Dear Sir/Madam,

Submission - Benchmark Costs for Local Infrastructure Contributions

Thank you for the opportunity to comment on IPART's draft Report on Local Infrastructure Benchmark Costs.

Blacktown City Council supports the introduction of benchmarking local infrastructure and is available to further assist IPART in the finalisation of its work. Council acknowledges that it is not possible to provide benchmarking to every item of local infrastructure and that there needs to be an understood process for items that sit outside that scope.

Council’s submission on the draft Report addresses four key areas of local Infrastructure costing being:

- Water Cycle Management
- Traffic Management
- Open Space
- Community Facilities.

Attached to this submission are Council’s comments in relation to work that IPART has previously undertaken with its consultants Evans and Peck.

Should you require any further information regarding this matter, please contact Council’s Co-ordinator Contributions & Economic Development, Dennis Bagnall on

Yours faithfully,

Kerry Robinson
GENERAL MANAGER
Water Cycle and Traffic Management Facilities

Section 1.2 Draft Recommendations

1. These are generally supported subject to comments on subsequent sections.

Section 1.3 Key Issues for consultation

2. These are addressed in comments in subsequent sections. Council has also provided previous advice to IPART’s consultants Evans and Peck in relation to the scope of works and benchmark items during the consultation phase. The comments in relation to works scope (in red) generally still apply to the current benchmark tables. A copy of the spread sheet information is attached at the end of this submission.

Section 3 Development and Application of benchmarks

3. It is noted that the benchmarks costs developed for items on the “benchmark list” are intended as a guide only and that part 2 of the report should be used by councils when costing local infrastructure.

4. The draft infrastructure list does not appear to include riparian corridor works. This would be a significant omission in delivering a suitable infrastructure outcome to the local community for these areas where the riparian corridors become public assets.

5. There may also be other items (or part items) that could be scoped and included in the benchmark lists. As mentioned above, Blacktown City Council has previously provided suggestions to IPART’s consultants. However, Council acknowledges that including all possible items would be a major exercise and could be overly onerous. The use of recommended methods for cost estimation is considered an appropriate approach.

6. The typical configuration/scope of items should be consistent with the standards applicable to development. These are normally specified in council Development Control Plans (DCP) and the State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (SEPP). The scope listed for some roads such as sub-arterial are not consistent with DCPs applying to the Blacktown LGA. The scope of works should be updated and or expanded to cater for the majority of cases. Using the sub-arterial road example, this should include a sub-item including a central median as this is likely to be the predominant configuration of such roads in greenfield release areas.

7. The benchmarked items’ scopes exclude certain components e.g. utility adjustments, etc. Therefore, it will be necessary to have both benchmarked and non-benchmarked components to the same overall works item in many instances. Item numbering in infrastructure cost templates (Figure 10.4) should address this to make the cross referencing of benchmarked and non-benchmarked components of the same infrastructure item obvious.

Section 4 Components of Benchmarks

8. The contingency allowances listed for transport and stormwater infrastructure are considered reasonable.
Section 5 Estimating efficient costs where there is no benchmark

9. The methods identified for determining efficient infrastructure costs are considered appropriate.

Section 6 Cost escalation and updating benchmarks

10. The methods proposed for cost escalation are considered appropriate.

11. Benchmark costs should also be updated when there are one-off cost spikes resulting from new taxes, legislation, changes in Australian Standards or other events that lead to a significant increase (or decrease) in infrastructure costs.

12. Updates due to cost escalation and other minor or administrative changes as outlined in section 6.3 should not require re-exhibition of Section 94 contributions plans.

Section 8 Dispute resolution

13. Methods proposed are considered reasonable. There should be limited grounds for dispute as the local infrastructure plans will have already been subject to rigorous exhibition and review processes prior to adoption.

Section 9 Cost drivers for infrastructure delivery

14. The standards determining infrastructure requirements are considered appropriate as they are generally in keeping with statutory requirements and community expectations. Therefore, there doesn’t appear to be any standards that result in unreasonable cost increases.

15. A further cost driver for the selection of infrastructure items such as stormwater management measures, is the life-cycle cost. As the asset owner and manager, Council needs to ensure that the infrastructure provided delivers the required performance outcome in a financially sound manner. For example, a device that may have a lower capital cost but a much higher maintenance cost, will lead to a less sustainable outcome. The setting of benchmarks should not preclude the selection of items that deliver a better life-cycle cost outcome.

Section 10 Guide for Councils

16. This section is well presented and is appropriate for inclusion in subsequent guidelines.

Section 11 Infrastructure Tables

17. See item 3 above and attached information provided to IPART’s consultant. General cost rates appear reasonable for the scope provided.

Open Space Facilities

18. The standard of provision and types of treatment for individual items will vary between councils. Therefore, it is difficult to establish benchmark cost for all items of open space embellishment. In addition, there are various site considerations such as vegetation, topography etc. which may influence the overall cost, especially for larger facilities such as playing fields.
19. Page 92 - New Footpath Adjacent to Traffic Lane.
   - Noting that open space refers to the above item for concrete pathways, it is recommended that a 1.5metre and 3metre wide pathway rate be included.

   - Clarification is required as to what sports 3a.4.1 (rubber surface) and 3a.4.3 (rebound concrete) is used for as a playing surface and if this conflicts with other items costed separately such as netball, basketball and tennis.
   - Consideration to hockey fields should also be considered as a different line item which may be in the form of water, sand or rubber infill synthetic.

   - Inclusion should allow for concrete edging (not timber).
   - Separate costs for various soft fall (not just rubber) should be included. i.e. sand, mulch, synthetic grass.

22. Page 115 - Steps and Ramping.
   - A rate for handrail should be included in this section.

   - Difficult to understand in current format. i.e
     - Does PC stand for ‘practical completion’?
     - Does this mean that a playground can have anything from 1 to 20 units of ‘Play set Equipment’? If so, how does is this used as a benchmark.
     - Allowance for certification and testing required.

