



15 April 2019

Julia Williams
Principal Analyst
Independent Pricing and Regulatory Tribunal
Level 15, 2-24 Rawson Place
Sydney NSW 2000

Axess Advisory
6 Middlemiss Street
Lavender Bay NSW 2060
Australia

T: +61 2 9053 7325

axessadvisory.com

Dear Julia,

**Independent Cost Review of three, two-lane roundabouts –
North Kellyville Precinct Contribution Plan 13**

Axess Advisory and Civil Consulting & Highway Design (CCHD) have been engaged by the Independent Pricing and Regulatory Tribunal to independently assess the base costs of three two-lane roundabouts as part of the North Kellyville Precinct Contribution Plan 14 and to determine the reasonableness of the costing approach used by The Hills Shire Council.

This letter describes the approach and findings of the independent cost assessment and addresses the primary purpose of the engagement to determine:

1. Whether the proposed bill of quantities, including unit rates, used to estimate the costs for three roundabouts are reasonable; and
2. Where the proposed bill of quantities, including unit rates, are not reasonable, recommend the alternative reasonable quantities and/or unit rates.

1. Background

The Hills Shire Council has submitted Contributions Plan No. 13 – North Kellyville Precinct (CP13 2018) to IPART for assessment. As part of CP13 the Hills Shire Council has prepared site specific cost estimates and drawings for three, two lane roundabouts on sub-arterial roads. The three roundabouts independently assessed include:

1. CP13NKR01 – Samantha Riley Drive and Foxall Road Roundabout;
2. CP13NKR02 – Hezlett Road and Gum Nut Close Roundabout, and;
3. CP13NKR03 – Hezlett Road and Curtis Road Roundabout.

It is noted that the developer is required to deliver CP13NKR02 as a signalized intersection, but the provision within the cost plan is based on a two-lane roundabout.

2. Approach

Axess and CCHD have undertaken the following approach to the independent cost review:

- Review of technical drawings, assumptions and cost schedules (indexed to 2016/2017);
- Clarification of information gaps with Hills Shire Council;
- Independent built up of quantities based on technical drawings supplied by IPART and Hill Shire Council to verify accuracy of the bill of quantities;
- Review of line by line provisions that make up the cost schedule for each roundabout;
- Benchmarking of the rates provided by Hills Shire Council against current market rates; and
- Review of calculations within the cost schedule.

3. Input Documentation

This independent cost assessment has been based on information provided by IPART and the Hills Shire Council. This assessment assumes that the technical drawings provided are accurate and correct. This assessment does not include any design verification and is solely focused on the cost schedule and provisions within the cost schedule alone. The following information was provided for this assessment:

Received 8th April 2019

- CP13 (2018) Cost schedule
- Detailed Design Drawings for NKR03 - Hezlett Road and Curtis Road Roundabout

Received 9th April 2019

- NKR02 – Hezlett Road and Gum Nut Close Roundabout

Received 10th April 2019

- Concept Design Drawings for NKR01 – Samantha Riley Drive and Foxall Road Roundabout

4. Cost Review Findings

CP13 NKR01 – Samantha Riley Drive and Foxall Road Roundabout

A review of the cost schedule revealed the following key findings:

- a. Technical drawings show the existing pavement to be overlaid over existing pavement, and not excavated as per the cost schedule. As such only milling of the existing road pavement is required to allow for overlay and tie in to existing pavement. As such

excavation of the existing road pavement is reduced from 1035m² to 180m². Disposal of existing road pavement is reduced from 207m² to 18m²;

