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3001116.1 / 30012599.002

29 March 2019

Savills Australia
Stephanie Ballango
Level 25, Governor Phillip Tower 1
Farrer Place, Sydney NSW 2000

Dear Stephanie,

RE: Review of Water and Wastewater Servicing Strategies for the North Tuncurry Development Project

SMEC Australia Pty Ltd (SMEC) was commissioned by UrbanGrowth NSW, now Landcom, to develop the Water and Wastewater Servicing Strategies for a proposed new development at North Tuncurry known as the North Tuncurry Development Project (NTDP). Reports documenting the results of these investigations, which were finalised in 2014, are appended to this letter. Since 2014 several changes have occurred, including:

- The development Master Plan has been updated (copy attached);
- UrbanGrowth NSW, is now known as Landcom; and
- MidCoast Water (MCW), is now MidCoast Water Services (MCWS) part of MidCoast Council.

The purpose of this letter is to outline the status of the 2014 Water and Wastewater Servicing Strategies and to confirm their overall suitability to support development approval for the proposed development.

Water Servicing Strategy

A review of the key design considerations for the Water Servicing Strategy is summarised in the table below.

ITEM	CURRENT STATUS OF REPORT	CONCLUSION
Development Density	The expected Equivalent Tenement (ET) load for the development is marginally higher than documented in the 2014 report due to the change in the masterplan.	The increase is marginal and does not affect the overall servicing strategy or serviceability of the proposed development.
Water Demands	The demands applied in the 2014 report were in accordance with the MCW Design Manual, which was applicable at the time. Written advice from MCWS has confirmed that these guidelines are still current (see attached letter from MCWS).	No change to the serviceability.

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ITEM	CURRENT STATUS OF REPORT	CONCLUSION
Water Servicing - Trunk	It is proposed that the NTDP will be serviced as part of the Manning Water supply system, connecting to a DN600 DICL water main located on Lakes Way.	Given the marginal change in development density this connection is still considered suitable.
Water Servicing - Internal	The preliminary layout and sizing of the internal water mains are based on the previous masterplan.	Updates to the masterplan will affect the internal layout. However, this will not affect the serviceability of the development.

Wastewater Servicing Strategy

A review of the key design considerations for the Wasterwater Servicing Strategy is summarised in the table below.

ITEM	CURRENT STATUS OF REPORT	CONCLUSION
Development Density	The expected ET load for the development is marginally higher than documented in the 2014 report due to the change in the masterplan.	The increase is marginal and does not affect the overall servicing strategy or serviceability of the proposed development.
Sewer Loadings	The loadings applied in the 2014 report were in accordance with the MCW Design Manual, which was applicable at the time. Written advice from MCWS has confirmed that these guidelines are still current (see attached letter from MCWS).	No change to the serviceability.
Wastewater Servicing Strategy – Reticulation System	Two servicing options were considered for NTDP in the 2014 report; Gravity Sewerage System and Vacuum Sewerage System. This is still consistent with MCWS's expectation for the development, as outlined in the Hallidays Point Sewerage Scheme – Servicing Strategy (2016). A gravity reticulation sewerage system is preferable for the NTDP. The preliminary layout of the internal systems are based on the previous masterplan.	The assessment of these systems is still valid, with minimal changes due to the marginal change in load. Updates to the masterplan will also have a minimal effect on the internal layout. Overall these changes will not affect the serviceability of the development.

ITEM	CURRENT STATUS OF REPORT	CONCLUSION
Wastewater Servicing Strategy – Trunk Main	The NTDP is included in the catchment for the Hallidays Point Wastewater Treatment Plant (WWTP), with several options considered for transferring flows to the WWTP. These options are consistent with MCWS's expectation for the development, as outlined in the Hallidays Point Sewerage Scheme – Servicing Strategy (2016).	Given the marginal change in development loads this strategy is still considered suitable.
Servicing the Initial Stages of the Development	The initial stages of the development will be serviced via the Tuncurry No. 22 WWPS. This is consistent with the Hallidays Point Sewerage Scheme – Servicing Strategy (2016).	Changes to the masterplan may affect how many stages can be serviced via this WWPS. However, this will not affect the overall serviceability of the development.

Summary

In summary, while the 2014 Water and Wastewater Servicing Strategies will need to be updated as the development design is progressed, they are considered suitable for planning purposes and to support any necessary approvals.

Yours sincerely,

Marlène van der Sterren

Team Leader – Water Resources

ATTACH

- Attachment 1: North Tuncurry Masterplan
- Water Servicing Study, 30011196 Water Servicing Strategy_rev D, dated 17 October 2014
- Wastewater Servicing Study, 30011196 - Wastewater Servicing Study - 2014-Rev 1_final, dated 30 October 2014.
- MidCoast Water Letter – Water and Sewerage Development Standards, dated 18 February 2019

Attachment 1: North Tuncurry Masterplan

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File: 30011196 Water Servicing Strategy_rev D
Our ref:
Your ref:

17 October 2014

UrbanGrowth NSW
PO Box 718
Forster NSW 2428

Attention: Michael Pring

Dear Michael,

RE: North Tuncurry Development Project Water Servicing Study

1 INTRODUCTION

UrbanGrowth NSW has commissioned SMEC Australia Pty Ltd (SMEC) to undertake water servicing investigations for a new development in North Tuncurry.

The North Tuncurry Development Project (NTDP) involves the re-zoning and subdivision of a 615 ha site north of Tuncurry on the mid north coast of New South Wales (the Site). Refer locality plan on **Figure 1**.

It is the intention of UrbanGrowth NSW to develop the site in stages for a mix of land uses, including residential dwellings, employment land, retail and open space.

This study has been prepared to define the water servicing strategy for the new development and includes investigation of the following elements:

- Development description, refer **Section** 2.
- Study area (the natural catchment boundaries, topography, environmental conservation constraints etc.), refer **Section 3**.
- Planning context (references to Local Environmental Plan, development consent), refer **Section 4**.
- Preliminary water demand estimation, refer **Section 5**.
- Details of connection to the existing water supply system, refer **Section 6**.
- Preliminary water reticulation design, refer **Section 7**.
- Preliminary cost estimates, refer **Section 8**.
- Conclusion, refer **Section** 9.

2 DEVELOPMENT DESCRIPTION

UrbanGrowth NSW are proposing to deliver a mixed use development on the Site that meet's the NSW State Government's objectives to increase housing supply, provide community benefits and create jobs[1].

The NTDP specifically incorporates the following components[1]:

- the type and location of land uses within the site;
- dwelling yield / density (approximately 2,123 dwellings);
- proposed location of retail / commercial / community floor space within the site;
- identification and location of open space and drainage, environmental conservation lands, and local active and passive recreation facilities;
- transport network layout;
- utilities (including power, telecommunications and gas), infrastructure strategy, potable water strategy, sewer concept plan and water cycle management plan;
- location and dimensions of Bushfire Asset Protection Zones;
- appropriate conservation of European and Aboriginal heritage located on the site.

It is estimated that the site will be developed over thirty years. The stages of the residential development will proceed from the south to the north-west, then to the north and to the south-east. Stages E1 and E2 are employment land stages which will only be developed as demand emerges. The proposed Master Plan is shown on **Figure 2**.

[1] JBA –urban development services, (2014), "North Tuncurry Development Project Assessment Report"

3 STUDY AREA

The study area covers the 615 ha development site located north of Tuncurry on the mid north coast of New South Wales, refer **Figure 1**.

The study area is relatively flat and located within a rural landscape with a moderately dense coverage of small trees and costal scrub.

The site is bounded by:

- The Lakes Way road to the west;
- undeveloped bushland and the low density residential zone to the south;
- undeveloped bushland and Nature Reserve to the north; and
- Nine Mile Beach to the east.

The proposed finished surface level of the final development is at approximately RL 4 - 6m AHD.

Under developed conditions, typical groundwater levels are expected to range between 1.4 to 2.5m AHD, with the 100 year ARI groundwater level being approximately 4 to 5m AHD across the site. Note that the ground water level will vary across the site. The design philosophy adopted in this early stage of the project is to minimise the potential effects of groundwater levels (up to and including the 100 year ARI event) on the proposed development.

4 PLANNING CONTEXT

The proposed works are located within the Great Lakes Local Government Area (LGA).

The relevant environmental planning instrument is the Great Lakes Local Environmental Plan, 2014.

According to this plan, construction of public water infrastructure does not require local government consent. However, consultation with the local government is to be undertaken during the concept design stage.

5 WATER DEMANDS

The water servicing study is based on the NTDP Master Plan developed by UrbanGrowth NSW shown on **Figure 2**.

Table 5-1 provides a breakdown of proposed ultimate equivalent tenements (ETs). There is a small component of employment land loading, but the loadings are dominated by the residential dwellings. A nominal allocation has been made for the employment lots based on consultation with UrbanGrowth and on previous experience on similar projects.

Table 5-1 – Equivalent Tenements

	Equivalent Tenements (ET)
Residential Lots	**2,123**
Non-Residential Lots: **(comprising Employment Area E1 and Employment Area E2 North of Stage T)**	**90 (E1) + 90 (E2) = 180**
TOTAL	**2,303 ET**

Table 5-2 summarises water demands calculated in accordance with the MidCoast Water (MCW) Design Manual for the development site.

Table 5-2 – Conventional water design flows

Equivalent Tenements ET	Peak Day Demand PDD (L/s)	Peak Instantaneous Demand PID (L/s) - Trunk Mains	Peak Instantaneous Demand PID (L/s) - Reticulation Mains
2303	74.6	230	276

Peak Instantaneous Demand	PID (L/s) =	0.10 (L/s/ET) x 2303 ET = 230 L/s (Trunk Mains)
	PID (L/s) =	0.12 (L/s/ET) x 2303 ET = 276 L/s (Reticulation Mains)
Peak Day Demand	PDD (L/s) =	2800 (L/day/ET) x 2303 ET = 6.448 x 10^6 L/day = 74.6 L/s

6 WATER SERVICING - TRUNK

The NTDP will be serviced as part of the Manning Water supply system.

The NTDP will be serviced from a 4.5ML reservoir north of Tuncurry at Rainbow Flat. The Reservoir has a two-thirds Top Water Level (TWL) of 74.7 metres AHD. Assuming friction losses of 3m/km in trunk mains, this leaves a residual pressure at the site of approximately 30 metres, which is compliant with the MCW Design Manual (MCW Design Manual requires a desirable minimum pressure head of 20 metres for domestic applications which is achievable with the above residual pressure at the site boundary).

MCW has previously indicated that the DN600 DICL water main located along the Lakes Way has sufficient capacity to supply the NTDP.

At this stage SMEC understands that staging of the development will proceed from the south to the north. Therefore, the water connection would logically be constructed near the southern portion of the development. The proposed water main would then most likely run from the existing water main located on the eastern side of Manning Street across the road and along Northern Parkway.

If required, a second connection could be constructed to increase the security of supply at a later stage of the development. This main would most likely connect the northern portion of the development site to the existing DN600 water main running along the Lakes Way.

The proposed water connections are shown on **Figure 3**.

For the purpose of this study a preliminary sizing has been undertaken, refer **Table 6-1**.

Table 6-1 – Water Main Connection

ET	Preliminary Pipe Size	Approximate Pipe Length
Connection 1	DN450	400 m
Connection 2	DN450	450 m

7 WATER SERVICING - INTERNAL

For the purpose of this study a preliminary sizing of water mains has been undertaken and is included in **Appendix B**. The preliminary design of the reticulation water system consists of DN100-DN300 main and is shown on **Figure 3**.

Water mains will be sized more accurately during the concept design stage of the development.

8 PRELIMINARY COST ESTIMATES

A preliminary capital cost estimate is included in **Appendix A** and summarised in **Table 8-1**.

Table 8-1 – Preliminary Cost Estimate

Project Size	Preliminary Capital Cost	Cost / ET
2303 ET	$5.9 M	$2.6 K

Note:

The cost estimates within this study are based on the Hunter Water Cost Estimating Manual. Use of a common estimating framework allows for cost estimates to be compared between options, but cost estimates cannot be guaranteed as SMEC has no control over contractor's prices, market forces and competitive bids from tenderers. The cost estimates may exclude items which should be considered in a cost plan. Cost estimates are not to be relied upon in any way. If reliable cost estimates are required, then an appropriately qualified Quantity Surveyor should be engaged.

9 CONCLUSION

The North Tuncurry Development Project is to be serviced as part of the Manning Water supply system. The NTDP will be serviced from a 4.5ML reservoir north of Tuncurry at Rainbow Flat.

MidCoast Waster has indicated that the DN600 DICL water main located along The Lakes Way has a capacity to supply the NTDP.

Two DN450 connections to the existing water main have been proposed. Initial stages of the development would be supplied from the connection constructed near the southern portion of the development site.

A second connection could be constructed to increase the security of supply at a later stage of the development. This main would connect the northern portion of the development site to the existing DN600 water main running along The Lakes Way.

Based on a preliminary assessment, the water reticulation system would consist of DN150 to DN300 mains.

A preliminary capital cost estimate of $5.9M ($2.6K per ET) utilising the Hunter Water Cost Estimating Manual has been developed.

10 REFERENCES

- Water Supply Code of Australia (WSA03) – MidCoast Water Edition, Version 2.2
- Hunter Water Pipeline and Pumping Station Estimating Guideline, Hunter Water Corporation, version 2.03
- North Tuncurry Development Project Assessment Report, JBA – urban development services, 2014

We trust the enclosed information enables an informed decision regarding preparation of the concept design.

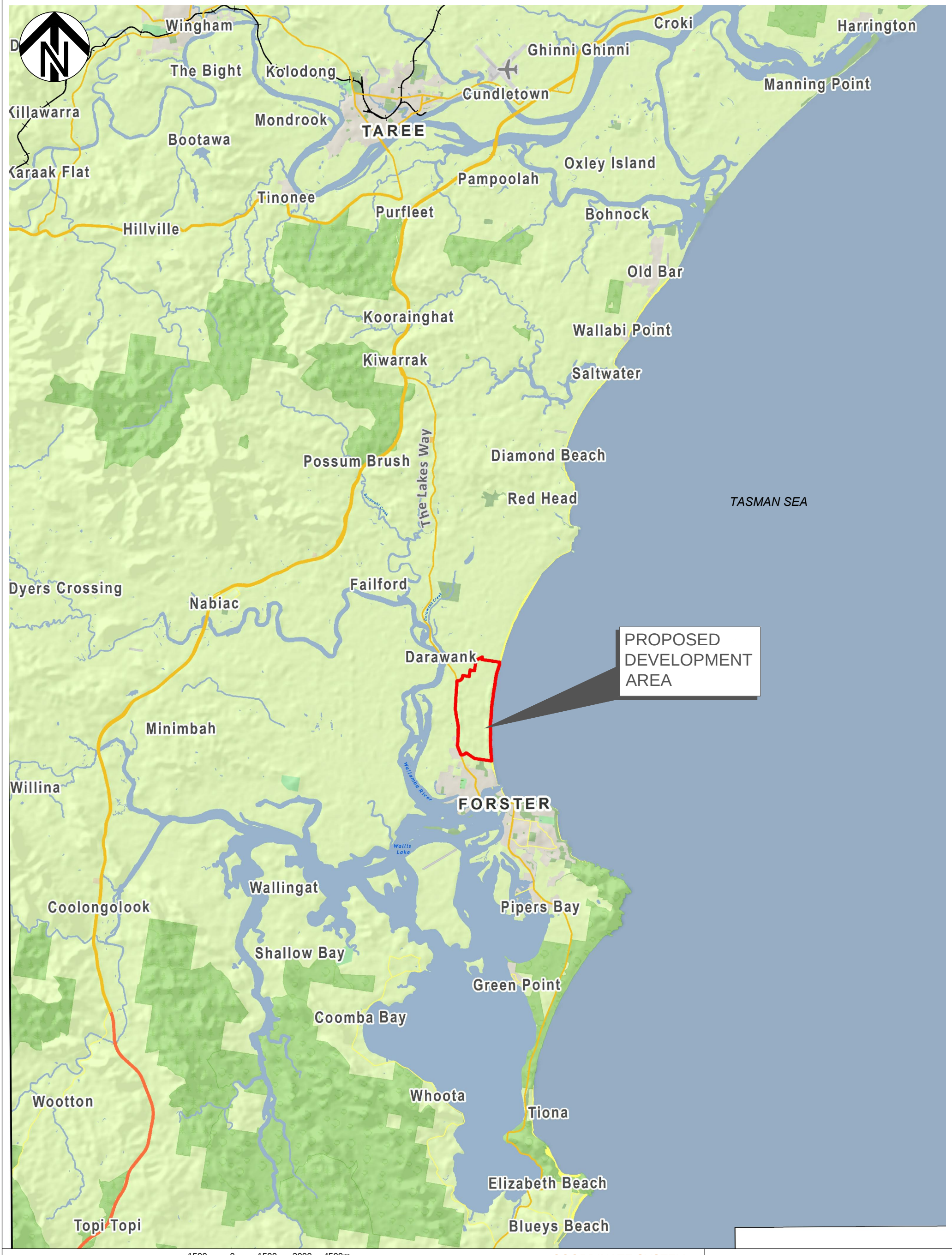
Please do not hesitate to contact the undersigned with any further questions.