   - Seating requires arm rests.

   - Costing for recycled plastic and concrete bollards required.

   - Cost required for mulching of planted areas to a depth of 150mm per sq.m.

27. Page 128 - Amenities Block.
   - Amenities building at Sportsgrounds are larger than 100 sq.m. They are generally closer to 250 sq.m and include home and away change rooms, male, female and disabled toilets, kiosk, officials room, store room, service room and an associated shade structure. Therefore costs need to be updated to include this. Blacktown City Council’s recent experience in relation to amenities buildings for sportsgrounds is that they cost in the order of $800,000. The costs identified seem to be very low. Therefore Council requests discussion on this matter.

   - Irrigation is seen as baseline embellishment for sports fields as it contributes to maintaining accessible and sustainable facilities that can be used more readily by the community, therefore it should be included in the costs.
Items such as parking should reference relevant item as per other exclusions that are costed separately.

Items such as practice facilities for cricket are seen a baseline embellishment that is used readily by clubs and individuals throughout the week as well as on match days. Therefore they should be costed and listed.

Other items that are not covered in this plan include:
- Baseball and softball including relevant infrastructure such as mounds, diamonds, higher fencing, batting cages etc.
- Little Athletics including standard size tracks, long jump pits discus and shot put cages, etc.

   - Costs required for lighting of other codes including but not limited to baseball and softball.

30. Page 133 - Tennis Court (outdoor).
   - Cost needs to consider removable poles and dual line marking so to allow flexibility with other codes.
   - Perimeter fencing is required to be costed separate to other perimeter fencing due to the height of fencing required for tennis courts.
   - Different court surfaces should also be costed such as synthetic grass and plexicushion.
   - Items such as parking should reference relevant item as per other exclusions that are costed separately.

31. Pages 140, 142, 143- Swimming Pools and Aquatic Facilities with gyms
   - The facility types for aquatic centres are as diverse as the communities they serve, and can include a range of items including but not limited to:
     - Indoor/outdoor 50 metre competition pools.
     - Indoor/outdoor water play facilities.
     - Indoor/outdoor program pools.
     - Diving/water polo pools.
     - Hydrotherapy pools.
     - Sauna and spa pools.
     - Indoor/outdoor leisure pools.
     - Program rooms for group exercise classes.
     - Gymnasiums including strength and cardio equipment.
     - Indoor courts for various sports such as basketball, futsal, squash etc.
     - Kiosk
     - Crèche
     - Professional suites for activities such as physiotherapy.
32. As such it is difficult to standardise the costing for such facilities in the manner attempted in the report. Some items that have not been included require consideration include:

- Site services (stormwater drainage, sewer, power)
- Skate facilities.
- Outdoor Fitness Equipment.
- Signage
- Public Art
- Pedestrian bridges over waterways.
- Street Trees (as part of roads)

Community Facilities

33. The ‘top down’ approach identified (3.2 pg. 20) by Evans & Peck is agreed in relation to making cost estimations for community facilities. This is the approach that Blacktown City Council has taken where the known total cost of a similar item delivered at a specific place and time, and making relevant adjustments to take account of the different circumstances is used to make cost estimations.

34. In relation to the suggested contingency allowances (10.4) these seem reasonable and Council prefers to apply a 10% contingency in relation to community facilities.

35. The benchmarking costs identified for community facilities (4.1, 4.2 & 4.3) appear very low compared to Council’s recent costings for the delivery of community facilities. It can be assumed that part of the reason for the low costings, compared with Council’s recent experience, could be a number of the exclusions that are standards required in community facilities, e.g. car parking, alarm systems, furnishings & fittings and external playgrounds.

36. A number of the items omitted (car parking, furnishings and fittings, etc.) were included in the infrastructure list provided from the Taskforce to be costed by IPART (Page 151-152) but have not been included in the benchmarking costs identified by IPART. The experience at Blacktown City Council is informed by facilities that include:

- Ropes Crossing Community Resource Hub
- The Mount Druitt Hub
- Stonecutters Ridge Neighbourhood Centre
- Bungarribee Community Resource Hub
- The Ponds Community Resource Hub

37. If councils have the capacity to utilise other costs, where required and justified (using the recommended methodologies), then referencing the delivered total cost of Blacktown’s community resource hub portfolio of delivered and designed works (as well as including a number of the excluded items), the benchmark sq.m costs would be higher than the $3,175 - $3,860 identified in IPART’s draft report.
38. What should also be noted is that under Council’s Community Resource Hub model, Council combines the costs of a number of community facilities and delivers a single combined Community Resource Hub, that while having a higher sq.m cost, achieves cost efficiencies over the whole Precinct or area. For example instead of having 2 neighbourhood centres, 1 Community Resource Hub that is provided. The CRH is larger than a neighbourhood centre but requires only one land site, and overall floor space reduced. Council welcomes further discussion with IPART on its Community Resource model and costs.

Valuing Land

39. Council supports IPART’s finding and recommendations in terms of valuing land. The findings support Council’s current process as outlined below:

- **Blacktown City Council applies an “averaging” technique when determining the likely acquisition costs in a Contributions Plan. Estimates are undertaken by Council Officers in their capacity as Registered Valuers. Council also on occasion engages an independent valuer from its appointed Valuation Panel to do the same work.**

- A spread sheet is provided to Council’s Property Services section by Council’s Land Information Services Section identifying each individual parcel of land affected by a public purpose zoning under an Indicative Layout Plan or acquisitions map. The spread sheet also identifies an acquisition area for each property. The spread sheets are also broken into categories i.e. Public Recreation, Local Roads, and Drainage.

- Aerial plans with identified acquisition parcels and flood affectation are also provided by Council's engineers.

- Each parcel is then reviewed and an estimated acquisition rate applied considering the inherent features of the land i.e. topography, location, flood affectation or unconstrained, although in some circumstances other factors such as large improvements/business uses may be considered.

