment
- Retaining Walls 200 thick - (Inside of Bored Pile) + Rail Under Approach 450 m each approach of bridge included
- 50 mm thick asphalt pavement
- Off Structure Barriers - Armco type barriers
- Allowance for Street Lighting (Pole Mounted @ 35 m centres both sides)
- Drainage Slots & Droppers to Creek Below (say 50 m centres)
- Drainage to Approach Slabs
- Drainage to lowered rail under
- Sump Pump & Pit
- Rail Related Items Below (including).
  - a. Lowering of Track & Ballast (Assume + 100 m each way both sides)
  - b. Rail Signalling Adjustments
  - c. Rail Occupation Costs (Major) - Vline - 2 Weekend allowance
- Architectural / Anti Throw Screens (say 1800 high)
- Signage
- De-watering works
- LXRA - Project Management / On Costs 16% allowance
- Extra Over for Rock Excavation 30%
- Increase in Head Contractor Preliminaries (22% to 25%)

### 5.2.4 BRIDGE SS-BR-01

The following assumptions are reflected in our cost estimate:

- Deck Length 315 m
- Deck Width 14 m
- Deck Area 4,539 m²
- 450 x 450 square x 20000 long 50 Mpa Concrete Driven Piles including Reo Rate say 200kg/m³ - Assume 10 No. per pile cap
- Pile Cap 13500 long x 2500 wide x 1200 deep with 40Mpa Concrete and Reo Rate say 100kg/m³
- 3200 wide x 1500 thick 40 Mpa Precast concrete Pier Column including Reo Rate of say 240kg/m³
- Crosshead 1200 wide x 1000 deep 40 Mpa including 200kg/m³
- Prestressed Super T Beam 2200 wide x 1800 deep x 120 thick overall with a700mm wide x 350mm thick base
- Deck Slabs 200 mm thick 40 Mpa including Reo Rate of 280kg/m³
- Approach Slabs 350 mm thick 50 Mpa including Reo Rate of 250kg/m³ [2 No.]
- On Structure Barriers - Medium Containment
- Retaining Walls - Wing & Keeper Walls
- 195 mm thick asphalt pavement in 3 layers

- Off Structure Barriers - Armco type barriers
- Allowance for Street Lighting (Pole Mounted @ 35 m centres both sides)
- Drainage Slots & Droppers to Creek Below (say 50 m centres)
- Drainage to Approach Slabs
- Architectural Screens (say 1800 high)
- Access Road to Laydown Points
- Additional Lay Down Points for Cranage
- Extra Over for Rock Excavation 30%
- Signage
- De-watering works
- Services Relocation surrounding approach slabs
- Increase in Head Contractor Preliminaries (22% to 25%)

### 5.2.5 BRIDGE SS-BR-02

The following assumptions are reflected in our cost estimate:

- Deck Length 22 m
- Deck Width 12 m
- Deck Area 271 $m^2$
- 900 Diameter x 10000 long 50 Mpa Concrete Bored Piles including Reo Rate say 200kg/$m^3$ - Assume 10 No. per pile cap
- Prestressed Super T Beam 2200 wide x 1200 deep x 120 thick overall with a 700 mm wide x 350 mm thick base
- Deck Slabs 200 mm thick 40 Mpa including Reo Rate of 280kg/$m^3$
- Approach Slabs 350 mm thick 50 Mpa including Reo Rate of 250kg/$m^3$ [2 No.]
- On Structure Barriers - Medium Containment
- Retaining Walls - Wing & Keeper Walls
- 50 mm thick asphalt pavement
- Off Structure Barriers Armco Type
- Allowance for Street Lighting (Pole Mounted @ 35 m centres both sides)
- Drainage Slots & Droppers to Creek Below (say 50 m centres)
- Drainage to Approach Slabs
- Extra Over for Rock Excavation 30%

### 5.2.6 BRIDGE SS-BR-03

The following assumptions are reflected in our cost estimate:

- Deck Length 17.97 m
- Deck Width 2.41 m
- Deck Area 43 $m^2$
- Single span precast inverted culvert
- Base Slab 97 $m^2$ to full width

- Wing & Headwalls
- Rock Beaching 300 mm thick
- Deck Slabs 200 mm thick 40 Mpa including Reo Rate of 280kg/$m^3$
- Approach Slabs 350 mm thick 50 Mpa including Reo Rate of 250kg/$m^3$ [2 No.]
- 195mm thick asphalt pavement in 3 layers
- Barriers – Handrails only
- 1 No. pole mounted streetlight included
- Extra Over for Rock Excavation 30%

### 5.2.7 BRIDGE SS-BR-04

The following assumptions are reflected in our cost estimate:

- Deck Length 22 m
- Deck Width 13 m
- Deck Area 291 $m^2$
- Earthworks – Bulk Cut for Road Under
- 1200 diameter x 10000 long 50 Mpa Concrete Bored Piles including Reo Rate say 200kg/$m^3$. 4 No. under each abutment beam
- Prestressed Super T Beam 2200 wide x 1200 deep x 120 thick overall with a 700 mm wide x 350 mm thick base
- Prestressed Super T Beam 3000 wide x 750 deep x 120 thick overall with a 700 mm wide x 350 mm thick base
- Deck Slabs 200 mm thick 40 Mpa including Reo Rate of 280kg/$m^3$
- Approach Slabs 350 mm thick 50 Mpa including Reo Rate of 250kg/$m^3$ [2 No.]
- On Structure Barriers – Balustrades
- Retaining Walls 200 thick - (Inside of Bored Pile)
- 600 mm wide cantilevered walkway
- 195 mm thick asphalt pavement in 3 layers
- Medium Containment Barriers in cutting and Armco type to approaches
- Allowance for Street Lighting (bridge soffit mounted)
- Drainage to bridge
- Drainage to Approach Slabs
- Drainage to lowered road under
- Sump Pump & Pit
- Rail Related Items Below (including).
    - a. Track & Ballast (Assume + 100m each way)
    - b. OHLE (Assume + 100m each way)
    - c. Signalling Adjustments
    - d. Rail Occupation Costs (Power Off)
    - e. Rail Occupation Costs (Major)
- APA Gas $4,400,000

- Telstra NBN $400,000
- Western Water Sewer $300,000
- Extra Over for Rock Excavation 30%
- LXRA - Project Management / On Costs 16%
- Increase in Head Contractor Preliminaries (22% to 25%) Length 17.97 m

## 5.3 ROADS

### 5.3.1 BRIDGE SD-RD4-01 to 05 (inclusive) Typically

The following assumptions are reflected in our road cost estimates:

- Demolition / Site Preparation - Road Length x 35 m width
- Earthworks – No separate independent measure (No documents available) –
- WT Partnership used GHD quantity
- All bulk earthwork quantities have been supplied by GHD. GHD has informed WT Partnership that any bridge bulk earthworks are to be directly below the bridge. WT Partnership has been advised by GHD that the balance of all bulk earthworks have been included within these roadwork quantities.
- Extra Over for Rock Excavation 30% of cut Volume is reasonable. WT believe rate of $140/m$^3$ for (hard) rock excavation is a more reasonable assumption and rate.
- Set out cost – WT allowance of $10,000 per section of road.
- Road Pavement – Road Length x 2 No. x 5.80 m wide overall, consisting of a 3.50 m wide Traffic Lane and a 2.30 m wide Parking Bay.
- Kerb and channel – Road Length x 4 No.
- Footpath / Bike Path – Road Length x 2 No. x 1.50 m wide
- Bike Path – Road Length x 2 No. x 1.70 m wide
- Concrete Median (between traffic lanes) – Road Length x 7.0 m wide
- Stormwater & subsoil drainage (average 450 diameter RCP) – Road Length x 2 No.
- Side Entry Pits @ 75 m centres of stormwater drainage lines
- Nature strip – Road Length x 3.50 m wide x 2 No.
- Pole mounted street lighting, twin arm within central median @ 50 m centres of road length
- Retaining Walls – No separate independent measure (No documents available)
- WT Partnership used GHD quantity. GHD rate/m extremely low. WT use rate of $1,250/m$^2$ including wall, foundation, backfill, drainage, finishes, etc.
- All retaining wall quantities have been supplied by GHD. GHD has informed WT Partnership that any retaining walls for bridges are to be only for directly below the bridge. WT Partnership have been advised by GHD that the balance of all retaining walls have been included within these roadwork quantities.

## 5.4 DELIVERY COSTS

The VPA have set the percentages for delivery costs, and these have been applied in the preparation of the estimates as follows:

5.4.1 Allowance for Council Fees – 3.25% of total direct cost

5.4.2 Allowance for Traffic Management - 5% of total direct cost.

5.4.3 Allowance for Environmental Management - 0.5% of total direct cost

5.4.4 Allowance for Survey & Design - 5% of total direct cost

5.4.5 Allowance for Supervision & Project Management - 9% of total direct cost

5.4.6 Allowance for Site Establishment - 2.5% of total direct cost.

5.4.7 Allowance for Contingency - 15% of total direct cost (20% for Bridges).

# 6 ESTIMATE EXCLUSIONS

The exclusions that we have used in the preparation of the estimates are as follows:

6.1.1 Land and Property Acquisitions

6.1.2 Demolition of Major Structures

6.1.3 Contamination, Removal of hazardous Materials and Site Remediation

6.1.4 Underpinning of adjacent footings

6.1.5 Abnormal and unforeseen ground conditions (e.g. Major Soft Spots, Rock Excavation over and above the 30% included)

6.1.6 Site access restrictions

6.1.7 Work out of normal working hours

6.1.8 Future Cost escalation in construction prices beyond April 2019

6.1.9 Consultant Fees

6.1.10 VicRoads Fees

6.1.11 Authority Fees, Charges and Headworks

6.1.12 Any non-construction Development Cost

6.1.13 Delay and Prolongation Allowances

6.1.14 GST

# 7 CONCLUSION

I conclude that overall, the costs prepared by VPA for the Sunbury South and Lancefield Road Bridge projects are low by approximately 0.5%, for the reasons detailed in this report.

I can also conclude that overall, the costs prepared by VPA for the Sunbury South and Lancefield Road Bridge projects are high by approximately 1.0%, for the reasons detailed in this report.

In summary, this report highlights that VPA and WT Partnerships overall project cost estimates are within approximately 1% of each other after reconciliation is undertaken. It is generally recommended that if variance in cost is within +/-5% then the comparable estimates are within a reasonable band.

We highlight that due to the conceptual nature of the documentation provided we would assume the level of accuracy of cost estimates to be in the order of +/- 30%.

Should you require any further assistance in the above matters please do not hesitate to contact Mr Lance Weatherell of WT Partnership.

# APPENDIX A
## COST ESTIMATES

**CITY OF HUME**
**Sunbury and Lancefield Bridges**
**RECONCILIATION**

WT PARTNERSHIP

17/05/2019

| Item | Code | Project Title & Description | WTP Independent Estimate (a) | GHD Estimate (b) | Difference (b - a) | % | Comments |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| 1 | LR-BR-01 | Sunbury Ring Road: Northern Link - Jacksons Creek Crossing - Construction of 2 Lane Bridge | 98,847,358 | 98,905,515 | 58,157 | 0.06% | Refer to WTP estimate breakdown |
| 2 | LR-BR-02 | Sunbury Ring Road: Northern Link Grade Separation - Construction of 2 Lane Road Underpass of Rail Line | 10,065,442 | 9,653,567 | - 411,875 | -4.27% | |
| 3 | LR-BR-03 | Balbethan Drive Grade Separation - Construction of 2 Lane Road Overpass of Rail Line | 9,065,949 | 9,488,005 | 422,056 | 4.45% | |
| 4 | SS-BR-01 | Sunbury Ring Road: Southern Link - Jacksons Creek Crossing - Construction of 2 Lane Bridge | 26,531,351 | 27,950,062 | 1,418,710 | 5.08% | |
| 5 | SS-BR-02 | Sunbury Ring Road: Southern Link - Harpers Creek East Crossing - Construction of 2 Lane Bridge | 1,914,056 | 1,851,961 | - 62,096 | -3.35% | |
| 6 | SS-BR-03 | Sunbury Ring Road: Southern Link - Harpers Creek West Crossing - Construction of Culvert | 380,980 | 388,462 | 7,482 | 1.93% | |
| 7 | SS-BR-04 | Sunbury Ring Road: Southern Link Grade Separation - Construction of 2 Lane Road Underpass of Rail Line | 18,644,500 | 18,116,071 | - 528,429 | -2.92% | |
| | | | | | | | |
| | | **Total Construction Cost** | **165,449,638** | **166,353,643** | **904,006** | **0.54%** | |

**CITY OF HUME**
**Sunbury and Lancefield Roads**
**RECONCILIATION**

WT PARTNERSHIP

17/05/2019

| Item | Code | Project Title & Description | WTP Independent Estimate (a) | GHD Estimate (b) | Difference (b - a) | % | Comments |
|---|---|---|---|---|---|---|---|
| | | **Construction & Delivery Costs** | | | | | |
| 1 | SD-RD4-01 | Sunbury Ring Road: Jacksons Hill Creek Crossing - South - SS-RD-04-01 (Approx. length 1580m, excluding Intersections) | 12,343,926 | 12,672,310 | 328,384 | 2.59% | Refer to WTP estimate breakdown |
| 2 | SD-RD4-02 | Sunbury Ring Road: Jacksons Hill Creek Crossing - South - SS-RD4-02 (Long Options, approx. length 630m, excluding Intersections) | 6,115,158 | 6,040,117 | - 75,041 | -1.24% | |
| 3 | SD-RD4-03 | Sunbury Ring Road: Jacksons Hill Creek Crossing - South - SS-RD4-03 (Long Options, approx. length 955m, excluding Intersections) | 15,319,944 | 14,895,574 | - 424,370 | -2.85% | |
| 4 | SD-RD4-04 | Sunbury Ring Road: Jacksons Hill Creek Crossing - South - SS-RD4-04 (Long Options, approx. length 235m, excluding Intersections) | 3,694,328 | 3,855,678 | 161,350 | 4.18% | |
| 5 | SD-RD4-05 | Sunbury Ring Road: Jacksons Hill Creek Crossing - South - SS-RD4-05 (Long Options, approx. length 330m, excluding Intersections) | 17,565,007 | 18,159,029 | 594,022 | 3.27% | |
| | | | | | | | |
| | | **Total Construction Cost** | **55,038,362** | **55,622,708** | **584,346** | **1.05%** | |

**CITY OF HUME**
**Sunbury and Lancefield Bridges**
**Independent Estimators Review**

17/05/2019

| ITEM | CODE | DESCRIPTION | QTY | UNIT | RATE | AMOUNT |
|---|---|---|---|---|---|---|
| | | **Construction & Delivery Costs** | | | | |
| 1 | LR-BR-01 | Sunbury Ring Road: Northern Link - Jacksons Creek Crossing - Construction of 2 Lane Bridge (50m span steel box girders) | 7840 | m2 | 12,608 | 98,847,358 |
| 2 | LR-BR-02 | Sunbury Ring Road: Northern Link Grade Separation - Construction of 2 Lane Road Underpass of Rail Line | 291 | m2 | 34,605 | 10,065,442 |
| 3 | LR-BR-03 | Balbethan Drive Grade Separation - Construction of 2 Lane Road Overpass of Rail Line | 299 | m2 | 30,359 | 9,065,949 |
| 4 | SS-BR-01 | Sunbury Ring Road: Southern Link - Jacksons Creek Crossing - Construction of 2 Lane Bridge | 4539 | m2 | 5,845 | 26,531,351 |
| 5 | SS-BR-02 | Sunbury Ring Road: Southern Link - Harpers Creek East Crossing - Construction of 2 Lane Bridge | 271 | m2 | 7,073 | 1,914,056 |
| 6 | SS-BR-03 | Sunbury Ring Road: Southern Link - Harpers Creek West Crossing - Construction of Culvert | 43 | m2 | 8,797 | 380,980 |
| 7 | SS-BR-04 | Sunbury Ring Road: Southern Link Grade Separation - Construction of 2 Lane Road Underpass of Rail Line | 291 | m2 | 64,099 | 18,644,500 |
| | | **Total Construction Cost** | | | | **165,449,638** |

**CITY OF HUME**
**Sunbury and Lancefield Bridges**
**LR-BR-01 Sunbury Ring Road: Northern Link - Jacksons Creek Crossing - Construction of 2 Lane Bridge (50m span steel box girder)**

| | | |
|---|---|---|
| Length | m | 490 |
| Width | m | 16 |
| Area | m2 | 7,840 |