Yours sincerely,

Marketa McCarty

Senior Water Infrastructure Engineer

FIGURES



DATE 10/04/14		PAGE SIZE A3	COORDINATE SYSTEM MGA
PROJECT NO. 30011196	PROJECT TITLE	NORTH TUNCURRY DEVELOPMENT - WATER	
FIG NO. 1	FIGURE TITLE	LOCALITY PLAN	
CREATED BY S.DRUERY	SOURCES	-	

SMEC AUSTRALIA PTY LTD
ABN 47 065 475 149

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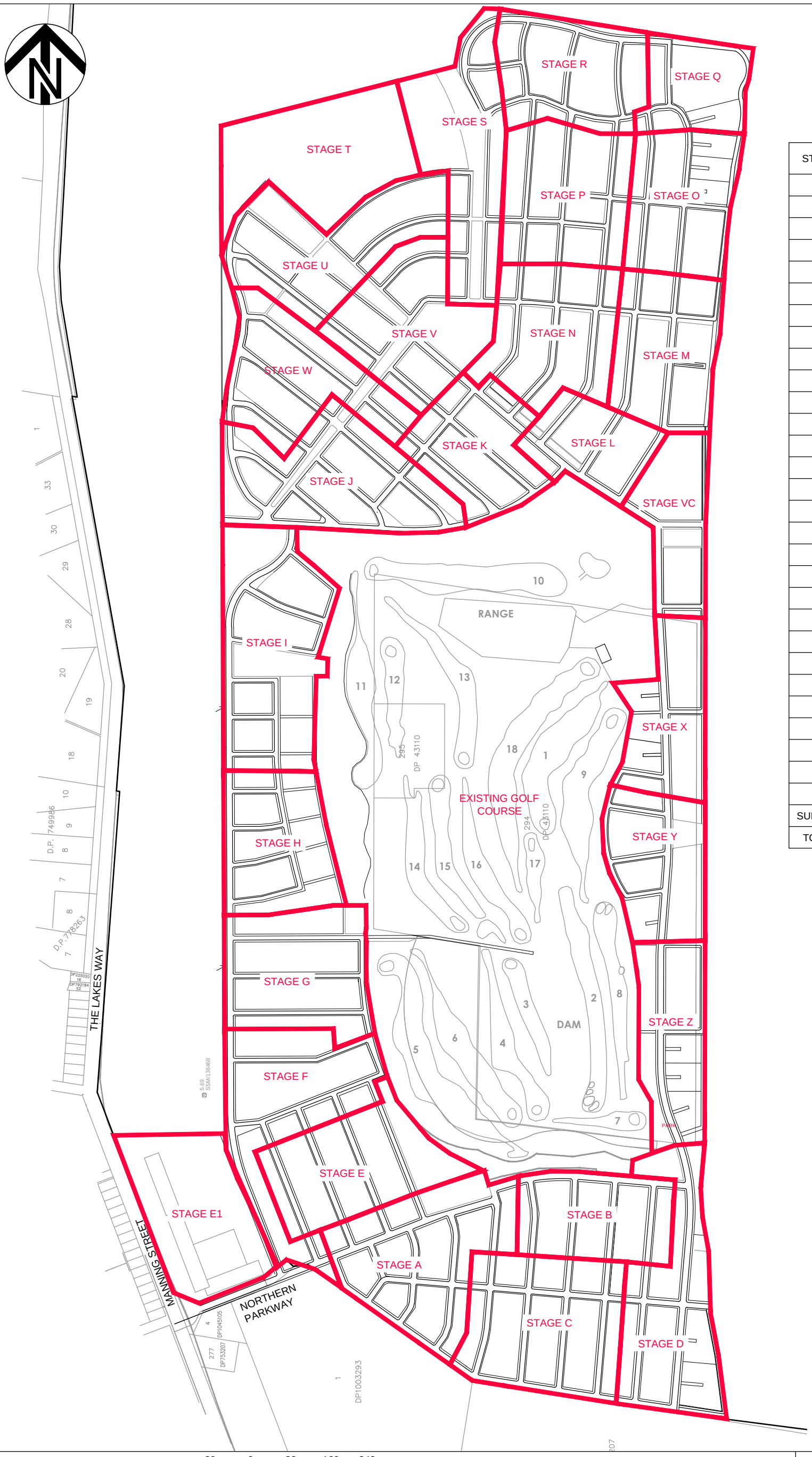

STAGE	LOTS ET	UNITS ET	EMPLOYMENT ET
A	85		
B	76		
C	82		
D	67	58	
E	76		
F	91		
G	75		
H	74		
I	74		
J	75		
K	64		
L	76		
VC	55	98	
M	73		
N	82		
O	63		
P	69		
Q	42		
R	70		
S	76		
T	80		
U	75		
V	72		
W	78		
X	65	44	
Y	66		
Z	42		
E1			90
E2			90
SUB-TOT	1923	200	180
TOTAL	2303		

80 0 80 160 240m

SCALE 1:8000

DATE 10/04/14

PAGE SIZE A3

COORDINATE SYSTEM MGA

PROJECT NO. 30011196

PROJECT TITLE NORTH TUNCURRY DEVELOPMENT - WATER

FIG NO. 2

FIGURE TITLE STAGING PLAN

CREATED BY S.DRUERY

SOURCES -

SMEC AUSTRALIA PTY LTD

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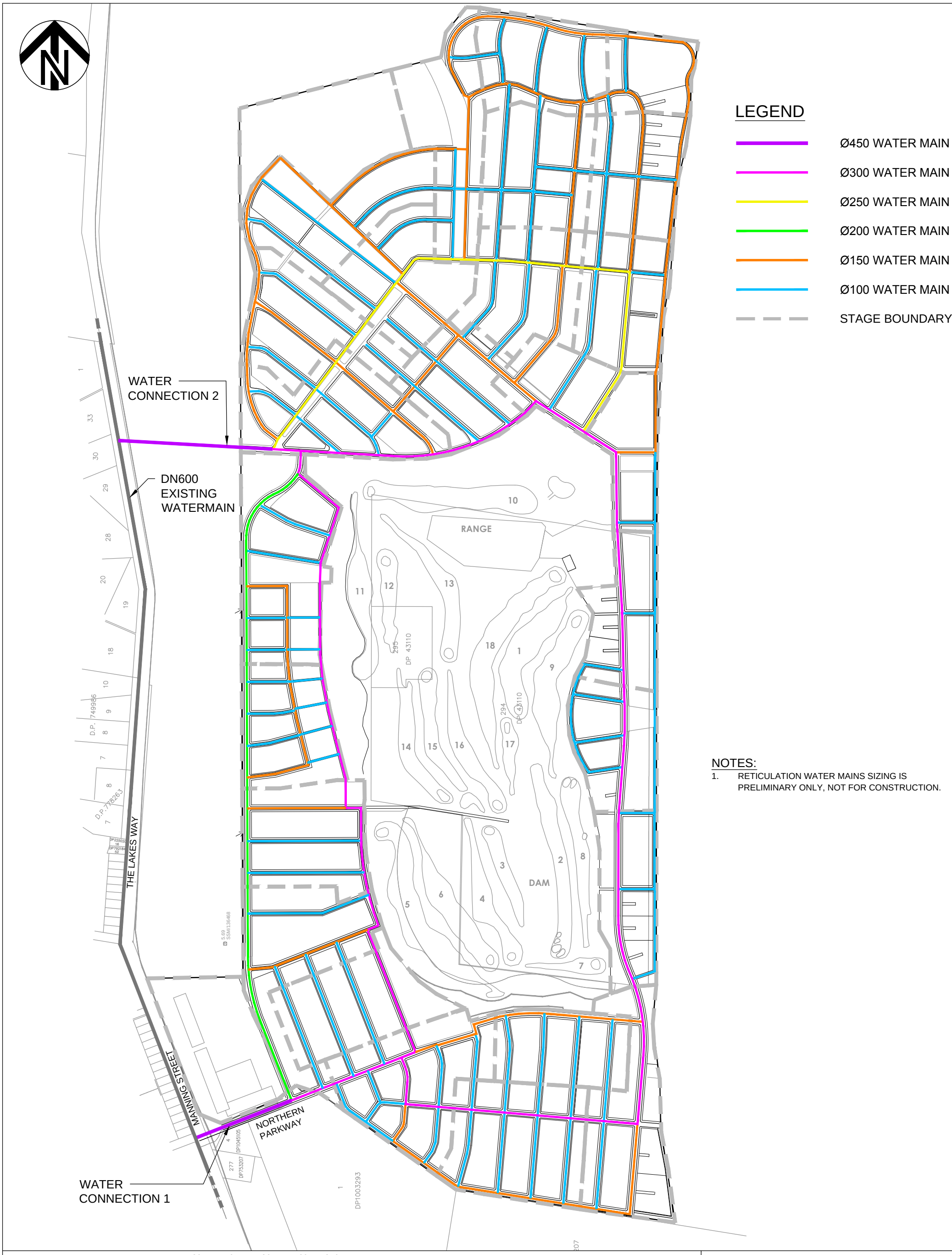

NOTES:

1. RETICULATION WATER MAINS SIZING IS PRELIMINARY ONLY, NOT FOR CONSTRUCTION.

DATE 10/04/14		PAGE SIZE A3	COORDINATE SYSTEM MGA
PROJECT NO. 30011196	PROJECT TITLE	NORTH TUNCURRY DEVELOPMENT - WATER	
FIG NO. 3	FIGURE TITLE	PRELIMINARY RETICULATION WATER SYSTEM PLAN	
CREATED BY S.DRUERY	SOURCES -		

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APPENDIX A – COST ESTIMATES

PROJECT DESCRIPTION: North Tuncurry Development Project - Water System - all stages

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $	Application of Schedule of Rates
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 70,774.00	$ 70,774.00	**Payment: Maximum of 10% shall be due each month until 70% of the amount has been paid. Remainder at Practical Completion.**
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 30,000.00	$ 30,000.00	**Payment: 100% after completion.**
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 30,000.00	$ 30,000.00	**Payment: 100% after completion.**
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 24,000.00	$ 24,000.00	**Payment: Maximum of 30% on submission of complying Construction EMP, then 10% per month up to maximum of 80%. Remainder at Practical Completion.** **Submit: Construction EMP.**
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 54,000.00	$ 54,000.00	**Payment: Maximum of 30% on submission of complying plan, then 10% per month up to maximum of 80%. Remainder at Practical Completion.** **Submit: Safety Management Plan.**
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 12,000.00	$ 12,000.00	**Payment: Maximum of 30% on submission of complying Traffic Control Plan, then 10% per month up to maximum of 80%. Remainder at Practical Completion.**
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 36,186.88	$ 36,186.88	**Payment: Maximum of 30% on submission of complying Quality Management Plan, then 10% per month up to maximum of 80%. Remainder at Practical Completion.**
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -	**Payment: 10% per month up to maximum of 70%. Remainder at Practical Completion.**

Water Pipeline - Reticulation - section will be present if one or more reticulation watermains are specified

Item	Construction of Reticulation Watermains	Qty	Unit	Rate $/Unit	Amount $	Application of Schedule of Rates
HWW001	Service Location	Item	Lump Sum	$ 13,080.65	$ 13,080.65	**Payment: Maximum of 10% shall be due each month until 70% of the amount has been paid. Remainder at Practical Completion.**
HWW002	Supply all valves and flowmeters	Item	Lump Sum		$ -	Payment: Percentage of valves and flowmeters supplied. Submit: Relevant Quality Records including Compliance Certificates.
HWW003	Supply all fittings	Item	Lump Sum		$ -	**Payment: Percentage of fittings supplied.** **Submit: Relevant Quality Records including Compliance Certificates.**
HWW004	Supply all pipes materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:					Measurement: Actual metres (effective length) of pipe delivered to site. Submit: Relevant Quality Records including Compliance Certificates. Note: Limits of Accuracy to be inserted for each pipe size.
20AVSS	Nominal DN100 PVC pipe	13556	m	$ 14.00	$ 189,784.00	
20FVSS	Nominal DN150 PVC pipe	8842	m	$ 28.00	$ 247,576.00	
214VSS	Nominal DN200 PVC pipe	1747	m	$ 49.00	$ 85,603.00	
21EVSS	Nominal DN300 PVC pipe	4306	m	$ 90.00	$ 387,540.00	
22DESS	Nominal DN450 PE pipe	800	m	$ 275.00	$ 220,000.00	
219VSS	Nominal DN250 PVC pipe	1360	m	$ 63.00	$ 85,680.00	
HWW005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.					Measurement: Actual metres of pipe installed to design depth of excavation up to and including 1.5m. Retention: 10% <or other appropriate percentage> until satisfactory testing. Submit: Relevant Quality Records including as constructed lengths, levels and coordinates. Limits of Accuracy: <To be inserted>.
20AVSS	Nominal DN100 PVC (Trench type B)	13556	m	$ 48.40	$ 656,110.40	
20FVSS	Nominal DN150 PVC (Trench type B)	8842	m	$ 56.40	$ 498,688.80	
214VSS	Nominal DN200 PVC (Trench type B)	1747	m	$ 63.40	$ 110,759.80	
21EVSS	Nominal DN300 PVC (Trench type B)	4306	m	$ 81.25	$ 349,862.50	
22DESS	Nominal DN450 PE (Trench type B)	800	m	$ 289.25	$ 231,400.00	
219VSS	Nominal DN250 PVC (Trench type B)	1360	m	$ 71.40	$ 97,104.00	
HWW006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m to invert in OTR.					Measurement: Actual metres of pipe installed to design depth of excavation > 1.5m to and including 3.0m. Retention: 10% <or other appropriate percentage> until satisfactory testing. Submit: Relevant Quality Records including as constructed lengths, levels and coordinates. Limits of Accuracy: <To be inserted>.
HWW007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m to invert in OTR.					Measurement: Actual metres of pipe installed to design depth of excavation > 3.0m to and including 4.5m. Retention: 10% <or other appropriate percentage> until satisfactory testing. Submit: Relevant Quality Records including as constructed lengths, levels and coordinates. Limits of Accuracy: <To be inserted>.
HWW008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth > 4.5m to invert in OTR.					Measurement: Actual metres of pipe installed to design depth of excavation > 4.5m. Retention: 10% <or other appropriate percentage> until satisfactory testing. Submit: Relevant Quality Records including as constructed lengths, levels and coordinates. Limits of Accuracy: <To be inserted>.
HWW009	Supply additional service connection pipe and fittings and install	Item	Lump Sum		$ -	**Payment: Percentage of work completed.** **Submit: Relevant Quality Records.**
HWW010	Extra over rate for installation for Additional compaction		m3	$ 15.05		Measurement: Cubic metres of additional compaction based on thickness by length by Minimum Trench Width. Submit: Relevant Quality Records. Limits of Accuracy: <To be inserted>.
HWW011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 61.95		Measurement: Cubic metres of excavation directed based on thickness by length by Minimum Trench Width. Submit: Relevant Quality Records. Limits of Accuracy: <To be inserted>.
HWW012	Extra over rate for installation to Supply & place & compact non cohesive material		m3			Measurement: Cubic metres of non cohesive material based on thickness by length by Minimum Trench Width. Submit: Relevant Quality Records. Limits of Accuracy: <To be inserted>.
HWW013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 265.50		Measurement: Cubic metres of stabilised sand cement based on thickness by length by Minimum Trench Width. Submit: Relevant Quality Records. Limits of Accuracy: <To be inserted>.

HWW014	Extra over rate for installation for supply, place and compact aggregate		m3			Measurement: Cubic metres of aggregate based on thickness by length by Minimum Trench Width. Submit: Relevant Quality Records. Limits of Accuracy: <To be inserted>.
HWW015	Supply & place ballast			$ 90.00		Measurement: Actual tonnes placed as directed. Submit: Relevant Quality Records including certified weighbridge dockets. Limits of Accuracy: <To be inserted>.
HWW016	External Dewatering of trench including establishment and disestablishment (Contingent Item)		m			**Measurement: Length of pipeline for which external dewatering is agreed with the Superintendent and provided, measured along the axis of the pipeline between the first and last spear point. Submit: Relevant Quality Records. Limits of Accuracy: <To be inserted>.**
HWW017	Supply and place treated timber piling for pipe support		m			**Measurement: Actual metres from pipe invert to toe of pile. Submit: Relevant Quality Records. Limits of Accuracy: <To be inserted>.**
HWW018	Road / creek crossings					**Measurement: Length in metres of casing installed. Submit: Relevant Quality Records. Limits of Accuracy: <To be inserted>.**
HWW019	Extra over rate for installation of trenchless technique under existing rail line		m			**Measurement: Length in metres of casing installed. Submit: Relevant Quality Records. Limits of Accuracy: <To be inserted>.**
HWW020	Supply & installation of river crossing includes supply of MSCL pipe, welding, weld testing, 150mm concrete encasement, mobilisation & demobilisation of dredge, excavation, disposal of excavated material, backfilling, lay, bed & test:					**Measurement: Length in metres of casing installed. Retention: 10% <or other appropriate percentage> until satisfactory testing. Note: Consider other milestone retentions. Submit: Relevant Quality Records. Limits of Accuracy: <To be inserted>.**
HWW021	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:					**Measurement: Length in metres of crossing installed in accordance with design. Retention: 10% <or other appropriate percentage> until satisfactory testing. Note: Consider other milestone retentions. Submit: Relevant Quality Records. Limits of Accuracy: <To be inserted>.**
HWW022	Bulkheads and Trenchstops in accordance with WSAA drawing WAT-1209		Each			**Payment: Number of bulkheads & trenchstops constructed. Submit: Relevant Quality Records. Limits of Accuracy: <To be inserted>.**
HWW023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -	**Payment: Number of valve pits constructed. Retention: <To be determined>. Submit: Relevant Quality Records. Limits of Accuracy: <To be inserted>.**
HWW024	Flow Relief Structures		Each			Payment: Number of flow relief structures constructed. Retention: <To be determined>. Submit: Relevant Quality Records. Limits of Accuracy: <To be inserted>.
HWW025	EMPTY					
HWW026	Supply and install structure to house flowmeter (excluding cost of flowmeter).		Each			Payment: Number of structures constructed. Retention: <To be determined>. Submit: Relevant Quality Records. Limits of Accuracy: <To be inserted>.
HWW027	Preparation of line sheets	30611	m	$ 1.00	$ 30,611.00	**Measurement: Length of pipelines constructed as per design. Limits of Accuracy: <To be inserted>.**
HWW028	Acceptance testing - reticulation main		m			Measurement: Length of pipelines constructed as per design. Submit: Staisfactory test records Limits of Accuracy: <To be inserted>.
HWW029	**Miscellaneous**					
HWW000	***Sub Total***				$3,203,800	