- The total estimated acquisition costs are then divided by the total acquisition area by category and an average estimated rate (rounded) per category is determined. No additional allowance is made for valuation and conveyancing charges in Contributions Plans for the North West Growth Centre.

40. Although Council considers valuation and conveyancing charges to be legitimate costs in Contributions Plans and includes these costs in its older Contributions Plans, Council has worked with the Department of Planning and Infrastructure (DPI) to make its Growth Centre Contributions Plans as affordable as possible to stimulate housing production. However, Council will monitor any change made by the DPI as a result the new Planning Act and IPART's benchmarking work and will review its position when these changes are known.

41. Section 7.4.2 of IPART's Report discusses the escalation of costs for land, and applying a suitable index to address this issue. Council has always used the CPI for this purpose. Council notes that the CPI does not keep pace with the
escalation of land values in Greenfields areas. Therefore Council supports the introduction of a suitable land index to address this issue and suggests that IPART could be the organisation that could produce this index.
### Local Development Contributions Benchmark Summary Tables

#### Contents

- Overview
- Benchmark Summary Tables

#### Benchmark Summary Tables

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>1 Transport</td>
<td>New Sub-Arterial Road, Sub-Arterial Road widening, New Industrial Road, New Subdivision Road, New Local Access Road, New Rural Road, Rural Road widening, Guide Post / Safety barriers, Pedestrian Fencing</td>
</tr>
<tr>
<td>2 Stormwater</td>
<td>Primary Pollution Treatment, Secondary Tertiary Pollution Treatment, Precast Concrete Box Culverts, Concrete Channels, Stormwater Drain/ Pits, Stormwater Drainage Pipework, Stormwater Headwalls - also do rock headwalls for outlets to creeks and channels, Scour protection - riprap, reinforced turf, rock filled mattresses, Landscaping treatment for basins, channels riparian land, Retaining walls - stacked rock, concrete modular block, concrete blockwork, concrete, Bridges - road and foot pick typical construction types based on spans</td>
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<tr>
<td>3a Local Open Space Embellishment</td>
<td>Demolition, Site clearance, Soft Surfaces - Turfing, Soft Surfaces - Landscaping, Soft Surfaces - Synthetic playing surfaces / artificial grass - For what purpose? i.e. hockey is different to other codes. Includes shockpad?, Soft Surfaces - Softfall under play equipment-Synthetic rubber safety surfacing, Hard Surfaces, Concrete pathways-1.5 m wide, Concrete Cycleways-2.5 m wide, Play Equipment, Playground (local) - combine play equipment and softfall surface, Playground (Neighbourhood) - combine play equipment and softfall surface, Exercise trail, Park furniture - Seating Type of seating, sets, bins, bbqs etc to be confirmed, Park furniture - Picnic sets, Park furniture - Bins, Park furniture - BBQs, Park furniture - Bubblers, Park furniture - Taps, Fencing - playground / fronting roads, Boundary fencing - Post and rail?, Shade structures, Planting, Planter boxes, Toilets facilities and changerooms Should this be amenities building under district?, Lighting, Youth recreation facility, Public art</td>
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## Contents

<table>
<thead>
<tr>
<th>3b</th>
<th>District Open Space Embellishment</th>
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<tbody>
<tr>
<td>3b.1</td>
<td>Interpretation signage</td>
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<td>3b.2</td>
<td>Look out pavillion</td>
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<td>3b.3</td>
<td>Bridge</td>
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<td>3b.4</td>
<td>Bush regeneration</td>
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<td>3b.5</td>
<td>Riparian corridor</td>
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<th>Community Facilities</th>
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<tr>
<td>4.1</td>
<td>Sportsfields (include drainage and irrigation)</td>
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<td>4.2</td>
<td>Sportsfield site services</td>
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<td>4.3</td>
<td>Amenities building</td>
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<td>4.4</td>
<td>Sportsfield floodlighting per field?</td>
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<td>4.5</td>
<td>Tennis court (outdoor) with lighting?</td>
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<tr>
<td>4.6</td>
<td>Netball court (outdoor) with lighting?</td>
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<td>4.7</td>
<td>Basketball court (outdoor) with lighting?</td>
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<td>4.8</td>
<td>Carparking size and number of spaces</td>
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<th>Assumptions</th>
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<td>5.1</td>
<td>Regional Factors</td>
</tr>
<tr>
<td>5.2</td>
<td>Contingency</td>
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</table>
New Sub-Arterial Road

Construction of new, flexible pavement sub-arterial road, covering a range of pavement structures.

**KEY SCOPE ASSUMPTIONS**
- Greenfield environment
- Nominal 1.2m of excavation with allowance to remove 50% of the spoil to an off-site tip @ $50/T.
- Sub soil drainage, K & G, 2 x 2.5m reinforced footpath & 500mm grassed nature strip
- Allowance for nominal signage, linemarking & tie-in to existing lane
- Excludes: guard rails, guide post, street lighting and all utility associated works
- Pavement make-up:
  - 200mm – 300mm SMZ, 200mm to 250mm DOS20, 150mm to 200mm DGB20, two coat bitumen seal (10mm & 14mm), 40mm to 50mm AC wearing course.

**STANDARDS**

**PRIMARY STANDARD**
- Austroads
- Guide to Traffic Engineering Practice, Parts I – 15
- Pavement Design - Guide to the structural Design of Road pavements
- Rural road design - guide to the geometric design of rural roads

**SECONDARY STANDARDS**
- Road and Maritime Services - road design guide

**VALUES TABLE**

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<td></td>
<td>1.1.2</td>
<td>3 lane Sub-Arterial Road</td>
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For industrial areas, likely to have a deep lift pavement as axle loads higher.

Under Growth Centres SEPP and Council DCPs sub-arterial usually have central median min. 4m wide and at least 26m wide road reserve.