- b. The cost schedule allows for 1m deep excavation area, significantly larger than the area typically required for a two-lane roundabout i.e. 8875m³ rather than 1447m³;
- c. Additional line items allow for the excavation beyond 1m, resulting in an additional excavation allowance of 2271m³. The area and size of this allowance is not required after 1m deep topsoil has been stripped. A provision of 120m³ has been allowed for;
- d. Excavation and disposal of rock has been allowed for at 681m³. Without supporting geotechnical information, the percentage of the amount of rock that needs to be disposed of is not possible to be assessed. Based on the drawings provided, we would allow for a provision of 100m³;
- e. The excavation of unsuitable material and provision of sub-grade crushed sandstone 200mm is partially covered in item b. above. The excavation area of 8169m³ is larger than the typical provision required. Noting the duplication of excavation, we recommend a pavement area which is 200mm deep based on an area of 1447m². This equates to a sub-grade provision of approximate 300m³;
- f. Grading and consolidating of ground surface, including sub-base (325mm DGS40) and base-course (150mm DGB20) preparation provisions are 7898m². Based on the drawings, we estimate this to be 1567m²;
- g. Surface course (50mm AC) and two coat seal provisions (14/10mm) are 7875m². Based on the drawings we estimate this to be 3682m²;
- h. Concrete 2.5m wide shared path (one side only) is double counted with the provision for a 1.5m wide cycleway and 1.5m wide footpath;
- i. Provision for drainage pipes is over-provisioned. Council has allowed for 270m, whereas drawings show 80m;
- j. Several items were not accounted for in the cost schedule. We have made provision for these in our cost build up. This includes:
 - i. No provision for excavation relating to stormwater drainage
 - ii. There is no provision in the cost schedule for pram or kerb ramps
 - iii. There is no provision for sub-soil drainage under the kerb and gutters
 - iv. Traffic calming devices is not specified, as such we have allowed for splitter islands in this cost review.

CP13NKR02 – Hezlett Road and Gum Nut Close Roundabout

A review of the cost schedule revealed the following key findings:

- a. Excavation of existing road pavement 9m wide to a depth of 200mm is under-provisioned. Council has allowed 1035 m². Based on the drawings provided, we estimate the provision to be 1700m²;
- b. Stripping to a depth of 1m and disposal of the proposed roadway spoil is over-provisioned. Council has allowed for 2716m³. Based on the drawings provided, we estimate the provision to be 1180m³;
- c. Excavation of unsuitable material and provision of sub-grade (200mm) crushed sandstone is under-provisioned. Council has allowed for 284m³. Based on drawings provided, we estimate the provision to be 400m³;
- d. Grading and consolidating ground surface, including sub-base (325mm DGS40) and base-course (150mm DGB20) preparation provisions are 2923m² and 2843m² respectively. Based on the drawings we estimate this to be 1920m²;
- e. Surface course (50mm AC) and two coat seal provisions (14/10mm) provisions are 2843m². Based on the drawings we estimate this to be 1767m²;
- f. Errors with provisioning for drainage pipes. Council has allowed for 1870m, whereas drawings show 156m. Drainage inlets and pits are also over provisioned. Council has allowed for 69 inlets and pits, whereas drawings show requirement for 10 inlets and pits;
- g. Several items were not accounted for in the cost schedule. We have made provision for these in our cost build up. This includes:
 - i. No provision for excavation relating to stormwater drainage
 - ii. There is no provision in the cost schedule for pram or kerb ramps
 - iii. There is no provision for sub-soil drainage under the kerb and gutters
 - iv. Traffic calming devices is not specified, as such we have allowed for splitter islands in this cost review.

CP13NKR03 – Hezlett Road and Curtis Road Roundabout

A review of the cost schedule revealed the following key findings:

- a. Stripping to a depth of 1m and disposal for the proposed roadway is over-provisioned. Council has allowed 4015m³. Based on drawings provided, we estimate the provision to be 1482m³;
- b. Excavation of other material other than rock is over provisioned. Council has allowed 1051m³. Based on drawings provided, we estimate the provision to be 520m³;
- c. Grading and consolidating ground surface, including sub-base (325mm DGS40) and base-course (150mm DGB20) preparation provisions is 4203m². Based on the drawings we estimate this to be 2274m²;
- d. Surface course (50mm AC) and two coat seal provisions (14/10mm) provisions are 4203m². Based on the drawings we estimate this to be 1968m²;
- e. Errors with provisioning for drainage pipes. Council has allowed for 1870m, whereas drawings show 294m. Drainage inlets and pits are also over provisioned. Council has allowed for 69 inlets and pits, whereas drawings show requirement for 23 inlets and pits;
- f. Several items were not accounted for in the cost schedule. We have made provision for these in our cost build up. This includes:
 - i. provision for excavation relating to stormwater drainage
 - ii. There is no provision in the cost schedule for pram or kerb ramps
 - iii. There is no provision for sub-soil drainage under the kerb and gutters
 - iv. Traffic calming devices is not specified, as such we have allowed for splitter islands in this cost review.