Item No.	Item Description	Qty	Unit		Amount $	Application of Schedule of Rates
HW0009	Restoration - Pipelines:					**Payment: 100% after completion.**
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -	**Measurement: Lineal metres restored within Minimum Trench Width. Limits of Accuracy: <To be inserted>.**
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -	**Measurement: Square metres restored based on actual length by Minimum Trench Width. Limits of Accuracy: <To be inserted>**
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -	**Measurement: Square metres restored based on actual length by Minimum Trench Width. Limits of Accuracy: <To be inserted>**
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -	**Measurement: Square metres restored based on actual length by Minimum Trench Width. Limits of Accuracy: <To be inserted>**
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -	**Measurement: Square metres restored based on actual length by Minimum Trench Width. Limits of Accuracy: <To be inserted>**
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -	**Measurement: Square metres restored based on actual length by Minimum Trench Width. Limits of Accuracy: <To be inserted>**
HW0009.07	Bitumen pavement		m2			**Measurement: Square metres restored based on actual length by Minimum Trench Width. Limits of Accuracy: <To be inserted>**
HW0009.08	AC pavement		m2			**Measurement: Square metres restored based on actual length by Minimum Trench Width. Limits of Accuracy: <To be inserted>**
HW0009.09	Pavers		m2			**Measurement: Square metres restored based on actual length by Minimum Trench Width. Limits of Accuracy: <To be inserted>**
HW0009.10	Turf		m2			**Measurement: Square metres restored based on actual length by Minimum Trench Width. Limits of Accuracy: <To be inserted>**
HW0009.11	Grass seeding		m2			**Measurement: Square metres restored based on actual length by Minimum Trench Width. Limits of Accuracy: <To be inserted>**
HW0009.12	Hydromulch		m2			**Measurement: Square metres restored based on actual length by Minimum Trench Width. Limits of Accuracy: <To be inserted>**
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3			**Measurement: Cubic metres excavated based on thickness of rock by actual length by Minimum Trench Width. Limits of Accuracy: <To be inserted>.**
HW0011	Acid sulphate soil					

HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test			**Submit: Result for each test.** **Limits of Accuracy: <To be inserted>.**
HW0011.02	Establish treatment facility		Item			**Payment: 100% after completion of treatment facility.**
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3			**Measurement: Cubic metres excavated based on thickness of ASS by actual length by Minimum Trench Width.** **Submit: Test results confirming satisfactory treatment.** **Limits of Accuracy: <To be inserted>**
HW0011.04	Disposal off site of acid sulphate soil		tonne			**Measurement: Tonnes transported from the site.** **Submit: Weighbridge dockets.** **Limits of Accuracy: <To be inserted>**
HW0012	Preconstruction record					
HW0012.01	Photographic	Item	Lump Sum		$ -	**Payment: 70% on submission of the Photographic record. Remainder at Practical Completion.**
HW0012.02	Video	Item	Lump Sum		$ -	**Payment: 70% on submission of the Video record. Remainder at Practical Completion.**
HW0012.03	CCTV	Item	Lump Sum		$ -	**Payment: 70% on submission of the CCTV record. Remainder at Practical Completion.**
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 244,888.00	$ 244,888.00	**Payment: 100% at Practical Completion.**

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	$ 3,705,649.03

B.	**PRE-CONSTRUCTION COST (Table 10)**	
HW0016	Design	$ 444,677.88
HW0017	Project Management of Design	$ 98,935.58
HW0018	Land Matters	$ -
HW0024	Community Consultation	
	Sub Total(B1)	$ 543,613.46
	Pre construction contingency (30% of B1)	$ 163,084.04
	TOTAL PRE-CONSTRUCTION COST (B)	$ 706,697.50

C.	**CONSTRUCTION COST**		
	Total Estimated Contract Award Sum (A)		$ 3,705,649.03
HW0019	Principal Supplied Pipe (as applicable)		$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)		$ -
HW0021	Principal Supplied Fittings (as applicable)		$ -
HW0022	Pump Station HV Power Supply		$ -
HW0023	Construction Management (Table 11)		$ 296,451.92
	Sub Total (C1)		$ 4,002,100.95
	Construction contingency (Table 12) (30% of C1)	Preliminary Estimate	$ 1,200,630.29
	TOTAL CONSTRUCTION COST (C)		$ 5,202,731.24

	TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	$ 5,909,428.74

APPENDIX B – PRELIMINARY DESIGN CALCULATIONS

North Tuncurry Development Project

PRELIMINARY WATER MAIN SIZING

Temperature(°C) 15

Kinematic Viscosity (m^2/s) 1.14E-06

WATER CONNECTION TO THE SITE

Stage	Number of Lots	Preliminary sizing based on Table 3.1 of the Desig Manual	PID (m3/s)	Length of Pipe (m)	Pipe Size (DN)	Pipe Material	Pipe Size ID (mm)	Roughness (mm)	Velocity (m/s)	Max Velocity (m/s)	Velocity Head (m)	Reynold's Number	Friction Factor	Friction Slope (m/km)	Max Head Loss in Manual (m/km)		PDD (L/s)	Velocity (m/s)	Min Velocity in Manual (m/s)
	2303		0.27636	1000.00	300	DICL	322	0.500	3.39	2	0.59	958510	0.0222	40.6	3		75	0.9	0.5
	2303		0.27636	1000.00	375		401	0.500	2.19	2	0.24	769677	0.0212	12.9	3		75	0.6	0.5
	2303		0.27636	1000.00	**450**		480	0.500	1.53	2	0.12	643001	0.0204	5.1	3		75	0.4	0.5
	1065		0.1278	1000.00	300	DICL	322	0.500	1.57	2	0.13	443254	0.0225	8.8	3		35	0.4	0.5
	1065		0.1278	1000.00	375		401	0.500	1.01	2	0.05	355929	0.0216	2.8	3		35	0.3	0.5
	1065		0.1278	1000.00	**450**		480	0.500	0.71	2	0.03	297349	0.0209	1.1	3		35	0.2	0.5
	1238		0.14856	1000.00	300	DICL	322	0.500	1.82	2	0.17	515257	0.0225	11.8	3		40	0.5	0.5
	1238		0.14856	1000.00	375		401	0.500	1.18	2	0.07	413747	0.0215	3.8	3		40	0.3	0.5
	1238		0.14856	1000.00	**450**		480	0.500	0.82	2	0.03	345651	0.0208	1.5	3		40	0.2	0.5

INTERNAL DELIVERY RING

Stage	Number of Lots	Preliminary sizing based on Table 3.1 of the Desig Manual	PID (m3/s)	Length of Pipe (m)	Pipe Size (DN)	Pipe Material	Pipe Size ID (mm)	Roughness (mm)	Velocity (m/s)	Max Velocity (m/s)	Velocity Head (m)	Reynold's Number	Friction Factor	Friction Slope (m/km)	Max Head Loss in Manual (m/km)		PDD (L/s)	Velocity (m/s)	Min Velocity in Manual (m/s)
	1152	300-375	0.13818	1000.00	375	PVC-O	403.8	0.500	1.08	2	0.06	382170	0.0215	3.2	3		37	0.3	0.5
	1152		0.13818	1000.00	**300**		326.3	0.500	1.65	2	0.14	472940	0.0224	9.6	3		37	0.4	0.5
	1152		0.13818	1000.00	250		270.5	0.500	2.40	2	0.29	570500	0.0234	25.5	3		37	0.6	0.5
	576	250	0.06909	1000.00	375	PVC-O	403.8	0.500	0.54	2	0.01	191085	0.0221	0.8	3		19	0.1	0.5
	576		0.06909	1000.00	**300**		326.3	0.500	0.83	2	0.03	236470	0.0229	2.4	3		19	0.2	0.5
	576		0.06909	1000.00	250		270.5	0.500	1.20	2	0.07	285250	0.0238	6.5	3		19	0.3	0.5

Stages A-D Sub-Ring

Stage	Number of Lots	Preliminary sizing based on Table 3.1 of the Desig Manual	PID (m3/s)	Length of Pipe (m)	Pipe Size (DN)	Pipe Material	Pipe Size ID (mm)	Roughness (mm)	Velocity (m/s)	Max Velocity (m/s)	Velocity Head (m)	Reynold's Number	Friction Factor	Friction Slope (m/km)	Max Head Loss in Manual (m/km)		PDD (L/s)	Velocity (m/s)	Min Velocity in Manual (m/s)
	131	150	0.01569	1000.00	100	PVC-O	114.7	0.500	1.52	2	0.12	152770	0.0300	30.8	5		4	0.4	0.5
	131		0.01569	1000.00	**150**		167.2	0.500	0.71	2	0.03	104801	0.0276	4.3	5		4	0.2	0.5
	131		0.01569	1000.00	200		219.3	0.500	0.42	2	0.01	79903	0.0264	1.1	3		4	0.1	0.5

Stages E-I Sub-Ring

Stage	Number of Lots	Preliminary sizing based on Table 3.1 of the Desig Manual	PID (m3/s)	Length of Pipe (m)	Pipe Size (DN)	Pipe Material	Pipe Size ID (mm)	Roughness (mm)	Velocity (m/s)	Max Velocity (m/s)	Velocity Head (m)	Reynold's Number	Friction Factor	Friction Slope (m/km)	Max Head Loss in Manual (m/km)		PDD (L/s)	Velocity (m/s)	Min Velocity in Manual (m/s)
	195	200	0.0234	1000.00	100	PVC-O	114.7	0.500	2.26	2	0.26	227840	0.0298	67.9	5		6	0.6	0.5
	195		0.0234	1000.00	150		167.2	0.500	1.07	2	0.06	156299	0.0272	9.4	5		6	0.3	0.5
	195		0.0234	1000.00	**200**		219.3	0.500	0.62	2	0.02	119167	0.0258	2.3	3		6	0.2	0.5

Stages I-H Sub-Ring

Stage	Number of Lots	Preliminary sizing based on Table 3.1 of the Desig Manual	PID (m3/s)	Length of Pipe (m)	Pipe Size (DN)	Pipe Material	Pipe Size ID (mm)	Roughness (mm)	Velocity (m/s)	Max Velocity (m/s)	Velocity Head (m)	Reynold's Number	Friction Factor	Friction Slope (m/km)	Max Head Loss in Manual (m/km)		PDD (L/s)	Velocity (m/s)	Min Velocity in Manual (m/s)
	74	150	0.00888	1000.00	100	PVC-O	114.7	0.500	0.86	2	0.04	86462	0.0306	10.1	5		2	0.2	0.5
	74		0.00888	1000.00	**150**		167.2	0.500	0.40	2	0.01	59314	0.0286	1.4	5		2	0.1	0.5
	74		0.00888	1000.00	200		219.3	0.500	0.24	2	0.00	45222	0.0277	0.4	3		2	0.1	0.5

Stages J, U-W Sub-Ring

Stage	Number of Lots	Preliminary sizing based on Table 3.1 of the Desig Manual	PID (m3/s)	Length of Pipe (m)	Pipe Size (DN)	Pipe Material	Pipe Size ID (mm)	Roughness (mm)	Velocity (m/s)	Max Velocity (m/s)	Velocity Head (m)	Reynold's Number	Friction Factor	Friction Slope (m/km)	Max Head Loss in Manual (m/km)		PDD (L/s)	Velocity (m/s)	Min Velocity in Manual (m/s)
	150	150	0.018	1000.00	**150**	PVC-O	167.2	0.500	0.82	2	0.03	120230	0.0275	5.6	5		5	0.2	0.5
	150		0.018	1000.00	200		219.3	0.500	0.48	2	0.01	91667	0.0262	1.4	3		5	0.1	0.5
	150		0.018	1000.00	250		270.5	0.500	0.31	2	0.01	74316	0.0255	0.5	3		5	0.1	0.5

Stages O-W Sub-Ring

Stage	Number of Lots	Preliminary sizing based on Table 3.1 of the Desig Manual	PID (m3/s)	Length of Pipe (m)	Pipe Size (DN)	Pipe Material	Pipe Size ID (mm)	Roughness (mm)	Velocity (m/s)	Max Velocity (m/s)	Velocity Head (m)	Reynold's Number	Friction Factor	Friction Slope (m/km)	Max Head Loss in Manual (m/km)		PDD (L/s)	Velocity (m/s)	Min Velocity in Manual (m/s)
	625	250-300	0.075	1000.00	200	PVC-O	219.3	0.500	1.99	2	0.20	381944	0.0248	22.8	3		20	0.5	0.5
	625		0.075	1000.00	**250**		270.5	0.500	1.31	2	0.09	309650	0.0237	7.6	3		20	0.4	0.5
	625		0.075	1000.00	300		326.3	0.500	0.90	2	0.04	256698	0.0228	2.9	3		20	0.2	0.5

North Tuncurry Development Project

PRELIMINARY PRESSURE CALCULATIONS - Peak Day Demand Flow

U/S Head m		ET	Design Flow PDD L/s	Pipe Data Pipe DN	Pipe ID mm	Pipe Roughness mm	Pipe Length m	Pressure Head Calculations Velocity full pipe m/s	Reynolds No.	Friction Factor	Friction Loss m	k Factor	Pressure Head Change m	Total Head m
30	A-I, X-Z	1065	34.51	300	284.5	0.3	240	0.54	154,462	0.0218	0.28	3	0.05	29.68
29.68	E	390	12.64	300	284.5	0.3	240	0.20	56,564	0.0240	0.04	2	0.00	29.63
29.63	F	314	10.18	300	284.5	0.3	240	0.16	45,541	0.0246	0.03	2	0.00	29.60
29.60	G	223	7.23	300	284.5	0.3	224	0.11	32,343	0.0259	0.01	2	0.00	29.59
29.59	H	148	4.80	300	284.5	0.3	280	0.08	21,465	0.0279	0.01	0	-	29.58
29.58	I	74	2.40	300	284.5	0.3	440	0.04	10,733	0.0322	0.00	2	0.00	29.58

Including Fire Flow 20 L/s

30	A-I, X-Z	1065	54.51	300	284.5	0.3	240	0.86	243,969	0.0212	0.67	3	0.11	29.22
29.22	E	195	26.32	300	284.5	0.3	240	0.41	117,789	0.0222	0.16	2	0.02	29.04
29.04	F	157	25.09	300	284.5	0.3	240	0.39	112,278	0.0223	0.15	2	0.02	28.87
28.87	G	112	23.61	300	284.5	0.3	224	0.37	105,679	0.0224	0.12	2	0.01	28.73
28.73	H	74	22.40	300	284.5	0.3	280	0.35	100,240	0.0225	0.14	0	-	28.59
28.59	I	37	21.20	300	284.5	0.3	440	0.33	94,873	0.0226	0.20	2	0.01	28.38

Conservative scenario - 1 connection supplying whole site

U/S Head m		ET	Design Flow PDD L/s	Pipe Data Pipe DN	Pipe ID mm	Pipe Roughness mm	Pipe Length m	Pressure Head Calculations Velocity full pipe m/s	Reynolds No.	Friction Factor	Friction Loss m	k Factor	Pressure Head Change m	Total Head m
30	A-Z	2303	74.63	300	284.5	0.3	240	1.17	334,015	0.0209	1.24	3	0.21	28.55
28.55	E	1628	52.76	300	284.5	0.3	240	0.83	236,117	0.0212	0.63	2	0.07	27.85
27.85	F	1552	50.30	300	284.5	0.3	240	0.79	225,094	0.0213	0.57	2	0.06	27.21
27.21	G	1461	47.35	300	284.5	0.3	224	0.74	211,896	0.0213	0.48	2	0.06	26.68
26.68	H	1386	44.92	300	284.5	0.3	280	0.71	201,018	0.0214	0.54	0	-	26.15
26.15	I	1312	42.52	300	284.5	0.3	440	0.67	190,286	0.0215	0.76	2	0.05	25.34

25.34	J	1238	40.12	250	252.9	0.3	440	**0.80**	**201,988**	**0.0219**	**1.24**	2	**0.07**	**24.04**
24.04	V	870	28.19	250	252.9	0.3	320	**0.56**	**141,947**	**0.0224**	**0.45**	2	**0.03**	**23.55**
23.55	N	489	15.85	300	284.5	0.3	240	**0.25**	**70,922**	**0.0233**	**0.06**	1	**0.00**	**23.49**
23.49	M	331	10.73	300	284.5	0.3	40	**0.17**	**48,007**	**0.0245**	**0.00**	0	-	**23.48**
23.48	O	249	8.07	300	284.5	0.3	440	**0.13**	**36,114**	**0.0255**	**0.03**	2	**0.00**	**23.45**
23.45	Q	42	1.36	300	284.5	0.3	440	**0.02**	**6,091**	**0.0371**	**0.00**	0	-	**23.45**

North Tuncurry Development Project

PRELIMINARY PRESSURE CALCULATIONS - Peak Instantaneous Demand Flow

U/S Head		ET	Design Flow	Pipe Data				Pressure Head Calculations						
			PID	Pipe DN	Pipe ID	Pipe Roughness	Pipe Length	Velocity full pipe	Reynolds No.	Friction Factor	Friction Loss	k Factor	Pressure Head Change	Total Head
m			L/s		mm	mm	m	m/s			m		m	m
30	A-I, X-Z	1065	127.80	300	284.5	0.3	240	2.01	571,951	0.0205	3.57	3	0.62	25.81
25.81	E	390	46.80	300	284.5	0.3	240	0.74	209,447	0.0213	0.50	2	0.06	25.26
25.26	F	314	37.68	300	284.5	0.3	240	0.59	168,632	0.0216	0.33	2	0.04	24.90
24.90	G	223	26.76	300	284.5	0.3	224	0.42	119,761	0.0222	0.16	2	0.02	24.72
24.72	H	148	17.76	300	284.5	0.3	280	0.28	79,482	0.0230	0.09	0	-	24.63
24.63	I	74	8.88	300	284.5	0.3	440	0.14	39,741	0.0251	0.04	2	0.00	24.59
Including Fire Flow 20 L/s														
30	A-I, X-Z	1065	147.80	300	284.5	0.3	240	2.32	661,458	0.0204	4.76	3	0.83	24.42
24.42	E	195	43.40	300	284.5	0.3	240	0.68	194,231	0.0214	0.43	2	0.05	23.94
23.94	F	157	38.84	300	284.5	0.3	240	0.61	173,823	0.0216	0.35	2	0.04	23.55
23.55	G	112	33.38	300	284.5	0.3	224	0.53	149,387	0.0218	0.24	2	0.03	23.29
23.29	H	74	28.88	300	284.5	0.3	280	0.45	129,248	0.0220	0.23	0	-	23.06
23.06	I	37	24.44	300	284.5	0.3	440	0.38	109,378	0.0224	0.26	2	0.02	22.78

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File: 30011196 - Wastewater Servicing Study - 2014-Rev 1_final
Our ref: 30011196
Your ref:

30 October 2014

UrbanGrowth NSW
PO Box 718
Forster NSW 2428

Attention: Michael Pring

Dear Michael,

RE: North Tuncurry Development Project – Wastewater Servicing Study

1 INTRODUCTION

UrbanGrowth NSW has commissioned SMEC Australia Pty Ltd (SMEC) to undertake wastewater servicing investigations for a new development in North Tuncurry.