Collector roads generally have 20m road reserve

9.6m carriageway width is less than a standard collector carriageway width of 11m? This would not be a common standard of construction. There is also no mention of medians? This typology needs clarification

Need to specify assumed traffic load in relation to pavement design eg 1x10^7 axle loading
### Item 1.2

**Functional Description**

Widening of a sub-arterial road adjacent to traffic by 1 lane, covering a range of pavement structures.

**Key Scope Assumptions**

- Work adjacent to moving traffic and behind crash barriers
- Includes:
  - nominal 500mm of excavation and spoil disposal with allowance to remove all spoil to an off-site tip @ $50/T, SWD & sub soil drainage, K & G, 1.2m wide footpath, allowance for nominal signage, top soiling with site won material, turfing of nature strip, line marking & tie-in works to existing lane
  - footpath to one side
- Road corridor: 1 x 3.2m c/w, road reserve is 7m & c/w width is 3.2m
- Excludes:
  - guard rails, guide post, street lighting and all utility associated work including relocation of existing utilities
  - Minimum quantity: > 300m2 (>70mtrs)

**Sub Item 1.2.1 - Flexible pavement**

- Pavement make-up: 200mm - 300mm SMZ, 200mm to 250mm DGS20, 150mm to 200mm DG820, two coat bitumen seal (10mm & 14mm), 40mm to 50mm AC wearing course

**Sub Item 1.2.2 - Rigid Pavement**

- Pavement make-up: 150mm - 200mm SMZ, 200mm of subbase, 190mm of LMC, chip seal and 120mm of asphalt.

**Pricing Methodology**

First Principles Build-up

**Standards**

**Primary Standards**

- Austroads
  - Guide to Traffic Engineering Practice, Parts 1 - 15
  - Pavement Design - Guide to the structural Design of Road pavements
  - Rural road design - guide to the geometric design of rural roads

**Secondary Standards**

- Road and Maritime Services - road design guide

**Values Table**

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<tr>
<td>[FUNCTIONAL DESCRIPTION]</td>
<td>Construction of a new, 2 lane, flexible pavement Industrial road, covering a range of pavement structures</td>
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</table>
| [KEY SCOPE ASSUMPTIONS] | - Greenfield environment  
- Includes:  
  - nominal 500mm cut/fill balance, SWD & sub soil drainage, roll top gutter, 2 x 2.5m reinforced footpath & 500mm grassed nature strip  
  - Minimal signage, linemarking & tie-in works to existing traffic lane  
  - parking lane & footpath on both sides  
- Excludes:  
  - guard rails, guide post, street lighting and all utility associated work  
  - Pavement make-up  
    - 200mm - 300mm SMT, 200mm to 250mm DGS20, 150mm to 200mm DGB20, two coat bitumen seal (10mm & 14mm), 50mm to 60mm AC wearing course  
    - Road Corridor: 2 lanes x 6.75m c/w, road reserve is 21m & C/W width is 13.5m  
  - Minimum quantity: >1500m2 (>100mtrs)  
|
ITEM NAME: New Rural Road

ITEM NUMBER: ITEM 1.6

FUNCTIONAL DESCRIPTION: Construction of new, 2 lane, flexible pavement Rural road, covering a range of pavement structures

KEY SCOPE ASSUMPTIONS:
- Greenfield environment
- Includes:
  - nominal 500mm cut/fill balance, SWD & sub soil drainage, roll top gutter, 1 x 1.2m reinforced footpath & 500mm grassed nature strip
  - Allowed for a swale
- Excludes:
  - signage, linemarking, tie-in works to existing traffic lane, guide rails, street lighting and all utility associated work
  - SWD, K & G & footpath
- Pavilion make up:
  - 150mm SMZ, 150mm DGS20, 150mm DGB20, 14/7 seal
  - Road Corridor: 2 lanes x 3m c/w, road reserve is 8m & C/W width is 6m.
  - Minimum quantity: >1000m2 (>120mtrs)

SUBITEMS: N/A

PRICING METHODOLOGY: First Principles Build-up

STANDARDS:

PRIMARY STANDARD
- Austroads
- Guide to Traffic Engineering Practice, Parts 1 - 15
- Pavement Design - Guide to the structural Design of Road pavements
- Rural road design - guide to the geometric design of rural roads

SECONDARY STANDARDS
- Road and Maritime Services - road design guide

VALUES TABLE:

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<td>New Rural Road</td>
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Would normally have shoulder on rural road and footway widths.
**ITEM NAME** | Rural Road widening  
---|---  
**ITEM NUMBER** | ITEM 1.7  
**FUNCTIONAL DESCRIPTION** | Widening of a rural road adjacent to moving traffic by 1 lane  
**KEY SCOPE ASSUMPTIONS** | - Work adjacent to moving traffic and behind crash barriers  
| | Includes:  
| | - nominal 500mm of excavation and disposal, with allowance to remove all spoil to an off-site tip @ $50/T  
| | - Allowed for a swale  
| | Excludes  
| | - SWD & sub soil drainage, K & G, footpath, guard rails, guide post, street lighting and all utility associated work including relocation of existing utilities  
| | - SWD, K & G & footpath  
| | Pavement make-up  
| | - 150mm of SMZ, 150mm DGS20, 150mm DGB20 and 14/7 spray seal  
| | - Road Corridor: 1 lane x 3m c/w, road reserve is 5m & C/W width is 3m  
| | - Minimum quantity: >300m2 (>120mtrs)  
**SUBITEMS** | N/A  
**PRICING METHODOLOGY** | First Principles Build-up  
**STANDARDS** | PRIMARY STANDARD  
| | Austroads  
| | - Guide to Traffic Engineering Practice, Parts 1 - 15  
| | - Pavement Design - Guide to the structural Design of Road pavements  
| | - Rural road design - guide to the geometric design of rural roads  
| | SECONDARY STANDARDS  
| | - "Road and Maritime Services - road design guide"  
**VALUES TABLE** | # | Item | Unit | $/unit  
---|---|---|---|---  
1.7 | Rural Road widening | m | $3,328  