| | | | WTP Estimate | | | | | GHD Estimate | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Item | | Description | QTY | UOM | Rate | Total (a) | Comments | QTY | UOM | Rate | Total (b) | *Diff. (b - a)* | *%* |
| | | **WORKS** | | | | - | | | | | | | |
| | 1 | **SITEWORKS AND EARTHWORKS** | | | | | | | | | | | |
| 1.01 | | Site preparation | 2,000 | m2 | $ 2.75 | 5,500 | Allowance 50m x 20m Each End of Bridge | | | | - | *- 5,500* | *-100%* |
| 1.02 | | Earthworks | 10,000 | m3 | $ 49.50 | 495,000 | Allowance 50m x 20m x 5m Each End of Bridge | 10,000 | m3 | 50 | 500,000 | *5,000* | *1%* |
| 1.03 | | Set-Out | 2 | Item | $ 5,500 | 11,000 | Working Platforms (Each End) | 1 | Item | 12,500 | 12,500 | *1,500* | *12%* |
| | 2 | **STRUCTURE** | | | | | | | | | | | |
| 2.01 | | Slab and foundations/piers/beams | 7,840 | m2 | $ - | - | | | | | - | *-* | *0%* |
| 2.02 | | Mobilize / Demobilize Rig | 2 | No | $ 27,500 | 55,000 | Each End | | | | | *- 55,000* | *-100%* |
| 2.03 | | Say 1200 Dia x 20000 long 50 Mpa Concrete Bored Piles including Reo Rate say 220kg/m3 - Assume 10 No. per pile cap | 110 | No | $ 35,200 | 3,872,030 | Refer assumptions | 2,600 | LM | 1,800 | 4,680,000 | *807,970* | *17%* |
| 2.04 | | Pile Cap 16000 long x 2500 wide x 2400 deep with 40Mpa Concrete and Reo Rate say 150kg/m3 | 9 | No. | $ 126,500 | 1,138,500 | Refer assumptions | 624 | m3 | 650 | 405,600 | *- 732,900* | *-181%* |
| 2.05 | | Pier concrete Column 12,000w x 2500d 40Mpa | | | | - | | 8,970 | m3 | 1,100 | 9,867,000 | *9,867,000* | *100%* |
| 2.06 | | Reinforced conc Crosshead Abutment 1200w x 1000d 40Mpa | | | | - | | 1,208 | m3 | 2,500.78 | 3,020,940 | *3,020,940* | *100%* |
| 2.07 | | Say 15000 wide x 3500 thick 40 Mpa Concrete Pier Column including Reo Rate of say 300kg/m3 | 233 | m | $ 26,400 | 6,151,168 | Refer assumptions | | | | | *- 6,151,168* | *-100%* |
| 2.08 | | Crosshead 16000 long x 2700 deep 40 Mpa including 300kg/m3 | 9 | No | $ 211,199 | 1,900,795 | (Top of Pier) Refer assumptions | | | | | *- 1,900,795* | *-100%* |
| 2.09 | | Elastomeric Bearings | 78 | No | $ 1,650 | 128,700 | Refer assumptions | | | | | *- 128,700* | *-100%* |
| 2.1 | | Supply steel plate web girder incl.painting | 4,290 | t | $ 8,250 | 35,392,500 | 32mm thick Top Flange, 60mm thick Bottom Flange & 16mm thick Web/Sides + Bracing $3,900t + 10% Bolts & Connections | | | | | *- 35,392,500* | *-100%* |
| 2.11 | | Beam delivery | 30 | no | $ 5,500 | 165,000 | 10 Spans x 3 Beams | | | | | *- 165,000* | *-100%* |
| 2.12 | | Unload and splicing | 30 | no | $ 33,000 | 990,000 | 10 Spans x 3 Beams | | | | | *- 990,000* | *-100%* |
| 2.13 | | Load for bridge area | 30 | no | $ 5,500 | 165,000 | 10 Spans x 3 Beams | | | | | *- 165,000* | *-100%* |
| 2.14 | | Crane mob/demob | 2 | no | $ 110,000 | 220,000 | | | | | | *- 220,000* | *-100%* |
| 2.15 | | 2 no of 200 tn crane | 7 | day | $ 33,000 | 231,000 | | | | | | *- 231,000* | *-100%* |
| 2.16 | | Labour- 11 men | 77 | mday | $ 1,150 | 88,512 | | | | | | *- 88,512* | *-100%* |
| 2.17 | | Site splice incl.testing | 12 | no | $ 16,500 | 198,000 | | | | | | *- 198,000* | *-100%* |
| 2.18 | | Temporary Tower supply , place and remove | | | | - | | | | | | *-* | *-100%* |
| 2.19 | | Piling | 360 | m | $ 1,152 | 414,612 | Separate Piling for Temp. Tower | | | | | *- 414,612* | *-100%* |
| 2.2 | | Pile cap | 130 | m3 | $ 1,987 | 258,258 | Separate for Temp. Tower | | | | | *- 258,258* | *-100%* |
| 2.21 | | Piers | 350 | m3 | $ 3,080 | 1,078,000 | Separate for Temp. Tower | | | | | *- 1,078,000* | *-100%* |
| 2.22 | | Demolishing | 10 | days | $ 8,800 | 88,000 | Separate for Temp. Tower | | | | | *- 88,000* | *-100%* |
| 2.23 | | Bridge decking / conc slab (200mm thk) including 3000mm deep steel girders | | | | - | | 7,383 | m3 | 4,450.00 | 32,854,350 | *32,854,350* | *100%* |
| 2.24 | | Deck Slabs 150mm thick 40 Mpa including Reo Rate of 280kg/m3 | 7,845 | m2 | $ 358 | 2,804,588 | Or 270mm thick deck slab (70mm Transfloor Panel + 200mm thick insitu deck | | | | | *- 2,804,588* | *-100%* |
| 2.25 | | Retaining Walls - Wing & Keeper Walls | 216 | m2 | $ 1,100 | 237,600 | @ Bridge abutments | | | | | *- 237,600* | *-100%* |
| 2.26 | | Retaining Walls - Fender Wall with Reo Rate of 200kg/m3 | 2 | No | $ 16,500 | 33,000 | @ Bridge abutments | | | | | *- 33,000* | *-100%* |
| 2.27 | | Rock Beaching - say 300 thick | 582 | m3 | $ 176 | 102,369 | @ Bridge abutments | | | | | *- 102,369* | *-100%* |
| 2.28 | | Bridge containment barriers | 980 | m | $ 2,750 | 2,694,835 | Barriers - High Containment | 1,000 | LM | 2,850 | 2,850,000 | *155,165* | *5%* |
| 2.29 | | Constructability (Temp piling for tower, Pile cap for temp tower, Temp tower piers, Demolishing, Unload and splicing, Load for bridge area, Crane mob/demob, 2 no of 200 tn crane, Labour- 11 men, Site splice incl.testing, Temporary Tower supply , place and remove, Access Road to Laydown Points & Additional Lay Down Points for Cranage) | | | | - | WTP Included Above | 1 | Item | 7,624,184 | 7,624,184 | *7,624,184* | *100%* |
| | 3 | **ON BRIDGE WORKS** | | | | | | | | | | | |
| 3.01 | | Asphalt | 7,840 | m2 | $ 107 | 840,840 | 195mm thick asphalt pavement in 3 layers | 4,410 | m2 | 110 | 485,100 | *- 355,740* | *-73%* |
| 3.02 | | Ditto to Bridge Approach Ramps on Grade | 128 | m2 | $ 121 | 15,488 | 195mm thick asphalt pavement in 3 layers | | | | - | *- 15,488* | *-100%* |
| 3.03 | | Kerb and Channel | 980 | m | $ 72 | 70,066 | 2 No. x 490m | 1,000 | LM | 75 | 75,000 | *4,934* | *7%* |
| 3.04 | | Footpath | 1,960 | m2 | $ 154 | 301,822 | Both Sides (Inc. Cycle Path) | 1,500 | m2 | 66 | 99,000 | *- 202,822* | *-205%* |
| 3.05 | | Allow for linemarking | 1,470 | m | $ 6 | 8,085 | 3 No. full length | | | | - | *- 8,085* | *-100%* |
| 3.06 | | Lighting | 30 | No | $ 13,200 | 396,000 | Allowance for Street Lighting (Pole Mounted @ 35m centres both sides) | 34 | No | 17,500 | 595,000 | *199,000* | *33%* |
| 3.07 | | Allowance for Conduits | 3,920 | m | $ 17 | 64,676 | | | | | | *- 64,676* | *-100%* |

**CITY OF HUME**
**Sunbury and Lancefield Bridges**
**LR-BR-01 Sunbury Ring Road: Northern Link - Jacksons Creek Crossing - Construction of 2 Lane Bridge (50m span steel box girder)**

| | | |
|---|---|---|
| Length | m | 490 |
| Width | m | 16 |
| Area | m2 | 7,840 |

| | | | WTP Estimate | | | | | GHD Estimate | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Item | | Description | QTY | UOM | Rate | Total (a) | Comments | QTY | UOM | Rate | Total (b) | *Diff. (b - a)* | *%* |
| | 4 | **OFF-BRIDGE WORKS** | | | | | | | | | | | |
| 4.01 | | Approach Slabs 350mm thick 50 Mpa including Reo Rate of 250kg/m3 [2no.] | 179 | m2 | $ 165 | 29,535 | Approach Slabs 350mm thick 50 Mpa including Reo Rate of 250kg/m3 [2no.] | 50 | m3 | 500 | 25,000 | - *4,535* | *-18%* |
| 4.02 | | Safety guard rail | 160 | m | $ 1,705 | 272,800 | Barriers - Medium Containment | 200 | m | 1,500 | 300,000 | *27,200* | *9%* |
| 4.03 | | Barriers - Armco | 160 | m | $ 110 | 17,600 | | | | | - | - *17,600* | *-100%* |
| 4.04 | | Drainage | | | | | | | | | - | - | *0%* |
| 4.05 | | Drainage Slots & Droppers to Creek Below (say 50m centres) | 20 | No | $ 1,100 | 22,000 | | | | | - | - *22,000* | *-100%* |
| 4.06 | | Drainage to Approach Slabs | 2 | No | $ 165,000 | 330,000 | | | | | - | - *330,000* | *-100%* |
| | 5 | **MISCELLANEOUS** | | | | | | | | | - | | |
| 5.01 | | Architectural screens / cladding to Piers / Deck | 980 | m | $ 2,000 | 1,959,880 | Allowance of $2k/m of bridge length (both sides) | 1,000 | LM | 1,200 | 1,200,000 | - *759,880* | *-63%* |
| 5.02 | | Anti Throw screens (Agreed Item is Required) | 980 | m | $ 1,650 | 1,616,901 | Architectural Screens (say 1800 high) | 980 | m | 1,650 | 1,616,901 | - | *0%* |
| 5.03 | | Access Road to Laydown Points | 1,250 | m2 | $ 165 | 206,250 | 5 No. Points @ 250m2 each | | | | | - *206,250* | *-100%* |
| 5.04 | | Additional Lay Down Points for Cranage | 1,800 | m2 | $ 165 | 297,000 | 2 No. locations (30m x 30m) | | | | | - *297,000* | *-100%* |
| 5.05 | | Signage | 1 | Item | $ 55,000 | 55,000 | Allowance | | | | | - *55,000* | *-100%* |
| 5.06 | | De-watering works | 1 | Item | $ 275,000 | 275,000 | Allowance | | | | | - *275,000* | *-100%* |
| 5.07 | | Services Relocation surrounding approach slabs | 1 | Item | $ 165,000 | 165,000 | Allowance | | | | | - *165,000* | *-100%* |
| 5.08 | | Extra Over Foundations for Rock Excavation (Assume 30% in Rock) | 789 | m3 | $ 116 | 91,130 | 30% of excavated material | | | | | - *91,130* | *-100%* |
| 5.09 | | Geo-Tech Allowance | 1 | Item | $ 20,000 | 20,000 | Allowance | | | | | - *20,000* | *-100%* |
| 5.1 | | Off Set & Constructability Allowance | 1 | Item | | - | Included | | | | | - | *0%* |
| 5.11 | | Increase in Head Contractor Preliminaries (22% to 25%) | 0 | Item | $ 65,974,037 | 1,979,221 | Tier 1 Contractor (Min 25%) - Agreed | 1 | Item | 1,882,723 | 1,882,723 | - *96,498* | *-5%* |
| | 6 | **SERVICES** | | | | | | | | | | | |
| 6.01 | | Allowance for Services (Clash with existing) + Power / Comms to site | 1 | TBC | $ 100,000 | 100,000 | Allowance | | | | - | - *100,000* | *-100%* |
| | | | | | | | | | | | - | | |
| | | **SUBTOTAL - LR-BR-01** | | | | **68,053,259** | | | | | **68,093,298** | ***40,039*** | ***0.06%*** |
| | | | | | | | | | | | | | |
| 7 | | **DELIVERY** | | | | | | | | | | | |
| 7.01 | | Council Fees | 3.25% | Item | | 2,211,731 | % driven variance | 3.25% | Item | | 2,213,032 | *1,301* | *0%* |
| 7.02 | | VicRoads Fees | 0.00% | Item | | - | Removed - Not Vic Roads Project | 0.00% | Item | | - | - | *0%* |
| 7.03 | | Traffic Management | 5.00% | Item | | 3,402,663 | % driven variance | 5.00% | Item | | 3,404,665 | *2,002* | *0%* |
| 7.04 | | Environmental Management | 0.50% | Item | | 340,266 | % driven variance | 0.50% | Item | | 340,466 | *200* | *0%* |
| 7.05 | | Survey & Design | 5.00% | Item | | 3,402,663 | % driven variance | 5.00% | Item | | 3,404,665 | *2,002* | *0%* |
| 7.06 | | Supervision & Project Management | 9.00% | Item | | 6,124,793 | % driven variance | 9.00% | Item | | 6,128,397 | *3,604* | *0%* |
| 7.07 | | Site Establishment | 2.50% | Item | | 1,701,331 | % driven variance | 2.50% | Item | | 1,702,332 | *1,001* | *0%* |
| 7.08 | | Contingency | 20.00% | Item | | 13,610,652 | % driven variance - 20% agreed for bridge estimates | 20.00% | Item | | 13,618,660 | *8,008* | *0%* |
| | | | | | | | | | | | | | |
| | | **TOTAL - LR-BR-01** | | | | **98,847,358** | | | | | **98,905,515** | ***58,157*** | ***0.06%*** |

**CITY OF HUME**
**Sunbury and Lancefield Bridges**
**LR-BR-02 Sunbury Ring Road: Northern Link Grade Separation - Construction of 2 Lane Road Underpass of Rail Line**

| | | |
|---|---|---|
| Length | m | 22 |
| Width | m | 13 |
| Area | m2 | 291 |

| | | WTP Estimate | | | | | GHD Estimate | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Item | Description | QTY | UOM | Rate | Total (a) | Comments | QTY | UOM | Rate | Total (b) | *Diff. (b - a)* | *%* |
| | **WORKS** | | | | | | | | | | | |
| 1 | **SITEWORKS AND EARTHWORKS** | | | | | | | | | | | |
| 1.01 | Strip Site Locally at Approach Ramps / RE Walls | 450 | m2 | $ 2.75 | 1,238 | | | | | | *- 1,238* | *-100%* |
| 1.02 | Bulk Cut to road under | 2,288 | m3 | $ 39 | 88,088 | | 2,288 | m3 | 40 | 91,520 | *3,432* | *4%* |
| 1.03 | Set-Out | 1 | No | $ 5,500 | 5,500 | | 1 | Item | 5,000 | 5,000 | *- 500* | *-10%* |
| 2 | **STRUCTURE** | | | | | | | | | | - | |
| 2.01 | Single span precast prestressed 1000 mm deep Super T-beam arrangement with in-situ deck slab overlay on top of reinforced abutment cross head | | | | - | | 250 | m2 | 1,900 | 475,000 | *475,000* | *100%* |
| 2.02 | Single span precast prestressed 1200 mm deep Super T-beam (4no.) arrangement with in-situ deck slab overlay on top of reinforced abutment cross head (depth tbc) | | | | - | | | | | - | - | |
| 2.03 | Mobilize / Demobilize Rig | 1 | No | $ 27,500 | 27,500 | | | | | - | *- 27,500* | *-100%* |
| 2.04 | 1200 diameter x 10000 long 50 Mpa Concrete Bored Piles including Reo Rate say 200kg/m3 | 8 | No | $ 14,960 | 119,679 | | 8 | No | 15,000 | 120,000 | *321* | *0%* |
| 2.05 | **Bearings and Expansion Joints** | | | | | | | | | | | |
| 2.06 | Elastomeric Bearings | 10 | No | $ 1,650 | 16,500 | | | | | - | *- 16,500* | *-100%* |
| 2.07 | **Super T Beams** | | | | | | | | | | | |
| 2.08 | Prestressed Super T Beam 2200 wide x 1200 deep x 120 thick overall with a 700mm wide x 350mm thick base | 111 | m | $ 2,464 | 274,120 | | | | | - | *- 274,120* | *-100%* |
| 2.09 | **Retaining Walls** | | | | | | | | | | | |
| 2.1 | Retaining Walls 200 thick - (Inside of Bored Pile) | 400 | m2 | $ 1,100 | 440,000 | | 420 | m2 | 1,120 | 470,400 | *30,400* | *6%* |
| 2.11 | Foundation to above | 50 | m | $ 550 | 27,500 | | | | | - | *- 27,500* | *-100%* |
| 2.12 | **Abutment Beam** | | | | | | | | | | | |
| 2.13 | RC Abutment Beam | 27 | m | $ 3,348 | 91,229 | | 30 | m | 3,140 | 94,200 | *2,971* | *3%* |
| 2.14 | Beam thickening under Cycle Path | 13 | m | $ 4,646 | 62,587 | | | | | - | *- 62,587* | *-100%* |
| 2.15 | Bridge pavement (balast ontop of concrete slab) | | | | | | | | | - | - | |
| 2.16 | Reinforced concrete stip footing | | | | | | | | | - | - | |
| 2.17 | Reinforced concrete slabs (approach slabs) | | | | - | | | | | - | - | |
| 3 | **ON BRIDGE WORKS** | | | | | | | | | | - | |
| 3.01 | Deck Slabs 200mm thick 40 Mpa including Reo Rate of 280kg/m3 | 292 | m2 | $ 418 | 122,056 | | | | | | *- 122,056* | *-100%* |
| 3.02 | 600mm wide cantelevered walkway | 26 | m2 | $ 1,500 | 39,000 | | 30 | m2 | 1,500 | 45,000 | *6,000* | *13%* |
| 3.03 | Kerb and Channel | | | | - | | | | | | - | |
| 3.04 | Path | | | | - | | 99 | m2 | 155 | 15,345 | *15,345* | *100%* |
| 3.05 | Allowance for Street Lighting (Wall mounted @ 35m centres both sides) | - | No | $ 2,475 | - | Removed - Inc. in Road Package Works | | | | - | - | |
| 3.06 | Allowance for Street Lighting (bridge soffit mounted) | 4 | No | $ 2,475 | 9,900 | | 4 | No | 2,500 | 10,000 | *100* | *1%* |
| 3.07 | Allowance for Conduits | 1,000 | m | $ 17 | 16,500 | | | | | - | *- 16,500* | *-100%* |
| 4 | **OFF-BRIDGE WORKS** | | | | | | | | | | - | |
| 4.01 | **Road Pavements** | | | | | | | | | | | |
| 4.02 | 195mm thick asphalt pavement in 3 layers | 154 | m2 | $ 107 | 16,517 | | 154 | m2 | 110 | 16,940 | *424* | *3%* |
| 4.03 | Kerbs | 44 | m | $ 72 | 3,146 | | 45 | m2 | 75 | 3,375 | *229* | *7%* |
| 4.04 | Footpath / Shared Path | 121 | m2 | $ 154 | 18,634 | | | | | | *- 18,634* | *-100%* |
| 4.05 | Allow for linemarking | 88 | m | $ 6 | 484 | | 1 | Item | 2,500 | 2,500 | *2,016* | *81%* |
| 4.06 | Approach Slabs 350mm thick 50 Mpa including Reo Rate of 250kg/m3 [2no.] | 70 | m2 | $ 165 | 11,550 | | 115 | m2 | 500 | 57,500 | *45,950* | *80%* |
| 4.07 | Barriers - Balustrade 1400 high | - | m | $ 90 | - | No Separate Bike Path Required | 1 | Item | 5,000 | 5,000 | *5,000* | *100%* |