The North Tuncurry Development Project (NTDP) involves the re-zoning and subdivision of a 615 ha project site north of Tuncurry on the mid north coast of New South Wales (the Site). Refer locality plan on **Figure 1**.

It is the intention of UrbanGrowth NSW to develop the site in stages for a mix of land uses, including residential dwellings, employment land, retail and open space.

This study has been prepared to define the wastewater servicing strategy for the new development and includes investigation of the following elements:

- Development description, refer **Section 2**.
- Study area (the natural catchment boundaries, topography, environmental conservation constraints etc.), refer **Section 3**.
- Planning context (references to Local Environmental Plan, development consent), refer **Section 4**.
- Identification of the options for the wastewater reticulation design, refer **Section 5**.
- Identification of the trunk main options, assessment of downstream capacity in MidCoast Water's sewerage system and details of any upgrades required. Refer **Section 6**.
- Options Assessment, refer **Section** 7.
- Identification of the options for servicing the initial stages of the development, refer **Section 8**.
- Conclusion, refer **Section 9**.

2 DEVELOPMENT DESCRIPTION

UrbanGrowth NSW are proposing to deliver a mixed use development on the site that meet's the State Government's objectives to increase housing supply, provide community benefits and create jobs[1].

The NTDP will be located within a 261.6ha development area that comprises the following key components[1]:

- Approximately 2,123 residential dwellings.
- 13.2ha of employment lands.
- 9.6ha of parks and open space.
- A village centre.
- Reconfiguration of the existing North Tuncurry Golf Course (total area 59ha).
- Water management infrastructure, including 18.1ha of water management basins.

It is estimated that the site will be developed over thirty years. The stages of the residential development will proceed from the south to the north-west, then to the north and to the south-east. Stages E1 and E2 are employment land stages which will only be developed as demand emerges. The proposed Master Plan is shown on **Figure 2**.

[1] JBA –urban development services, (2014), "North Tuncurry Development Project Assessment Report"

3 STUDY AREA

The study area covers the 615 ha project site including the wastewater trunk main sites. The study area is relatively flat located within a rural landscape with a moderately dense coverage of small trees and coastal scrub.

The project site is located north of Tuncurry on the mid north coast of New South Wales, refer **Figure 1**.

The site is bounded by:

- The Lakes Way road to the west;
- undeveloped bushland and a low density residential zone to the south;
- undeveloped bushland and Nature Reserve to the north; and
- Nine Mile Beach to the east.

The trunk main will transport wastewater from the site to the existing MidCoast Water wastewater system. Three options for the trunk main alignment have been investigated and are detailed in **Section** 6 and on **Figure 7**. The wastewater trunk main study area extends from the township of Tuncurry along The Lakes Way and the access road to the Hallidays Point Wastewater Treatment Plant (WWTP).

4 PLANNING CONTEXT

A majority of the proposed works are located within the Great Lakes Local Government Area (LGA). Only Option 1 that includes a rising main transporting wastewater from the NTDP to Hallidays Point WWTP would be located in both the Great Lakes LGA and the Greater Taree LGA.

The relevant environmental planning instruments are the Great Lakes Local Environmental Plan, 2014 and the Greater Taree LEP, 2010.

According to these plans, construction of public wastewater infrastructure does not require local government consent. However, consultation with the local government bodies is to be undertaken during the concept design stage.

5 WASTEWATER SERVICING STRATEGY – RETICULATION SYSTEM

5.1 Development Site

The finished surface level of the final development is at approximately RL 4 - 6m AHD.

Under developed conditions, typical groundwater levels are expected to range between 1.4 to 2.5m AHD, with the 100 year ARI groundwater level being approximately 4 to 5m AHD across the site. The site water management philosophy adopted for the project is to minimise the potential effects of groundwater levels (up to and including the 100 year ARI event) on the proposed development.

5.2 Servicing Options

There are two technology options currently being considered for the NTDP, being conventional gravity sewers and vacuum sewers.

It is noted that there are other technology options to provide wastewater service to the site, including onsite treatment and pressure sewers, but preliminary negotiations with MidCoast Water have indicated that these are not favoured at the North Tuncurry site due to a variety of technical, environmental, legislative and cost factors.

5.2.1 Gravity Sewerage System

A conventional gravity sewerage system consists of a reticulated pipe network, which transports sewage via gravity flow in the reticulation pipes. In a 'typical' subdivision, it provides the highest level of service with the minimum ongoing costs and is the most widely used technology in Australia.

Conventional sewerage reticulation pipework is a minimum 150mm diameter. The pipes are laid with a downhill grade that promote minimum self-cleaning flows for the transport of sewage solids. For maintenance purposes a conventional sewerage system has access manholes at approximately a 120 metres spacing and at changes of grade or direction.

A conventional gravity system may be coupled with a pumped transfer system to deliver sewage to another downstream sewerage system or to a centralised treatment works. The need for pumping depends mainly on site topography and the location of the sewage treatment works.

5.2.2 Vacuum Sewerage System

A vacuum sewerage system consists of a reticulated pipe network, which transports sewage from vacuum collection chambers to a vacuum pumping station. It provides a high level of service but with some ongoing maintenance requirements.

Wastewater from each property gravitates to a collection chamber. The collection chamber consists of a storage chamber for sewage and a special vacuum valve. When the level of sewage fills the chamber a sensor opens the vacuum valve and the sewage is admitted into the vacuum sewerage reticulation pipework.

Vacuum sewerage reticulation pipework is of a minimum 80mm diameter. The reticulation pipework is airtight to maintain a vacuum in the reticulation system. The pipes are laid with a downhill grade with vertical risers to minimise depth of the reticulation and provide a 'sawtooth' profile which assists with moving the sewage through the reticulation in short 'bursts' as vacuum valves open and close. This profile provides flexibility to avoid obstacles, without the need for deep excavations or lift pump stations.

The vacuum sewerage system does not have access manholes. The 'sawtooth' profile keeps sewer lines shallow and is designed to ensure that sewage will not block the pipe at low flow periods when the sewage is at rest.

5.3 Loadings

The wastewater servicing study is based on the NTDP Master Plan developed by UrbanGrowth NSW as shown on **Figure 2**.

Table 5-1 provides a breakdown of the proposed ultimate sewer loading. There is a small component of employment land loading, but the loads are dominated by the residential component. A nominal allocation has been made for the employment lots.

Table 5-1 –Sewer Loading

	Sewer Loading (ET)
Residential Lots	**2,123**
Non-Residential Lots **(comprising Employment Area E1 and Employment Area E2 North of Stage T)**	**90 (E1) + 90 (E2) = 180**
TOTAL	**2,303 ET**

Different technologies have different potential for groundwater / storm water ingress to the system, resulting in different design flows. Design flows for the technologies considered are detailed in **Sections 5.3.1 and 5.3.2**.

5.3.1 Option A –Gravity Sewerage System

Conventional gravity sewerage system loadings for the NTDP have been estimated in accordance with the MidCoast Water Design Manual, as summarised below.

Average Dry Weather Flow ADWF = 0.005 L/s/ET

Peaking Factor $r = \sqrt{1.74 + \frac{56}{ET^{0.4}}}$

Peak Dry Weather Flow PDWF = r x ADWF

Storm Allowance SA = 0.029 L/s/ET (Sandy areas, including Tuncurry)

Peak Wet Weather Flow PWWF = PDWF + SA

Design flows calculated using the above parameters are summarised below in **Table 5-2**.

Table 5-2 – Conventional wastewater design flows (per MCW Design Manual) – Coastal Permanent Population

Stage	Lots	Units	Employment	Total	ADWF	r	PDWF	SA	PWWF
	ET	ET	ET	ET	L/s		L/s	L/s	L/s
A	85			85	0.4	3.3	1.4	2.5	3.9
B	76			76	0.4	3.4	1.3	2.2	3.5
C	82			82	0.4	3.4	1.4	2.4	3.8
D	67	58		125	0.6	3.1	2.0	3.6	5.6
E	76			76	0.4	3.4	1.3	2.2	3.5
F	91			91	0.5	3.3	1.5	2.6	4.1
G	75			75	0.4	3.4	1.3	2.2	3.5
H	74			74	0.4	3.4	1.3	2.1	3.4
I	74			74	0.4	3.4	1.3	2.1	3.4
J	75			75	0.4	3.4	1.3	2.2	3.5
K	64			64	0.3	3.5	1.1	1.9	3.0
L	76			76	0.4	3.4	1.3	2.2	3.5
VC	55	98		153	0.8	3.0	2.3	4.4	6.8
M	73			73	0.4	3.4	1.3	2.1	3.4
N	82			82	0.4	3.4	1.4	2.4	3.8
O	63			63	0.3	3.5	1.1	1.8	2.9
P	69			69	0.3	3.5	1.2	2.0	3.2
Q	42			42	0.2	3.8	0.8	1.2	2.0
R	70			70	0.4	3.5	1.2	2.0	3.2
S	76			76	0.4	3.4	1.3	2.2	3.5
T	80			80	0.4	3.4	1.4	2.3	3.7
U	75			75	0.4	3.4	1.3	2.2	3.5
V	72			72	0.4	3.4	1.2	2.1	3.3
W	78			78	0.4	3.4	1.3	2.3	3.6

Stage	Lots	Units	Employment	Total	ADWF	r	PDWF	SA	PWWF
X	65	44		109	0.5	3.2	1.8	3.2	4.9
Y	66			66	0.3	3.5	1.2	1.9	3.1
Z	42			42	0.2	3.8	0.8	1.2	2.0
E1			90	90	0.5	3.3	1.5	2.6	4.1
E2			90	90	0.5	3.3	1.5	2.6	4.1
Sub-Total	1923	200	180						
	2123		180						
Total	**2303**			**2303**	**11.5**		**38.8**	**66.8**	**105.6**

5.3.2 Option B – Vacuum Sewerage System

Design flow rates for a vacuum sewerage system have been calculated using a similar methodology to the conventional gravity flows, but with a lower storm allowance.

The potential for storm water ingress is greatly reduced with this system, as it is airtight and being shallower is more likely to be above the groundwater table. As the system is designed to be airtight (and watertight) it will not function if there is a leak. The affected collection chambers will not empty and will trigger a maintenance call from the Water Authority. As such, the potential for stormwater / groundwater ingress into the system is greatly reduced (SA = 0.012 L/s/ET).

Design flows calculated using the above parameters are summarised below in **Table 5-3**.

Table 5-3 –Vacuum wastewater design flows

Stage	Lots	Units	Employment	Total	ADWF	r	PDWF	SA	PWWF
	ET	ET	ET	ET	L/s		L/s	L/s	L/s
A	85			85	0.4	3.3	1.4	1.0	2.4
B	76			76	0.4	3.4	1.3	0.9	2.2
C	82			82	0.4	3.4	1.4	1.0	2.4
D	67	58		125	0.6	3.1	2.0	1.5	3.5
E	76			76	0.4	3.4	1.3	0.9	2.2
F	91			91	0.5	3.3	1.5	1.1	2.6
G	75			75	0.4	3.4	1.3	0.9	2.2
H	74			74	0.4	3.4	1.3	0.9	2.2
I	74			74	0.4	3.4	1.3	0.9	2.2
J	75			75	0.4	3.4	1.3	0.9	2.2
K	64			64	0.3	3.5	1.1	0.8	1.9
L	76			76	0.4	3.4	1.3	0.9	2.2
VC	55	98		153	0.8	3.0	2.3	1.8	4.2
M	73			73	0.4	3.4	1.3	0.9	2.1
N	82			82	0.4	3.4	1.4	1.0	2.4
O	63			63	0.3	3.5	1.1	0.8	1.9
P	69			69	0.3	3.5	1.2	0.8	2.0

Stage	Lots	Units	Employment	Total	ADWF	r	PDWF	SA	PWWF
Q	42			42	0.2	3.8	0.8	0.5	1.3
R	70			70	0.4	3.5	1.2	0.8	2.1
S	76			76	0.4	3.4	1.3	0.9	2.2
T	80			80	0.4	3.4	1.4	1.0	2.3
U	75			75	0.4	3.4	1.3	0.9	2.2
V	72			72	0.4	3.4	1.2	0.9	2.1
W	78			78	0.4	3.4	1.3	0.9	2.3
X	65	44		109	0.5	3.2	1.8	1.3	3.1
Y	66			66	0.3	3.5	1.2	0.8	1.9
Z	42			42	0.2	3.8	0.8	0.5	1.3
E1			90	90	0.5	3.3	1.5	1.1	2.6
E2			90	90	0.5	3.3	1.5	1.1	2.6
Sub-Total	1923	200	180						
	2123		180						
Total	**2303**			**2303**	**11.5**		**38.8**	**27.6**	**66.5**

5.4 Preliminary Wastewater Reticulation Design

The preliminary wastewater system design has been based on the site Master Plan (see **Figure 2**) and is described in **Sections 5.4.1 and 5.4.2**. The options assessment is included in **Section** 7.

5.4.1 Option A – Gravity Sewerage System

Based on the available topographic survey and bulk earthworks design prepared by SMEC, the development site has been divided into six catchment areas. The gravity sewerage system in each catchment area would drain into its own internal wastewater pumping station (WWPS) . Ultimately, there would be a system of six internal WWPSs transporting flow via rising mains and gravity mains into a Central WWPS.

The Central WWPS would be constructed during Stage A in the southern portion of the development site.

The Central WWPS would transport wastewater from the development site into the MidCoast Water wastewater system.

The Option A preliminary wastewater system layout is shown on **Figures 3 and 4**.

Until Stage Y is constructed, the detention time of the pumped system would be longer than 4 hours. As a result odour control will be required.

5.4.2 Option B – Vacuum Sewerage System

Wastewater from each property would gravitate to a collection chamber. When the collection chamber sump fills to a pre-determined level, an automatic pneumatically operated vacuum interface valve opens. Pneumatic pressure forces the wastewater from the collection chamber into collection lines.

A series of pipes connect each of the chambers to the Central Vacuum Pumping Station. The Vacuum Station would have duty and standby vacuum pumps that create a vacuum in the vacuum sewer lines and an enclosed collection tank. When the vacuum mains deliver sewage and air to the pump station, sewage pumps would then transfer the sewage from the collection tank through a rising main to the existing MidCoast Water wastewater infrastructure.

The initial ten stages of the development (833 ET) would be serviced by a temporary skid mounted vacuum pumping station. The vacuum pumping station would be constructed during Stage A. The Option B initial wastewater system layout is shown on **Figure 5**.

As the development proceeds, the temporary vacuum pumping station would be replaced by a permanent station. The Option B ultimate wastewater system layout is shown on **Figure 6**.

Until Stage Y is constructed, the detention time in the system would be longer than 4 hours. As a result, odour control will be required.

6 WASTEWATER SERVICING STRATEGY – TRUNK MAIN

6.1 Loadings

The ultimate wastewater loadings summarised in **Table 6-1** have been adopted for design of the infrastructure.

Table 6-1 –Wastewater Loadings

Option	Equivalent Tenements ET	Average Dry Weather Flow ADWF (L/s)	Peak Dry Weather Flow PDWF (L/s)	Storm Allowance SA (L/s)	Peak Weather Flow PWWF (L/s)
Option A – Gravity System	2303	11.5	38.8	66.8	105.6
Option B – Vacuum System	2303	11.5	38.8	27.6	66.5

6.2 Options

Existing MidCoast Water wastewater infrastructure located in proximity to the development site is listed in **Table 6-2**. It includes the Hallidays Point Wastewater Treatment Plant (WWTP) and the Tuncurry No. 23 WWPS and rising main.

Table 6-2 – MidCoast Water Wastewater Infrastructure

Item	Spare Capacity	Distance from the site
Hallidays Point WWTP	Could accept the ultimate flow	11 km from the northern boundary
Tuncurry No. 23 WWPS transporting wastewater to Hallidays Point WWTP	Could accept the ultimate flow, however upgrade of the pumping station will be required	1.8 km from the southern boundary
Tuncurry No. 23 rising main transporting wastewater to Hallidays Point WWTP	Could accept the ultimate flow, however upgrade of the pumping station will be required	200 metres from the western boundary

The following options for transportation of wastewater from the NTDP site have been investigated:

- Option 1 – new NTDP WWPS and rising main transporting wastewater to the Hallidays Point WWTP.
- Option 2 – new NTDP WWPS and rising main transporting flow to the Tuncurry No. 23 WWPS. The Tuncurry No. 23 WWPS would transport the existing flow and flow from the NTDP site to the Hallidays Point WWTP.
- Option 3 – new NTDP WWPS and rising main transporting flow to the Tuncurry No. 23 rising main. As a result, the Tuncurry No. 23 WWPS and the new NTDP Central WWPS would pump into a common rising main.

Each of the above options has been investigated for a PWWF of 105.6 L/s (option A) and a PWWF of 66.5 L/s (option B).

The wastewater trunk main options are shown on **Figure 7**.

6.2.1 Option 1

Under Option 1 a new rising main would transport wastewater from the NTDP site to the Hallidays Point WWTP. The rising main would be approximately 11 km long located parallel to the existing Tuncurry No. 23 rising main. The main would run within the existing road easement along The Lakes Way and the access road to the Hallidays Point WWTP.

Under Option 1A (gravity sewerage reticulation system, PWWF=105.6 L/s) the rising main would be DN300. A new NTDP Central WWPS wet well would be a 3.0 metre diameter precast concrete structure, 7.5 metres deep. The wet well would accommodate two pumps (duty and stand-by) with an operating duty of 105.6 L/s at 71 metres head and an approximate motor rating of 123 kW.