Why is rate more than constructing full width rural road?
### Key Scope Assumptions

**Subitem 1.8.1 - Guide posts**
- Standard metal posts

  - Quantity Bands:
    - Band 1: less than 10 guide posts
    - Band 2: between 10 & 70 guide posts

**Subitem 1.8.2 - Guard rail safety barriers**
- Standard "W" beam safety barrier, as per RMS Model drawing MD 132

  - Quantity Bands:
    - Band 1: less than 24m
    - Band 2: between 24m and 80m

**Subitem 1.8.3 - Pedestrian fencing**
- Mild steel fencing, as per RMS Model drawing MD. R70. A21

  - Quantity Bands:
    - Band 1: less than 24m
    - Band 2: between 24m and 70m

### Subitems

- **1.8.1** Guide posts
- **1.8.2** Guard rail safety barriers
- **1.8.3** Pedestrian fencing

### Pricing Methodology

First Principles Build-up

### Standards

- **Guideposts:**
  - AS 1742.2 - Traffic control devices for general use
- **Safety barriers:**
  - Roads and Maritime Services Road Design guide Section 6
  - RMS model drawing MD 132
  - Hills Shire Council Specifications
- **Pedestrian fencing:**
  - RMS model drawing MD. R70. A21

### Values Table

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<th>Subitem</th>
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<th>Applicable Band 2</th>
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<td>Unit $/unit</td>
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<tr>
<td>1.8.1</td>
<td>Guide posts</td>
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<tr>
<td>1.8.2</td>
<td>Guard rail safety barriers</td>
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<td>each $ 196</td>
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<td>1.8.3</td>
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<td>m $ 1,218</td>
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### Traffic Calming

#### Item 1.9

**Functional Description:** Installation of basic speed controlling devices across 2 lanes

#### Key Scope Assumptions

<table>
<thead>
<tr>
<th>Subitem</th>
<th>Description</th>
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<td>Concrete road hump</td>
</tr>
<tr>
<td>1.9.2</td>
<td>Concrete &quot;Watts profile&quot; road hump</td>
</tr>
</tbody>
</table>

**Subitem 1.9.1 - Concrete road hump**
- Dimension: 11m wide x 6.4m long (across 2 lanes)

**Subitem 1.9.2 - Concrete "Watts profile" road hump**
- Ramp dims: 3.7m wide x 6.0m c/e width.
- Excludes traffic control.

#### Subitems

- 1.9.1 Concrete "Wombat" Crossing
- 1.9.2 Concrete "Watts profile" road hump

#### Pricing Methodology

- First Principles Build-up

#### Standards

- **Wombat Crossing:**
  - Hills Shire Council drawings
- **Watts profile road hump:**
  - Roads and Maritime Services model drawings

#### Values Table

<table>
<thead>
<tr>
<th>Subitem</th>
<th>Unit</th>
<th>$/unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.9.1</td>
<td>each</td>
<td>$421</td>
</tr>
<tr>
<td>1.9.2</td>
<td>each</td>
<td>$7,865</td>
</tr>
</tbody>
</table>

Normally a raised threshold type treatment.

Blacktown standard as per our standard drawing is approx $15k and would normally cost more than road hump.
## ITEM NAME
Roundabout Intersection

### ITEM NUMBER
ITEM 1.14

### FUNCTIONAL DESCRIPTION
Construction of a small trafficable, 4 leg roundabout with 2 approaching lanes

### KEY SCOPE ASSUMPTIONS
- 6m diameter trafficable roundabout
- 3m wide apron
- 3m radius centre section with stencil finish
- 4 leg roundabout with 2 approaching lanes

### SUBITEMS
N/A

### PRICING METHODOLOGY
Primary Principles Build-up

### STANDARDS
Austroads: Guide to Traffic management; Part 4, 6, 9 & 10

<table>
<thead>
<tr>
<th>#</th>
<th>Item</th>
<th>Unit</th>
<th>$/unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.14</td>
<td>Roundabout Intersection</td>
<td>each</td>
<td>$33,495</td>
</tr>
</tbody>
</table>

Would expect cost approx $100k if includes all pavement and kerb works as normally use SBS modified asphalt pavement treatment
<table>
<thead>
<tr>
<th>Item Name</th>
<th>Primary Pollution Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item Number</td>
<td>ITEM 2.1</td>
</tr>
<tr>
<td>Functional Description</td>
<td>The supply and installation of primary pollution devices, including proprietary devices.</td>
</tr>
</tbody>
</table>
| Key Scope Assumptions | - All rates include supply and installation;  
- This activity is assumed to be part of a larger scope of works, therefore plant and equipment will not require transportation costs;  
- Unit rates based on greenfield development;  
- No allowance for offsite disposal of surplus excavation material;  
- Stockpiled material hauled no greater than 500m;  
- No allowance for encountering rock;  
- No allowance for dewatering measures;  
- Excavated material assumed to be VENM;  
- No allowance for reinstatement. |
| Subitems | 2.1.1 GPT - Proprietary System Design Flow 20l/s  
2.1.2 GPT - Proprietary System Design Flow 80l/s  
2.1.3 GPT - Proprietary System Design Flow 200l/s  
2.1.4 GPT - Proprietary System Design Flow 370l/s  
2.1.5 GPT - Prefabricated Pit including internal Trash Rack  
2.1.6 GPT - Trash Rack/Trap (Pre Fabricated Steel)  
2.1.7 GPT - Trash Net To suit 375mm pipe  
2.1.8 GPT - Trash Net To suit 750mm pipe  
2.1.9 GPT - Trash Net To suit 1500mm pipe |
| Pricing Methodology | First Principles Build up |
| Standards | Primary Standards:  
- Australian Runoff Quality: A Guide to Runoff Quality (Engineers Australia, 2007)  
- WSUD Technical Guidelines for Western Sydney (URS, 2004)  
Secondary Standards:  
- Structural Stormwater Quality Best Management Practice Cost / Size Relationship Information from the Literature (CRC for Catchment Hydrology, 2005)  
- Water Sensitive Urban Design Book 1 | Policy (Landcom, 2009) |
| Values Table | | |
| Subitem | Unit | $/unit |
| 2.1.1 GPT - Proprietary System Design Flow 20l/s | each | $ 44,950 |
| 2.1.2 GPT - Proprietary System Design Flow 80l/s | each | $ 63,800 |
| 2.1.3 GPT - Proprietary System Design Flow 200l/s | each | $ 92,800 |
| 2.1.4 GPT - Proprietary System Design Flow 370l/s | each | $ 113,100 |
| 2.1.5 GPT - Prefabricated Pit including internal Trash Rack | each | $ 44,950 |
| 2.1.6 GPT - Trash Rack/Trap (Pre Fabricated Steel) | each | $ 9,715 |
| 2.1.7 GPT - Trash Net To suit 375mm pipe | each | $ 10,150 |
| 2.1.8 GPT - Trash Net To suit 750mm pipe | each | $ 11,600 |
| 2.1.9 GPT - Trash Net To suit 1500mm pipe | each | $ 18,850 |

