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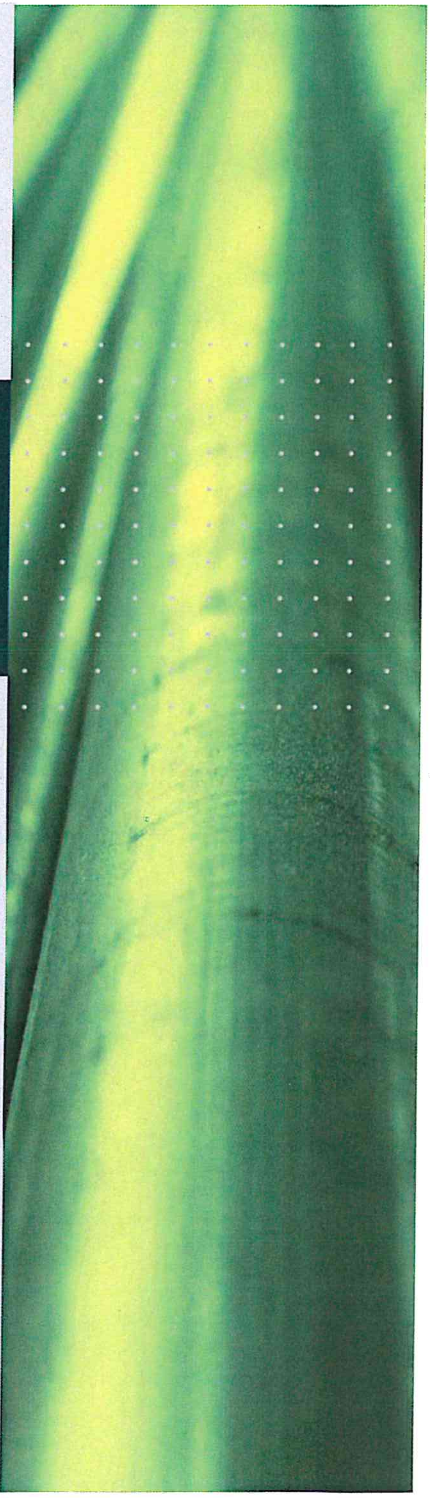

North Penrith Infrastructure, CIV Evaluations, Stage 3A

ISSUED TO:

Urban Growth NSW / Landcom

DATE:

02/09/2013

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DOCUMENT TITLE:

NORTH PENRITH INFRASTRUCTURE, CIV EVALUATIONS, STAGE 3A

PROJECT REFERENCE: **212070**

PURPOSE OF ISSUE: **Update with revisions**

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REVISION	DESCRIPTION OF AMENDMENT	AUTHOR	CHECKED	APPROVED	DATE
0	Initial issue, Stage 2A	DQ		EJL	25/06/2012
1	Initial issue, all other Stages	DQ			19/07/2012
2	Adjustments to allocation of earthworks quantities as requested	DQ		EJL	26/11/2012
3	Amended issue for Stage 3A	LG		DQ	02/09/2013

Previous issues of this document shall be destroyed or marked SUPERSEDED.

contents

1 Introduction

Aquenta Consulting have been engaged to provide an estimate of the Capital Investment Values (CIV) for the various Stages of the infrastructure works associated with the North Penrith development.

Landcom is developing the site for a new mixed-use, diverse and sustainable urban community. The site will include a diversity of residential buildings, a new community centre, and business opportunities through retail, light industrial and commercial floor space and open spaces to create a transit orientated development adjacent to Penrith railway station.

The total site covers an area of some 40 hectares and size of the Stage 3A is 4.82 heactares. The project is located immediately north of Penrith railway station and is ex-Department of Defence land.

2 CIV Definition

The Capital Investment Value is assessed in accordance with the definition of CIV. Capital Investment Value is defined in the Environmental Planning and Assessment Regulation 2000 as:

Capital investment value of a development or project includes all costs necessary to establish and operate the project, including the design and construction of buildings, structures, associated infrastructure and fixed or mobile plant and equipment other than the following costs:

- *Amounts payable or the cost of the land dedicated or any other benefit provided under a condition imposed under Division 6 or 6A of Part 4 of the Environmental Planning and Assessment Act or planning agreement under that division*
- *Costs relating to any part of the development or project that is subject of a separate development consent or project approval*
- *Land costs (including any costs of marketing or selling land)*
- *GST (as defined by A New Tax System (Goods and Services Tax) Act 1999 of the Commonwealth).*

3 Capital Investment Value

3.1 BASIS OF VALUATION

The estimate of the CIV has been based on;

- A validation of quantities prepared by Worley Parsons, file ref; Worley Parsons Costings (SP15-11-10).
- Road and Drainage Design, North Penrith X12016-PA, report prepared by Brown Smart Consulting, file ref; X12016_2A_Rev03.
- Thornton Park Landscape Concept, North Penrith Village, prepared by Place, file ref; LCM31-Stage 2A Report_FINAL_R1_120530.
- North Penrith Indicative Staging Plan, prepared by Craig & Rhodes.