Under Option 1B (vacuum sewerage reticulation system, PWWF=66.5 L/s) the rising main would be DN225. The sewage pump duty condition would be 66.5 L/s at 108 metres head. It would be difficult to establish sewage pumps in the Central Vacuum Pump Station that can deliver against a 108 metre head to the Hallidays Pont WWTP with the vacuum (negative pressure) that would exist on the pump inlet. Therefore, a new Central WWPS would be required to transport flow from the Vacuum Pump Station to the Hallidays Point WWTP.

A new Central WWPS wet well would be a 2.4 metre diameter precast concrete structure, 3.5 metres deep. The wet well would accommodate two pumps (duty and stand-by) with an operating duty of 66.5 L/s at 108 metres head and an approximate motor rating of 118 kW.

6.2.2 Option 2

Under Option 2 a new rising main would transport wastewater from the NTDP site into the Tuncurry No. 23 WWPS. The rising main would be approximately 1.8 km long located parallel to the existing Tuncurry No. 23 rising main. The main would run within the existing road easement along The Lakes Way and Grey Gum Road.

Under Option 2A (gravity sewerage reticulation system, PWWF=105.6 L/s) the rising main would be DN300. The Central WWPS wet well would be a 3.0 metre diameter precast concrete structure, 7.5 metres deep. The wet well would accommodate two pumps (duty and stand-by) with an operating duty of 105.6 L/s at 22 metres head and an approximate motor rating of 37 kW.

Under Option 2B (vacuum sewerage reticulation system, PWWF=66.5 L/s) the rising main would be DN225. A new Central WWPS would not be required as sewage pumps with an operating duty of 66.5 L/s at 21 metres head can be established in the Central Vacuum Pumping Station to transport flow to Tuncurry No. 23 WWPS - the vacuum on the pump inlet would be manageable with the modest delivery head.

Additionally, the existing pumps and discharge pipework in the Tuncurry No. 23 WWPS would have to be upgraded due to the increased flow. The existing DN450 DICL rising main transporting flow from Tuncurry No. 23 WWPS into the Hallidays Point WWTP has sufficient capacity to transport the additional peak wet weather flow (PWWF) of 105.6 L/s. It currently transports 237 L/s and after adding the flow from the NTDP site the velocity achieved in the rising main would be 1.9 m/s (Option A – gravity sewerage system) and 1.6 m/s (Option B – vacuum sewerage system). This velocity is within the normal operating velocities for the rising main and would not have any significant adverse effect on the pipeline.

6.2.3 Option 3

Under Option 3 a new NTDP rising main would transport wastewater from the NTDP site into the Tuncurry No. 23 rising main located west of the development site. The new rising would be approximately 650 metres long. The new NTDP Central WWPS and the Tuncurry No. 23 WWPS would pump into a common rising main.

Under Option 3A (gravity sewerage reticulation system, PWWF=105.6 L/s) the rising main would be DN300. The Central WWPS wet well would be a 4.6 metre diameter cast in-situ structure, 7 metres deep and would accommodate two pumps (duty and stand-by) with an approximate motor rating of 128 kW. The pumps would have an operating duty of 94L/s at 75 metres head when operating at the same time as the Tuncurry No. 23 WWPS and 194 L/s at 48 metres head when operating alone.

Under Option 3B (vacuum sewerage reticulation system, PWWF=66.5 L/s) the rising main would be DN225. The duty conditions for the sewage pumps would vary depending on whether the pump station operates at the same time as Tuncurry No. 23 WWPS or alone. It would be difficult to establish sewage pumps in the Central Vacuum Pump Station capable of delivering at different duties with the vacuum (negative pressure) on the pump inlet. Therefore, a new Central WWPS transporting flow from the Central Vacuum Pump Station to the Tuncurry No. 23 rising main would be required. The Central WWPS wet well would be a 3.8 metre diameter cast in-situ structure, 3 metres deep and would accommodate two pumps (duty and stand-by) with an approximate motor rating of 98 kW. The pumps would have an operating duty of 67 L/s at 62 metres head when operating at the same time as the Tuncurry No. 23 WWPS and 139 L/s at 50 metres head when operating alone.

The wet well for the new WWPS under this option is larger than the wet well under Options 1 and 2. This is due to the requirement for common pumping with the Tuncurry No. 23 WWPS. When the new NTDP Central WWPS operates at the same time as the Tuncurry No. 23 WWPS it will pump close to the design flow rate and pressure (94L/s at 75 metres head under Option 3A and 67 L/s at 62 metres head under Option 3B). However, when the new NTDP Central WWPS operates alone, the pressure in the common rising main will be lower and as a result the pumps will operate at higher flow rate (approximately at 194 L/s at 48 metres head for Option 3A and 139 L/s at 50 metres head for Option 3B). The wet well control volume will need to be sized for the highest pumping rate.

As a result of common pumping (and increased delivery head), the pump rate of the existing Tuncurry No. 23 pumps will be reduced when pumping with the new NTDP Central WWPS. (The existing Tuncurry No. 23 pump duty is 237 L/s at 58 metres head, under Option 3A the new duty would be approximately 185 L/s at 63 metres head and under Option 3B approximately 205 L/sat 61 metres head). Also, if the new duty point is close to the shut off head, the existing pumps would have to be upgraded. The specific requirements for the Tuncurry No. 23 WWPS upgrade are to be confirmed during the concept design.

7 OPTIONS ASSESSMENT

7.1 Cost Benefit Analysis

The preliminary capital cost estimates and net present value (NPV) analysis of the capital and operation and maintenance costs have been developed for the following options:

- Option 1 – Central WWPS and rising main transporting wastewater to the Hallidays Point WWTP.
  - Option 1A – gravity sewerage reticulation system.
  - Option 1B – vacuum sewerage reticulation system.
- Option 2 – Central WWPS and rising main transporting flow to the Tuncurry No. 23 WWPS.
  - Option 2A – gravity sewerage reticulation system.
  - Option 2B – vacuum sewerage reticulation system.
- Option 3 – Central WWPS and rising main transporting flow to the Tuncurry No. 23 rising main.
  - Option 3A – gravity sewerage reticulation system.
  - Option 3B – vacuum sewerage reticulation system.

The capital cost estimates and NPV analysis of the capital and operation and maintenance costs are included in **Appendix A** and summarised in **Table 7-1**.

Table 7-1 –Capital Cost Estimates and Net Present Values of the Capital and O&M Costs

Option	Option A – Gravity System		Option B – Vacuum System	
	Capital Cost	NPV at 7% over 30 years	Capital Cost	NPV at 7% over 30 years
Option 1	$20.8 M	$15.1 M	$19.3 M	$19.0 M
Option 2	$17.9 M	$12.0 M	$16.2 M	$15.5 M
Option3	$18.2 M	$12.5 M	$17.0 M	$16.8 M

Below **Table 7-2** provides a breakdown of the capital and operation and maintenance costs.

Table 7-2 – Options Capital Costs and Operation & Maintenance Costs

Option	Capital Cost ($M)			O&M Cost over 30 years ($M)			
	Reticulation System	Transportation System	Total	Retic.	Transport.	Odour Control	Total
Option 1A	$16.1	$4.8	**$20.8**	$2.7	$1.2	$1.4	**$4.7**
Option 1B	$15.1	$4.1	**$19.3**	$15.4	$ 1.1	$1.4	**$17.8**
Option 2A	$16.1	$1.8	**$17.9**	$2.7	$0.8	$1.4	**$4.3**
Option 2B	$15.1	$1.0	**$16.2**	$15.4	$0.1	$1.4	**$16.8**
Option 3A	$16.1	$2.1	**$18.2**	$2.7	$1.2	$1.4	**$4.7**
Option 3B	$15.1	$1.9	**$17.0**	$15.4	$1.1	$1.4	**$17.8**

Note:

1. *The capital cost estimates within this study are based on the Hunter Water Cost Estimating Manual. Use of a common estimating framework allows for cost estimates to be compared between options, but cost estimates cannot be guaranteed as SMEC has no control over contractor's prices, market forces and competitive bids from tenderers. The cost estimates may exclude items which should be considered in a cost plan. Cost estimates are not to be relied upon in any way. If reliable cost estimates are required, then an appropriately qualified Quantity Surveyor should be engaged.*
2. *Operation and maintenance costs are based on MidCoast Water advice included in Appendix C.*

Option 2B has the lowest capital cost ($16.2M). It includes the vacuum sewerage reticulation system and trunk rising main discharging into the existing Tuncurry No.23 WWPS.

Option 2A has slightly higher capital cost ($17.9M) than Option 2B. However, Option 2A has the lowest operation and maintenance costs ($4.3M) and net present value ($12M). It includes the gravity sewerage reticulation system and trunk rising main discharging into the existing Tuncurry No.23 WWPS.

Option 3B has the second lowest capital cost ($17M).

Option 3A has the second lowest NPV ($12.5M).

7.2 Non-Cost Benefit Analysis - Reticulation System

7.2.1 Leakage and Exfiltration

The vacuum sewer system has a lower infiltration rate during storms than the gravity system because it is designed to operate as a closed airtight and watertight system. For the same reason a vacuum sewer system is less likely than a gravity system to exfiltrate sewage to the environment. In a conventional gravity network, cracked pipes and manholes will exfiltrate sewage to the environment. In the specific case of the NTDP site, minimising exfiltration is advantageous as the site is located above extensive aquifers and in proximity to Nine Mile Beach.

7.2.2 Emergency Overflows

The gravity system, including the six catchment pump stations and the Central, WWPS presents a higher risk for emergency overflows than the vacuum system that includes a Central Vacuum Pump Station. During emergency situations when a pump station is inoperable for longer than the emergency storage time provided, sewage would overflow via the pump station and the lowest laying manhole cover (or via the WWPS flow relief structure if included in the design of the WWPS). These overflows may potentially lead to the transport of untreated sewage into waterways.

7.2.3 Dewatering

The gravity sewers would be constructed significantly deeper (up to approximately 5.5 metres deep) than the vacuum mains. It is expected that deep trenching required for the gravity mains would be undertaken in water charged ground.

Choosing vacuum sewer might not completely avoid dewatering costs. In particular the vacuum pits would be excavated to about 2.5 metres depth and may require dewatering. However, this option would require significantly less dewatering than the gravity sewer option.

There are number of construction risks associated with dewatering, examples of which include potential disruption to slope stability, potential water inrush and contamination of receiving waters.

A Dewatering Management Plan will be required during the construction. It should include an assessment of the potential geotechnical and hydrological impacts of groundwater extraction. It should demonstrate that nearby sites remain stable during and after dewatering. Details of dewatering volume, rate, duration, equipment and procedures should be included in the plan.

Works that interfere with the water table (such as continuous dewatering) require a licence under Part 5 of the Water Act 1912.

7.2.4 Odour

The gravity system would include a total of six vent stacks located at the rising main discharge manholes (for the six catchment pump stations) and seven vent stacks located at the seven WWPS sites (also includes the Central WWPS). The vent stacks would be located in public spaces and have the potential to release minor odour from the sewerage system. The vacuum system is designed to operate as a closed airtight and watertight system and does not require vent stacks.

7.2.5 Visual Impact

The vacuum system, except for the vacuum pump station, would be located underground. The gravity sewer system would include above ground pump station switchboards and vent stacks that would have a visual impact on the environment. There would be seven WWPSs with vent stacks and six rising main discharge manholes with vent stacks.

7.2.6 Energy Consumption

Based on the operating cost estimates detailed in **Section 7.1**, the pumps in the gravity sewer system would have lower annual energy consumption than the pumps in the vacuum sewer system.

7.3 Non-Cost Benefit Analysis - Transportation System

7.3.1 Environmental Factors

The Option 1 rising main discharging into the Hallidays Point WWTP is the longest trunk main alignment and is located mostly within a rural area. The rising main would be constructed parallel to the existing Tuncurry No. 23 rising main within the existing road easement and as a result it is expected that there would not be any significant impact on the existing environment both during and after the construction period.

The Option 2 rising main discharging into the Tuncurry No. 23 WWPS is shorter than the Option 1 rising main. However, this rising main would be constructed partly within an existing built up area and as a result there would be some impact on the local community during construction.

The Option 3 rising main has the shortest route and is located mostly within the development site. As a result, there would be minimal additional impact on the environment resulting from construction of the rising main.

In summary, Option 3 would have the least impact on the existing environment.

7.3.2 Impact on the Existing Wastewater Infrastructure

The Option 1 rising main would transport wastewater to the Hallidays Point WWTP. Modification to the WWTP inlet arrangement to accommodate a new rising main would be required. As a result, there would be an impact on the operation of the WWTP. However, it is expected that the modification would be of a minor scale and could be executed in a short timeframe.

The Option 2 rising main would transport flow to the Tuncurry No. 23 WWPS. Upgrade of the WWPS would be required including the construction of a new inlet, pumps and discharge pipework and an electrical upgrade.

The Option 3 rising main would transport flow to the existing Tuncurry No. 23 rising main. The connection would be undertaken in a short period of time and would not result in a significant impact on the Tuncurry No. 23 WWPS operating cycles. However, mechanical and electrical upgrade at the Tuncurry No. 23 WWPS would have to be undertaken due to pumping into a common rising main.

7.3.3 Construction Time

The Option 1 rising main has the longest alignment (11 km) and therefore would result in the longest construction time. The Option 2 rising main (1.8 km) and the Option 3 rising main (0.7 km) are significantly shorter and therefore would result in a significantly shorter construction time.

7.3.4 Opportunity for the Upgrade

Ultimately, all three options transport flow into the Hallidays Point WWTP. Option 2 and Option 3 discharge into the existing Tuncurry No. 23 WWPS and rising main. As a result the viability of Options 2 and 3, and the potential for future upgrade to these options, is dependent on (and limited by) the available capacity of the Tuncurry No. 23 WWPS and rising main.

8 SERVICING THE INITIAL STAGES OF THE DEVELOPMENT

The NTDP site is expected to be developed over thirty years with in excess of 25 development stages currently envisaged. The ultimate NTDP wastewater infrastructure will therefore involve considerable capital cost as well as ongoing operation and maintenance costs. Accordingly a more modest and cost effective means of servicing the development in the early years, when the number of developed lots is relatively low, has been investigated and discussed below.

8.1 Existing Wastewater Infrastructure

The nearest existing wastewater infrastructure is the Tuncurry No. 22 WWPS located approximately 40 metres from the southern boundary of the site. This pump station transports flow from the Great Lakes College to Tuncurry No. 23 WWPS (located 1.8 km from the NTDP southern boundary).

MidCoast Water have advised that the Tuncurry No. 22 WWPS has a spare capacity of 230 ET (gravity system basis) equal to Peak Wet Weather Flow of 9.9 L/s and could service the initial stages of the development. Refer **Appendix C**.

A vacuum sewerage system has lower stormwater infiltration than a gravity system, and therefore Tuncurry No. 22 WWPS (TU22) could service a greater number of equivalent tenements for the vacuum system. The spare capacity and theoretical flows determined for the gravity and vacuum reticulation systems are shown in **Table 8-1**.

Table 8-1 - Spare Capacity in Tuncurry No. 22 WWPS

System		ADWF	r	PDWF	SA	PWWF
	ET	L/s		L/s	L/s	L/s
Gravity	230	1.2	2.8	3.3	6.7	9.9
Vacuum	395	2.0	2.6	5.2	4.7	9.9

The following options have been identified for servicing the initial stages of the development site using the spare capacity of TU22:

- Option 1 – Gravity System discharging into Tuncurry No. 22 WWPS.
- Option 2 - Vacuum System discharging into Tuncurry No. 22 WWPS.

- Option 3 – Combined Gravity and Vacuum System discharging into Tuncurry No. 22 WWPS.

These options and the implications for staging the provision of the NTDP wastewater infrastructure are discussed below.

8.1.1 Option 1 - Gravity System Discharging into Tuncurry No. 22 WWPS

Based on the preliminary Master Plan shown on **Figure 2** and the current site grading plan, part of Stage A and part of Stage C (47 ET in total) could gravitate to Tuncurry No. 22 WWPS. This gravity catchment is shown on figure included in **Appendix D**.

The initial 47 ET could be developed in the first year of the development.

The theoretical flows calculated for the above ETs are summarised below in **Table 8-2**.

Table 8-2 – Gravity System Flow to Tuncurry No. 22 WWPS

System	ET	ADWF L/s	r	PDWF L/s	SA L/s	PWWF L/s
Gravity	47	0.2	3.7	0.9	1.4	2.2

8.1.2 Option 2 - Vacuum System Discharging into Tuncurry No. 22 WWPS

Based on the preliminary Master Plan shown on **Figure 2** and the current site grading plan there is an opportunity to build a small vacuum pumping station transporting all flow from the areas of Stage A, Stage B, Stage C and possibly Stage D to the Tuncurry No. 22 WWPS, amounting to 368 ET. (The discharged PWWF would be less than the spare capacity of TU22). This catchment area is shown on figure included in **Appendix D**.

The initial 368 ET could be developed in the first five years of the development.

The theoretical flows calculated for the above scenario are summarised below in **Table 8-3**.

Table 8-3 – Vacuum System Flow to Tuncurry No. 22 WWPS

Stage	ET	ADWF L/s	r	PDWF L/s	SA L/s	PWWF L/s
A	85	0.4	3.3	1.4	1.0	2.4
B	76	0.4	3.4	1.3	0.9	2.2
C	82	0.4	3.4	1.4	1.0	2.4
D	125	0.6	3.1	2.0	1.5	3.5
Total	368	1.8		4.9	4.4	9.3[1]

Note 1 - Due to the way the peaking factor (r) is calculated, calculations for PDWF and PWWF using the total 368 ET do not give the same values as adding the PDWF and PWWF values for the individual stages (A, B, C and D).

8.1.3 Option 3 - Combined Gravity and Vacuum System Discharging into Tuncurry No. 22 WWPS

Based on the preliminary Master Plan shown on **Figure 2** and the current site grading plan, there is an opportunity to combine a gravity system and a vacuum system. Part of Stage A and part of Stage C could be serviced via a gravity system discharging into the Tuncurry No. 22 WWPS. A small vacuum pumping station could transport flow from the remaining area of Stages A and C and the whole of Stages B and D to the Tuncurry No. 22 WWPS, amounting to 368 ET. (The discharged PWWF would be only about 0.5 L/s higher than the spare capacity).This catchment area is shown on figure included in **Appendix D**.