**CITY OF HUME**
**Sunbury and Lancefield Bridges**
**LR-BR-02 Sunbury Ring Road: Northern Link Grade Separation - Construction of 2 Lane Road Underpass of Rail Line**

| | | |
|---|---|---|
| Length | m | 22 |
| Width | m | 13 |
| Area | m2 | 291 |

| | | WTP Estimate | | | | | GHD Estimate | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Item | Description | QTY | UOM | Rate | Total (a) | Comments | QTY | UOM | Rate | Total (b) | *Diff. (b - a)* | *%* |
| 4.08 | Barriers - Balustrade 1200 high | 43 | m | $ 77 | 3,328 | | 1 | Item | 5,000 | 5,000 | *1,672* | *33%* |
| 4.09 | **Guard rails** | | | | | | | | | | | |
| 4.1 | Barriers - Medium Containment | 44 | m | $ 1,705 | 75,020 | | 50 | m | 1,700 | 85,000 | *9,980* | *12%* |
| 4.11 | Barriers - Armco | - | m | $ 110 | - | | | | | - | - | |
| 4.12 | Safety rails | | | | - | | | | | | - | |
| 4.13 | **Drainage** | | | | | | | | | | | |
| 4.14 | Drainage to bridge | 1 | Item | $ 22,000 | 22,000 | | 1 | Item | 22,000 | 22,000 | - | *0%* |
| 4.15 | Drainage to Approach Slabs | - | No. | $ 55,000 | - | Item Removed - Not Required (Agreed) | | Inc | | | - | |
| 4.16 | Drainage to lowered road under | 44 | m | $ 550 | 24,200 | | 1 | Item | 100,000 | 100,000 | *75,800* | *76%* |
| 4.17 | Sump Pump & Pit | 1 | Item | $ 110,000 | 110,000 | | | | | | - *110,000* | *-100%* |
| 4.18 | Scour protection | | | | - | | | | | - | - | |
| 5 | **MISCELLANEOUS** | | | | - | | | | | | | |
| 5.01 | Architectural screens / cladding to Piers / Deck | 44 | m | $ 2,000 | 88,000 | | 1 | Item | 80,000 | 80,000 | - *8,000* | *-10%* |
| 5.02 | **Rail Related Items** | | | | | | | | | | | |
| 5.03 | Track & Ballast (Assume + 100m each way) | 444 | TM | $ 1,650 | 732,600 | | 444 | TM | 1,650 | 732,600 | - | *0%* |
| 5.04 | OHLE (Assume + 100m each way) - N/A Vline Only | | Note | | - | | | | | - | - | |
| 5.05 | Signalling Adjustments | 1 | Item | $ 750,000 | 750,000 | | 1 | Item | 750,000 | 750,000 | - | *0%* |
| 5.06 | Rail Occupation Costs (Power Off) - N/A Vline Only | | Note | | - | | | | | - | - | |
| 5.07 | Rail Occupation Costs (Major) - Vline | 2 | Wkend | $ 100,000 | 200,000 | | 2 | Wkend | 100,000 | 200,000 | - | *0%* |
| 5.08 | Rail Occupation Costs (Major) - Vline (Weekend) | | | | | | 3 | No | 20,000 | 60,000 | *60,000* | *100%* |
| 5.09 | Construction Occupation | 2 | No | $ 1,035,000 | 2,070,000 | | 2 | No | 1,035,000 | 2,070,000 | - | *0%* |
| 6 | **SERVICES** | | | | | | | | | | | |
| 6.01 | Signage | 1 | Item | $ 50,000 | 50,000 | GHD Included | | | | - | - *50,000* | *-100%* |
| 6.02 | De-watering works | 1 | Item | $ 250,000 | 250,000 | GHD included in Sump Pump | | | | - | - *250,000* | *-100%* |
| 6.03 | Extra Over Foundations for Rock Excavation (Assume 30% in Rock) | 500 | m3 | $ 140 | 70,000 | | 686 | m3 | 100 | 68,640 | - *1,360* | *-2%* |
| 6.04 | LXRA - Project Management / On Costs | 16 | % | $ 5,766,875 | 922,700 | | 16 | % | 5,585,020 | 893,603 | - *29,097* | *-3%* |
| 6.05 | Increase in Head Contractor Preliminaries (22% to 25%) | 3 | % | $ 5,672,049 | 170,161 | | 3 | % | 5,585,020 | 167,551 | - *2,611* | *-2%* |
| | | | | **SUBTOTAL - LR-BR-02** | **6,929,736** | | | | | **6,646,174** | **- *283,562*** | ***-4%*** |
| **7** | **DELIVERY** | | | | | | | | | | | |
| 7.01 | Council Fees | 3.25% | Item | | 225,216 | % driven variance | 3.25% | Item | | 216,001 | - *9,216* | *-4%* |
| 7.02 | VicRoads Fees | 0.00% | Item | | - | Removed - Not Vic Roads Project | 0.00% | Item | | - | - | *0%* |
| 7.03 | Traffic Management | 5.00% | Item | | 346,487 | % driven variance | 5.00% | Item | | 332,309 | - *14,178* | *-4%* |
| 7.04 | Environmental Management | 0.50% | Item | | 34,649 | % driven variance | 0.50% | Item | | 33,231 | - *1,418* | *-4%* |
| 7.05 | Survey & Design | 5.00% | Item | | 346,487 | % driven variance | 5.00% | Item | | 332,309 | - *14,178* | *-4%* |
| 7.06 | Supervision & Project Management | 9.00% | Item | | 623,676 | % driven variance | 9.00% | Item | | 598,156 | - *25,521* | *-4%* |
| 7.07 | Site Establishment | 2.50% | Item | | 173,243 | % driven variance | 2.50% | Item | | 166,154 | - *7,089* | *-4%* |
| 7.08 | Contingency | 20.00% | Item | | 1,385,947 | % driven variance | 20.00% | Item | | 1,329,235 | - *56,712* | *-4%* |
| | | | | | - | | | | | | - | |
| | | | | **TOTAL - LR-BR-02** | **10,065,442** | | | | | **9,653,567** | **- *411,875*** | ***-4%*** |

**CITY OF HUME**
**Sunbury and Lancefield Bridges**
**LR-BR-03 Balbethan Drive Grade Separation - Construction of 2 Lane Road Overpass of Rail Line**

| | | |
|---|---|---|
| Length | m | 20 |
| Width | m | 15 |
| Area | m2 | 299 |

| | | | WTP Estimate | | | | | GHD Estimate | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Item | | Description | QTY | UOM | Rate | Total (a) | Comments | QTY | UOM | Rate | Total (b) | *Diff. (b - a)* | *%* |
| | | **WORKS** | | | | - | | | | | | | |
| | 1 | **SITEWORKS AND EARTHWORKS** | | | | | | | | | | | |
| 1.01 | | Strip Site Locally at Approach Ramps / RE Walls | 3,000 | m2 | $ 5.50 | 16,500 | | | | | - | *- 16,500* | *-100%* |
| 1.02 | | Bulk Cut to rail under (Lower 1m 100m each end) - Allowance | 1,800 | m3 | $ 35 | 63,000 | Bulk Cut Under - Lower Rail | | | | | *- 63,000* | *-100%* |
| 1.03 | | Bulk Cut/Fill to Bridge Approaches Only | 500 | m3 | $ 38.50 | 19,250 | Fill Under Approach Slab | | | | - | *- 19,250* | *-100%* |
| 1.04 | | Set-Out | 1 | No | $ 5,500 | 5,500 | | 1 | No | 5,000 | 5,000 | *- 500* | *-10%* |
| 1.05 | | Bulk Cut/Fill to Bridge Approaches Only | | | | - | Included Above | 3,000 | m2 | 40 | 120,000 | *120,000* | *100%* |
| 1.06 | | Set-Out | | | | - | Included Above | 900 | m3 | 100 | 90,000 | *90,000* | *100%* |
| 1.07 | | Fill to approach | | | | - | Included Above | 500 | m3 | 38 | 18,900 | *18,900* | *100%* |
| | 2 | **STRUCTURE** | | | | | | | | | | - | |
| 2.01 | | Single span precast prestressed 1200 mm deep Super T-beam arrangement with in-situ deck slab overlay. | | | | - | | 223 | m2 | 1,900 | 423,890 | *423,890* | *100%* |
| 2.02 | | Reinforced concrete bored piles (supporting abutment crossheads) | | | | | | 8 | m2 | 15,000 | 120,000 | *120,000* | *100%* |
| 2.03 | | Elastomeric Bearings | | | | | | 8 | No | 1,650 | 13,200 | *13,200* | *100%* |
| 2.04 | | **Bored Piles** | | | | | | | | | | - | |
| 2.05 | | Mobilize / Demobilize Rig | 1 | No | $ 27,500 | 27,500 | | | | | - | *- 27,500* | *-100%* |
| 2.06 | | 1200 diameter x 10000 long 50 Mpa Concrete Bored Piles including Reo Rate say 200kg/m3 | 8 | No | $ 14,960 | 119,679 | | 8 | No | 15,000 | 120,000 | *321* | *0%* |
| 2.07 | | **Abutment Beam** | | | | | | | | | | - | |
| 2.08 | | RC Abutment / Crosshead Beam | 30 | m | $ 2,585 | 78,157 | | 30 | m | 3,140 | 94,200 | *16,043* | *17%* |
| 2.09 | | **Bearings and Expansion Joints** | | | | | | | | | | - | |
| 2.1 | | Elastomeric Bearings | 12 | No | $ 1,650 | 19,800 | | | | | - | *- 19,800* | *-100%* |
| 2.11 | | **Super T Beams** | | | | | | | | | | - | |
| 2.12 | | Prestressed Super T Beam 2200 wide x 1000 deep x 120 thick overall with a 700mm wide x 350mm thick base | 119 | m | $ 2,090 | 248,710 | | | | | - | *- 248,710* | *-100%* |
| 2.13 | | **Deck and Approach Slabs** | | | | | | | | | | - | |
| 2.14 | | Deck Slabs 200mm thick 40 Mpa including Reo Rate of 280kg/m3 | 299 | m2 | $ 418 | 124,982 | | | | | - | *- 124,982* | *-100%* |
| 2.15 | | Approach Slabs 350mm thick 50 Mpa including Reo Rate of 250kg/m3 [2no.] | 124 | m2 | $ 165 | 20,460 | | | | | - | *- 20,460* | *-100%* |
| 2.16 | | **Barriers** | | | | | | | | | | - | |
| 2.17 | | Barriers - High Containment | 56 | m | $ 2,750 | 153,010 | | 56 | m | 1,750 | 97,370 | *- 55,640* | *-57%* |
| 2.18 | | Barriers - Armco (off structure) | 160 | m | $ 110 | 17,600 | | 80 | m | 110 | 8,800 | *- 8,800* | *-100%* |
| 2.19 | | Bridge pavement (balast ontop of concrete slab) | | | | | | | | | - | - | |
| 2.2 | | Reinforced concrete slabs (approach slabs) | | | | - | | 92 | m2 | 500 | 46,000 | *46,000* | *100%* |
| 2.21 | | **Retaining Walls** | | | | | | 880 | m | 1,120 | 985,600 | *985,600* | |
| 2.22 | | Retaining Walls - Wing & Keeper Walls | 70 | m2 | $ 1,100 | 77,000 | | | | | - | *- 77,000* | *-100%* |
| 2.23 | | Retaining Walls - Fender Wall with Reo Rate of 200kg/m3 | 2 | No | $ 16,500 | 33,000 | | | | | - | *- 33,000* | *-100%* |
| 2.24 | | Rock Beaching - say 300 thick | | n/a | | - | | | | | - | - | |
| 2.25 | | Retaining Walls 200 thick - (Inside of Bored Pile) | 220 | m2 | $ 1,100 | 242,000 | | | | | - | *- 242,000* | *-100%* |
| 2.26 | | Foundation to above | 31 | m | $ 550 | 17,050 | | | | | - | *- 17,050* | *-100%* |
| | 3 | **ON BRIDGE WORKS** | | | | | | | | | | - | |
| 3.01 | | 50mm thick asphalt pavement | 341 | m2 | $ 30 | 10,315 | Bridge & Approach Slab Pavement | 160 | m2 | 110 | 17,600 | *7,285* | *41%* |
| 3.02 | | Kerbs | 56 | m | $ 72 | 3,978 | | 45 | m | 75 | 3,375 | *- 603* | *-18%* |
| 3.03 | | Footpath | 80 | m2 | $ 154 | 12,320 | | 60 | m2 | 155 | 9,300 | *- 3,020* | *-32%* |
| 3.04 | | Allow for linemarking | 83 | m | $ 6 | 458 | | | | | - | *- 458* | *-100%* |
| 3.05 | | **Street Lighting & Conduits** | | | | - | | | | | | - | |
| 3.06 | | Allowance for Street Lighting (Pole Mounted @ 35m centres both sides) | 4 | No | $ 13,200 | 52,800 | | 2 | No | 17,500 | 35,000 | *- 17,800* | *-51%* |
| 3.07 | | Allowance for Conduits | 158 | m | $ 17 | 2,608 | | | | | - | *- 2,608* | *-100%* |

**CITY OF HUME**
**Sunbury and Lancefield Bridges**
**LR-BR-03 Balbethan Drive Grade Separation - Construction of 2 Lane Road Overpass of Rail Line**

| | | |
|---|---|---|
| Length | m | 20 |
| Width | m | 15 |
| Area | m2 | 299 |

| | | WTP Estimate | | | | | GHD Estimate | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Item | Description | QTY | UOM | Rate | Total (a) | Comments | QTY | UOM | Rate | Total (b) | *Diff. (b - a)* | *%* |
| | | | | | | | | | | | | |
| 4 | **OFF-BRIDGE WORKS** | | | | | | | | | | - | |
| 4.01 | Safety Rail | | | | - | | | | | - | - | |
| 4.02 | **Drainage** | | | | | | 1 | No. | 22,000 | 22,000 | *22,000* | *100%* |
| 4.03 | Drainage Slots & Droppers to Creek Below (say 50m centres) | 4 | No | $ 1,100 | 4,400 | | | | | | - *4,400* | *-100%* |
| 4.04 | Drainage to Approach Slabs | 2 | No. | $ 55,000 | 110,000 | | | | | | - *110,000* | *-100%* |
| 4.05 | Drainage to lowered rail under | 215 | m | $ 550 | 118,250 | | | | | | - *118,250* | *-100%* |
| 4.06 | Sump Pump & Pit | 1 | Item | $ 110,000 | 110,000 | | | | | | - *110,000* | *-100%* |
| 5 | **MISCELLANEOUS** | | | | - | | | | | | - | |
| 5.01 | Feature Cladding | - | m2 | | - | Anti Throw Screens included below | 1 | m2 | 80,000 | 80,000 | *80,000* | *100%* |
| 5.02 | Allow for signs and linemarking | | | | - | | 1 | item | 2,500 | 2,500 | *2,500* | *100%* |
| 5.03 | **Rail Related Items** | | | | - | | | | | | - | |
| 5.04 | Lowering of Track & Ballast (Assume + 500m each way) - (Rail Already Lowered but may require additiona lowering due to required clearances) | 215 | TM | $ 1,650 | 354,750 | | | | | - | - *354,750* | *-100%* |
| 5.05 | OHLE (Assume + 100m each way) - N/A - Vline - Not Required (Rail Already Lowered) | | Note | | - | | 210 | item | 1,650 | 346,500 | *346,500* | *100%* |
| 5.06 | Signalling Adjustments - Not Required (Rail Already Lowered) | 1 | Item | $ 500,000 | 500,000 | Due to lowering of Rail (if required) | 1 | item | 500,000 | 500,000 | - | *0%* |
| 5.07 | Rail Occupation Costs (Weekend) - Vline | 2 | Wkend | $ 100,000 | 200,000 | | 2 | Wkend | 100,000 | 200,000 | - | *0%* |
| 5.08 | Consturction occupation (Major Closure) - Lowering of Rail | 2 | No | $ 1,035,000 | 2,070,000 | | 2 | No | 1,035,000 | 2,070,000 | - | *0%* |
| 5.09 | Rail Occupation Costs (Night Closures) - Vline | 2 | No | $ 20,000 | 40,000 | | 3 | Item | 20,000 | 60,000 | *20,000* | *33%* |
| 5.1 | Line marking & signage | 1 | Item | $ 2,500 | 2,500 | | | | | - | - *2,500* | *-100%* |
| 6 | **SERVICES** | | | | | | | | | | - | |
| 6.01 | No Services Clashes Assumed | | Note | | - | | | | | | - | |
| 6.02 | Anti Throw Screens (say 1800 high) | 40 | m | $ 1,630 | 65,208 | | | | | | - *65,208* | *-100%* |
| 6.03 | Signage | 1 | Item | $ 50,000 | 50,000 | | | | | | - *50,000* | *-100%* |
| 6.04 | De-watering works | 1 | Item | $ 250,000 | 250,000 | | | | | | - *250,000* | *-100%* |
| 6.05 | LXRA - Project Management / On Costs | 16 | % | $ 5,240,786 | 838,526 | | 16 | % | 5,489,235 | 878,277.60 | *39,752* | *5%* |
| 6.06 | Extra Over Foundations for Rock Excavation (Assume 30% in Rock) | 44 | m3 | $ 116 | 5,082 | | | | | | - *5,082* | *-100%* |
| 6.07 | Increase in Head Contractor Preliminaries (22% to 25%) | 3 | % | $ 5,240,786 | 157,224 | | 3 | % | 5,489,235 | 164,677.05 | *7,453* | *5%* |
| | | | | | | | | | | - | | |
| | **SUBTOTAL - LR-BR-03** | | | | **6,241,617** | | | | | **6,532,190** | ***290,572*** | ***4%*** |
| | | | | | | | | | | | | |
| 7 | **DELIVERY** | | | | | | | | | | | |
| 7.01 | Council Fees | 3.25% | Item | | 202,853 | % driven variance | 3.25% | Item | | 212,296 | *9,444* | *4%* |
| 7.02 | VicRoads Fees | 0.00% | Item | | - | Removed - Not Vic Roads Project | 0.00% | Item | | - | - | *0%* |
| 7.03 | Traffic Management | 5.00% | Item | | 312,081 | % driven variance | 5.00% | Item | | 326,609 | *14,529* | *4%* |
| 7.04 | Environmental Management | 0.50% | Item | | 31,208 | % driven variance | 0.50% | Item | | 32,661 | *1,453* | *4%* |
| 7.05 | Survey & Design | 5.00% | Item | | 312,081 | % driven variance | 5.00% | Item | | 326,609 | *14,529* | *4%* |
| 7.06 | Supervision & Project Management | 9.00% | Item | | 561,746 | % driven variance | 9.00% | Item | | 587,897 | *26,152* | *4%* |
| 7.07 | Site Establishment | 2.50% | Item | | 156,040 | % driven variance | 2.50% | Item | | 163,305 | *7,264* | *4%* |
| 7.08 | Contingency | 20.00% | Item | | 1,248,323 | % driven variance | 20.00% | Item | | 1,306,438 | *58,114* | *4%* |
| | | | | | - | | | | | | | |
| | **TOTAL - LR-BR-03** | | | | **9,065,949** | | | | | **9,488,005** | ***422,056*** | ***4%*** |

| | | |
|---|---|---|
| Length | m | 315 |
| Width | m | 14 |
| Area | m2 | 4,539 |