5. Cost Review Rates

We undertook a cost review of 2018 market rates against Financial Year 2017 cost rates provided by the Hills Shire Council. CPI approximately 1 year has not been considered in this cost review of the rates. A summary of the key findings on the cost rates is provided below.

The rates for:

- a. Disposal of existing road pavement is \$114.11 per cubic metre above market rate;
- b. Extra over for excavation and disposal of rock is \$144.94 per cubic metre above market rate;
- c. Excavation of unsuitable material and provision of sub-grade (crushed sandstone 200mm) is \$38.85 per cubic metre below market rate;

- d. Kerb and gutter provisions (150mm) are \$82.71 per linear metre above market rate;
- e. Drainage inlets and pits is \$926.69 above market rate per item (noting there was an error with the provision for NKR02 where this was under-provisioned by \$4,358.87 per item); and
- f. Reinforced concrete roundabout with vegetation is \$6,422.18 above market rate per item.

For further information on the cost rate differences refer to Attachment A.

6. Summary of Cost Differences

Description	Hills Shire Council Cost Estimate (2016/2017 Rates)	Independent Cost Review (2018 Rates)
NKR01 – Samantha Riley Drive and Foxall Road Roundabout	\$3,114,370	\$950,502
NKR02 – Hezlett Road and Gum Nut Close Roundabout	\$1,686,127	\$843,216
NKR03 – Hezlett Road and Curtis Road Roundabout	\$2,404,139	\$1,095,491

The difference between Hills Shire Council and our cost estimate can be summarized as follows:

NKR01 – Samantha Riley Drive and Foxall Road Roundabout

- Incorrect earthworks quantities and rates totalling approximately **\$1.2 million**. Council has allowed for full depth excavation to depths of 1m for the full corridor width, where technical drawings show the existing pavement to be overlaid; and
- Incorrect pavement provisions totalling approximately **\$700,000**. Existing pavement is to be overlaid.

NKR02 – Hezlett Road and Gum Nut Close Roundabout

- Incorrect drainage provisions totalling approximately **\$500,000**. Council has allowed for 1,870 linear metres of 450mm pipe drainage and 69 drainage pits, well over the amount allowed for in the drawings of 156m and 10 drainage pits.

NKR03 – Hezlett Road and Curtis Road Roundabout

- Incorrect earthworks quantities and rates totalling approximately **\$200,000**. Council has allowed for excavation of the existing pavement, where technical drawings show the existing pavement to be overlaid;
- Incorrect pavement provisions totalling approximately **\$200,000**. Existing pavement is to be overlaid, and;
- Incorrect drainage provisions totalling approximately **\$700,000**. Council has allowed for 1,870 linear metres of 450mm pipe drainage and 69 drainage pits, well over the amount allowed for in the drawings of 294m and 23 drainage pits.

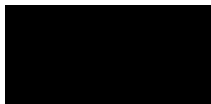
7. Utilities Provisions

It is noted that in the review of the drawings both NKR02 and NKR03 require utility relocations. These have not been allowed for in the cost schedules provided to Axess and CCHD. A cost review for these items has been included in the independent cost schedule spreadsheet (Attachment A – CP13 Cost Review), but not in the cost summary in Section 6.

8. Conclusion

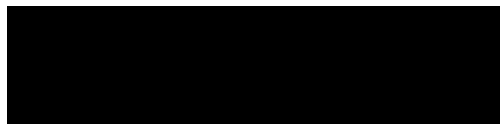
In conclusion Axess and CCHD find the proposed cost estimate from the Hills Shire Council unreasonably high, due to earthworks, pavement and drainage errors noted above.

Yours Sincerely,



Bobby Yang

Director of Engineering Services



Attachment A: CP13 Cost review.xls