- Aquenta in-house database of current market rates for infrastructure works.
- Aquenta site visit, 01 May 2012.
- Email from Urban Growth NSW (Mike Williams) dated 20th August 2013.
- Streetscape stage 3A quantities prepared by Place Planning Design Environment.
- Civil work, Sewer reticulation, Water reticulation, Electrical Reticulation, NBN pit & Pipe work, Roadwork and Drainage quantities by J Wyndham Prince (consulting civil infrastructure engineers).
- Email from Urban Growth NSW (Mike Williams) dated 27th August 2013.

3.2 SCOPE OF CAPITAL WORKS

The scope of works included within these CIV estimates is;

- Civil works, excluding removal of topsoil and site clearance, cut-and-fill bulk earthworks, construction of roads and pavings complete with all associated kerbs, drainage etc. Assumed no removal from site or importation to site of materials, and no excavation in rock.
- Landscaping to public areas.
- Common service trench for potable water supply, gas supply, and telecommunications.
- Potable water, mains and branches to an isolation valve within each lot.
- Gas, mains and branches to an isolation valve within each lot.
- Sewer, mains and a branch for each lot. The average depth of the gravity sewers is taken as 3m below finished levels.
- Electricity, compromising high voltage cabling to the substation locations, low voltage cabling to distribution pillars, low voltage cabling to and including street lighting.
- Telecommunications, fibre-optic cabling in conduit to distribution turrets.

All services are measured to the physical boundaries of the Stage as indicated. The sizes of piped services have been taken from the Worley Parsons documentation.

3.3 REMEDIATION

Remediation costs are excluded as advised by Urban Growth NSW.

3.4 INDIRECT COSTS

Consultant fees have been included at a rate of 15% of the cost of capital works.

Nominal council fees and long service levy have been included at 1% of the cost of capital works.

3.5 CONTINGENCY

Given the concept stage of the design, contingency has been included at 15% of the total of the capital works plus Indirect costs.

3.6 SUMMARY OF ESTIMATES

Item	Stage 3A
Subtotal of Works	$ 4,532,741
Consultant costs	$ 679,911
Fees	$ 45,327
Contingency	$ 788,697
TOTAL OF CIV	**$ 6,046,676**

The detail of the estimates is in Appendix 1 below.

4 Exclusions

Excluded from the CIV are:

- GST
- Escalation to the start of construction or to the completion of construction (all costs are current at August 2013)
- Land and land-related costs
- Finance and finance-related costs
- Construction costs for any works on individual lots
- Statutory contributions, charges and the like
- Sales & marketing costs.

Appendix 1: Detail of Estimate

Project: North Penrith Defence Land
Stage 3A

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	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
1	**ROADWORKS**				
	Prepare, trim and compact:				
	Pavement subgrade under roads, accessways, driveways and pathways	4560	m2	15.00	68,400
	Footways, berms and batters	2460	m2	15.00	36,900
	Supply, place and compact crushed sandstone, (or approved equivalent) sub-base courses under pavements / accessway / thresholds:				
	290 mm thick (compacted thickness)	4660	m2	30.00	139,800
	Supply, place and compact DGB 20, (or approved equivalent) base course:				
	150mm thick (compacted thickness)	4000	m2	20.00	80,000
	Surfacing of road pavement with:				
	Single coat hot bitumen flush seal	4000	m2	7.00	28,000
	Asphaltic concrete first course (AC10) min 25mm thick	4000	m2	Included	Included
	Asphaltic concrete wearing course (AC10) min 25 mm thick	4000	m2	25.00	100,000
	Supply all materials and construct kerbs and gutters to Council's Standard Drawing.				
	150mm kerb & gutter including vehicular crossings and kerb ramps	650	m	115.00	74,750
	PATHWAY/FOOTPATH PAVING				
	Excavate for, supply all materials and construct concrete footpath to Council's standards.				
	100mm thick including thickening to 125mm at vehicle crossings including starter bars at 600 centres to either side of footpath and back of kerb for laneway crossing and driveways as required	2400	m2	85.00	204,000
2	**DRAINAGE**				
	Supply, bed, lay and joint RC stormwater pipes as specified:				
	Excavation & Backfilling	400.43	m^3	175.00	70,074
	375 mm dia. RRJ2	98	m	150.00	14,700
	450 mm dia. RRJ2	140	m	195.00	27,300
	525 mm dia. RRJ2	23	m	225.00	5,175
	600 mm dia. RRJ2	22	m	265.00	5,830
	675 mm dia. RRJ2	27	m	350.00	9,450
	750 mm dia. RRJ2	28	m	360.00	10,080
	900 mm dia. RRJ2	34	m	510.00	17,340
3	**SEWER LEAD IN WORKS**				
	Excavate in all materials, backfill & general restoration (all material means excavated material including shale or rock which is able to be removed by a 30t excavator with a 600 wide bucket with tiger teeth)				
	(1.5 - 3.0m) - Pipe Type: DN225 PVC SN8 (Incl. PCS)	35.41	m	275.00	9,738
	(3.0 - 4.5m) - Pipe Type: DN225 PVC SN8 (Incl. PCS)	171.36	m	415.00	71,114
	(4.5 - 6.0m) - Pipe Type: DN225 PVC SN8 (Incl. PCS)	138.95	m	551.00	76,561
	Supply, bed and lay pipes on granular				