| | | | WTP Estimate | | | | | GHD Estimate | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Item | | Description | QTY | UOM | Rate | Total (a) | Comments | QTY | UOM | Rate | Total (b) | *Diff. (b - a)* | *%* |
| | | **WORKS** | | | | - | | | | | | | |
| | 1 | **SITEWORKS AND EARTHWORKS** | | | | | | | | | | | |
| 1.01 | | Site preparation | 2,000 | m2 | $ 2.75 | 5,500 | | | | | - | *- 5,500* | *-100%* |
| 1.02 | | Earthworks | 10,000 | m3 | $ 50 | 495,000 | | 1 | Item | 500,000 | 500,000 | *5,000* | *1%* |
| 1.03 | | Set-Out | 2 | No | $ 5,500 | 11,000 | | 1 | Item | 12,500 | 12,500 | *1,500* | *12%* |
| 1.04 | | Rock Beaching - say 300 thick | 582 | m3 | $ 176 | 102,369 | | 565 | m3 | 100 | 56,520 | *- 45,849* | *-81%* |
| 1.05 | | Compacted Backfill | | | | - | | | | | - | - | |
| | 2 | **STRUCTURE** | | | | | | | | | | - | |
| 2.01 | | Allow for reinforced single span concrete bridge (Total width 13.5m approx. 4m deep) | | sq.m | $ 4,500 | - | | | | | - | - | *-100%* |
| 2.02 | | **Pier Column** | | | | - | | | | | | - | |
| 2.03 | | 3200 wide x 1500 thick 40 Mpa Precast concrete Pier Column including Reo Rate of say 240kg/m3 | 353 | m | $ 7,150 | 2,524,028 | | | | | | *- 2,524,028* | *-100%* |
| 2.04 | | **Crossheads** | | | | - | | | | | | - | |
| 2.05 | | Crosshead 1200 wide x 1000 deep 40 Mpa including 200kg/m3 | 111 | m | $ 2,453 | 272,283 | | | | | | *- 272,283* | *-100%* |
| 2.06 | | **Bearings and Expansion Joints** | | | | - | | | | | | - | |
| 2.07 | | Elastomeric Bearings | 48 | No | $ 1,650 | 79,200 | | | | | | *- 79,200* | *-100%* |
| 2.08 | | **Super T Beams** | | | | - | | | | | | - | |
| 2.09 | | Prestressed Super T Beam 2200 wide x 1800 deep x 120 thick overall with a 700mm wide x 350mm thick base | 1,890 | m | $ 2,750 | 5,197,500 | | | | | | *- 5,197,500* | *-100%* |
| 2.1 | | **Deck and Approach Slabs** | | | | - | | | | | | - | |
| 2.11 | | Deck Slabs 200mm thick 40 Mpa including Reo Rate of 280kg/m3 | 4,539 | m2 | $ 418 | 1,897,302 | | | | | | *- 1,897,302* | *-100%* |
| 2.12 | | Allow for reinforced single span concrete bridge (Total width 13.5m approx. 4m deep) | | | | - | | 4,253 | m2 | 2,450 | 10,418,625 | *10,418,625* | *100%* |
| 2.13 | | Approach Slabs 350mm thick 50 Mpa including Reo Rate of 250kg/m3 [2no.] | 179 | m2 | $ 165 | 29,535 | | | | | | *- 29,535* | *-100%* |
| 2.14 | | **Barriers** | | | | - | | | | | | - | |
| 2.15 | | **Retaining Walls** | | | | - | | | | | | - | |
| 2.16 | | Retaining Walls - Wing & Keeper Walls | 216 | m2 | $ 1,100 | 237,600 | | | | | | *- 237,600* | *-100%* |
| 2.17 | | Retaining Walls - Fender Wall with Reo Rate of 200kg/m3 | 2 | No | $ 16,500 | 33,000 | | | | | | *- 33,000* | *-100%* |
| 2.18 | | **Piles** | | | | | | | | | | - | |
| 2.19 | | Mobilize / Demobilize Rig | 2 | No | $ 27,500 | 55,000 | | | | | | *- 55,000* | *-100%* |
| 2.2 | | Precast reinforced concrete segments | | | | | | 187 | m2 | 3,508.98 | 656,180 | *656,180* | *100%* |
| 2.21 | | Driven piles (Piers) | 100 | No | $ 5,500 | 549,973 | | 80 | No | 3,585 | 286,776 | *- 263,197* | *-92%* |
| 2.22 | | Pier pile cap (Total 168m3) | | | | | | 8 | No | 31,950 | 255,600 | *255,600* | *100%* |
| 2.23 | | Bored piles (Abutment) | | | | | | 8 | No | 9,713 | 77,702 | *77,702* | *100%* |
| 2.24 | | Pile Cap 13500 long x 2500 wide x 1200 deep with 40Mpa Concrete and Reo Rate say 100kg/m3 | 10 | No. | $ 45,631 | 456,308 | | | | | - | *- 456,308* | *-100%* |
| 2.25 | | Abutments | | | | | | | | | - | - | |
| 2.26 | | Bridge containment barriers | | LM | $ 1,500 | - | | | | | - | - | |
| 2.27 | | Reinforced Concrete Cross head Abutment | | | | - | | 130 | cum | 2,500 | 325,000 | *325,000* | *100%* |
| 2.28 | | Anti Sliding Blocks (10nr) | | | | | | 10 | No | 2,500 | 25,000 | *25,000* | *100%* |
| 2.29 | | Abutment Walls and Bearings | | | | - | | 1 | Item | 400,000 | 400,000 | *400,000* | *100%* |
| | 3 | **ON BRIDGE WORKS** | | | | | | | | | | - | |
| 3.01 | | 195mm thick asphalt pavement in 3 layers | 2,520 | m2 | $ 107 | 270,270 | | 2,205 | m2 | 110 | 242,550 | *- 27,720* | *-11%* |
| 3.02 | | Ditto to Bridge Approach Ramps on Grade | 128 | m2 | $ 121 | 15,488 | | | | | | *- 15,488* | *-100%* |
| 3.03 | | Kerbs | 630 | m | $ 72 | 45,041 | | 630 | LM | 75 | 47,250 | *2,209* | *5%* |
| 3.04 | | Footpath / Shared Path | 1,732 | m2 | $ 154 | 266,780 | | 1,575 | m2 | 132 | 207,900 | *- 58,880* | *-28%* |
| 3.05 | | Footpath | | inc. | | - | | | | | - | - | |
| 3.06 | | Lighting | | item | $ 160,000 | - | | 11 | No | 17,500 | 192,500 | *192,500* | *100%* |

**CITY OF HUME**
**Sunbury and Lancefield Bridges**
**SS-BR-01 Sunbury Ring Road: Southern Link - Jacksons Creek Crossing - Construction of 2 Lane Bridge**

| | | |
|---|---|---|
| Length | m | 315 |
| Width | m | 14 |
| Area | m2 | 4,539 |

| | | WTP Estimate | | | | | GHD Estimate | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Item | Description | QTY | UOM | Rate | Total (a) | Comments | QTY | UOM | Rate | Total (b) | *Diff. (b - a)* | *%* |
| 4 | **OFF-BRIDGE WORKS** | | | | | | | | | | - | |
| 4.01 | Approach Slabs | | cu.m | $ 1,500 | - | | 54 | m2 | 500 | 27,000 | *27,000* | *100%* |
| 4.02 | Handrails | | m | $ 1,500 | - | | | | | - | - | *0%* |
| 4.03 | Guard rails | 160 | m | $ 110 | 17,600 | | | | | - | - *17,600* | *-100%* |
| 4.04 | Bridge barrier | 668 | m | $ 1,705 | 1,138,190 | | 646 | LM | 2,850 | 1,841,100 | *702,910* | *38%* |
| 4.05 | Drainage Slots & Droppoers to Creek Below | 20 | No | $ 1,100 | 22,000 | | | | | | - *22,000* | *-100%* |
| 4.06 | Drainage - Works to approach slabs | 2 | No | $ 165,000 | 330,000 | | 2 | No | 150,000 | 300,000 | - *30,000* | *-10%* |
| 4.07 | Scour protection | | | $ - | - | | | | | - | - | |
| 5 | **MISCELLANEOUS** | | | | - | | | | | - | - | |
| 5.01 | Architectural screens / cladding to Piers / Deck | 630 | m | $ 2,000 | 1,260,000 | Architectural Screens (say 1800 high) | 630 | m | 2,000 | 1,260,000 | - | *0%* |
| 5.02 | Anti Throw screens | 630 | LM | $ 1,650 | 1,039,500 | | 630 | LM | 1,650 | 1,039,500 | - | *0%* |
| 5.03 | Traffic Safety | - | Allow | | - | | | | | - | - | |
| 5.04 | Lighting on-bridge | 20 | No | $ 13,200 | 264,000 | | | | | - | - *264,000* | *-100%* |
| 5.05 | Conduits | 3,920 | m | $ 17 | 64,680 | | | | | | - *64,680* | *-100%* |
| 5.06 | Allow for linemarking | 945 | m | $ 6 | 5,197 | | 945 | m | 10 | 9,450 | *4,253* | *45%* |
| 5.07 | Access Road to Laydown Points | 1,250 | m2 | $ 165 | 206,250 | | | | | - | - *206,250* | *-100%* |
| 5.08 | Additional Lay Down Points for Cranage | 1,800 | m2 | $ 165 | 297,000 | | | | | - | - *297,000* | *-100%* |
| 5.09 | Extra Over Foundations for Rock Excavation (Assume 30% in Rock) | 241 | m3 | $ 116 | 27,836 | | | | | | - *27,836* | *-100%* |
| 5.1 | Signage | 1 | Item | $ 50,000 | 50,000 | | | | | - | - *50,000* | *-100%* |
| 5.11 | Dewatering works | 1 | Item | $ 250,000 | 250,000 | | 1 | Item | 250,000 | 250,000 | - | *0%* |
| 5.12 | Geo-Tech Allowance | 1 | TBC | $ 20,000 | 20,000 | | | | | | - *20,000* | *-100%* |
| 5.13 | Off Set & Constructability Allowance | 1 | TBC | | - | | | | | | - | |
| 6 | **SERVICES** | | | | | | | | | | - | |
| 6.01 | Services relocation | 1 | Item | $ 150,000 | 150,000 | | 1 | Item | 150,000 | 150,000 | - | *0%* |
| 6.02 | Services to bridge location | 1 | TBC | $ 50,000 | 50,000 | | | | | - | - *50,000* | *-100%* |
| 6.03 | Increase in Head Contractor Preliminaries (22% to 25%) | 3 | % | $ 17,685,428 | 530,563 | | 3 | % | 17,685,428 | 530,000 | - *563* | *0%* |
| | | | | | | | | | | - | | |
| | **SUBTOTAL - SS-BR-01** | | | | **18,265,991** | | | | | **19,111,153** | ***845,163*** | ***4%*** |
| | | | | | | | | | | | | |
| 7 | **DELIVERY** | | | | | | | | | | | |
| 7.01 | Council Fees | 3.25% | Item | | 593,645 | % driven variance | 3.25% | Item | | 621,112 | *27,468* | *4%* |
| 7.02 | VicRoads Fees | 0.00% | Item | | - | Removed - Not Vic Roads Project | 1.00% | Item | | 191,112 | *191,112* | *100%* |
| 7.03 | Traffic Management | 5.00% | Item | | 913,300 | % driven variance | 5.00% | Item | | 955,558 | *42,258* | *4%* |
| 7.04 | Environmental Management | 0.50% | Item | | 91,330 | % driven variance | 0.50% | Item | | 95,556 | *4,226* | *4%* |
| 7.05 | Survey & Design | 5.00% | Item | | 913,300 | % driven variance | 5.00% | Item | | 955,558 | *42,258* | *4%* |
| 7.06 | Supervision & Project Management | 9.00% | Item | | 1,643,939 | % driven variance | 9.00% | Item | | 1,720,004 | *76,065* | *4%* |
| 7.07 | Site Establishment | 2.50% | Item | | 456,650 | % driven variance | 2.50% | Item | | 477,779 | *21,129* | *4%* |
| 7.08 | Contingency | 20.00% | Item | | 3,653,198 | % driven variance | 20.00% | Item | | 3,822,231 | *169,033* | *4%* |
| | | | | | - | | | | | | | |
| | **TOTAL - SS-BR-01** | | | | **26,531,351** | | | | | **27,950,062** | ***1,418,710*** | ***5%*** |

| | | |
|---|---|---|
| Length | m | 22 |
| Width | m | 12 |
| Area | m2 | 271 |

| | | | WTP Estimate | | | | | GHD Estimate | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Item | | Description | QTY | UOM | Rate | Total (a) | Comments | QTY | UOM | Rate | Total (b) | *Diff. (b - a)* | *%* |
| | | **WORKS** | | | | - | | | | | | | |
| | 1 | **SITEWORKS AND EARTHWORKS** | | | | | | | | | | | |
| 1.01 | | Strip Site Locally at Approach Ramps / RE Walls | 368 | m2 | $ 3 | 1,012 | | 368 | m2 | 3 | 1,012 | - | *0%* |
| 1.02 | | Imported Structural Fill to Wing/Fender Walls compacted in layers | 214 | m3 | $ 39 | 8,239 | | 300 | m3 | 39 | 11,550 | *3,311* | *29%* |
| 1.03 | | Set-Out | 1 | No | $ 5,500 | 5,500 | | 1 | No | 5,000 | 5,000 | - *500* | *-10%* |
| | 2 | **STRUCTURE** | | | | | | | | | | | |
| 2.01 | | Single span precast prestressed 1200 mm deep Super T-beam arrangement with in-situ deck overlay. | | | | - | | 297 | m2 | 1,900 | 564,300 | *564,300* | *100%* |
| 2.02 | | Mobilize / Demobilize Rig | 1 | No | $ 27,500 | 27,500 | | | | | | - *27,500* | *-100%* |
| 2.03 | | 900 Dia x 10000 long 50 Mpa Concrete Bored Piles including Reo Rate say 200kg/m3 - Assume 10 No. per pile cap | 8 | No | $ 8,470 | 67,762 | | | | | - | - *67,762* | *-100%* |
| 2.04 | | **Abutment Beam** | | | | | | | | | | | |
| 2.05 | | RC Abutment / Crosshead Beam | 24 | m | $ 2,761 | 66,985 | | 27 | m | 3,147 | 84,969 | *17,984* | *21%* |
| 2.06 | | **Bearings and Expansion Joints** | | | | | | | | | | | |
| 2.07 | | Elastomeric Bearings | 8 | No | $ 1,650 | 13,200 | | 8 | No | 1,650 | 13,200 | - | *0%* |
| 2.08 | | **Super T Beams** | | | | | | | | | | | |
| 2.09 | | Prestressed Super T Beam 2200 wide x 1200 deep x 120 thick overall with a 700mm wide x 350mm thick base | 134 | m | $ 2,464 | 330,176 | | | | | - | - *330,176* | *-100%* |
| 2.1 | | **Deck and Approach Slabs** | | | | | | | | | | | |
| 2.11 | | Deck Slabs 200mm thick 40 Mpa including Reo Rate of 280kg/m3 | 271 | m2 | $ 418 | 113,278 | | | | | - | - *113,278* | *-100%* |
| 2.12 | | Approach Slabs 350mm thick 50 Mpa including Reo Rate of 250kg/m3 [2no.] | 98 | m2 | $ 165 | 16,170 | | | | | - | - *16,170* | *-100%* |
| 2.13 | | Approach Slabs 200mm thick (2No.) | | | | - | | 108 | m2 | 500 | 54,000 | *54,000* | *100%* |
| 2.14 | | **Barriers** | | | | | | | | | - | - | *-100%* |
| 2.15 | | Barriers - Medium Containment | 61 | m | $ 1,705 | 103,357 | | 40 | m | 1,705 | 68,200 | - *35,157* | *-52%* |
| 2.16 | | **Retaining Walls** | | | | | | | | | | | |
| 2.17 | | Retaining Walls - Wing & Keeper Walls | 61 | m2 | $ 1,100 | 67,100 | | 61 | m2 | 1,100 | 67,100 | - | *0%* |
| 2.18 | | Retaining Walls - Fender Wall with Reo Rate of 200kg/m3 | 2 | No | $ 16,500 | 33,000 | | 2 | No | 16,500 | 33,000 | - | *0%* |
| 2.19 | | Rock Beaching - say 300 thick | 30 | m3 | $ 176 | 5,280 | | 30 | m3 | 176 | 5,280 | - | *0%* |
| 2.2 | | **Bridge pavement (balast ontop of concrete slab)** | | | | | | | | | | | |
| 2.21 | | Retaining Wall | | | | | | | | | - | - | |
| 2.22 | | Reinforced concrete slabs (approach slabs) | | | | - | | | | | - | - | |
| | 3 | **ON BRIDGE WORKS** | | | | | | | | | | | |
| 3.01 | | 50mm thick asphalt pavement | 301 | m2 | $ 30 | 9,105 | | | | | - | - *9,105* | *-100%* |
| 3.02 | | 2 x layers asphalt pavement | | | | - | | 154 | m2 | 110 | 16,940 | *16,940* | *100%* |
| 3.03 | | Pedestrian Footpath | | | | - | | 33 | m2 | 155 | 5,115 | *5,115* | *100%* |
| 3.04 | | Shared path | | | | - | | 66 | m2 | 155 | 10,230 | *10,230* | *100%* |
| 3.05 | | Shared Use Path | 67 | m2 | $ 154 | 10,318 | | | | | - | - *10,318* | *-100%* |
| 3.06 | | Kerbs | 45 | m | $ 72 | 3,190 | | 45 | m | 75 | 3,375 | *185* | *5%* |
| 3.07 | | Allow for linemarking | 91 | m | $ 6 | 500 | | 1 | Item | 1,200 | 1,200 | *700* | *58%* |
| 3.08 | | **Street Lighting & Conduits** | | | | - | | | | | | | |
| 3.09 | | Allowance for Street Lighting (Pole Mounted @ 35m centres both sides) | 4 | No | $ 13,200 | 52,800 | | 2 | No | 17,500 | 35,000 | - *17,800* | *-51%* |
| 3.1 | | Allowance for Conduits | 178 | m | $ 17 | 2,945 | | 178 | m | 17 | 2,945 | - | *0%* |
| | 4 | **OFF-BRIDGE WORKS** | | | | | | | | | | | |
| 4.01 | | Barriers - Armco (off structure) | 160 | m | $ 110 | 17,600 | | 160 | m | 110 | 17,600 | - | *0%* |
| 4.02 | | Drainage Slots & Droppers to Creek Below (say 50m centres) | 4 | No | $ 1,100 | 4,400 | | | | | | - *4,400* | *-100%* |
| 4.03 | | Drainage to Approach Slabs | 2 | No. | $ 27,500 | 55,000 | | | | | - | - *55,000* | *-100%* |

**CITY OF HUME**
**Sunbury and Lancefield Bridges**
**SS-BR-02 Sunbury Ring Road: Southern Link - Harpers Creek East Crossing - Construction of 2 Lane Bridge**

| | | |
|---|---|---|
| Length | m | 22 |
| Width | m | 12 |
| Area | m2 | 271 |

| | | | WTP Estimate | | | | | GHD Estimate | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Item | | Description | QTY | UOM | Rate | Total (a) | Comments | QTY | UOM | Rate | Total (b) | *Diff. (b - a)* | *%* |
| | | | | | | | | | | | | | |
| | 5 | **MISCELLANEOUS** | | | | - | | | | | | | |
| 5.01 | | Signage | 1 | Item | $ 50,000 | 50,000 | | 1 | Item | 25,000 | 25,000 | - *25,000* | *-100%* |
| 5.02 | | Miscellaneous : 3m high Anti-throw screen | | | | - | | | | | - | - | |
| 5.03 | | Extra Over Foundations for Rock Excavation (Assume 30% in Rock) | 29 | m3 | $ 116 | 3,350 | | | | | | - *3,350* | *#DIV/0!* |
| 5.04 | | Melbourne Water Diversion (creek retention costs) - Say - Install / Remove Temp. Sheet Piling | 250 | m2 | $ 1,000 | 250,000 | | 250 | m2 | 1,000 | 250,000 | - | *0%* |
| | 6 | **SERVICES** | | | | | | | | | | | |
| 6.01 | | No Services Clashes Assumed | | Note | | - | | | | | | - | |
| | | | | | | | | | | | - | | |
| | | | | | | **SUBTOTAL - SS-BR-02** | **1,317,767** | | | | **1,275,016** | **-** ***42,751*** | ***-3%*** |
| | | | | | | | | | | | | | |
| | 7 | **DELIVERY** | | | | | | | | | | | |
| 7.01 | | Council Fees | 3.25% | Item | | 42,827 | % driven variance | 3.25% | Item | | 41,438 | - *1,389* | *-3%* |
| 7.02 | | VicRoads Fees | 0.00% | Item | | - | Removed - Not Vic Roads Project | 0.00% | Item | | - | - | *0%* |
| 7.03 | | Traffic Management | 5.00% | Item | | 65,888 | % driven variance | 5.00% | Item | | 63,751 | - *2,138* | *-3%* |
| 7.04 | | Environmental Management | 0.50% | Item | | 6,589 | % driven variance | 0.50% | Item | | 6,375 | - *214* | *-3%* |
| 7.05 | | Survey & Design | 5.00% | Item | | 65,888 | % driven variance | 5.00% | Item | | 63,751 | - *2,138* | *-3%* |
| 7.06 | | Supervision & Project Management | 9.00% | Item | | 118,599 | % driven variance | 9.00% | Item | | 114,751 | - *3,848* | *-3%* |
| 7.07 | | Site Establishment | 2.50% | Item | | 32,944 | % driven variance | 2.50% | Item | | 31,875 | - *1,069* | *-3%* |
| 7.08 | | Contingency | 20.00% | Item | | 263,553 | % driven variance | 20.00% | Item | | 255,003 | - *8,550* | *-3%* |
| | | | | | | - | | | | | | | |
| | | | | | | **TOTAL - SS-BR-02** | **1,914,056** | | | | **1,851,961** | **-** ***62,096*** | ***-3%*** |