The initial 368 ET could be developed in the first five years of the development.

The theoretical flows calculated for the above scenario are summarised below in **Table 8-4**.

Table 8-4 – Combined Gravity and Vacuum Flows to Tuncurry No. 22 WWPS

System	ET	ADWF L/s	r	PDWF L/s	SA L/s	PWWF L/s
Gravity	47[1]	0.2	3.7	0.9	1.4	2.2
Vacuum	321[2]	1.6	2.7	4.3	3.9	8.2
Total	368					10.4

Note 1 - part of Stage A and part of Stage C

Note 2 - remainder of Stages A and C, plus all of Stages B and D.

9 CONCLUSION

9.1 Reticulation System

Options for servicing the development site investigated in this report include:

- Option A - gravity reticulation sewerage system; and
- Option B - vacuum reticulation sewerage system.

Option B (vacuum reticulation system) has a lower capital cost and potential environmental impact than Option A (gravity reticulation system).

However, Option A has significantly lower operating and maintenance costs and a lower net present value (refer Table 7-1). It is considered that the potential environmental impacts of the gravity system could be minimised during design and construction (e.g. allowing for a larger WWPS emergency storage, targeting high quality construction, providing sufficient cover to the reticulation pipes to minimise movement and cracking, etc.)

As a result, it is considered that a gravity reticulation sewerage system is preferable for the North Tuncurry site.

9.2 Transportation System

The following options for transporting wastewater from the NTDP site have been investigated:

- Option 1 – new NTDP WWPS and rising main transporting wastewater to the Hallidays Point WWTP.

- Option 2 – new NTDP WWPS and rising main transporting wastewater to the Tuncurry No. 23 WWPS. The Tuncurry No. 23 WWPS would transport the existing flow and flow from the NTDP site to the Hallidays Point WWTP.
- Option 3 – new NTDP WWPS and rising main transporting flow to the Tuncurry No. 23 rising main. As a result, the Tuncurry No. 23 WWPS and the new NTDP Central WWPS would pump into a common rising main.

The Option 2 NTDP rising main discharging into the Tuncurry No. 23 WWPS has the lowest capital cost, operation and maintenance costs and NPV. It would have some impact on the local community during the construction phase and on the existing Tuncurry No. 23 WWPS during operation. The impact can be minimised by selecting trenchless technology for construction of the new NTDP rising main road crossings. The specific requirements for upgrading the Tuncurry No. 23 WWPS are to be further investigated during the concept design stage.

10 REFERENCES

- Priority Sewerage Program Appin – Douglas Park – Wilton Sewerage Options Study (Patterson Britton & Partners, January 2003).
- Sewerage Code of Australia (WSA02) – MidCoast Water Edition, Version 2.2.
- Hunter Water Pipeline and Pumping Station Estimating Guideline, Hunter Water Corporation, version 2.03
- North Tuncurry Development Project Assessment Report, JBA – urban development services, 2014
- Information provided by MidCoast Water and included in Appendix C.

We trust the enclosed information enables an informed decision about the preferred option for the NTDP wastewater reticulation and transportation system, and we await your instruction on proceeding with the concept design.

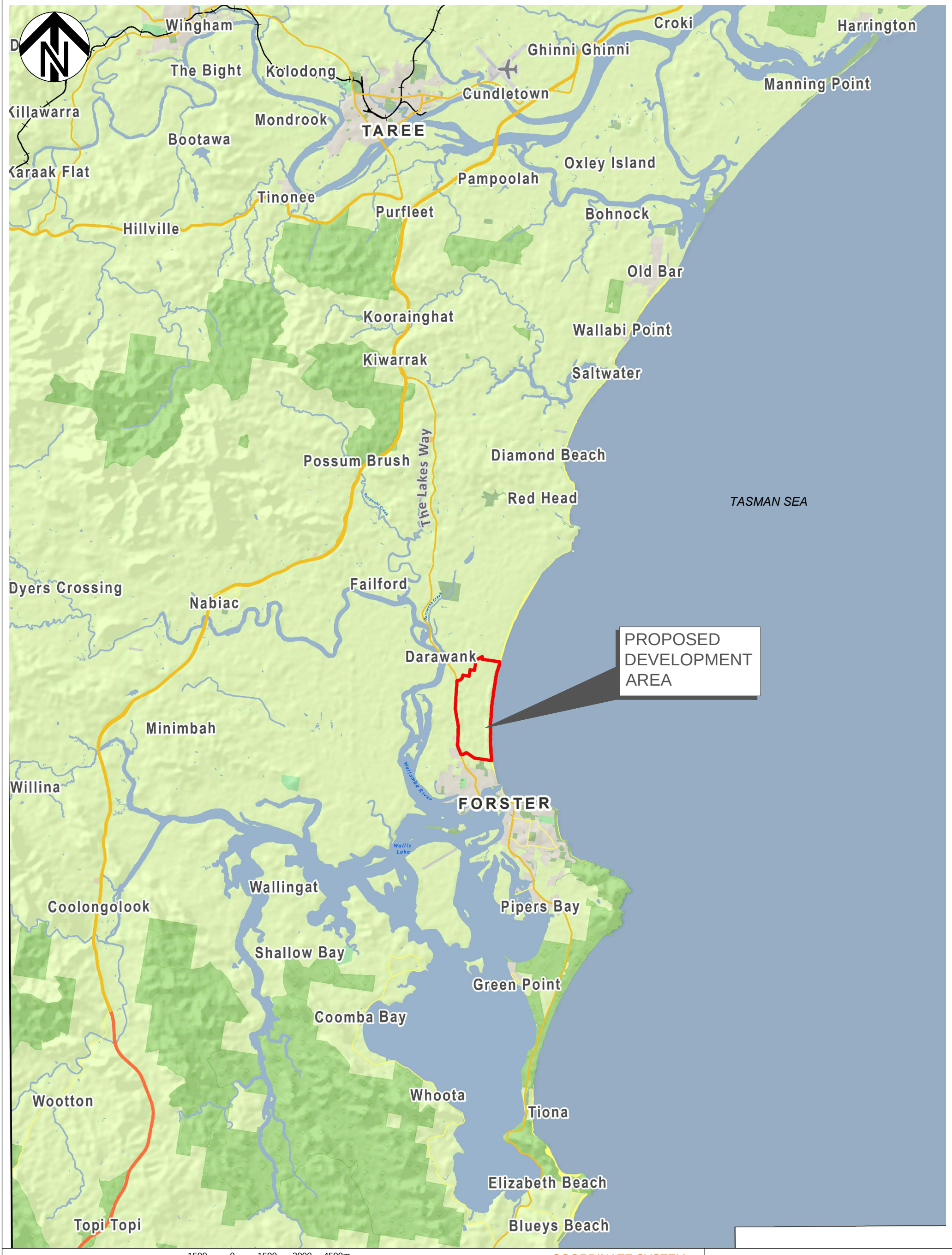
Please do not hesitate to contact the undersigned with any further questions.

Yours sincerely,

Marketa McCarthy

Senior Water Infrastructure Engineer

FIGURES



DATE 10/04/14		PAGE SIZE A3	COORDINATE SYSTEM MGA
PROJECT NO. 30011196	PROJECT TITLE	NORTH TUNCURRY DEVELOPMENT - WASTE WATER	
FIG NO. 1	FIGURE TITLE	LOCALITY PLAN	
CREATED BY S.DRUERY	SOURCES	-	

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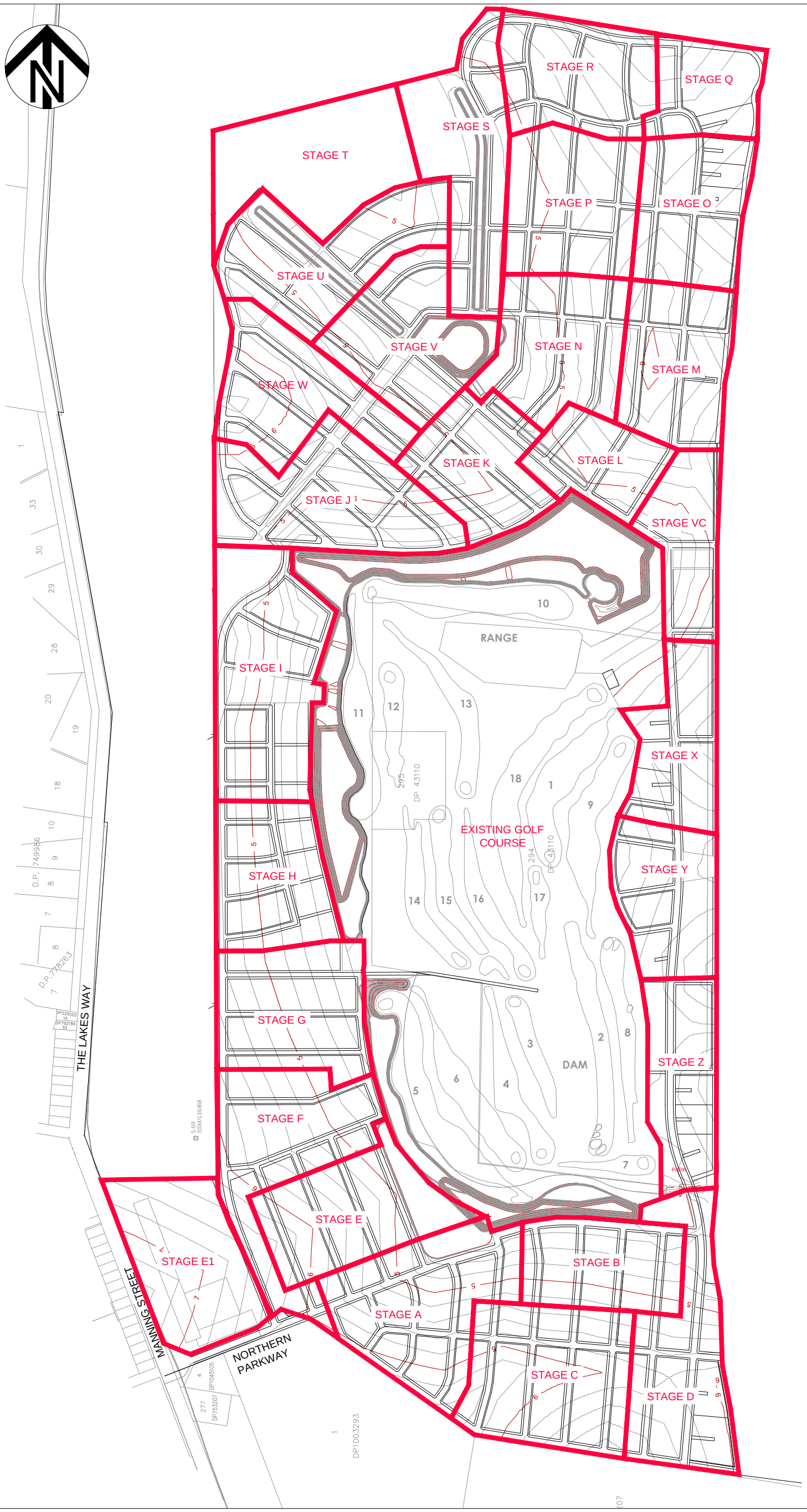

STAGE	LOTS ET	UNITS ET	EMPLOYMENT ET
A	85		
B	76		
C	82		
D	67	58	
E	76		
F	91		
G	75		
H	74		
I	74		
J	75		
K	64		
L	76		
VC	55	98	
M	73		
N	82		
O	63		
P	69		
Q	42		
R	70		
S	76		
T	80		
U	75		
V	72		
W	78		
X	65	44	
Y	66		
Z	42		
E1			90
E2			90
SUB-TOT	1923	200	180
TOTAL	2303		

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COORDINATE SYSTEM MGA

PROJECT NO. 30011196

PROJECT TITLE NORTH TUNCURRY DEVELOPMENT - WASTE WATER

FIG NO. 2

FIGURE TITLE STAGING PLAN

CREATED BY S.DRUERY

SOURCES -

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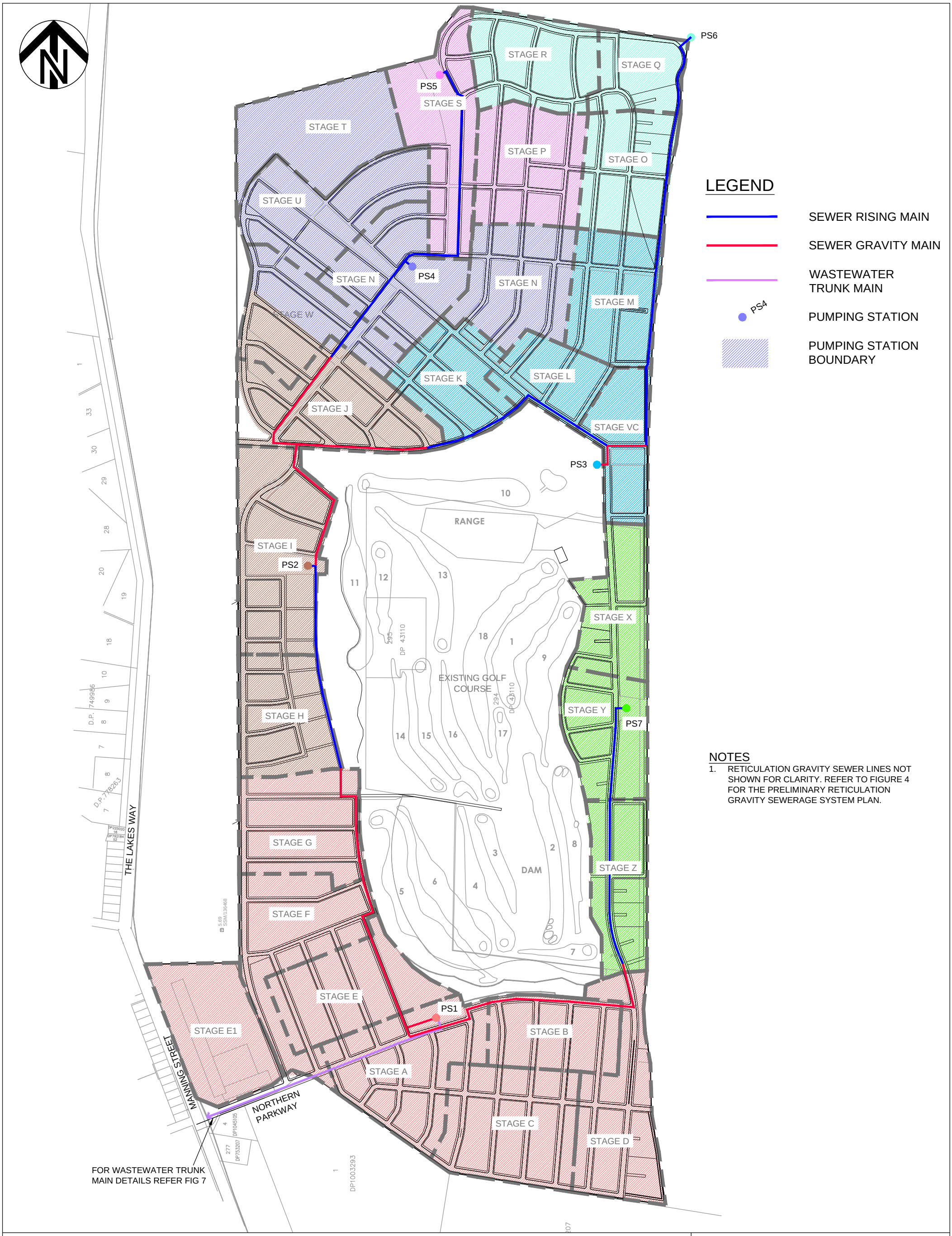

NOTES

1. RETICULATION GRAVITY SEWER LINES NOT SHOWN FOR CLARITY. REFER TO FIGURE 4 FOR THE PRELIMINARY RETICULATION GRAVITY SEWERAGE SYSTEM PLAN.