Project: North Penrith Defence Land

Stage 3A

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	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	Incl. PCS but excluding Risers - 225mm	345.72	m	165.00	57,044
	Junctions for PCS's - off 225mm	8	Each	1,500.00	12,000
	Propert Service Connections (incl. risers, mass concrete block, junction for actual house connection and surface fittings, refer to low infiltration spec LIS 5, LIS 6, LIS-9 and LIS-10)				
	1.5 - 3.0m (225mm)	2	Each	3,000.00	6,000
	3.0 - 4.5m (225mm)	5	Each	4,000.00	20,000
	4.5 - 6.0m (225mm)	1	Each	5,000.00	5,000
	Supply and install Maintenance Hole as per design plan				
	MH to DTC-2203 (4.5 - 6.0)m	2	Each	7,500.00	15,000
	Supply and install Maintenance Shafts				
	3.0 - 4.5m	4	Each	6,000.00	24,000
	Supply and install Terminal Maintenance Shafts				
	1.5 - 3.0m	1	Each	1,500.00	1,500
	3.0 - 4.5m	3	Each	2,500.00	7,500
	Concrete Encasement				
	proposed 225mm	50	m	300.00	15,000
	Connection to existing system				
	Existing reticulation MH	2	Each	5,000.00	10,000
	Existing reticulation MS	1	Each	10,000.00	10,000
	Branch off				
	Branch off to the lots & cap	65	No.	300.00	19,500
	Additional items	1	lump sum	17,997.87	17,998
	Final restoration			Included	
	Removal of Spoil			Included	
	Sediment Control			Included	
	Provision and installation of Barricades/Fencing			Included	
	Providing measurements of PCS's			Included	
	Road opening permit			Included	
	Traffic Control			Included	
	Excavation in rock			Included	
	Testing	1	lump sum	18,897.76	18,898
	Compaction Fill	85	Each	Included	
	Compaction Embedment	6	Each	Included	
	Pressure/Vacuum	345.72	Each	Included	
	MH Vacuum	2	Each	Included	
	CCTV	341.72	m	Included	
	Deflection	69.14	m	Included	
4	**NORTH PENRITH STATION SQUARE**				
	Hardscape				
	Stone Pavers (Preferred) - 60mm thick Granite Paving	1,575	m2	220.00	346,500
	Concrete Pavers (Secondary Option) Price not included in overal sum - 60mm thick Concrete Pavers	1,575	m2	130.00	204,750
	Feature stone banding - 60mm thick Granite Paving with feature colour / texture	145	m2	260.00	37,700
	Softscape				0
	Soft Landscaping - Soft landscaping including subgrade preparation and amelioration to 300mm, spreading and feathering of ameliorated site won topsoil to 300mm, supply and install of all shrubs, groundcovers & mulch	125	m2	55.00	6,875