Blacktown Council generally uses Rocla CDS units for primary treatment as generally looking at larger scale applications and has better removal performance for a greater range of pollutant types. Blacktown Council generally does not use these devices on public systems due to operational issues, so would not normally use in new release areas. Should consider other suppliers such as Baramy to get a comparison of value for money based on total life cycle cost. Note that some items that are cheapest to install are not the cheapest to clean and maintain. Blacktown Council generally does not use these devices on public systems due to operational issues, so would not normally use in new release areas.
### Functional Description

This item comprises the supply and installation/construction of secondary and tertiary pollution devices.

### Key Scope Assumptions

- This activity is assumed to be part of a larger scope of works, therefore plant and equipment will not require transportation costs.
- Unit rates based on greenfield development.
- No allowance for offsite disposal of surplus excavated material.
- Stockpiled material hauled no greater than 500m.
- No allowance for encountering rock.
- No allowance for dewatering measures.
- Excavated material assumed to be VEM.
- No allowance for reinstatement.

**Grassed/Vegetated Swale**

- Maximum flow velocity adopted for grass swales is 2.0 m/s (1% AEP flows).
- Minimum flow velocity adopted for grass swales is 0.6 m/s (100% AEP flows).
- Maximum batter slope adopted for grassed swales is 1(V):4(H).
- Grassed/vegetated swale includes earthworks, labour and planting.
- Grassed/vegetated swale includes transition filter, gravel, geofabric liner in central channel.
- Grassed/vegetated swale does not include sub-soil drain.

**Bio retention Trench**

- Bio retention trench assumed to be 3 m wide by 1 m nominal depth.
- Bio retention trench includes geofabric liner, underdrainage pipe (100 mm dia), gravel drainage layer, filter media, sand, topsoil, vegetation cover.
- Trench - 3.0m (W) x 1.0m (H).

### Subitems

<table>
<thead>
<tr>
<th>Subitem</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.2.1</td>
<td>Grassed swale 1.5m total width</td>
</tr>
<tr>
<td>2.2.2</td>
<td>Grassed swale 3.0m total width</td>
</tr>
<tr>
<td>2.2.3</td>
<td>Grassed swale 5.0m total width</td>
</tr>
<tr>
<td>2.2.4</td>
<td>Bio Detention Trench</td>
</tr>
</tbody>
</table>

### Pricing Methodology

First Principles Build-up

### Standards

**Primary Standards**

- Australian Runoff Quality: A Guide to Runoff Quality (Engineers Australia, 2007)
- WSUD Technical Guidelines for Western Sydney (URS, 2004)

**Secondary Standards**

- Structural Stormwater Quality Best Management Practice Cost / Size Relationship Information from the Literature (CRC for Catchment Hydrology, 2005)
- Water Sensitive Urban Design Book 1 | Policy (Landcom, 2009)

### Values Table

<table>
<thead>
<tr>
<th>Subitem</th>
<th>Unit</th>
<th>$/unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.2.1</td>
<td>m</td>
<td>$261</td>
</tr>
<tr>
<td>2.2.2</td>
<td>m</td>
<td>$653</td>
</tr>
<tr>
<td>2.2.3</td>
<td>m</td>
<td>$943</td>
</tr>
<tr>
<td>2.2.4</td>
<td>m</td>
<td>$783</td>
</tr>
</tbody>
</table>
(iii) [FUNCTIONAL DESCRIPTION] This item comprises the excavation and backfilling of trenches and the supply, bedding(including base slab), laying and jointing of precast reinforced concrete box culverts.

(iv) [KEY SCOPE ASSUMPTIONS] - Includes the supply and installation of Precast Concrete Box Culverts for road crossings and detention/retention basin outlet structures;
   - This activity is assumed to be part of a larger scope of works, therefore plant and equipment will not require transportation costs;
   - Quotations have received from industry for precast box culvert for the below sizes;
   - Unit rates based on greenfield development;
   - Culverts excavated to depth of culvert;
   - No allowance for offsite disposal of surplus exc material;
   - Stockpiled material hauled no greater than 500m;
   - No allowance for encountering rock;
   - No allowance for dewatering measures;
   - Excavated material assumed to be VENM;
   - No allowance for reinstatement.