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SCALE 1:8000

DATE 10/04/14		PAGE SIZE A3	COORDINATE SYSTEM MGA
PROJECT NO. 30011196	PROJECT TITLE	NORTH TUNCURRY DEVELOPMENT - WASTE WATER	
FIG NO. 3	FIGURE TITLE	PRELIMINARY INTERNAL PUMPING STATIONS SYSTEM PLAN	
CREATED BY S.DRUERY	SOURCES	-	

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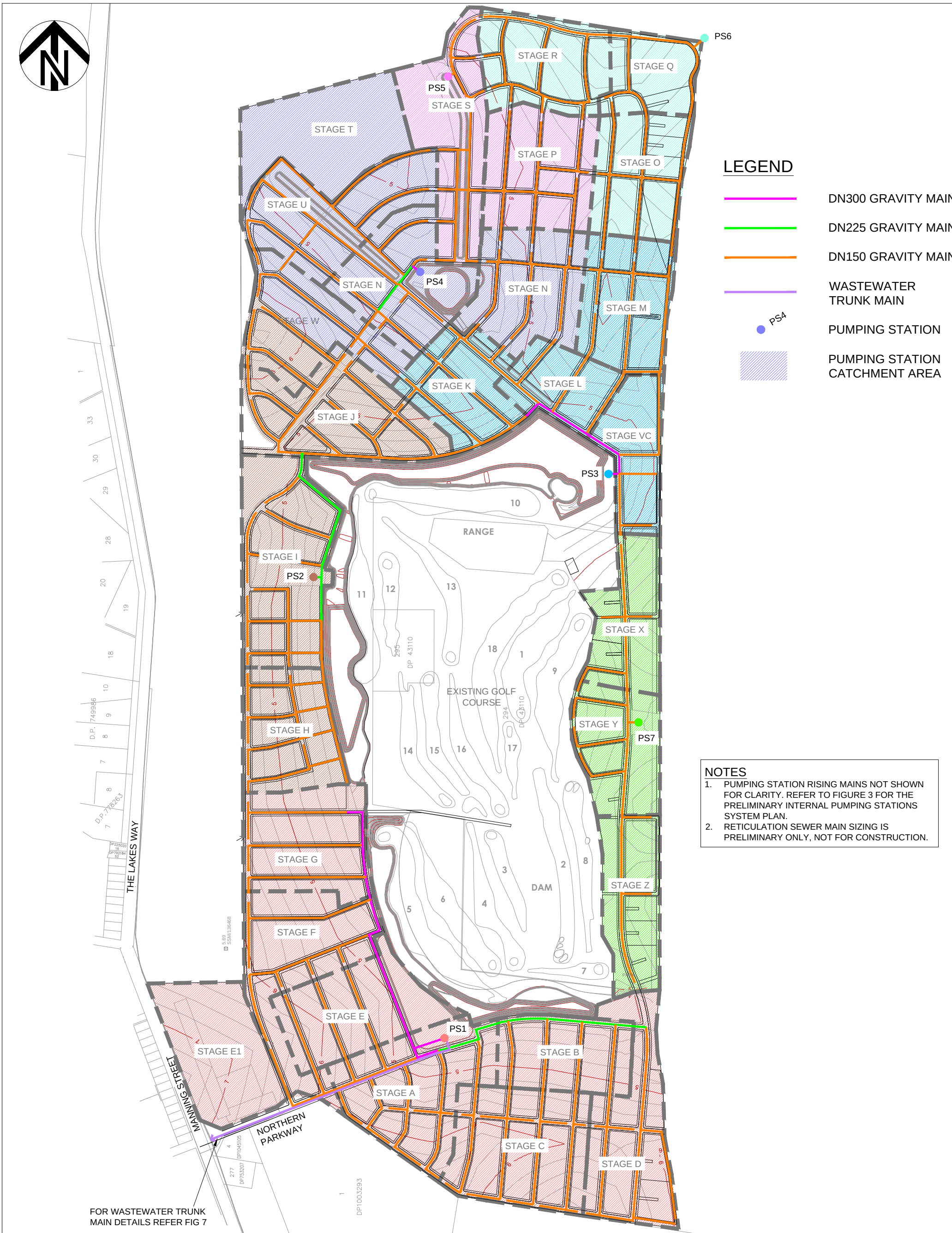

NOTES

1. PUMPING STATION RISING MAINS NOT SHOWN FOR CLARITY. REFER TO FIGURE 3 FOR THE PRELIMINARY INTERNAL PUMPING STATIONS SYSTEM PLAN.
2. RETICULATION SEWER MAIN SIZING IS PRELIMINARY ONLY, NOT FOR CONSTRUCTION.

80 0 80 160 240m

SCALE 1:8000

DATE 10/04/14		PAGE SIZE A3	COORDINATE SYSTEM MGA
PROJECT NO. 30011196	PROJECT TITLE	NORTH TUNCURRY DEVELOPMENT - WASTE WATER	
FIG NO. 4	FIGURE TITLE	PRELIMINARY RETICULATION GRAVITY SEWERAGE SYSTEM PLAN	
CREATED BY S.DRUERY	SOURCES -		

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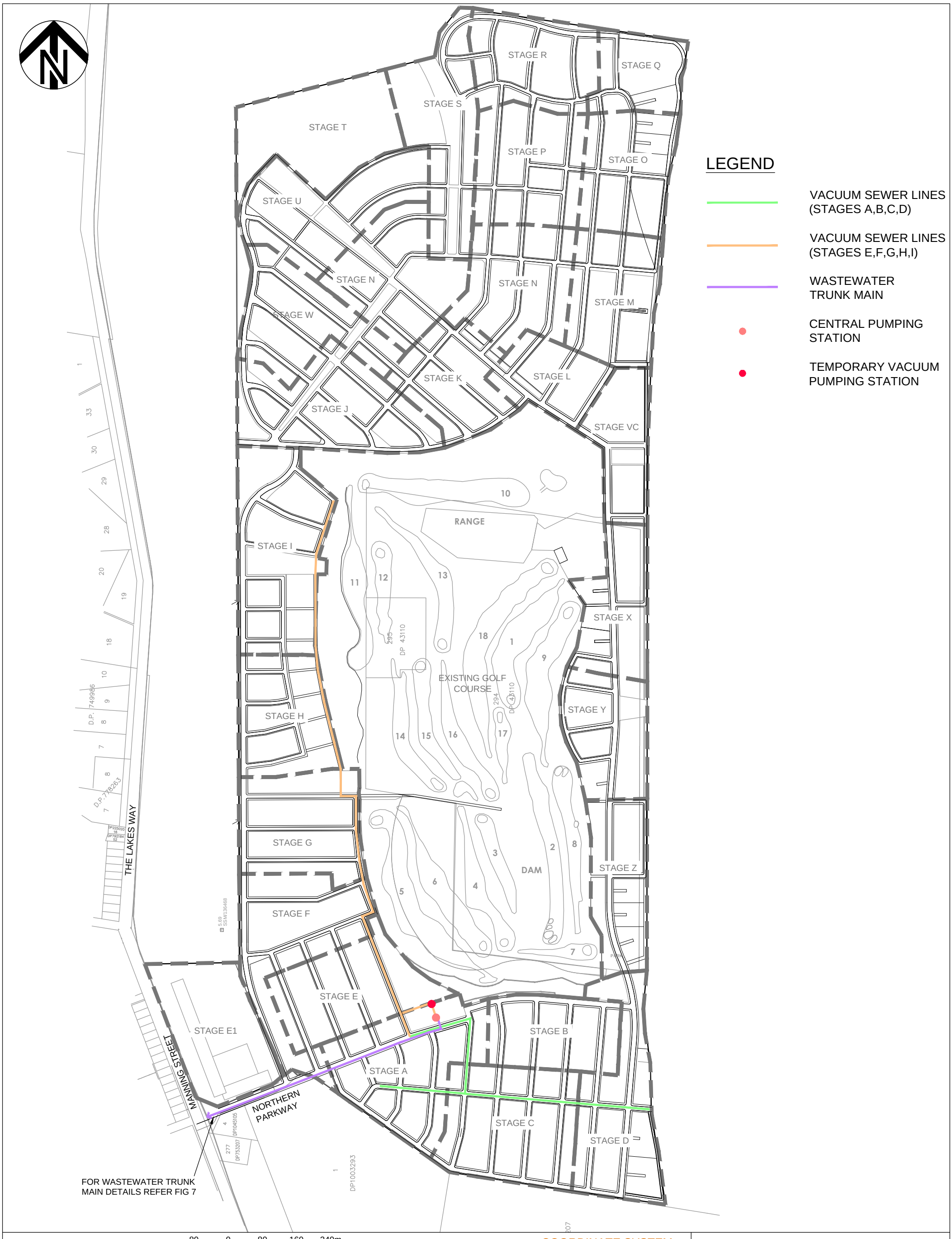

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PROJECT NO. 30011196	PROJECT TITLE	NORTH TUNCURRY DEVELOPMENT - WASTE WATER	
FIG NO. 5	FIGURE TITLE	PRELIMINARY VACUUM SEWERAGE SYSTEM PLAN - INITIAL STAGE	
CREATED BY S.DRUERY	SOURCES -		

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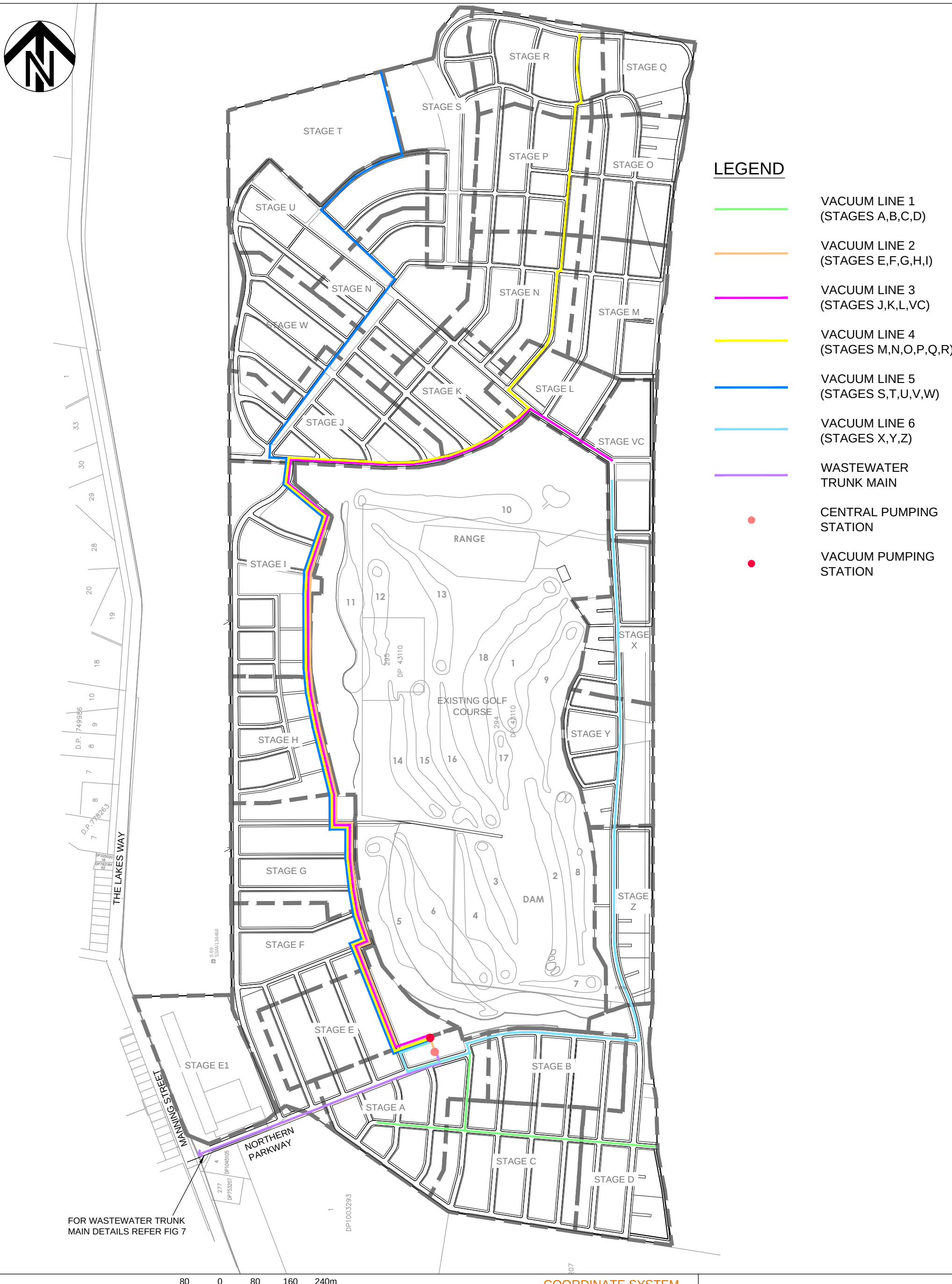

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PROJECT NO. 30011196	PROJECT TITLE	NORTH TUNCURRY DEVELOPMENT - WASTE WATER	
FIG NO. 6	FIGURE TITLE	PRELIMINARY VACUUM SEWERAGE SYSTEM PLAN - ULTIMATE STAGE	
CREATED BY S.DRUERY	SOURCES -		

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HALLIDAYS POINT WWTP

DARAWANK RESERVE

EXISTING DN450 DICL RISING MAIN

TASMAN SEA

THE LAKES WAY

EXISTING GOLF COURSE

NEW CENTRAL WWPS

EXISTING TUNCURRY No.23 WWPS (2 PUMPS DUTY 237 L/s)

TUNCURRY

LEGEND

- DEVELOPMENT BOUNDARY
- EXISTING RISING MAIN
- WASTE WATER PUMP STATION
- OPTION 1 - RISING MAIN FROM NEW WWPS TO HALLIDAYS POINT WWTP
  - OPTION 1A - RISING MAIN DN 300
  - OPTION 1B - RISING MAIN DN 225
- OPTION 2 - RISING MAIN FROM NEW WWPS TO EXISTING WWPS No.23
  - OPTION 2A - RISING MAIN DN 300
  - OPTION 2B - RISING MAIN DN 225
- OPTION 3 - RISING MAIN FROM NEW WWPS TO EXISTING WWPS No.23 RISING MAIN
  - OPTION 3A - RISING MAIN DN 300
  - OPTION 3B - RISING MAIN DN 225

300 0 300 600 900m

SCALE 1:30000

DATE 10/04/14

PAGE SIZE A3

COORDINATE SYSTEM MGA

PROJECT NO. 30011196

PROJECT TITLE NORTH TUNCURRY DEVELOPMENT - WASTE WATER

FIG NO. 7

FIGURE TITLE WASTEWATER TRUNK MAIN OPTIONS

CREATED BY M.SKINNER

SOURCES .

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APPENDIX A – COST ESTIMATES AND NPV ANALYSIS

North Tuncurry Development Project - Options for Sewer System

TRUNK SYSTEM OPTION		RETICULATION OPTION		Capital Cost	NPV (Capital+O&M) at 7% 30 yrs
Option 1	Central WWPS pumping to Hallidays Point WWTP	**Option 1A**	Gravity system with internal PSs	$ 20,822,742	$ 15,108,937
		Option 1B	Vacuum system	$ 19,274,254	$ 19,022,982
Option 2	Central WWPS pumping to Tuncurry No. 23 WWPS	**Option 2A**	Gravity system with internal PSs	$ 17,891,362	$ 12,008,742
		Option 2B	Vacuum system	$ 16,150,720	$ 15,482,036
Option 3	Central WWPS pumping to Tuncurry No. 23 rising main	**Option 3A**	Gravity system with internal PSs	$ 18,209,608	$ 12,481,776
		Option 3B	Vacuum system	$ 17,023,762	$ 16,766,202

Option	Capital Cost ($M)			O&M Cost over 30 years ($M)			
	Reticulation System	Transportation System	Sub-Total	O&M Cost Reticulation	O&M Cost Transportation	Odour Control	Sub-Total
Option 1A	$ 16.1	$ 4.8	**$ 20.8**	$ 2.69	$ 1.22	$ 1.44	**$ 5.3**
Option 1B	$ 15.1	$ 4.1	**$ 19.3**	$ 15.41	$ 1.09	$ 1.35	**$ 17.8**
Option 2A	$ 16.1	$ 1.8	**$ 17.9**	$ 2.69	$ 0.81	$ 1.44	**$ 4.9**
Option 2B	$ 15.1	$ 1.0	**$ 16.2**	$ 15.41	$ 0.08	$ 1.35	**$ 16.8**
Option 3A	$ 16.1	$ 2.1	**$ 18.2**	$ 2.69	$ 1.18	$ 1.44	**$ 5.3**
Option 3B	$ 15.1	$ 1.9	**$ 17.0**	$ 15.41	$ 1.07	$ 1.35	**$ 17.8**

OPTION 1 **Central WWPS pumping to Hallidays Point WWTP**

Option 1A **Gravity Sewerage Reticulation System**

NPV			NPV		Year																																	
		4%	7%	10%	0 2014	1 2015	2 2016	3 2017	4 2018	5 2019	6 2020	7 2021	8 2022	9 2023	10 2024	11 2025	12 2026	13 2027	14 2028	15 2029	16 2030	17 2031	18 2032	19 2033	20 2034	21 2035	22 2036	23 2037	24 2038	25 2039	26 2040	27 2041	28 2042	29 2043	30 2044	TOTAL
												PS2			PS3				PS4	PS5	PS6							PS7							
Capital Cost	**Total**	**$ 15,240,114**	**$ 12,789,067**	**$ 11,159,313**	**5,603,473**	**725,780**	**350,259**	**336,890**	**370,938**	**217,543**	**337,645**	**1,065,300**	**1,910,941**	**794,323**	**789,810**	**402,042**	**448,984**	**296,784**	**1,003,520**	**902,210**	**922,339**	**978,782**	**417,151**	**990,089**	**73,133**	**370,335**	**83,510**	**264,806**	**693,593**	**314,250**	**158,311**	**0**	**0**	**0**	**0**	**20,822,742**
	Reticulation				841,914	725,780	350,259	336,890	370,938	217,543	337,645	351,013	1,910,941	794,323	266,582	402,042	448,984	296,784	525,508	403,410	409,471	978,782	417,151	990,089	73,133	370,335	83,510	264,806	166,660	314,250	158,311					**12,807,056**
	Internal WWPS incl Rising Mains				0	0	0	0	0	0	0	714,287	0	0	523,228	0	0	0	478,012	498,800	512,868	0	0	0	0	0	0	0	526,933	0	0					**3,254,128**
	Central WWPS and RM				4,761,558																																**4,761,558**
Operation and Maintenance Cost	***% of Cap. Cost PA***																																				
Internal Pumping Stations O&M Cost	*2.25%*	$ 498,106	$ 348,311	$ 252,968									10,983	10,983	10,983	21,064	21,064	21,064	21,064	29,187	36,723	44,691	44,691	44,691	44,691	44,691	44,691	44,691	44,691	52,439	52,439	52,439	52,439	52,439	52,439	**855,279**
Internal Rising Mains O&M Cost	*0.25%*	$ 20,762	$ 14,467	$ 10,486									565	565	565	753	753	753	753	1,046	1,455	1,852	1,852	1,852	1,852	1,852	1,852	1,852	1,852	2,309	2,309	2,309	2,309	2,309	2,309	**35,882**
Gravity Mains Maintenance O&M Cost	*0.75%*	$ 862,731	$ 534,696	$ 351,385		6,314	11,758	14,385	16,911	19,693	21,325	23,857	26,490	40,822	46,779	48,779	51,794	55,161	57,387	61,329	64,354	67,425	74,766	77,895	85,320	85,869	88,646	89,273	91,259	92,509	94,866	96,053	96,053	96,053	96,053	**1,799,178**
Central WWPS O&M Cost	*2.25%*	$ 558,107	$ 400,507	$ 304,257		32,275	32,275	32,275	32,275	32,275	32,275	32,275	32,275	32,275	32,275	32,275	32,275	32,275	32,275	32,275	32,275	32,275	32,275	32,275	32,275	32,275	32,275	32,275	32,275	32,275	32,275	32,275	32,275	32,275	32,275	**968,262**
Trunk Rising Main O&M Cost	*0.25%*	$ 143,831	$ 103,215	$ 78,411		8,318	8,318	8,318	8,318	8,318	8,318	8,318	8,318	8,318	8,318	8,318	8,318	8,318	8,318	8,318	8,318	8,318	8,318	8,318	8,318	8,318	8,318	8,318	8,318	8,318	8,318	8,318	8,318	8,318	8,318	**249,532**
Odour Control		$ 1,090,094	$ 918,673	$ 793,291		220,000	110,000	110,000	110,000	110,000	110,000	110,000	110,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000								**1,440,000**
Annual GHG Abatement Cost	not included	$ -	$ -	$ -																																**0**
TOTAL		**$ 18,413,745**	**$ 15,108,937**	**$ 12,950,111**																																**26,170,876**

Option 1B **Vacuum Sewerage Reticulation System** Note: Under this option the Vacuum Pumping Station would not be able to transport wastewater to Hallidays Point WWTP and Central WWPS and RM would be required.