Project: North Penrith Defence Land
Stage 3A

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	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	Tree - feature (800L) - Soft landscaping including subgrade preparation and amelioration to 300mm, spreading and feathering of ameliorated site won topsoil to 300mm, supply and install of all trees	1	Item	3,000.00	3,000
	Trees - plaza (400L) - Soft landscaping including subgrade preparation and amelioration to 300mm, spreading and feathering of ameliorated site won topsoil to 300mm, supply and install of all trees	8	Item	1,000.00	8,000
	Structures				0
	Water Feature Elements - Linear Ril and Pop Jet Water Feature including reticulation, pump, storage and drainage	1	PC SUM	120,000.00	120,000
	Sculptural Element - Sculptural Lawn	1	PC SUM	40,000.00	40,000
	Sculptural Element - Sculptural Seating	1	PC SUM	50,000.00	50,000
	Furniture - Stainless steel bike racks	3	Item	4,000.00	12,000
	Furniture - Wayfinding and directory signage	1	PC SUM	7,500.00	7,500
	Lighting				
	Station Squre - Lighting	1	Sum	12,000.00	12,000
	Landscape Drainage				
	Landscape Drainage	1	Sum	30,000.00	30,000
	Art Works				
	Public Art	1	Pr. Sum	75,000.00	75,000
	Kiosk				
	Kiosk Building and Canopy within the station plaza	1	Sum	750,000.00	750,000
5	**STREETSCAPE**				
5.1	**HARDSCAPES VERGES**				
	Grading - Fine grading, bulk grading by others.	2045	m2	5.00	10,225
	Asphalt pavement - Asphaltic concrete, over 100mm DGB20 sub base, 15mm AC5 wearing coarse over 35mm thick AC10 intermeddiate wearing coarse	1475	m2	50.00	73,750
	Granite Paving bands to lot boundary (2 x pavers wide) - 600 x 300 x 40mm thick Granite paves stretcher bond & butt jointed, laid on sand cement mortar over DGB20 sub base, colour grey	244.5	m2	450.00	110,025
	Granite Paving bands to back of kerb and tree pits - 600 x 300 x 40mm thick Granite paves butt jointed, laid on sand cement mortar over DGB20 sub base, colour grey	180.35	m2	450.00	81,158
	Granite Paving to road crossing threshold - 600 x 300 x 40mm thick Granite paves stretcher bond & butt jointed, laid on sand cement mortar over DGB20 sub base, colour grey	25.7	m2	450.00	11,565
	Structural soil - 600mm depth of structural soil under pavements average of 9.6m3 per tree	375	m3	40.00	15,000
	Topsoil to plant beds - 150 cultivation, 300 ameliorated site Type B topsoil	120	m2	22.50	2,700
	Mulch to Plantbeds - 75mm depth of organic grade mulch	120	m2	6.00	720
	Trees 100lt stock - Supply & install, excavate, cultivate, topsoil organic mulch.	39	item	300.00	11,700
	H/W tree stakes - 1500 x 38 x 38mm x 3 Hardwood stake assembly to street trees	39.0	3 / pit	40.00	1,560
	Agg. Pipe 90mm dia. - Around trees & between trees/to sw, Approx 10 lm/tree	390	m	20.00	7,800
	Plantstock 150mm - Supply & install average of 6 plants /m2	120	m2	72.00	8,640

Project: North Penrith Defence Land

Stage 3A

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	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	Maintenance - Maintenance to Stage 3A public domain & planting to future bus link	36	month	2,500.00	90,000
5.2	SOFTSCAPE VERGES				
	Grading - Fine grading & excavation, bulk grading by others.	567	item	5.00	2,835
	Structural soil - For trees in turf, under foot paths, 2.25m3 per tree	27	m3	40.00	1,080
	Topsoil to Lawn areas - 150 cultivation, 100 ameliorated site topsoil	395	m3	50.00	19,750
	Turf to verge - Supply and install turf rolls	395	m2	10.00	3,950
	Trees 100lt stock - Supply & install, excavate, cultivate, drainage, topsoil, organic mulch	12	item	300.00	3,600
	Plants 200mm stock - Supply & install		item		
	Plants 150mm stock - Supply & install		item		
	Plants 75mm stock - Supply & install		item		
	H/W tree stakes - 1500 x 38 x 38mm x 3 Hardwood stake assembly to street trees	12	3 / pit	40.00	480
	90mm Agg. Pipe - Around trees, between trees & connected to sw, 10 lm/tree	120	m	20.00	2,400
	Topsoil to tree pits - 150 cultivation, 300 ameliorated site Type B topsoil	8	m3	50.00	405
	Mulch to tree pits - 75mm depth of organic grade mulch	27	m2	6.00	162
					0
5.3	FUTURE BUS LINK				0
	Grading - Fine grading & excavation, bulk grading by others.	1,130	item	5.00	5,650
	Topsoil to plant beds - 150 cultivation, 300 ameliorated site Type B topsoil	1,130	m2	22.50	25,425
	Mulch to Plantbeds - 75mm depth of organic grade mulch	1,130	m2	6.00	6,780
	Trees 45lt stock - Supply & install, excavate, cultivate, topsoil organic mulch. Stake.	25	item	130.00	3,250
	Plantstock - Supply & install average of 6 plants /m2 at 75mm tube & 1 shrub /m2 at 150mm pot	1,130	m2	54.00	61,020
	Fence - Supply & install 1800mm high galv. Chain & wire fence to perimeter of future bus link	105	lm	60.00	6,300
6	POTABLE WATER RETICULATION				
	Excavate in all materials (all material means excavated material including shale or rock which is able to be removed by a 30t excavator with a 600 wide bucket with tiger teeth), supply, bed, lay, backfill pipes & general restoration				
	Pipe Type: OPVC PN16 - 150mm	306	m	160.00	48,960
	Pipe Type: DICL PN35 (DTC1115) - 150mm	7	m	278.00	1,807
	Supply and Install Fittings (As per DTC drawings)				
	Hydrant	5	Each	1,650.00	8,250
	Hydrant Tee - 150mm	10	each	2,500.00	25,000
	Stop Valve -150mm	2	Each	1,850.00	3,700
	Bend (approx. only - to be verified)				
	150mmx22.5	4	Each	Included	Included
	150mmx11.25	4	Each	Included	Included
	Connection to existing pipework	1	Sum	5,000.00	5,000
	Straight -150mm	2	Each	Included	Included
	Final restoration				