(v) [SUBITEMS] 2.3.1 Single Cell; Size 300 x 225mm  
2.3.2 Single Cell; Size 600 x 450 mm  
2.3.3 Single Cell; Size 1500 x 600 mm  
2.3.4 Single Cell; Size 2100 x 2100 mm  
2.3.5 Twin Cell; Size 300 x 225mm  
2.3.6 Twin Cell; Size 600 x 450 mm  
2.3.7 Twin Cell; Size 1500 x 600 mm  
2.3.8 Twin Cell; Size 2100 x 2100 mm

(vi) [PRICING METHODOLOGY] First Principles Build-up

(vii) [STANDARDS] PRIMARY STANDARDS  
- AUS-SPEC NSW Development Design Specification DS Stormwater Drainage Design  
- AS1597 'Precast Reinforced Concrete Box Culverts'  
SECONDARY STANDARDS  
- Camden Council Engineering Design Specification (adopted 10 February 2009)

(viii) [VALUES TABLE] | # | Subitem | Unit | $/ unit |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2.3.1</td>
<td>Single Cell; Size 300 x 225mm</td>
<td>m</td>
<td>$ 377</td>
</tr>
<tr>
<td>2.3.2</td>
<td>Single Cell; Size 600 x 450 mm</td>
<td>m</td>
<td>$ 711</td>
</tr>
<tr>
<td>2.3.3</td>
<td>Single Cell; Size 1500 x 600 mm</td>
<td>m</td>
<td>$ 1,697</td>
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<tr>
<td>2.3.4</td>
<td>Single Cell; Size 2100 x 2100 mm</td>
<td>m</td>
<td>$ 3,161</td>
</tr>
<tr>
<td>2.3.5</td>
<td>Twin Cell; Size 300 x 225mm</td>
<td>m</td>
<td>$ 609</td>
</tr>
<tr>
<td>2.3.6</td>
<td>Twin Cell; Size 600 x 450 mm</td>
<td>m</td>
<td>$ 1,105</td>
</tr>
<tr>
<td>2.3.7</td>
<td>Twin Cell; Size 1500 x 600 mm</td>
<td>m</td>
<td>$ 2,695</td>
</tr>
<tr>
<td>2.3.8</td>
<td>Twin Cell; Size 2100 x 2100 mm</td>
<td>m</td>
<td>$ 5,017</td>
</tr>
</tbody>
</table>

Other councils should be similar. However, there is different standard for RMS roads

Correct order of magnitude
Concrete Channels

**ITEM NAME**: Concrete Channels

**ITEM NUMBER**: ITEM 2.4

**FUNCTIONAL DESCRIPTION**: This item comprises the construction of concrete lined open channels.

**KEY SCOPE ASSUMPTIONS**:
- Cast in-situ base slab designed by a suitably qualified structural engineer
- 1.1m wide concrete channel
- This activity is assumed to be part of a larger scope of works, therefore plant and equipment will not require transportation costs
- Unit rates based on greenfield development
- No allowance for offsite disposal of surplus exc material
- Stockpiled material hauled no greater than 500m
- No allowance for encountering rock
- No allowance for dewatering measures
- Excavated material assumed to be VENM
- No allowance for reinstatement

**SUBITEMS**: N/A

**PRICING METHODOLOGY**: First Principles Build-up

**STANDARDS**:
- **PRIMARY STANDARD**
  - AUS-SPEC NSW Development Design Specification D5 Stormwater Drainage Design
- **SECONDARY STANDARDS**
  - Camden Council Engineering Construction Specification (Feb 2009)
  - Camden Council Engineering Design Specification (Feb 2009)

**VALUES TABLE**:

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
<th>$/ unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.4</td>
<td>m</td>
<td>276</td>
</tr>
<tr>
<td>[ITEM NAME]</td>
<td>Stormwater Drain/ Pits</td>
<td></td>
</tr>
<tr>
<td>-------------</td>
<td>------------------------</td>
<td></td>
</tr>
<tr>
<td>[ITEM NUMBER]</td>
<td>ITEM 2.5</td>
<td></td>
</tr>
<tr>
<td>(iii) [FUNCTIONAL DESCRIPTION]</td>
<td>Reinforced concrete (“RC”) gully pit Type SA1, including excavation, bedding materials, backfilling, connection of pipes, galvanised frame and heavy duty grates</td>
<td></td>
</tr>
</tbody>
</table>
| (iv) [KEY SCOPE ASSUMPTIONS] | - Unit rates based on greenfield development  
- This activity is assumed to be part of a larger scope of works, therefore plant and equipment will not require transportation costs  
- Pits to suit pipes up to 600mm in size assumed to be 2.0m in depth  
- Pits to suit pipes above 600mm in size assumed to be 2.5m in depth  
- No allowance for offsite disposal of surplus exc material  
- Stockpiled material hauled no greater than 500m  
- Gully pits Type SA1 are trafficable  
- Backfilling of the pits is based on imported Type 1 material  
- No allowance for encountering rock  
- No allowance for dewatering measures  
- Excavated material assumed to be VENM  
- No allowance for reinstatement |
| (v) [SUBITEMS] | 2.5.1 Precast pit to suit 375mm pipe  
2.5.2 Precast pit to suit 450mm pipe  
2.5.3 Precast pit to suit 600mm pipe  
2.5.4 Precast pit to suit 900mm pipe  
2.5.5 Precast pit to suit 1050mm pipe  
2.5.6 Precast pit to suit 1200mm pipe |
| (vi) [PRICING METHODOLOGY] | First Principles Build-up |
| (vii) [STANDARDS] | PRIMARY STANDARD  
- AUS-SPEC NSW Development Design Specification DS Stormwater Drainage Design |
| SECONDARY STANDARDS | - Camden Council Engineering Construction Specification (Feb 2009)  
- Camden Council Engineering Design Specification (Feb 2009) |
| (viii) [VALUES TABLE] | # Subitem | Unit | $/ unit |
| 2.5.1 | Precast pit to suit 375mm pipe | No | $ 3,660 |
| 2.5.2 | Precast pit to suit 450mm pipe | No | $ 3,944 |
| 2.5.3 | Precast pit to suit 600mm pipe | No | $ 4,495 |
| 2.5.4 | Precast pit to suit 900mm pipe | No | $ 5,800 |
| 2.5.5 | Precast pit to suit 1050mm pipe | No | $ 5,945 |
| 2.5.6 | Precast pit to suit 1200mm pipe | No | $ 6,670 |