**CITY OF HUME**
**Sunbury and Lancefield Bridges**
**SS-BR-03 Sunbury Ring Road: Southern Link - Harpers Creek West Crossing - Construction of Culvert**

| | | |
|---|---|---|
| Length | m | 18 |
| Width | m | 2 |
| Area | m2 | 43 |

| | | | WTP Estimate | | | | | GHD Estimate | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Item | Description | QTY | UOM | Rate | Total (a) | Comments | QTY | UOM | Rate | Total (b) | *Diff. (b - a)* | *%* |
| | | | | | | | | | | | | |
| | **WORKS** | | | | - | | | | | | | |
| 1 | **SITEWORKS AND EARTHWORKS** | | | | | | | | | | | |
| 1.01 | Strip Site Locally at Approach Ramps / RE Walls | 72 | m2 | $ 3 | 198 | | 500 | m2 | 3 | 1,375 | *1,177* | *86%* |
| 1.02 | Grade & Level for Culvert Base & Apron Slab | 97 | m2 | $ 125 | 12,144 | | 500 | m2 | 28 | 13,750 | *1,606* | *12%* |
| 1.03 | Imported Structural Fill to over crown units in compacted in layers | 66 | m3 | $ 39 | 2,551 | | 66 | m3 | 39 | 2,551 | *0* | *0%* |
| 1.04 | Set-Out | 1 | No | $ 5,500 | 5,500 | | 1 | No | 5,500 | 5,500 | - | *0%* |
| 2 | **STRUCTURE** | | | | | | | | | | - | |
| 2.01 | Single span precast inverted concrete culvert | 43 | m2 | $ 880 | 38,113 | | 15 | m | 2,500 | 37,500 | - *613* | *-2%* |
| 2.02 | Cast in-situ concrete base slab with footings | 97 | m2 | $ 594 | 57,707 | | 110 | m2 | 550 | 60,500 | *2,793* | *5%* |
| 2.03 | Deck Slabs 200mm thick 40 Mpa including Reo Rate of 280kg/m3 | 43 | m2 | $ 418 | 18,104 | | 36 | m2 | 480 | 17,280 | - *824* | *-5%* |
| 2.04 | Retaining Walls - Wing & Keeper Walls | 40 | m2 | $ 825 | 33,388 | | 2 | Item | 18,000 | 36,000 | *2,612* | *7%* |
| 2.05 | **Abutments** | | | | | | | | | | - | |
| 2.06 | Bridge containment barriers | | | | - | | | | | - | - | |
| 3 | **ON BRIDGE WORKS** | | | | | | | | | | - | |
| 3.01 | 195mm thick asphalt pavement in 3 layers | 36 | m2 | $ 107 | 3,870 | | 35 | m2 | 110 | 3,850 | - *20* | *-1%* |
| 3.02 | Pedestrain footpath | | | | - | | 8 | m2 | 155 | 1,163 | *1,163* | *100%* |
| 3.03 | Ditto to Bridge Approach Ramps on Grade | 72 | m2 | $ 121 | 8,697 | | | | | - | - *8,697* | *-100%* |
| 3.04 | Approach Slabs 200mm (2no.) (Approach Ramp) | | | | - | | | | | - | - | |
| 3.05 | Kerbs | 20 | m | $ 72 | 1,430 | | 10 | m | 75 | 750 | - *680* | *-91%* |
| 3.06 | Shared Use Path / Footpath | 30 | m2 | $ 154 | 4,620 | | 15 | m2 | 155 | 2,325 | - *2,295* | *-99%* |
| 3.07 | Allow for linemarking | 30 | m | $ 6 | 165 | | 1 | Item | 1,200 | 1,200 | *1,035* | *86%* |
| 4 | **OFF-BRIDGE WORKS** | | | | | | | | | | - | |
| 4.01 | Approach Slabs 350mm thick 50 Mpa including Reo Rate of 250kg/m3 [2no.] | 72 | m2 | $ 500 | 35,940 | | 108 | m2 | 500 | 54,000 | *18,060* | *33%* |
| 4.02 | Barriers - Handrail | 27 | m | $ 110 | 2,968 | | | | | - | - *2,968* | *-100%* |
| 4.03 | Barriers - Armco | 60 | m | $ 120 | 7,200 | | 60 | m | 120 | 7,200 | - | *0%* |
| 4.04 | Drainage Slots & Droppers to Creek Below | 2 | No | $ 500 | 1,000 | | | | | | - *1,000* | *-100%* |
| 4.05 | Scour protection | | | | - | | | | | - | - | *-100%* |
| 4.06 | Rock Beaching - say 300 thick | 54 | m3 | $ 176 | 9,476 | | 1 | Item | 10,000 | 10,000 | *524* | *5%* |
| 5 | **MISCELLANEOUS** | | | | - | | | | | | - | |
| 5.01 | Miscellaneous | | | | - | | | | | - | - | |
| 5.02 | Allowance for Street Lighting (Pole Mounted @ 35m centres both sides) | 1 | No | $ 13,200 | 13,200 | | 1 | No | 12,500 | 12,500 | - *700* | *-6%* |
| 5.03 | Allowance for Conduits | 20 | m | $ 17 | 330 | | | | | | - *330* | *-100%* |
| 5.04 | Signage | 1 | Item | $ 5,000 | 5,000 | | | | | | - *5,000* | *-100%* |
| 6 | **SERVICES** | | | | | | | | | | - | |
| 6.01 | Extra Over Foundations for Rock Excavation (Assume 30% in Rock) | 6 | m3 | $ 116 | 693 | | | | | | - *693* | *-100%* |
| | | | | | | | | | | - | | |
| | **SUBTOTAL - SS-BR-03** | | | | **262,293** | | | | | **267,444** | ***5,151*** | ***2%*** |
| | | | | | | | | | | | | |
| 7 | **DELIVERY** | | | | | | | | | | | |
| 7.01 | Council Fees | 3.25% | Item | | 8,525 | % driven variance | 3.25% | Item | | 8,692 | *167* | *2%* |
| 7.02 | VicRoads Fees | 0.00% | Item | | - | Removed - Not Vic Roads Project | 0.00% | Item | | - | - | *0%* |
| 7.03 | Traffic Management | 5.00% | Item | | 13,115 | % driven variance | 5.00% | Item | | 13,372 | *258* | *2%* |
| 7.04 | Environmental Management | 0.50% | Item | | 1,311 | % driven variance | 0.50% | Item | | 1,337 | *26* | *2%* |
| 7.05 | Survey & Design | 5.00% | Item | | 13,115 | % driven variance | 5.00% | Item | | 13,372 | *258* | *2%* |
| 7.06 | Supervision & Project Management | 9.00% | Item | | 23,606 | % driven variance | 9.00% | Item | | 24,070 | *464* | *2%* |
| 7.07 | Site Establishment | 2.50% | Item | | 6,557 | % driven variance | 2.50% | Item | | 6,686 | *129* | *2%* |
| 7.08 | Contingency | 20.00% | Item | | 52,459 | % driven variance | 20.00% | Item | | 53,489 | *1,030* | *2%* |
| | | | | | - | | | | | | | |
| | **TOTAL - SS-BR-03** | | | | **380,980** | | | | | **388,462** | ***7,482*** | ***2%*** |

| | | |
|---|---|---|
| Length | m | 22 |
| Width | m | 13 |
| Area | m2 | 291 |

| | | | WTP Estimate | | | | | GHD Estimate | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Item | | Description | QTY | UOM | Rate | Total (a) | Comments | QTY | UOM | Rate | Total (b) | *Diff. (b - a)* | *%* |
| | | **WORKS** | | | | - | | | | | | | |
| | 1 | **SITEWORKS AND EARTHWORKS** | | | | | | | | | | | |
| 1.01 | | Strip Site Locally at Approach Ramps / RE Walls | 292 | m2 | $ 3 | 803 | | | | | - | *- 803* | *-100%* |
| 1.02 | | Bulk Cut to road under | 2,221 | m3 | $ 39 | 85,509 | | | | | - | *- 85,509* | *-100%* |
| 1.03 | | Set-Out | 1 | No | $ 5,500 | 5,500 | | | | | - | *- 5,500* | *-100%* |
| 1.04 | | Bulk excavation and fill | | | | - | | 194 | Item | 400 | 77,600 | *77,600* | *100%* |
| | 2 | **STRUCTURE** | | | | | | | | | | | |
| 2.01 | | Single span precast prestressed 1200 mm deep Super T-beam (4no.) arrangement with in-situ deck slab overlay on top of reinforced abutment cross head (depth tbc) | | | | - | | 194 | m2 | 1,900 | 368,600 | *368,600* | *100%* |
| 2.02 | | Mobilize / Demobilize Rig | 1 | No | $ 27,500 | 27,500 | | | | | - | *- 27,500* | *-100%* |
| 2.03 | | 1200 diameter x 10000 long 50 Mpa Concrete Bored Piles including Reo Rate say 200kg/m3 | 8 | No | $ 14,960 | 119,679 | | 8 | no | 15,000 | 120,000 | *321* | *0%* |
| 2.04 | | **Bearings and Expansion Joints** | | | | | | | | | | | |
| 2.05 | | Elastomeric Bearings | 10 | No | $ 1,650 | 16,500 | | | | | - | *- 16,500* | *-100%* |
| 2.06 | | **Super T Beams** | | | | | | | | | | | |
| 2.07 | | Prestressed Super T Beam 2200 wide x 1200 deep x 120 thick overall with a 700mm wide x 350mm thick base | 89 | m | $ 2,464 | 219,296 | | | m | | - | *- 219,296* | *-100%* |
| 2.08 | | Prestressed Super T Beam 3000 wide x 750 deep x 120 thick overall with a 700mm wide x 350mm thick base | 23 | m | $ 2,041 | 46,932 | | | m | | - | *- 46,932* | *-100%* |
| 2.09 | | **Retaining Walls** | | | | | | | | | | | |
| 2.1 | | Retaining Walls 200 thick - (Inside of Bored Pile) | 206 | m2 | $ 1,100 | 226,600 | | 300 | m2 | 1,120 | 336,000 | *109,400* | *33%* |
| 2.11 | | Foundation to above | 27 | m | $ 550 | 14,850 | | | | | - | *- 14,850* | *-100%* |
| 2.12 | | **Abutment Beam** | | | | | | | | | | | |
| 2.13 | | RC Abutment Beam | 27 | m | $ 3,348 | 91,229 | | 30 | m | 3,147.00 | 94,410 | *3,181* | *3%* |
| 2.14 | | Beam thickening under Cycle Path | 13 | m | $ 4,646 | 62,587 | | | | | - | *- 62,587* | *-100%* |
| | 3 | **ON BRIDGE WORKS** | | | | | | | | | | | |
| 3.01 | | Deck Slabs 200mm thick 40 Mpa including Reo Rate of 280kg/m3 | 227 | m2 | $ 418 | 94,886 | | | m2 | | - | *- 94,886* | *-100%* |
| 3.02 | | 3000mm wide cycle track slab 160mm thick | 65 | m2 | $ 330 | 21,395 | | | m2 | | - | *- 21,395* | *-100%* |
| 3.03 | | 600mm wide cantelevered walkway | 13 | m2 | $ 550 | 7,134 | | | | | | *- 7,134* | *-100%* |
| 3.04 | | Kerb and Channel | | | | - | | | | | | - | |
| 3.05 | | Path | | | | - | | | | | - | - | |
| 3.06 | | Allowance for Street Lighting (Wall mounted @ 35m centres both sides) | - | No | $ 2,475 | - | Inc. in Road Package | - | No | 2,475 | - | - | *0%* |
| 3.07 | | Allowance for Street Lighting (bridge soffit mounted) | 4 | No | $ 2,475 | 9,900 | | 4 | No | 2,500 | 10,000 | *100* | *1%* |
| 3.08 | | Allowance for Conduits | 886 | m | $ 17 | 14,626 | | - | m | 17 | - | *- 14,626* | *-100%* |
| | 4 | **OFF-BRIDGE WORKS** | | | | | | | | | | | |
| 4.01 | | **Road Pavements** | | | | | | | | | | | |
| 4.02 | | 195mm thick asphalt pavement in 3 layers | 217 | m2 | $ 107 | 23,273 | | 194 | m2 | 250 | 48,500 | *25,227* | *52%* |
| 4.03 | | Kerbs | 27 | m | $ 72 | 1,931 | | 60 | LM | 75 | 4,500 | *2,570* | *57%* |
| 4.04 | | Footpath / Shared Path | 53 | m2 | $ 154 | 8,162 | | 58 | m2 | 1,200 | 69,840 | *61,678* | *88%* |
| 4.05 | | Allow for linemarking | 48 | m | $ 6 | 264 | | | | | - | *- 264* | *-100%* |
| 4.06 | | Approach Slabs 350mm thick 50 Mpa including Reo Rate of 250kg/m3 [2no.] | 70 | m2 | $ 165 | 11,550 | | 115 | m2 | 500 | 57,600 | *46,050* | *80%* |
| 4.07 | | Barriers - Balustrade 1400 high | 43 | m | $ 90 | 3,883 | | | | | - | *- 3,883* | *-100%* |
| 4.08 | | Barriers - Balustrade 1200 high | 43 | m | $ 77 | 3,328 | | | | | | *- 3,328* | *-100%* |
| 4.09 | | **Guard rails** | | | | - | | | | | | | |
| 4.1 | | Barriers - Medium Containment | 27 | m | $ 1,705 | 46,035 | | | | | - | *- 46,035* | *-100%* |
| 4.11 | | Barriers - Armco | 160 | m | $ 110 | 17,600 | | | | | - | *- 17,600* | *-100%* |
| 4.12 | | Safety rails | | | | - | | 1 | Item | 20,000 | 20,000 | *20,000* | *100%* |
| 4.13 | | Handrails | | | | - | | 1 | Item | 5,000 | 5,000 | *5,000* | *100%* |
| 4.14 | | Guard rails | | | | - | | 1 | Item | 5,000 | 5,000 | *5,000* | *100%* |
| 4.15 | | **Drainage** | | | | | | | | | | | |
| 4.16 | | Drainage to bridge | 1 | Item | $ 22,000 | 22,000 | | 1 | Item | 22,000 | 22,000 | - | *0%* |
| 4.17 | | Drainage to Approach Slabs | 2 | No. | $ 55,000 | 110,000 | | | | | | *- 110,000* | *-100%* |
| 4.18 | | Drainage to lowered road under | 27 | m | $ 550 | 14,850 | | 400 | m | 250 | 100,000 | *85,150* | *85%* |
| 4.19 | | Sump Pump & Pit | 1 | Item | $ 110,000 | 110,000 | | | | | | *- 110,000* | *-100%* |
| 4.2 | | Scour protection | | | | - | | | | | - | - | |
| | 5 | **MISCELLANEOUS** | | | | - | | | | | | | |
| 5.01 | | Architectural screens / cladding to Piers / Deck | 44 | m | $ 2,000 | 88,000 | Architectural Screens (say 1800 high) | 44 | m | 2,000 | 88,000 | - | *0%* |
| 5.02 | | **Rail Related Items** | | | | | | | | | | | |
| 5.03 | | Track & Ballast (Assume + 100m each way) | 444 | TM | $ 1,650 | 732,600 | | 444 | TM | 1,650 | 732,600 | - | *0%* |

**CITY OF HUME**
**Sunbury and Lancefield Bridges**
**SS-BR-04 Sunbury Ring Road: Southern Link Grade Separation - Construction of 2 Lane Road Underpass of Rail Line**

| | | |
|---|---|---|
| Length | m | 22 |
| Width | m | 13 |
| Area | m2 | 291 |

| | | | WTP Estimate | | | | | GHD Estimate | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Item | Description | QTY | UOM | Rate | Total (a) | Comments | QTY | UOM | Rate | Total (b) | *Diff. (b - a)* | *%* |
| 5.04 | OHLE (Assume + 100m each way) | 444 | TM | $ 550 | 244,200 | | 444 | TM | 550 | 244,200 | - | *0%* |
| 5.05 | Signalling Adjustments | 1 | Item | $ 750,000 | 750,000 | | 1 | Item | 750,000 | 750,000 | - | *0%* |
| 5.06 | Rail Occupation Costs (Power Off) | 3 | No | $ 20,000 | 60,000 | | 3 | Item | 20,000 | 60,000 | - *0* | *0%* |
| 5.07 | Rail Occupation Costs (Major) | 2 | No. | $ 1,035,000 | 2,070,000 | | 2 | No. | 1,035,000 | 2,070,000 | - | *0%* |
| 6 | **SERVICES** | | | | | | | | | | | |
| 6.01 | APA Gas | 1 | Item | $ 4,400,000 | 4,400,000 | APA Quote 142m of 6" HDD + 164m of 4" temp. bypass + hottap & tie in. Abandon Existing P50 Value $3,939,020 (2018) - Roundup $4M<br>Accepted GHD allowances $4.4m | 1 | Item | 4,400,000 | 4,400,000 | - | *0%* |
| 6.02 | Telstra NBN | 1 | Item | $ 400,000 | 400,000 | | 1 | Item | 400,000 | 400,000 | - | *0%* |
| 6.03 | Western Water Sewer | 1 | Item | $ 300,000 | 300,000 | | 1 | Item | 300,000 | 300,000 | - | *0%* |
| 6.04 | Signage | 1 | Item | $ 50,000 | 50,000 | | | | | - | - *50,000* | *-100%* |
| 6.05 | De-watering works | 1 | Item | $ 250,000 | 250,000 | | | | | | - *250,000* | *-100%* |
| 6.06 | LXRA - Project Management / On Costs | 16 | % | $ 10,782,600 | 1,725,216 | WTP Allowance based on LXRA Projects - GHD Awaiting VPA Approval | 16 | % | 15,865,209 | 1,725,216 | *0* | *0%* |
| 6.07 | Extra Over Foundations for Rock Excavation (Assume 30% in Rock) | 42 | m3 | $ 116 | 4,851 | GHD Inc. in Bulk Exc. Rate | | | | | - *4,851* | *-100%* |
| 6.08 | Increase in Head Contractor Preliminaries (22% to 25%) | 3 | % | $ 10,782,600 | 323,478 | | 3 | % | 12,109,066 | 363,272 | *39,794* | *11%* |
| | **SUBTOTAL - SS-BR-04** | | | | **12,836,145** | | | | | **12,472,338** | **- *363,807*** | ***-3%*** |
| 7 | **DELIVERY** | | | | | | | | | | | |
| 7.01 | Council Fees | 3.25% | Item | | 417,175 | % driven variance | 3.25% | Item | | 405,351 | - *11,824* | *-3%* |
| 7.02 | VicRoads Fees | 0.00% | Item | | - | Removed - Not Vic Roads Project | 0.00% | Item | | - | - | *0%* |
| 7.03 | Traffic Management | 5.00% | Item | | 641,807 | % driven variance | 5.00% | Item | | 623,617 | - *18,190* | *-3%* |
| 7.04 | Environmental Management | 0.50% | Item | | 64,181 | % driven variance | 0.50% | Item | | 62,362 | - *1,819* | *-3%* |
| 7.05 | Survey & Design | 5.00% | Item | | 641,807 | % driven variance | 5.00% | Item | | 623,617 | - *18,190* | *-3%* |
| 7.06 | Supervision & Project Management | 9.00% | Item | | 1,155,253 | % driven variance | 9.00% | Item | | 1,122,510 | - *32,743* | *-3%* |
| 7.07 | Site Establishment | 2.50% | Item | | 320,904 | % driven variance | 2.50% | Item | | 311,808 | - *9,095* | *-3%* |
| 7.08 | Contingency | 20.00% | Item | | 2,567,229 | % driven variance | 20.00% | Item | | 2,494,468 | - *72,761* | *-3%* |
| | **TOTAL - SS-BR-04** | | | | **18,644,500** | | | | | **18,116,071** | **- *528,429*** | ***-3%*** |

**CITY OF HUME**
**Sunbury and Lancefield Roads**
**Independent Estimators Review**

17/05/2019

| ITEM | CODE | DESCRIPTION | QTY | UNIT | RATE | AMOUNT |
|---|---|---|---|---|---|---|
| | | **Construction & Delivery Costs** | | | | |
| 1 | SD-RD4-01 | Sunbury Ring Road: Jacksons Hill Creek Crossing - South - SS-RD-04-01 (Approx. length 1580m, excluding Intersections) | 53,720 | m2 | 230 | 12,343,926 |
| 2 | SD-RD4-02 | Sunbury Ring Road: Jacksons Hill Creek Crossing - South - SS-RD4-02 (Long Options, approx. length 630m, excluding Intersections) | 21,420 | m2 | 285 | 6,115,158 |
| 3 | SD-RD4-03 | Sunbury Ring Road: Jacksons Hill Creek Crossing - South - SS-RD4-03 (Long Options, approx. length 955m, excluding Intersections) | 32,470 | m2 | 472 | 15,319,944 |
| 4 | SD-RD4-04 | Sunbury Ring Road: Jacksons Hill Creek Crossing - South - SS-RD4-04 (Long Options, approx. length 235m, excluding Intersections) | 7,990 | m2 | 462 | 3,694,328 |
| 5 | SD-RD4-05 | Sunbury Ring Road: Jacksons Hill Creek Crossing - South - SS-RD4-05 (Long Options, approx. length 330m, excluding Intersections) | 11,220 | m2 | 1,566 | 17,565,007 |
| | | **Total Construction Cost** | | | | **55,038,362** |