Project: North Penrith Defence Land
Stage 3A

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	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
	Road	1	Lump Sum	5,000.00	5,000
	K&G	1	Lump Sum	Included	Included
	Grassed areas	1	Lump Sum	Included	Included
	Branch off to the lots & cap	14	No.	250.00	3,500
	Testing				
	Testing	1	Lump Sum	5,885.85	5,886
	Additional Items				
	Additional Items	1	Lump Sum	20,000.00	20,000
	Traffic Control			Included	
	Restoration			Included	
	Road Opening Permit			Included	
	Rock Rate			Included	
	Sand Cement Backfill of Road Crossings			Included	
7	**ELECTRICAL RETICULATION**				
	EXCAVATION				
	Supply & Install substation culvert	1	Each	15,000.00	15,000
	Excavate trench for ducts - 125mm	213	m	112.00	23,856
	Excavate trench for ducts - 50mm	196	m	75.00	14,700
	HV Trenching	250	m	250.00	62,500
	LV Trenching	248	m	200.00	49,600
	SUPPLY & INSTALL				
	Install Mechanical Protection & Tape	1	Sum	3,000.00	3,000
	HV Cable (direct buried or in duct) - 240AL 4C	243	m	155.00	37,665
	LV Cable (direct buried or in duct) - 240AL 4C XLPE	317	m	200.00	63,400
	LV Pillar	3	Each	3,500.00	10,500
	LV Switch Pillar	1	Each	3,500.00	3,500
	Street Lighting:				
	Columns	8	each	3,500.00	28,000
	Lamps	8	each	1,000.00	8,000
	Cables	196	m	40.00	7,840
	SUBSTATION				
	315kVA	1	each	100,000.00	100,000
	Substation earthing	1	each	20,000.00	20,000
	11 kV Relocation South				
	Excavate trench for ducts - 125mm	50	m	155.00	7,750
	HV trenching	25	m	200.00	5,000
	HV Supply & Install:				
	HV Cable (direct buried or in duct) - 240AL	614	m	155.00	95,170
	HV Cable (direct buried or in duct) - 240Cu		m		
	HV STJ Joints	2	each	5,000.00	10,000
	Removal of poles	7	each	500.00	3,500
	Removal of conductor	308	m	100.00	30,800
8	**NBN CONDUIT & PIT NETWORK**				
	Supply & install 100mm PN12 road crossing	446	m	225.00	100,350
	Supply & install 50mm PN12 road crossing for local lateral duct	50	m	156.00	7,800
	Excavate for , supply, bed & install boundary / local network pit. 700 x 450 x 650 deep	9	each	1,000.00	9,000
	Optic fibre cabling	610	m	75.00	45,750
	Distribution turrets	9	each	2,400.00	21,600
9	**GAS**				
	Trenching	610	m	40.00	24,400
	Supply and install safety/warning marker tape	610	m	5.00	3,050
	Supply and install reticulation conduits for gas supply (50mm	610	m	50.00	30,500
	Branch off to the lots & cap	14	m	250.00	3,500

Project: North Penrith Defence Land
Stage 3A

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	DESCRIPTION	QTY	UNIT	RATE	AMOUNT
10	**SUBTOTAL CONSTRUCTION WORKS**				4,532,741
14	Consultant Costs			15%	679,911
15	Fees			1%	45,327
16	Contingency			15%	788,697
	TOTAL				**6,046,676**