Cost will also vary based on Kerb Inlet size.
**ITEM NAME** | Stormwater Drainage Pipework
--- | ---
**ITEM NUMBER** | ITEM 2.6
**FUNCTIONAL DESCRIPTION** | This item comprises the installation of Reinforced concrete pipes ("RCP") Class 2, including trench excavation, bedding materials, connection to pits, compacted pipe surround and backfilling
**KEY SCOPE ASSUMPTIONS**
- Unit rates based on greenfield development
- RCP Class 2
- This activity is assumed to be part of a larger scope of works, therefore plant and equipment will not require transportation costs
- No allowance for offsite disposal of surplus exc material
- Stockpiled material hauled no greater than 500m
- Backfilling of the pits is based on imported Type 1 material
- No allowance for encountering rock
- No allowance for dewatering measures
- Excavated material assumed to be VENM
- Depths based on minimum cover as per Sydney Water standard trench details
- No allowance for reinstatement

| SUBITEMS | 2.6.1 375mm RCP  
| 2.6.2 450mm RCP  
| 2.6.3 600mm RCP  
| 2.6.4 750mm RCP  
| 2.6.5 900mm RCP  
| 2.6.6 1350mm RCP  
| 2.6.7 1500mm RCP  |

**PRICING METHODOLOGY** | First Principles Build-up

**STANDARDS**
- AUS-SPEC NSW Development Design Specification DS Stormwater Drainage Design
- AS 4058 'Precast Reinforced Concrete Pipes'
- AS 3735 'Loads on Buried Concrete Pipes'

**SECONDARY STANDARDS**
- Camden Council Engineering Construction Specification (Feb 2009)
- Camden Council Engineering Design Specification (Feb 2009)

<table>
<thead>
<tr>
<th>SUBITEM</th>
<th>Unit</th>
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<tbody>
<tr>
<td>2.6.1 375mm RCP</td>
<td>m</td>
<td>$283</td>
</tr>
<tr>
<td>2.6.2 450mm RCP</td>
<td>m</td>
<td>$348</td>
</tr>
<tr>
<td>2.6.3 600mm RCP</td>
<td>m</td>
<td>$464</td>
</tr>
<tr>
<td>2.6.4 750mm RCP</td>
<td>m</td>
<td>$711</td>
</tr>
<tr>
<td>2.6.5 900mm RCP</td>
<td>m</td>
<td>$928</td>
</tr>
<tr>
<td>2.6.6 1350mm RCP</td>
<td>m</td>
<td>$1,249</td>
</tr>
<tr>
<td>2.6.7 1500mm RCP</td>
<td>m</td>
<td>$1,928</td>
</tr>
</tbody>
</table>

Note cost will vary based on pipe class and ground conditions- assume no allowance for unsuitable or salinity conditions.

- No allowence for reinstatement.
**ITEM NAME**

Stormwater Headwalls

**ITEM NUMBER**

ITEM 2.7

**FUNCTIONAL DESCRIPTION**

Precast headwalls including excavation, backfilling and connection to the following size pipes

**KEY SCOPE ASSUMPTIONS**

- Unit rates based on greenfield development
- This activity is assumed to be part of a larger scope of works, therefore plant and equipment will not require transportation costs
- No allowance for offsite disposal of surplus exc material
- Stockpiled material hauled no greater than 500m
- No allowance for encountering rock
- No allowance for dewatering measures
- Excavated material assumed to be VENM
- No allowance for reinstatement

**SUBITEMS**

- 2.7.1 To suit 375mm pipe
- 2.7.2 To suit 525mm pipe
- 2.7.3 To suit 750mm pipe
- 2.7.4 To suit 900mm pipe
- 2.7.5 To suit 1200mm pipe
- 2.7.6 To suit 1350mm pipe

**PRICING METHODOLOGY**

First Principles Build-up

**STANDARDS**

**PRIMARY STANDARD**

- AUS-SPEC NSW Development Design Specification DS Stormwater Drainage Design

**SECONDARY STANDARDS**

- Camden Council Engineering Construction Specification (Feb 2009)
- Camden Council Engineering Design Specification (Feb 2009)

**VALUES TABLE**

<table>
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<tr>
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<th>Subitem</th>
<th>Unit</th>
<th>$/ unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.7.1</td>
<td>To suit 375mm pipe</td>
<td>No</td>
<td>$4,241</td>
</tr>
<tr>
<td>2.7.2</td>
<td>To suit 525mm pipe</td>
<td>No</td>
<td>$4,270</td>
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<tr>
<td>2.7.3</td>
<td>To suit 750mm pipe</td>
<td>No</td>
<td>$5,800</td>
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<tr>
<td>2.7.4</td>
<td>To suit 900mm pipe</td>
<td>No</td>
<td>$6,213</td>
</tr>
<tr>
<td>2.7.5</td>
<td>To suit 1200mm pipe</td>
<td>No</td>
<td>$14,500</td>
</tr>
<tr>
<td>2.7.6</td>
<td>To suit 1350mm pipe</td>
<td>No</td>
<td>$16,298</td>
</tr>
</tbody>
</table>

Any allowance for safety rails?

Rates seem high for all sizes
### Local Development Contributions Benchmark Summary Tables

#### 6. Assumptions

<table>
<thead>
<tr>
<th>Infrastructure Category</th>
<th>Contractors Costs</th>
<th>Council Costs</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Direct Costs (DC)</td>
<td>Contractor's Indirect Costs (% of DC)</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Transport</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>Stormwater</td>
<td>100%</td>
<td>20%</td>
</tr>
<tr>
<td>Community Facilities</td>
<td>100%</td>
<td>12%</td>
</tr>
<tr>
<td>Open Space Embellishment</td>
<td>100%</td>
<td>12%</td>
</tr>
</tbody>
</table>

(1) Percentages account for significant road widening / stormwater projects involving Tier 2/3 contractors.