**CITY OF HUME**
**Sunbury and Lancefield Roads**
**SD-RD4-01 Sunbury Ring Road: Jacksons Hill Creek Crossing - South - SS-RD-04-01 (Approx. length 1580m, excluding Intersections)**

| | | |
|---|---|---|
| Length | m | 1,580 |
| Width | m | 11.60 |
| Area | m2 | 18,328 |

| | | WTP Estimate | | | | | GHD Estimate | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Item | Description | QTY | UOM | Rate | Total (a) | Comments | QTY | UOM | Rate | Total (b) | *Diff. (b - a)* | *%* |
| | **WORKS** | | | | - | | | | | | | |
| 1 | **SITEWORKS AND EARTHWORKS** | | | | | | | | | | | |
| 1.1 | Pre-construction | | | | | | | | | | | |
| 1.1.1 | Demolition | 53,720 | m2 | 1.50 | 80,580 | WT Site Area. Benchmark rate | 59,090 | m2 | 4.00 | 236,360.00 | *155,780.00* | *66%* |
| 1.1.2 | Site Preparation | 53,720 | m2 | 2.50 | 134,300 | WT Site Area. Benchmark rate | | | | - | *- 134,300.00* | *0%* |
| 1.2 | Earthworks | | | | | | | | | | | |
| 1.2.2 | Cut and fill | 24,205 | m3 | 39.00 | 943,995 | No Long Sections - Use GHD Quantity. WT benchmark rate | 24,205 | m3 | 43.20 | 1,045,656.00 | *101,661.00* | *10%* |
| 1.2.3 | EO Allowance for rock excavation works | 2,534 | m3 | 101.00 | 255,934 | No Long Sections - Use GHD Quantity. WT Agree rate $140/m3 for rock excavation @ 30% of exc. Vol | 2,534 | m3 | 96.80 | 245,291.20 | *- 10,642.80* | *-4%* |
| 1.3 | Set-Out | | | | | | | | | | | |
| 1.3.1 | Allow for site set out | 1 | Item | 10,000.00 | 10,000 | WT allow $10k per stage, GHD reduced to $12,500 -accepted | 1 | Item | 12,500.00 | 12,500.00 | *2,500.00* | *20%* |
| 2 | **ROAD PAVEMENT** | | | | | | | | | | | |
| 2.1 | New Pavement | | | | | | | | | | | |
| 2.1.1 | Road pavement - Traffic lanes | 18,328 | m2 | 155.00 | 2,840,840 | Area accepted, WT Benchmark Rate | 18,661 | m2 | 156.60 | 2,922,312.60 | *81,472.60* | *3%* |
| 3 | **CONCRETE WORKS** | | | | | | | | | | | |
| 3.1 | Kerb and Channel | | | | | | | | | | | |
| 3.1.1 | Kerb and Channel | 6,320 | LM | 50.00 | 316,000 | 4 x Road length, WT Benchmark Rate Accepted | 6,435 | LM | 48.60 | 312,741.00 | *- 3,259.00* | *-1%* |
| 3.2 | Pedestrian & Cycle Paths | | | | | | | | | | | |
| 3.2.1 | Pedestrian footpath | 4,740 | m2 | 55.00 | 260,700 | Area accepted, WT Benchmark Rate Accepted | 4,508 | m2 | 59.00 | 265,972.00 | *5,272.00* | *2%* |
| 3.2.2 | Cycle pathway | 5,372 | m2 | 60.00 | 322,320 | Area accepted, WT Benchmark Rate Accepted | 5,470 | m2 | 66.00 | 361,020.00 | *38,700.00* | *11%* |
| 3.3 | Median strip | | | | | | | | | | | |
| 3.3.1 | Median (Levelled ground) | 11,060 | m2 | 32.40 | 358,344 | Median rate Topsoil & Grassing - Accept GHD Rate | 10,517 | m2 | 32.40 | 340,750.80 | *- 17,593.20* | *-5%* |
| 4 | **DRAINAGE** | | | | | | | | | | | |
| 4.1 | Drainage - Pipes | | | | | | | | | | | |
| 4.1.1 | Stormwater drainage - 525 dia. RCP one side of road 30% of road length | 474 | LM | 355.00 | 168,270 | Average 450 dia. RCP - Both sides of road | 483 | LM | 355.00 | 171,358.50 | *3,088.50* | *2%* |
| 4.1.2 | Stormwater drainage - 450 dia. RCP one side of road 70% of road length | 1,106 | LM | 290.00 | 320,740 | Average 450 dia. RCP - Both sides of road | 1,126 | LM | 216.00 | 243,280.80 | *- 77,459.20* | *-32%* |
| 4.1.3 | Stormwater drainage - 300 diam RCP cross drainage @ 90m centres | 351 | LM | 225.00 | 79,000 | Average 300 dia. RCP - Cross Drainage CR backfill | 358 | LM | 225.00 | 80,450.00 | *1,450.00* | *2%* |
| 4.1.4 | Drainage, sub grade drain | 3,160 | LM | 45.00 | 142,200 | Drainage both side of road | 3,218 | LM | 54.00 | 173,772.00 | *31,572.00* | *18%* |
| 4.2 | Drainage - Pits | | | | | | | | | | | |
| 4.2.1 | Side entry pits | 43 | No | 2,700.00 | 116,100 | Agreed - one side of road @ 35m c - Assumed approx 2.5m deep | 40 | No | 2,700.00 | 108,000.00 | *- 8,100.00* | *-8%* |
| 4.3 | Drainage - WSUD | | | | | | | | | | | |
| 4.3.1 | Drainage - WSUD | 43 | No | 1,500.00 | 64,500 | Agreed allowance for WSUD | 40 | No | 1,500.00 | 60,000.00 | *- 4,500.00* | *-8%* |
| 5 | **TRAFFIC** | | | | | | | | | | | |
| 5.1 | Traffic Signals & Line Marking | | | | | | | | | | | |
| 5.1.1 | Line marking and Traffic Signage | 9,480 | LM | 7.50 | 71,100 | $5 per metre of line length + $2.50 for sundries and signage | 1,609 | LM | 50.00 | 80,450.00 | *9,350.00* | *12%* |
| 6 | **LANDSCAPE** | | | | | | | | | | | |
| 6.1 | Trees | | | | | | | | | | | |
| 6.1.1 | Tree planting (2-2.5m tall) | 32 | No | 350.00 | 11,200 | Both sides of Road 2x 1580m @ 100m centres | 32 | No | 350.00 | 11,200.00 | *-* | *0%* |
| 6.2 | Landscaping | | | | | | | | | | | |
| 6.2.1 | Tube stock plantings | 14,220 | m2 | 2.50 | 35,550 | Area = 1580m Length x 9m wide | 11,900 | m2 | 3.00 | 35,700.00 | *150.00* | *0%* |
| 6.2.2 | Nature strip | 14,220 | m2 | 10.00 | 142,200 | Area = 1580m Length x 9m wide | 11,900 | m2 | 15.00 | 178,500.00 | *36,300.00* | *20%* |
| 7 | **STREET LIGHTING** | | | | | | | | | | | |
| 7.1 | Street Lighting | | | | | | | | | | | |
| 7.1.1 | Street lighting (incl. lighting conduits) | 32 | No | 12,000.00 | 384,000 | Pole mounted light in center median 1 No. per 50 metres | 30 | No | 12,500.00 | 375,000.00 | *- 9,000.00* | *-2%* |

**CITY OF HUME**
**Sunbury and Lancefield Roads**
**SD-RD4-01 Sunbury Ring Road: Jacksons Hill Creek Crossing - South - SS-RD-04-01 (Approx. length 1580m, excluding Intersections)**

| | | |
|---|---|---|
| Length | m | 1,580 |
| Width | m | 11.60 |
| Area | m2 | 18,328 |

| | | WTP Estimate | | | | | GHD Estimate | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Item | Description | QTY | UOM | Rate | Total (a) | Comments | QTY | UOM | Rate | Total (b) | *Diff. (b - a)* | *%* |
| 8 | **MISCELLANEOUS** | | | | | | | | | | | |
| 8.1 | Retaining walls | | | | | | | | | | | |
| 8.1.1 | Retaining wall (0-2m high) - CH3300-5100 | 145 | LM | 1,100.00 | 159,500 | WT $1,100/m2 Soil Nail Wall - No Arch. Finish | 145 | LM | 1,120.00 | 162,400.00 | *2,900.00* | *2%* |
| 8.1.2 | Retaining wall (3-5m high) - CH3300-5100 | 110 | LM | 4,400.00 | 484,000 | WT $1,100/m2 Soil Nail Wall - No Arch. Finish | 110 | LM | 4,480.00 | 492,800.00 | *8,800.00* | *2%* |
| 8.1.3 | Retaining wall (6-8m high) - CH3300-5100 | | LM | 7,700.00 | - | WT $1,100/m2 Soil Nail Wall - No Arch. Finish | - | LM | 7,840.00 | - | *-* | *0%* |
| 8.1.4 | Retaining wall (9-11m high) - CH3300-5100 | 100 | LM | 11,000.00 | 1,100,000 | WT $1,100/m2 Soil Nail Wall - No Arch. Finish | 100 | LM | 11,200.00 | 1,120,000.00 | *20,000.00* | *2%* |
| 9 | **SERVICES** | | | | | | | | | | | |
| 9.1.1 | Services Relocation | | Allow | - | - | | - | Allow | - | - | *-* | *0%* |
| 9.1.2 | Services Protection | | Allow | - | - | | - | Allow | - | - | *-* | *0%* |
| | **SUBTOTAL - SD-RD4-01** | | | | **8,801,373** | | | | | **9,035,514.90** | ***234,141.90*** | ***3%*** |
| **10** | **DELIVERY** | | | | | | | | | | | |
| 10.1 | Council Fees | 3.25% | Item | | 286,045 | | 3.25% | Item | | 293,654.23 | *7,609.61* | *3%* |
| 10.2 | VicRoads Fees | 0.00% | Item | | - | Removed - Not VicRoads Juristriction | 0.00% | Item | | - | *-* | *0%* |
| 10.3 | Traffic Management | 5.00% | Item | | 440,069 | | 5.00% | Item | | 451,775.75 | *11,707.09* | *3%* |
| 10.4 | Environmental Management | 0.50% | Item | | 44,007 | | 0.50% | Item | | 45,177.57 | *1,170.71* | *3%* |
| 10.5 | Survey & Design | 5.00% | Item | | 440,069 | | 5.00% | Item | | 451,775.75 | *11,707.09* | *3%* |
| 10.6 | Supervision & Project Management | 9.00% | Item | | 792,124 | | 9.00% | Item | | 813,196.34 | *21,072.77* | *3%* |
| 10.7 | Site Establishment | 2.50% | Item | | 220,034 | | 2.50% | Item | | 225,887.87 | *5,853.55* | *3%* |
| 10.8 | Contingency | 15.00% | Item | | 1,320,206 | Roads Contingency Reduced 20-15% | 15.00% | Item | | 1,355,327.24 | *35,121.28* | *3%* |
| | | | | | | | | | | | *-* | |
| | **TOTAL - SD-RD4-01** | | | | **12,343,926** | | | | | **12,672,309.65** | ***328,384.01*** | ***3%*** |

**CITY OF HUME**
**Sunbury and Lancefield Roads**
**SD-RD4-02 Sunbury Ring Road: Jacksons Hill Creek Crossing - South - SS-RD4-02 (Long Options, approx. length 630m, excluding Intersections)**

| | | |
|---|---|---|
| Length | m | 630 |
| Width | m | 11.60 |
| Area | m2 | 7,308 |

| Item | Description | WTP Estimate QTY | UOM | Rate | Total (a) | Comments | GHD Estimate QTY | UOM | Rate | Total (b) | Diff. (b - a) | % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **WORKS** | | | | - | | | | | | | |
| 1 | **SITEWORKS AND EARTHWORKS** | | | | | | | | | | | |
| 1.1 | Pre-construction | | | | | | | | | | | |
| 1.1.1 | Demolition and site preparation | 21,420 | m2 | $ 1.50 | 32,130 | WT Site Area. Benchmark rate | 32,320 | m2 | 4.00 | 129,280.00 | *97,150.00* | *75%* |
| 1.1.2 | Site Preparation | 21,420 | m2 | $ 2.50 | 53,550 | WT Site Area. Benchmark rate | | | | - | *- 53,550.00* | *0%* |
| 1.2 | Earthworks | | | | | | | | | | | |
| 1.2.2 | Cut and fill | 22,273 | m3 | $ 39.00 | 868,647 | No Long Sections - Use GHD Quantity. WT benchmark rate | 22,273 | m3 | 43.20 | 962,193.60 | *93,546.60* | *10%* |
| 1.2.3 | EO Allowance for rock excavation works | 2,103 | m3 | $ 101.00 | 212,403 | No Long Sections - Use GHD Quantity. WT Agree rate $140/m3 for rock excavation @ 30% of exc. Vol | 2,103 | m3 | 96.80 | 203,570.40 | *- 8,832.60* | *-4%* |
| 1.3 | Set-Out | | | | | | | | | | | |
| 1.3.1 | Allow for site set out | 1 | Item | $ 10,000.00 | 10,000 | WT allow $10k per stage, GHD reduced to $12,500 -accepted | 1 | Item | 12,500.00 | 12,500.00 | *2,500.00* | *20%* |
| 2 | **ROAD PAVEMENT** | | | | | | | | | | | |
| 2.1 | New Pavement | | | | | | | | | | | |
| 2.1.1 | Road pavement - Traffic lanes | 7,308 | m2 | $ 155.00 | 1,132,740 | Area accepted, WT Benchmark Rate | 6,713 | m2 | 156.60 | 1,051,255.80 | *- 81,484.20* | *-8%* |
| 3 | **CONCRETE WORKS** | | | | | | | | | | | |
| 3.1 | Kerb and Channel | | | | | | | | | | | |
| 3.1.1 | Kerb and Channel | 2,520 | LM | $ 50.00 | 126,000 | 4 x Road length, WT Benchmark Rate Accepted | 2,316 | LM | 48.60 | 112,557.60 | *- 13,442.40* | *-12%* |
| 3.2 | Pedestrian & Cycle Paths | | | | | | | | | | | |
| 3.2.1 | Pedestrian footpath | 1,890 | m2 | $ 55.00 | 103,950 | Area accepted, WT Benchmark Rate Accepted | 1,622 | m2 | 59.00 | 95,698.00 | *- 8,252.00* | *-9%* |
| 3.2.2 | Cycle pathway | 2,142 | m2 | $ 60.00 | 128,520 | Area accepted, WT Benchmark Rate Accepted | 1,968 | m2 | 66.00 | 129,888.00 | *1,368.00* | *1%* |
| 3.3 | Median strip | | | | | | | | | | | |
| 3.3.1 | Median (Levelled ground) | 4,410 | m2 | $ 32.40 | 142,884 | Median rate Topsoil & Grassing - Accept GHD Rate | 3,783 | m2 | 32.40 | 122,569.20 | *- 20,314.80* | *-17%* |
| 4 | **DRAINAGE** | | | | | | | | | | | |
| 4.1 | Drainage - Pipes | | | | | | | | | | | |
| 4.1.1 | Stormwater drainage - 525 dia. RCP one side of road 30% of road length | 189 | LM | 355.00 | 67,095 | Average 450 dia. RCP - Both sides of road | 174 | LM | 355.00 | 61,663.50 | *- 5,431.50* | *-9%* |
| 4.1.2 | Stormwater drainage - 450 dia. RCP one side of road 70% of road length | 441 | LM | 290.00 | 127,890 | Average 450 dia. RCP - Both sides of road | 405 | LM | 216.00 | 87,544.80 | *- 40,345.20* | *-46%* |
| 4.1.3 | Stormwater drainage - 300 diam RCP cross drainage @ 90m centres | 140 | LM | 225.00 | 31,500 | Average 300 dia. RCP - Cross Drainage CR backfill | 129 | LM | 225.00 | 28,950.00 | *- 2,550.00* | *-9%* |
| 4.1.4 | Drainage, sub grade drain | 1,260 | LM | 45.00 | 56,700 | Drainage both side of road | 1,158 | LM | 54.00 | 62,532.00 | *5,832.00* | *9%* |
| 4.2 | Drainage - Pits | | | | | | | | | | | |
| 4.2.1 | Side entry pits | 17 | No | $ 2,700.00 | 45,900 | Agreed - one side of road @ 35m c - Assumed approx 2.5m deep | 16 | No | 2,700.00 | 43,200.00 | *- 2,700.00* | *-6%* |
| 4.3 | Drainage - WSUD | | | | | | | | | | | |
| 4.3.1 | Drainage - WSUD | 17 | No | 1,500.00 | 25,500 | Agreed allowance for WSUD | 16 | No | 1,500.00 | 24,000.00 | *- 1,500.00* | *-6%* |
| 5 | **TRAFFIC** | | | | | | | | | | | |
| 5.1 | Traffic Signals & Line Marking | | | | | | | | | | | |
| 5.1.1 | Line marking and Traffic Signage | 3,780 | LM | $ 7.50 | 28,350 | $5 per metre of line length + $2.50 for sundries and signage | 579 | LM | 50.00 | 28,950.00 | *600.00* | *2%* |
| 6 | **LANDSCAPE** | | | | | | | | | | | |
| 6.1 | Trees | | | | | | | | | | | |
| 6.1.1 | Tree planting (2-2.5m tall) | 13 | No | $ 350.00 | 4,550 | Both sides of Road 2x 1580m @ 100m centres | 13 | No | 350.00 | 4,550.00 | - | *0%* |
| 6.2 | Landscaping | | | | | | | | | | | |
| 6.2.1 | Tube stock plantings | 5,670 | m2 | $ 2.50 | 14,175 | Area = 1580m Length x 9m wide | 2,432 | m2 | 3.00 | 7,296.00 | *- 6,879.00* | *-94%* |
| 6.2.2 | Nature strip | 5,670 | m2 | $ 10.00 | 56,700 | Area = 1580m Length x 9m wide | 2,432 | m2 | 15.00 | 36,480.00 | *- 20,220.00* | *-55%* |
| 7 | **STREET LIGHTING** | | | | | | | | | | | |
| 7.1 | Street Lighting | | | | | | | | | | | |
| 7.1.1 | Street lighting (incl. lighting conduits) | 13 | No | $ 12,000.00 | 156,000 | Pole mounted light in center median 1 No. per 50 metres | 12 | No | 12,500.00 | 150,000.00 | *- 6,000.00* | *-4%* |

**CITY OF HUME**
**Sunbury and Lancefield Roads**
**SD-RD4-02 Sunbury Ring Road: Jacksons Hill Creek Crossing - South - SS-RD4-02 (Long Options, approx. length 630m, excluding Intersections)**

| | | |
|---|---|---|
| Length | m | 630 |
| Width | m | 11.60 |
| Area | m2 | 7,308 |

| | | WTP Estimate | | | | | GHD Estimate | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Item | Description | QTY | UOM | Rate | Total (a) | Comments | QTY | UOM | Rate | Total (b) | *Diff. (b - a)* | *%* |
| **8** | **MISCELLANEOUS** | | | | | | | | | | | |
| 8.1 | Retaining walls | | | | | | | | | | | |
| 8.1.1 | Retaining wall (0-2m high) - CH3300-5100 | 100 | LM | 1,100.00 | 110,000 | WT $1,100/m2 Soil Nail Wall - No Arch. Finish | 100 | LM | 1,120.00 | 112,000.00 | *2,000.00* | *2%* |
| 8.1.2 | Retaining wall (3-5m high) - CH3300-5100 | 100 | LM | 4,400.00 | 440,000 | WT $1,100/m2 Soil Nail Wall - No Arch. Finish | 100 | LM | 4,480.00 | 448,000.00 | *8,000.00* | *2%* |
| 8.1.3 | Retaining wall (6-8m high) - CH3300-5100 | 50 | LM | 7,700.00 | 385,000 | WT $1,100/m2 Soil Nail Wall - No Arch. Finish | 50 | LM | 7,840.00 | 392,000.00 | *7,000.00* | *2%* |
| 8.1.4 | Retaining wall (9-11m high) - CH3300-5100 | - | LM | 11,000.00 | - | WT $1,100/m2 Soil Nail Wall - No Arch. Finish | - | LM | 11,200.00 | - | - | *0%* |
| **9** | **SERVICES** | | | | | | | | | | | |
| 9.1.1 | Services Relocation | | Allow | $ - | - | | - | Allow | - | - | - | *0%* |
| 9.1.2 | Services Protection | | Allow | $ - | - | | - | Allow | - | - | - | *0%* |
| | | | | **SUBTOTAL - SD-RD4-02** | **4,360,184** | | | | | **4,306,678.90** | **- 53,505.10** | ***-1%*** |
| **10** | **DELIVERY** | | | | | | | | | | | |
| 10.1 | Council Fees | 3.25% | Item | | 141,706 | | 3.25% | Item | | 139,967.06 | - *1,738.92* | *-1%* |
| 10.2 | VicRoads Fees | 0.00% | Item | | - | Removed - Not VicRoads Juristriction | 0.00% | Item | | - | - | *0%* |
| 10.3 | Traffic Management | 5.00% | Item | | 218,009 | | 5.00% | Item | | 215,333.95 | - *2,675.25* | *-1%* |
| 10.4 | Environmental Management | 0.50% | Item | | 21,801 | | 0.50% | Item | | 21,533.39 | - *267.53* | *-1%* |
| 10.5 | Survey & Design | 5.00% | Item | | 218,009 | | 5.00% | Item | | 215,333.95 | - *2,675.25* | *-1%* |
| 10.6 | Supervision & Project Management | 9.00% | Item | | 392,417 | | 9.00% | Item | | 387,601.10 | - *4,815.46* | *-1%* |
| 10.7 | Site Establishment | 2.50% | Item | | 109,005 | | 2.50% | Item | | 107,666.97 | - *1,337.63* | *-1%* |
| 10.8 | Contingency | 15.00% | Item | | 654,028 | Roads Contingency Reduced 20-15% | 15.00% | Item | | 646,001.84 | - *8,025.76* | *-1%* |
| | | | | | - | | | | | | - | |
| | | | | **TOTAL - SD-RD4-02** | **6,115,158** | | | | | **6,040,117.16** | **- 75,040.90** | ***-1%*** |

**CITY OF HUME**
**Sunbury and Lancefield Roads**
**SD-RD4-03 Sunbury Ring Road: Jacksons Hill Creek Crossing - South - SS-RD4-03 (Long Options, approx. length 955m, excluding Intersections)**

| | | |
|---|---|---|
| Length | m | 955 |
| Width | m | 11.60 |
| Area | m2 | 11,078 |

| Item | Description | WTP Estimate QTY | UOM | Rate | Total (a) | Comments | GHD Estimate QTY | UOM | Rate | Total (b) | Diff. (b - a) | % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **WORKS** | | | | - | | | | | | | |
| 1 | **SITEWORKS AND EARTHWORKS** | | | | | | | | | | | |
| 1.1 | Pre-construction | | | | | | | | | | | |
| 1.1.1 | Demolition and site preparation | 32,470 | m2 | $ 1.50 | 48,705 | WT Site Area. Benchmark rate | 40,170 | m2 | 4.00 | 160,680.00 | *111,975.00* | *70%* |
| 1.1.2 | Site Preparation | 32,470 | m2 | $ 2.50 | 81,175 | WT Site Area. Benchmark rate | | | | - | - *81,175.00* | *0%* |
| 1.2 | Earthworks | | | | | | | | | | | |
| 1.2.2 | Cut and fill | 85,180 | m3 | $ 39.00 | 3,322,020 | No Long Sections - Use GHD Quantity. WT benchmark rate | 85,180 | m3 | 43.20 | 3,679,776.00 | *357,756.00* | *10%* |
| 1.2.3 | EO Allowance for rock excavation works | 12,747 | m3 | $ 101.00 | 1,287,447 | No Long Sections - Use GHD Quantity. WT Agree rate $140/m3 for rock excavation @ 30% of exc. Vol | 12,747 | m3 | 96.80 | 1,233,909.60 | - *53,537.40* | *-4%* |
| 1.3 | Set-Out | | | | | | | | | | | |
| 1.3.1 | Allow for site set out | 1 | Item | $ 10,000.00 | 10,000 | WT allow $10k per stage, GHD reduced to $12,500 -accepted | 1 | Item | 12,500.00 | 12,500.00 | *2,500.00* | *20%* |
| 2 | **ROAD PAVEMENT** | | | | | | | | | | | |
| 2.1 | New Pavement | | | | | | | | | | | |
| 2.1.1 | Road pavement - Traffic lanes | 11,078 | m2 | $ 155.00 | 1,717,090 | Area accepted, WT Benchmark Rate | 8,927 | m2 | 156.60 | 1,397,968.20 | - *319,121.80* | *-23%* |
| 3 | **CONCRETE WORKS** | | | | | | | | | | | |
| 3.1 | Kerb and Channel | | | | | | | | | | | |
| 3.1.1 | Kerb and Channel | 3,820 | LM | $ 50.00 | 191,000 | 4 x Road length, WT Benchmark Rate Accepted | 3,080 | LM | 48.60 | 149,688.00 | - *41,312.00* | *-28%* |
| 3.2 | Pedestrian & Cycle Paths | | | | | | | | | | | |
| 3.2.1 | Pedestrian footpath | 2,865 | m2 | $ 55.00 | 157,575 | Area accepted, WT Benchmark Rate Accepted | 2,157 | m2 | 59.00 | 127,263.00 | - *30,312.00* | *-24%* |
| 3.2.2 | Cycle pathway | 3,247 | m2 | $ 60.00 | 194,820 | Area accepted, WT Benchmark Rate Accepted | 2,617 | m2 | 66.00 | 172,722.00 | - *22,098.00* | *-13%* |
| 3.3 | Median strip | | | | | | | | | | | |
| 3.3.1 | Median (Levelled ground) | 6,685 | m2 | $ 32.40 | 216,594 | Median rate Topsoil & Grassing - Accept GHD Rate | 5,031 | m2 | 32.40 | 163,004.40 | - *53,589.60* | *-33%* |
| 4 | **DRAINAGE** | | | | | | | | | | | |
| 4.1 | Drainage - Pipes | | | | | | | | | | | |
| 4.1.1 | Stormwater drainage - 525 dia. RCP one side of road 30% of road length | 287 | LM | 355.00 | 101,708 | Average 450 dia. RCP - Both sides of road | 231 | LM | 355.00 | 82,005.00 | - *19,702.50* | *-24%* |
| 4.1.2 | Stormwater drainage - 450 dia. RCP one side of road 70% of road length | 669 | LM | 290.00 | 193,865 | Average 450 dia. RCP - Both sides of road | 539 | LM | 216.00 | 116,424.00 | - *77,441.00* | *-67%* |
| 4.1.3 | Stormwater drainage - 300 diam RCP cross drainage @ 90m centres | 212 | LM | 225.00 | 47,750 | Average 300 dia. RCP - Cross Drainage CR backfill | 171 | LM | 225.00 | 38,500.00 | - *9,250.00* | *-24%* |
| 4.1.4 | Drainage, sub grade drain | 1,910 | LM | 45.00 | 85,950 | Drainage both side of road | 1,540 | LM | 54.00 | 83,160.00 | - *2,790.00* | *-3%* |
| 4.2 | Drainage - Pits | | | | | | | | | | | |
| 4.2.1 | Side entry pits | 26 | No | $ 2,700.00 | 70,200 | Agreed - one side of road @ 35m c - Assumed approx 2.5m deep | 21 | No | 2,700.00 | 56,700.00 | - *13,500.00* | *-24%* |
| 4.3 | Drainage - WSUD | | | | | | | | | | | |
| 4.3.1 | Drainage - WSUD | 26 | No | 1,500.00 | 39,000 | Agreed allowance for WSUD | 21 | No | 1,500.00 | 31,500.00 | - *7,500.00* | *-24%* |
| 5 | **TRAFFIC** | | | | | | | | | | | |
| 5.1 | Traffic Signals & Line Marking | | | | | | | | | | | |
| 5.1.1 | Line marking and Traffic Signage | 5,730 | LM | $ 7.50 | 42,975 | $5 per metre of line length + $2.50 for sundries and signage | 770 | LM | 50.00 | 38,500.00 | - *4,475.00* | *-12%* |
| 6 | **LANDSCAPE** | | | | | | | | | | | |
| 6.1 | Trees | | | | | | | | | | | |
| 6.1.1 | Tree planting (2-2.5m tall) | 20 | No | $ 350.00 | 7,000 | Both sides of Road 2x 1580m @ 100m centres | 20 | No | 350.00 | 7,000.00 | - | *0%* |
| 6.2 | Landscaping | | | | | | | | | | | |
| 6.2.1 | Tube stock plantings | 8,595 | m2 | $ 2.50 | 21,488 | Area = 1580m Length x 9m wide | 3,235 | m2 | 3.00 | 9,705.00 | - *11,782.50* | *-121%* |
| 6.2.2 | Nature strip | 8,595 | m2 | $ 10.00 | 85,950 | Area = 1580m Length x 9m wide | 3,235 | m2 | 15.00 | 48,525.00 | - *37,425.00* | *-77%* |
| 7 | **STREET LIGHTING** | | | | | | | | | | | |
| 7.1 | Street Lighting | | | | | | | | | | | |
| 7.1.1 | Street lighting (incl. lighting conduits) | 20 | No | $ 12,000.00 | 240,000 | Pole mounted light in center median 1 No. per 50 metres | 16 | No | 12,500.00 | 200,000.00 | - *40,000.00* | *-20%* |

**CITY OF HUME**
**Sunbury and Lancefield Roads**
**SD-RD4-03 Sunbury Ring Road: Jacksons Hill Creek Crossing - South - SS-RD4-03 (Long Options, approx. length 955m, excluding Intersections)**

| | | |
|---|---|---|
| Length | m | 955 |
| Width | m | 11.60 |
| Area | m2 | 11,078 |

| | | WTP Estimate | | | | | GHD Estimate | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Item | Description | QTY | UOM | Rate | Total (a) | Comments | QTY | UOM | Rate | Total (b) | *Diff. (b - a)* | *%* |
| 8 | **MISCELLANEOUS** | | | | | | | | | | | |
| 8.1 | Retaining walls | | | | | | | | | | | |
| 8.1.1 | Retaining wall (0-2m high) - CH3300-5100 | 160 | LM | 1,100.00 | 176,000 | WT $1,100/m2 Soil Nail Wall - No Arch. Finish | 160 | LM | 1,120.00 | 179,200.00 | *3,200.00* | *2%* |
| 8.1.2 | Retaining wall (3-5m high) - CH3300-5100 | 200 | LM | 4,400.00 | 880,000 | WT $1,100/m2 Soil Nail Wall - No Arch. Finish | 200 | LM | 4,480.00 | 896,000.00 | *16,000.00* | *2%* |
| 8.1.3 | Retaining wall (6-8m high) - CH3300-5100 | 150 | LM | 7,700.00 | 1,155,000 | WT $1,100/m2 Soil Nail Wall - No Arch. Finish | 150 | LM | 7,840.00 | 1,176,000.00 | *21,000.00* | *2%* |
| 8.1.4 | Retaining wall (9-11m high) - CH3300-5100 | 50 | LM | 11,000.00 | 550,000 | WT $1,100/m2 Soil Nail Wall - No Arch. Finish | 50 | LM | 11,200.00 | 560,000.00 | *10,000.00* | *2%* |
| 9 | **SERVICES** | | | | | | | | | | | |
| 9.1.1 | Services Relocation | | Allow | $ - | - | | - | Allow | - | - | - | *0%* |
| 9.1.2 | Services Protection | | Allow | $ - | - | | - | Allow | - | - | - | *0%* |
| | **SUBTOTAL - SD-RD4-03** | | | | **10,923,311** | | | | | **10,620,730.20** | **- 302,580.80** | **-3%** |
| 10 | **DELIVERY** | | | | | | | | | | | |
| 10.1 | Council Fees | 3.25% | Item | | 355,008 | | 3.25% | Item | | 345,173.73 | - *9,833.88* | *-3%* |
| 10.2 | VicRoads Fees | 0.00% | Item | | - | Removed - Not VicRoads Juristriction | 0.00% | Item | | - | - | *0%* |
| 10.3 | Traffic Management | 5.00% | Item | | 546,166 | | 5.00% | Item | | 531,036.51 | - *15,129.04* | *-3%* |
| 10.4 | Environmental Management | 0.50% | Item | | 54,617 | | 0.50% | Item | | 53,103.65 | - *1,512.90* | *-3%* |
| 10.5 | Survey & Design | 5.00% | Item | | 546,166 | | 5.00% | Item | | 531,036.51 | - *15,129.04* | *-3%* |
| 10.6 | Supervision & Project Management | 9.00% | Item | | 983,098 | | 9.00% | Item | | 955,865.72 | - *27,232.27* | *-3%* |
| 10.7 | Site Establishment | 2.50% | Item | | 273,083 | | 2.50% | Item | | 265,518.26 | - *7,564.52* | *-3%* |
| 10.8 | Contingency | 15.00% | Item | | 1,638,497 | Roads Contingency Reduced 20-15% | 15.00% | Item | | 1,593,109.53 | - *45,387.12* | *-3%* |
| | | | | | - | | | | | | - | |
| | **TOTAL - SD-RD4-03** | | | | **15,319,944** | | | | | **14,895,574.11** | **- 424,369.57** | **-3%** |

**CITY OF HUME**
**Sunbury and Lancefield Roads**
**SD-RD4-04 Sunbury Ring Road: Jacksons Hill Creek Crossing - South - SS-RD4-04 (Long Options, approx. length 235m, excluding Intersections)**

| | | |
|---|---|---|
| Length | m | 235 |
| Width | m | 11.60 |
| Area | m2 | 2,726 |

| Item | Description | WTP Estimate QTY | UOM | Rate | Total (a) | Comments | GHD Estimate QTY | UOM | Rate | Total (b) | Diff. (b - a) | % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **WORKS** | | | | - | | | | | | | |
| 1 | **SITEWORKS AND EARTHWORKS** | | | | | | | | | | | |
| 1.1 | Pre-construction | | | | | | | | | | | |
| 1.1.1 | Demolition and site preparation | 7,990 | m2 | $ 1.50 | 11,985 | WT Site Area. Benchmark rate | 14,750 | m2 | 4.00 | 59,000.00 | *47,015.00* | *80%* |
| 1.1.2 | Site Preparation | 7,990 | m2 | $ 2.50 | 19,975 | WT Site Area. Benchmark rate | | | | - | *- 19,975.00* | *0%* |
| 1.2 | Earthworks | | | | | | | | | | | |
| 1.2.2 | Cut and fill | 22,605 | m3 | $ 39.00 | 881,595 | No Long Sections - Use GHD Quantity. WT benchmark rate | 22,605 | m3 | 43.20 | 976,536.00 | *94,941.00* | *10%* |
| 1.2.3 | EO Allowance for rock excavation works | 309 | m3 | $ 101.00 | 31,209 | No Long Sections - Use GHD Quantity. WT Agree rate $140/m3 for rock excavation @ 30% of exc. Vol | 309 | m3 | 96.80 | 29,911.20 | *- 1,297.80* | *-4%* |
| 1.3 | Set-Out | | | | | | | | | | | |
| 1.3.1 | Allow for site set out | 1 | Item | $ 10,000.00 | 10,000 | WT allow $10k per stage, GHD reduced to $12,500 -accepted | 1 | Item | 12,500.00 | 12,500.00 | *2,500.00* | *20%* |
| 2 | **ROAD PAVEMENT** | | | | | | | | | | | |
| 2.1 | New Pavement | | | | | | | | | | | |
| 2.1.1 | Road pavement - Traffic lanes | 2,726 | m2 | $ 155.00 | 422,530 | Area accepted, WT Benchmark Rate | 2,669 | m2 | 156.60 | 417,965.40 | *- 4,564.60* | *-1%* |
| 3 | **CONCRETE WORKS** | | | | | | | | | | | |
| 3.1 | Kerb and Channel | | | | | | | | | | | |
| 3.1.1 | Kerb and Channel | 940 | LM | $ 50.00 | 47,000 | 4 x Road length, WT Benchmark Rate Accepted | 924 | LM | 48.60 | 44,906.40 | *- 2,093.60* | *-5%* |
| 3.2 | Pedestrian & Cycle Paths | | | | | | | | | | | |
| 3.2.1 | Pedestrian footpath | 705 | m2 | $ 55.00 | 38,775 | Area accepted, WT Benchmark Rate Accepted | 645 | m2 | 59.00 | 38,055.00 | *- 720.00* | *-2%* |
| 3.2.2 | Cycle pathway | 799 | m2 | $ 60.00 | 47,940 | Area accepted, WT Benchmark Rate Accepted | 783 | m2 | 66.00 | 51,678.00 | *3,738.00* | *7%* |
| 3.3 | Median strip | | | | | | | | | | | |
| 3.3.1 | Median (Levelled ground) | 1,645 | m2 | $ 32.40 | 53,298 | Median rate Topsoil & Grassing - Accept GHD Rate | 1,505 | m2 | 32.40 | 48,762.00 | *- 4,536.00* | *-9%* |
| 4 | **DRAINAGE** | | | | | | | | | | | |
| 4.1 | Drainage - Pipes | | | | | | | | | | | |
| 4.1.1 | Stormwater drainage - 525 dia. RCP one side of road 30% of road length | 71 | LM | 355.00 | 25,028 | Average 450 dia. RCP - Both sides of road | 69 | LM | 355.00 | 24,601.50 | *- 426.00* | *-2%* |
| 4.1.2 | Stormwater drainage - 450 dia. RCP one side of road 70% of road length | 165 | LM | 290.00 | 47,705 | Average 450 dia. RCP - Both sides of road | 162 | LM | 216.00 | 34,927.20 | *- 12,777.80* | *-37%* |
| 4.1.3 | Stormwater drainage - 300 diam RCP cross drainage @ 90m centres | 52 | LM | 225.00 | 11,750 | Average 300 dia. RCP - Cross Drainage CR backfill | 51 | LM | 225.00 | 11,550.00 | *- 200.00* | *-2%* |
| 4.1.4 | Drainage, sub grade drain | 470 | LM | 45.00 | 21,150 | Drainage both side of road | 462 | LM | 54.00 | 24,948.00 | *3,798.00* | *15%* |
| 4.2 | Drainage - Pits | | | | | | | | | | | |
| 4.2.1 | Side entry pits | 7 | No | $ 2,700.00 | 18,900 | Agreed - one side of road @ 35m c - Assumed approx 2.5m deep | 7 | No | 2,700.00 | 18,900.00 | - | *0%* |
| 4.3 | Drainage - WSUD | | | | | | | | | | | |
| 4.3.1 | Drainage - WSUD | 7 | No | 1,500.00 | 10,500 | Agreed allowance for WSUD | 7 | No | 1,500.00 | 10,500.00 | - | *0%* |
| 5 | **TRAFFIC** | | | | | | | | | | | |
| 5.1 | Traffic Signals & Line Marking | | | | | | | | | | | |
| 5.1.1 | Line marking and Traffic Signage | 1,410 | LM | $ 7.50 | 10,575 | $5 per metre of line length + $2.50 for sundries and signage | 231 | LM | 50.00 | 11,550.00 | *975.00* | *8%* |
| 6 | **LANDSCAPE** | | | | | | | | | | | |
| 6.1 | Trees | | | | | | | | | | | |
| 6.1.1 | Tree planting (2-2.5m tall) | 5 | No | $ 350.00 | 1,750 | Both sides of Road 2x 1580m @ 100m centres | 5 | No | 350.00 | 1,750.00 | - | *0%* |
| 6.2 | Landscaping | | | | | | | | | | | |
| 6.2.1 | Tube stock plantings | 2,115 | m2 | $ 2.50 | 5,288 | Area = 1580m Length x 9m wide | 967 | m2 | 3.00 | 2,901.00 | *- 2,386.50* | *-82%* |
| 6.2.2 | Nature strip | 2,115 | m2 | $ 10.00 | 21,150 | Area = 1580m Length x 9m wide | 967 | m2 | 15.00 | 14,505.00 | *- 6,645.00* | *-46%* |
| 7 | **STREET LIGHTING** | | | | | | | | | | | |
| 7.1 | Street Lighting | | | | | | | | | | | |
| 7.1.1 | Street lighting (incl. lighting conduits) | 5 | No | $ 12,000.00 | 60,000 | Pole mounted light in center median 1 No. per 50 metres | 5 | No | 12,500.00 | 62,500.00 | *2,500.00* | *4%* |

**CITY OF HUME**
**Sunbury and Lancefield Roads**
**SD-RD4-04 Sunbury Ring Road: Jacksons Hill Creek Crossing - South - SS-RD4-04 (Long Options, approx. length 235m, excluding Intersections)**

| | | |
|---|---|---|
| Length | m | 235 |
| Width | m | 11.60 |
| Area | m2 | 2,726 |

| | | WTP Estimate | | | | | GHD Estimate | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Item | Description | QTY | UOM | Rate | Total (a) | Comments | QTY | UOM | Rate | Total (b) | *Diff. (b - a)* | *%* |
| **8** | **MISCELLANEOUS** | | | | | | | | | | | |
| 8.1 | Retaining walls | | | | | | | | | | | |
| 8.1.1 | Retaining wall (0-2m high) - CH3300-5100 | - | LM | 1,100.00 | - | WT $1,100/m2 Soil Nail Wall - No Arch. Finish | - | LM | 1,120.00 | - | - | *0%* |
| 8.1.2 | Retaining wall (3-5m high) - CH3300-5100 | 190 | LM | 4,400.00 | 836,000 | WT $1,100/m2 Soil Nail Wall - No Arch. Finish | 190 | LM | 4,480.00 | 851,200.00 | *15,200.00* | *2%* |
| 8.1.3 | Retaining wall (6-8m high) - CH3300-5100 | - | LM | 7,700.00 | - | WT $1,100/m2 Soil Nail Wall - No Arch. Finish | - | LM | 7,840.00 | - | - | *0%* |
| 8.1.4 | Retaining wall (9-11m high) - CH3300-5100 | - | LM | 11,000.00 | - | WT $1,100/m2 Soil Nail Wall - No Arch. Finish | - | LM | 11,200.00 | - | - | *0%* |
| **9** | **SERVICES** | | | | | | | | | | | |
| 9.1.1 | Services Relocation | | Allow | $ - | - | | - | Allow | - | - | - | *0%* |
| 9.1.2 | Services Protection | | Allow | $ - | - | | - | Allow | - | - | - | *0%* |
| | | | | **SUBTOTAL - SD-RD4-04** | **2,634,102** | | | | | **2,749,146.70** | **115,044.70** | *4%* |
| **10** | **DELIVERY** | | | | | | | | | | | |
| 10.1 | Council Fees | 3.25% | Item | | 85,608 | | 3.25% | Item | | 89,347.27 | *3,738.95* | *4%* |
| 10.2 | VicRoads Fees | 0.00% | Item | | - | Removed - Not VicRoads Juristriction | 0.00% | Item | | - | - | *0%* |
| 10.3 | Traffic Management | 5.00% | Item | | 131,705 | | 5.00% | Item | | 137,457.34 | *5,752.24* | *4%* |
| 10.4 | Environmental Management | 0.50% | Item | | 13,171 | | 0.50% | Item | | 13,745.73 | *575.22* | *4%* |
| 10.5 | Survey & Design | 5.00% | Item | | 131,705 | | 5.00% | Item | | 137,457.34 | *5,752.24* | *4%* |
| 10.6 | Supervision & Project Management | 9.00% | Item | | 237,069 | | 9.00% | Item | | 247,423.20 | *10,354.02* | *4%* |
| 10.7 | Site Establishment | 2.50% | Item | | 65,853 | | 2.50% | Item | | 68,728.67 | *2,876.12* | *4%* |
| 10.8 | Contingency | 15.00% | Item | | 395,115 | Roads Contingency Reduced 20-15% | 15.00% | Item | | 412,372.01 | *17,256.71* | *4%* |
| | | | | | - | | | | | | - | |
| | | | | **TOTAL - SD-RD4-04** | **3,694,328** | | | | | **3,855,678.25** | **161,350.19** | *4%* |

**CITY OF HUME**
**Sunbury and Lancefield Roads**
**SD-RD4-05 Sunbury Ring Road: Jacksons Hill Creek Crossing - South - SS-RD4-05 (Long Options, approx. length 330m, excluding Intersections)**

| | | |
|---|---|---|
| Length | m | 330 |
| Width | m | 11.60 |
| Area | m2 | 3,828 |

| Item | Description | WTP Estimate QTY | UOM | Rate | Total (a) | Comments | GHD Estimate QTY | UOM | Rate | Total (b) | Diff. (b - a) | % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **WORKS** | | | | - | | | | | | | |
| 1 | **SITEWORKS AND EARTHWORKS** | | | | | | | | | | | |
| 1.1 | Pre-construction | | | | | | | | | | | |
| 1.1.1 | Demolition and site preparation | 11,220 | m2 | $ 1.50 | 16,830 | WT Site Area. Benchmark rate | 22,490 | m2 | 4.00 | 89,960.00 | *73,130.00* | *81%* |
| 1.1.2 | Site Preparation | 11,220 | m2 | $ 2.50 | 28,050 | WT Site Area. Benchmark rate | | | | - | - *28,050.00* | *0%* |
| 1.2 | Earthworks | | | | | | | | | | | |
| 1.2.2 | Cut and fill | 103,830 | m3 | $ 39.00 | 4,049,370 | No Long Sections - Use GHD Quantity. WT benchmark rate | 103,830 | m3 | 43.20 | 4,485,456.00 | *436,086.00* | *10%* |
| 1.2.3 | EO Allowance for rock excavation works | 26,805 | m3 | $ 101.00 | 2,707,305 | No Long Sections - Use GHD Quantity. WT Agree rate $140/m3 for rock excavation @ 30% of exc. Vol | 26,805 | m3 | 96.80 | 2,594,724.00 | - *112,581.00* | *-4%* |
| 1.3 | Set-Out | | | | | | | | | | | |
| 1.3.1 | Allow for site set out | 1 | Item | $ 10,000.00 | 10,000 | WT allow $10k per stage, GHD reduced to $12,500 -accepted | 1 | Item | 12,500.00 | 12,500.00 | *2,500.00* | *20%* |
| 2 | **ROAD PAVEMENT** | | | | | | | | | | - | |
| 2.1 | New Pavement | | | | | | | | | | | |
| 2.1.1 | Road pavement - Traffic lanes | 3,828 | m2 | $ 155.00 | 593,340 | Area accepted, WT Benchmark Rate | 3,760 | m2 | 156.60 | 588,816.00 | - *4,524.00* | *-1%* |
| 3 | **CONCRETE WORKS** | | | | | | | | | | | |
| 3.1 | Kerb and Channel | | | | | | | | | | | |
| 3.1.1 | Kerb and Channel | 1,320 | LM | $ 50.00 | 66,000 | 4 x Road length, WT Benchmark Rate Accepted | 1,300 | LM | 48.60 | 63,180.00 | - *2,820.00* | *-4%* |
| 3.2 | Pedestrian & Cycle Paths | | | | | | | | | | | |
| 3.2.1 | Pedestrian footpath | 990 | m2 | $ 55.00 | 54,450 | Area accepted, WT Benchmark Rate Accepted | 908 | m2 | 59.00 | 53,572.00 | - *878.00* | *-2%* |
| 3.2.2 | Cycle pathway | 1,122 | m2 | $ 60.00 | 67,320 | Area accepted, WT Benchmark Rate Accepted | 1,102 | m2 | 66.00 | 72,732.00 | *5,412.00* | *7%* |
| 3.3 | Median strip | | | | | | | | | | | |
| 3.3.1 | Median (Levelled ground) | 2,310 | m2 | $ 32.40 | 74,844 | Median rate Topsoil & Grassing - Accept GHD Rate | 2,119 | m2 | 32.40 | 68,655.60 | - *6,188.40* | *-9%* |
| 4 | **DRAINAGE** | | | | | | | | | | | |
| 4.1 | Drainage - Pipes | | | | | | | | | | | |
| 4.1.1 | Stormwater drainage - 525 dia. RCP one side of road 30% of road length | 99 | LM | 355.00 | 35,145 | Average 450 dia. RCP - Both sides of road | 98 | LM | 355.00 | 34,612.50 | - *532.50* | *-2%* |
| 4.1.2 | Stormwater drainage - 450 dia. RCP one side of road 70% of road length | 231 | LM | 290.00 | 66,990 | Average 450 dia. RCP - Both sides of road | 228 | LM | 216.00 | 49,140.00 | - *17,850.00* | *-36%* |
| 4.1.3 | Stormwater drainage - 300 diam RCP cross drainage @ 90m centres | 73 | LM | 225.00 | 16,500 | Average 300 dia. RCP - Cross Drainage CR backfill | 72 | LM | 225.00 | 16,250.00 | - *250.00* | *-2%* |
| 4.1.4 | Drainage, sub grade drain | 660 | LM | 45.00 | 29,700 | Drainage both side of road | 650 | LM | 54.00 | 35,100.00 | *5,400.00* | *15%* |
| 4.2 | Drainage - Pits | | | | | | | | | | | |
| 4.2.1 | Side entry pits | 9 | No | $ 2,700.00 | 24,300 | Agreed - one side of road @ 35m c - Assumed approx 2.5m deep | 9 | No | 2,700.00 | 24,300.00 | - | *0%* |
| 4.3 | Drainage - WSUD | | | | | | | | | | | |
| 4.3.1 | Drainage - WSUD | 9 | No | 1,500.00 | 13,500 | Agreed allowance for WSUD | 9 | No | 1,500.00 | 13,500.00 | - | *0%* |
| 5 | **TRAFFIC** | | | | | | | | | | | |
| 5.1 | Traffic Signals & Line Marking | | | | | | | | | | | |
| 5.1.1 | Line marking and Traffic Signage | 1,980 | LM | $ 7.50 | 14,850 | $5 per metre of line length + $2.50 for sundries and signage | 325 | LM | 50.00 | 16,250.00 | *1,400.00* | *9%* |
| 6 | **LANDSCAPE** | | | | | | | | | | | |
| 6.1 | Trees | | | | | | | | | | | |
| 6.1.1 | Tree planting (2-2.5m tall) | 7 | No | $ 350.00 | 2,450 | Both sides of Road 2x 1580m @ 100m centres | 7 | No | 350.00 | 2,450.00 | - | *0%* |
| 6.2 | Landscaping | | | | | | | | | | | |
| 6.2.1 | Tube stock plantings | 2,970 | m2 | $ 2.50 | 7,425 | Area = 1580m Length x 9m wide | 1,362 | m2 | 3.00 | 4,086.00 | - *3,339.00* | *-82%* |
| 6.2.2 | Nature strip | 2,970 | m2 | $ 10.00 | 29,700 | Area = 1580m Length x 9m wide | 1,362 | m2 | 15.00 | 20,430.00 | - *9,270.00* | *-45%* |
| 7 | **STREET LIGHTING** | | | | | | | | | | | |
| 7.1 | Street Lighting | | | | | | | | | | | |
| 7.1.1 | Street lighting (incl. lighting conduits) | 7 | No | $ 12,000.00 | 84,000 | Pole mounted light in center median 1 No. per 50 metres | 7 | No | 12,500.00 | 87,500.00 | *3,500.00* | *4%* |

**CITY OF HUME**
**Sunbury and Lancefield Roads**
**SD-RD4-05 Sunbury Ring Road: Jacksons Hill Creek Crossing - South - SS-RD4-05 (Long Options, approx. length 330m, excluding Intersections)**

| | | |
|---|---|---|
| Length | m | 330 |
| Width | m | 11.60 |
| Area | m2 | 3,828 |

| | | WTP Estimate | | | | | GHD Estimate | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Item | Description | QTY | UOM | Rate | Total (a) | Comments | QTY | UOM | Rate | Total (b) | *Diff. (b - a)* | *%* |
| 8 | **MISCELLANEOUS** | | | | | | | | | | | |
| 8.1 | Retaining walls | | | | | | | | | | | |
| 8.1.1 | Retaining wall (0-2m high) - CH3300-5100 | - | LM | 1,100.00 | - | GHD Qty Taken WT $1,100/m2 Soil Nail Wall - No Arch. Finish | - | LM | 1,120.00 | - | - | *0%* |
| 8.1.2 | Retaining wall (3-5m high) - CH3300-5100 | - | LM | 4,400.00 | - | GHD Qty Taken WT $1,100/m2 Soil Nail Wall - No Arch. Finish | - | LM | 4,480.00 | - | - | *0%* |
| 8.1.3 | Retaining wall (6-8m high) - CH3300-5100 | 160 | LM | 7,700.00 | 1,232,000 | GHD Qty Taken WT $1,100/m2 Soil Nail Wall - No Arch. Finish | 160 | LM | 7,840.00 | 1,254,400.00 | *22,400.00* | *2%* |
| 8.1.4 | Retaining wall (9-11m high) - CH3300-5100 | 300 | LM | 11,000.00 | 3,300,000 | GHD Qty Taken WT $1,100/m2 Soil Nail Wall - No Arch. Finish | 300 | LM | 11,200.00 | 3,360,000.00 | *60,000.00* | *2%* |
| 9 | **SERVICES** | | | | | | | | | | | |
| 9.1.1 | Services Relocation | | Allow | $ - | - | | - | Allow | - | - | - | *0%* |
| 9.1.2 | Services Protection | | Allow | $ - | - | | - | Allow | - | - | - | *0%* |
| | | | | **SUBTOTAL - SD-RD4-5** | **12,524,069** | | | | | **12,947,614.10** | **423,545.10** | *3%* |
| **10** | **DELIVERY** | | | | | | | | | | | |
| 10.1 | Council Fees | 3.25% | Item | | 407,032 | | 3.25% | Item | | 420,797.46 | *13,765.22* | *3%* |
| 10.2 | VicRoads Fees | 0.00% | Item | | - | Removed - Not VicRoads Juristriction | 0.00% | Item | | - | - | *0%* |
| 10.3 | Traffic Management | 5.00% | Item | | 626,203 | | 5.00% | Item | | 647,380.71 | *21,177.26* | *3%* |
| 10.4 | Environmental Management | 0.50% | Item | | 62,620 | | 0.50% | Item | | 64,738.07 | *2,117.73* | *3%* |
| 10.5 | Survey & Design | 5.00% | Item | | 626,203 | | 5.00% | Item | | 647,380.71 | *21,177.26* | *3%* |
| 10.6 | Supervision & Project Management | 9.00% | Item | | 1,127,166 | | 9.00% | Item | | 1,165,285.27 | *38,119.06* | *3%* |
| 10.7 | Site Establishment | 2.50% | Item | | 313,102 | | 2.50% | Item | | 323,690.35 | *10,588.63* | *3%* |
| 10.8 | Contingency | 15.00% | Item | | 1,878,610 | Roads Contingency Reduced 20-15% | 15.00% | Item | | 1,942,142.12 | *63,531.76* | *3%* |
| | | | | | - | | | | | | - | |
| | | | | **TOTAL - SD-RD4-5** | **17,565,007** | | | | | **18,159,028.78** | **594,022.00** | *3%* |

# APPENDIX B
## CURRICULUM VITAE

# LANCE WEATHERELL

Associate

wtpartnership.com.au

## PERSONAL DETAILS

### PROFESSIONAL

26 years of service

### QUALIFICATIONS & AFFILIATIONS

Bachelor of Construction Economics

Level 3 Train Track Awareness, Connex / Metro Trains Melbourne

Overhead Appreciation, Yarra Trams

### KEY SKILLS AND ATTRIBUTES

Budget Management

Business Case Development and Review

CAPEX Planning and analysis

Contract Cost Management and Adminstration

Cost Planning/Estimating

Feasibility Studies

Value Management

## SUMMARY

Lance has over 30 years' experience in quantity surveying and cost management as both a contractor and consultant. This experience, coupled with 20 years of specialization in the infrastructure sector across major road, rail, aviation and port/marine projects has provided Lance with a deep understanding of the cost risks and opportunities inherent in high profile public projects.

## PROFESSIONAL EXPERIENCE

### RELEVANT PROJECTS

BALLARAT CORRIDOR UPGRADE

PUBLIC TRANSPORT VICTORIA | 1-5m | Civil, Government, Infrastructure

PORT OF MELBOURNE (ROAD & RAIL) - WEBB DOCK LINK

GHD | 50m-100m | Civil

PORT OF MELBOURNE (ROAD & RAIL) - WEBB DOCK LINK

GHD | 50m-100m | Civil

HARBOUR ESPLANADE WOOLSHED PUB WHARF

Places Victoria | Civil, Government, Infrastructure

FISHERMANS BEND REDEVELOPMENT TRAM STOP IMPROVEMENT WORKS

Argot Consultants | Infrastructure

CITY OF GREATER DANDENONG - BRIDGE VALUATION WORKS

Sterling Group | Infrastructure

SOUTHERLAND SITE ROADWORKS, DIAMOND CREEK

SMEC (Aust) Pty Ltd | Infrastructure

KILMORE CREEK - NORTHERN HIGHWAY PEDESTRIAN ROUTE STUDY

One Mile Grid | Infrastructure

WEST COBURG & BUNDOORA TRAM TERMINUS

Argot | 5m-10m | Infrastructure

GEELONG TO WAURN PONDS TRACK DUPLICATION - BUSINESS CASE

Arcadis | >200m | Infrastructure

EASTLINK
Theiss/John Holland Consortium | Infrastructure

EAST WEST LINK
Arup / SMEC JV | Infrastructure

WESTERN DISTRIBUTOR (WESTGATE TUNNEL PROJECT) / CITYLINK TULLA WIDENING
Transurban | PPP/Infrastructure/Transport

ANGLESEA ROAD WIDENING
GHD | Infrastructure

MONASH FREEWAY UPGRADE STAGE 2
JHG | 100m-200m | Infrastructure

TARNEIT ROAD & LEAKES ROAD DUPLICATION
GHD | Infrastructure

SOUTH YARRA STATION STAGE 2 UPGRADE PROJECT - MASTERPLAN
Arup | 1.20 Billion | Infrastructure

LEVEL CROSSING REMOVAL PROJECT (LXRA)
Level Crossing Removal Authority | Infrastructure

MERNDA RAIL EXTENSION
Level Crossing Removal Authority | Infrastructure