NPV			NPV		Year																																	
		4%	7%	10%	0 2014	1 2015	2 2016	3 2017	4 2018	5 2019	6 2020	7 2021	8 2022	9 2023	10 2024	11 2025	12 2026	13 2027	14 2028	15 2029	16 2030	17 2031	18 2032	19 2033	20 2034	21 2035	22 2036	23 2037	24 2038	25 2039	26 2040	27 2041	28 2042	29 2043	30 2044	TOTAL
Capital Cost	**Total**	**$ 14,759,348**	**$ 12,715,086**	**$ 11,321,542**	**6,515,099**	**295,563**	**394,320**	**314,088**	**253,180**	**351,684**	**348,751**	**387,316**	**448,917**	**4,082,259**	**307,571**	**243,139**	**246,038**	**1,079,979**	**281,368**	**314,709**	**266,704**	**189,312**	**319,051**	**1,044,064**	**113,763**	**417,191**	**98,959**	**273,362**	**243,113**	**268,765**	**175,990**	**0**	**0**	**0**	**0**	**19,274,254**
	Reticulation				468,504	295,563	394,320	314,088	253,180	351,684	348,751	387,316	448,917	982,259	307,571	243,139	246,038	1,079,979	281,368	314,709	266,704	189,312	319,051	1,044,064	113,763	417,191	98,959	273,362	243,113	268,765	175,990					**10,127,660**
	Temporary & Permanent Vacuum Pump Stations				1,900,000									3,100,000																						**5,000,000**
																																					0
	Central WWPS and RM				4,146,594																																**4,146,594**
Operation and Maintenance Cost	***% of Cap. Cost PA***																																				
Vacuum Reticulation Network	5%	$ 4,265,235	$ 2,608,468	$ 1,689,922		23,425	38,203	57,919	73,624	86,283	103,867	121,305	140,670	163,116	212,229	227,608	239,765	252,067	306,065	320,134	335,869	349,205	358,670	374,623	426,826	432,514	453,374	458,322	471,990	484,145	497,583	506,383	506,383	506,383	506,383	**9,034,932**
Vacuum Sewage Pump Station	7.75%	$ 3,462,925	$ 2,375,356	$ 1,729,227		147,250	147,250	147,250	147,250	147,250	147,250	147,250	147,250	147,250	240,250	240,250	240,250	240,250	240,250	240,250	240,250	240,250	240,250	240,250	240,250	240,250	240,250	240,250	240,250	240,250	240,250	240,250	240,250	240,250	240,250	**6,370,500**
Central WWPS O&M Cost	*2.25%*	$ 502,464	$ 360,576	$ 273,923		29,058	29,058	29,058	29,058	29,058	29,058	29,058	29,058	29,058	29,058	29,058	29,058	29,058	29,058	29,058	29,058	29,058	29,058	29,058	29,058	29,058	29,058	29,058	29,058	29,058	29,058	29,058	29,058	29,058	29,058	**871,726**
Trunk Rising Main O&M Cost	*0.25%*	$ 123,428	$ 88,574	$ 67,288		7,138	7,138	7,138	7,138	7,138	7,138	7,138	7,138	7,138	7,138	7,138	7,138	7,138	7,138	7,138	7,138	7,138	7,138	7,138	7,138	7,138	7,138	7,138	7,138	7,138	7,138	7,138	7,138	7,138	7,138	**214,136**
Odour Control		$ 1,032,304	$ 874,923	$ 759,058		220,000	110,000	110,000	110,000	110,000	90,000	90,000	90,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000									**1,350,000**
Annual GHG Abatement Cost	not included	$ -	$ -	$ -																																**0**
TOTAL		**$ 24,145,704**	**$ 19,022,982**	**$ 15,840,960**																																**37,115,549**

OPTION 2 Central WWPS pumping to Tuncurry No. 23 WWPS

Option 2A Gravity Sewerage Reticulation System

NPV		NPV 4%	NPV 7%	NPV 10%	0 2014	1 2015	2 2016	3 2017	4 2018	5 2019	6 2020	7 2021 PS2	8 2022	9 2023	10 2024 PS3	11 2025	12 2026	13 2027	14 2028 PS4	15 2029 PS5
Capital Cost	**Total**	**$ 12,308,734**	**$ 9,857,687**	**$ 8,227,933**	**2,672,093**	**725,780**	**350,259**	**336,890**	**370,938**	**217,543**	**337,645**	**1,065,300**	**1,910,941**	**794,323**	**789,810**	**402,042**	**448,984**	**296,784**	**1,003,520**	**902,210**
	Reticulation				841,914	725,780	350,259	336,890	370,938	217,543	337,645	351,013	1,910,941	794,323	266,582	402,042	448,984	296,784	525,508	403,410
	Internal WWPS incl Rising Mains				0	0	0	0	0	0	0	714,287	0	0	523,228	0	0	0	478,012	498,800
	Central WWPS and RM				1,830,178															
Operation and Maintenance Cost	***% of Cap. Cost PA***																			
Internal Pumping Stations O&M Cost	*2.25%*	$ 498,106	$ 348,311	$ 252,968									10,983	10,983	10,983	21,064	21,064	21,064	21,064	29,187
Internal Rising Mains O&M Cost	*0.25%*	$ 20,762	$ 14,467	$ 10,486									565	565	565	753	753	753	753	1,046
Gravity Mains Maintenance O&M Cost	*0.75%*	$ 862,731	$ 534,696	$ 351,385		6,314	11,758	14,385	16,911	19,693	21,325	23,857	26,490	40,822	46,779	48,779	51,794	55,161	57,387	61,329
Central WWPS O&M Cost	*2.25%*	$ 436,022	$ 312,897	$ 237,702		25,215	25,215	25,215	25,215	25,215	25,215	25,215	25,215	25,215	25,215	25,215	25,215	25,215	25,215	25,215
Trunk Rising Main O&M Cost	*0.25%*	$ 30,672	$ 22,011	$ 16,721		1,774	1,774	1,774	1,774	1,774	1,774	1,774	1,774	1,774	1,774	1,774	1,774	1,774	1,774	1,774
Odour Control		$ 1,090,094	$ 918,673	$ 793,291		220,000	110,000	110,000	110,000	110,000	110,000	110,000	110,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000
Annual GHG Abatement Cost	not included	$ -	$ -	$ -																
TOTAL		**$ 15,247,122**	**$ 12,008,742**	**$ 9,890,486**																

NPV		16 2030 PS6	17 2031	18 2032	19 2033	20 2034	21 2035	22 2036	23 2037	24 2038 PS7	25 2039	26 2040	27 2041	28 2042	29 2043	30 2044	TOTAL
Capital Cost	**Total**	**922,339**	**978,782**	**417,151**	**990,089**	**73,133**	**370,335**	**83,510**	**264,806**	**693,593**	**314,250**	**158,311**	**0**	**0**	**0**	**0**	**17,891,362**
	Reticulation	409,471	978,782	417,151	990,089	73,133	370,335	83,510	264,806	166,660	314,250	158,311					**12,807,056**
	Internal WWPS incl Rising Mains	512,868	0	0	0	0	0	0	0	526,933	0	0					**3,254,128**
	Central WWPS and RM																**1,830,178**
Operation and Maintenance Cost	***% of Cap. Cost PA***																
Internal Pumping Stations O&M Cost	*2.25%*	36,723	44,691	44,691	44,691	44,691	44,691	44,691	44,691	44,691	52,439	52,439	52,439	52,439	52,439	52,439	**855,279**
Internal Rising Mains O&M Cost	*0.25%*	1,455	1,852	1,852	1,852	1,852	1,852	1,852	1,852	1,852	2,309	2,309	2,309	2,309	2,309	2,309	**35,882**
Gravity Mains Maintenance O&M Cost	*0.75%*	64,354	67,425	74,766	77,895	85,320	85,869	88,646	89,273	91,259	92,509	94,866	96,053	96,053	96,053	96,053	**1,799,178**
Central WWPS O&M Cost	*2.25%*	25,215	25,215	25,215	25,215	25,215	25,215	25,215	25,215	25,215	25,215	25,215	25,215	25,215	25,215	25,215	**756,456**
Trunk Rising Main O&M Cost	*0.25%*	1,774	1,774	1,774	1,774	1,774	1,774	1,774	1,774	1,774	1,774	1,774	1,774	1,774	1,774	1,774	**53,213**
Odour Control		30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000								**1,440,000**
Annual GHG Abatement Cost	not included																**0**
TOTAL																	**22,831,371**

Option 2B Vacuum Sewerage Reticulation System

Note: Under this option the Vacuum Pumping Station will transport wastewater to Tuncurry No. 23 WWPS and therefore Central WWPS will not be required.

NPV		NPV 4%	NPV 7%	NPV 10%	0 2014	1 2015	2 2016	3 2017	4 2018	5 2019	6 2020	7 2021	8 2022	9 2023	10 2024	11 2025	12 2026	13 2027	14 2028	15 2029
Capital Cost	**Total**	**$ 11,635,814**	**$ 9,591,551**	**$ 8,198,008**	**3,391,564**	**295,563**	**394,320**	**314,088**	**253,180**	**351,684**	**348,751**	**387,316**	**448,917**	**4,082,259**	**307,571**	**243,139**	**246,038**	**1,079,979**	**281,368**	**314,709**
	Reticulation				468,504	295,563	394,320	314,088	253,180	351,684	348,751	387,316	448,917	982,259	307,571	243,139	246,038	1,079,979	281,368	314,709
	Temporary & Permanent Vacuum Pump Stations				1,900,000									3,100,000						
	Trunk Rising Main				1,023,060															
Operation and Maintenance Cost	***% of Cap. Cost PA***																			
Vacuum Reticulation Network	5%	$ 4,265,235	$ 2,608,468	$ 1,689,922		23,425	38,203	57,919	73,624	86,283	103,867	121,305	140,670	163,116	212,229	227,608	239,765	252,067	306,065	320,134
Vacuum Sewage Pump Station	7.75%	$ 3,462,925	$ 2,375,356	$ 1,729,227		147,250	147,250	147,250	147,250	147,250	147,250	147,250	147,250	147,250	240,250	240,250	240,250	240,250	240,250	240,250
Trunk Rising Main O&M Cost	*0.25%*	$ 44,227	$ 31,738	$ 24,111		2,558	2,558	2,558	2,558	2,558	2,558	2,558	2,558	2,558	2,558	2,558	2,558	2,558	2,558	2,558
Odour Control		$ 1,032,304	$ 874,923	$ 759,058		220,000	110,000	110,000	110,000	110,000	90,000	90,000	90,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000
Annual GHG Abatement Cost	not included	$ -	$ -	$ -																
TOTAL		**$ 20,440,505**	**$ 15,482,036**	**$ 12,400,325**																

NPV		16 2030	17 2031	18 2032	19 2033	20 2034	21 2035	22 2036	23 2037	24 2038	25 2039	26 2040	27 2041	28 2042	29 2043	30 2044	TOTAL
Capital Cost	**Total**	**266,704**	**189,312**	**319,051**	**1,044,064**	**113,763**	**417,191**	**98,959**	**273,362**	**243,113**	**268,765**	**175,990**	**0**	**0**	**0**	**0**	**16,150,720**
	Reticulation	266,704	189,312	319,051	1,044,064	113,763	417,191	98,959	273,362	243,113	268,765	175,990					**10,127,660**
	Temporary & Permanent Vacuum Pump Stations																**5,000,000**
																	0
	Trunk Rising Main																**1,023,060**
Operation and Maintenance Cost	***% of Cap. Cost PA***																
Vacuum Reticulation Network	5%	335,869	349,205	358,670	374,623	426,826	432,514	453,374	458,322	471,990	484,145	497,583	506,383	506,383	506,383	506,383	**9,034,932**
Vacuum Sewage Pump Station	7.75%	240,250	240,250	240,250	240,250	240,250	240,250	240,250	240,250	240,250	240,250	240,250	240,250	240,250	240,250	240,250	**6,370,500**
Trunk Rising Main O&M Cost	*0.25%*	2,558	2,558	2,558	2,558	2,558	2,558	2,558	2,558	2,558	2,558	2,558	2,558	2,558	2,558	2,558	**76,730**
Odour Control		30,000	30,000	30,000	30,000	30,000	30,000	30,000									**1,350,000**
Annual GHG Abatement Cost	not included																**0**
TOTAL																	**32,982,882**

OPTION 3 — Central WWPS pumping to Tuncurry No. 23 Rising Main

Option 3A — Gravity Sewerage Reticulation System

NPV		NPV 4%	NPV 7%	NPV 10%	Year 0 2014	1 2015	2 2016	3 2017	4 2018	5 2019	6 2020	7 2021 PS2	8 2022	9 2023	10 2024 PS3	11 2025	12 2026	13 2027	14 2028 PS4	15 2029 PS5
Capital Cost	**Total**	**$ 12,626,981**	**$ 10,175,933**	**$ 8,546,179**	**2,990,339**	**725,780**	**350,259**	**336,890**	**370,938**	**217,543**	**337,645**	**1,065,300**	**1,910,941**	**794,323**	**789,810**	**402,042**	**448,984**	**296,784**	**1,003,520**	**902,210**
	Reticulation				841,914	725,780	350,259	336,890	370,938	217,543	337,645	351,013	1,910,941	794,323	266,582	402,042	448,984	296,784	525,508	403,410
	Internal WWPS incl Rising Mains				0	0	0	0	0	0	0	714,287	0	0	523,228	0	0	0	478,012	498,800
	Central WWPS and RM				2,148,424															
Operation and Maintenance Cost	***% of Cap. Cost PA***																			
Internal Pumping Stations O&M Cost	*2.25%*	$ 498,106	$ 348,311	$ 252,968									10,983	10,983	10,983	21,064	21,064	21,064	21,064	29,187
Internal Rising Mains O&M Cost	*0.25%*	$ 20,762	$ 14,467	$ 10,486									565	565	565	753	753	753	753	1,046
Gravity Mains Maintenance O&M Cost	*0.75%*	$ 862,731	$ 534,696	$ 351,385		6,314	11,758	14,385	16,911	19,693	21,325	23,857	26,490	40,822	46,779	48,779	51,794	55,161	57,387	61,329
Central WWPS O&M Cost	*2.25%*	$ 663,205	$ 475,926	$ 361,552		38,353	38,353	38,353	38,353	38,353	38,353	38,353	38,353	38,353	38,353	38,353	38,353	38,353	38,353	38,353
Trunk Rising Main O&M Cost	*0.25%*	$ 19,187	$ 13,769	$ 10,460		1,110	1,110	1,110	1,110	1,110	1,110	1,110	1,110	1,110	1,110	1,110	1,110	1,110	1,110	1,110
Odour Control		$ 1,090,094	$ 918,673	$ 793,291		220,000	110,000	110,000	110,000	110,000	110,000	110,000	110,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000
Annual GHG Abatement Cost	not included	$ -	$ -	$ -																
TOTAL		**$ 15,781,065**	**$ 12,481,776**	**$ 10,326,321**																

NPV		16 2030 PS6	17 2031	18 2032	19 2033	20 2034	21 2035	22 2036	23 2037	24 2038 PS7	25 2039	26 2040	27 2041	28 2042	29 2043	30 2044	TOTAL
Capital Cost	**Total**	**922,339**	**978,782**	**417,151**	**990,089**	**73,133**	**370,335**	**83,510**	**264,806**	**693,593**	**314,250**	**158,311**	**0**	**0**	**0**	**0**	**18,209,608**
	Reticulation	409,471	978,782	417,151	990,089	73,133	370,335	83,510	264,806	166,660	314,250	158,311					**12,807,056**
	Internal WWPS incl Rising Mains	512,868	0	0	0	0	0	0	0	526,933	0	0					**3,254,128**
	Central WWPS and RM																**2,148,424**
Operation and Maintenance Cost	***% of Cap. Cost PA***																
Internal Pumping Stations O&M Cost	*2.25%*	36,723	44,691	44,691	44,691	44,691	44,691	44,691	44,691	44,691	52,439	52,439	52,439	52,439	52,439	52,439	**855,279**
Internal Rising Mains O&M Cost	*0.25%*	1,455	1,852	1,852	1,852	1,852	1,852	1,852	1,852	1,852	2,309	2,309	2,309	2,309	2,309	2,309	**35,882**
Gravity Mains Maintenance O&M Cost	*0.75%*	64,354	67,425	74,766	77,895	85,320	85,869	88,646	89,273	91,259	92,509	94,866	96,053	96,053	96,053	96,053	**1,799,178**
Central WWPS O&M Cost	*2.25%*	38,353	38,353	38,353	38,353	38,353	38,353	38,353	38,353	38,353	38,353	38,353	38,353	38,353	38,353	38,353	**1,150,596**
Trunk Rising Main O&M Cost	*0.25%*	1,110	1,110	1,110	1,110	1,110	1,110	1,110	1,110	1,110	1,110	1,110	1,110	1,110	1,110	1,110	**33,288**
Odour Control		30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000								**1,440,000**
Annual GHG Abatement Cost	not included																**0**
TOTAL																	**23,523,832**

Option 3B — Vacuum Sewerage Reticulation System

Note: Under this option the Vacuum Pumping Station would not be able to transport wastewater to common rising main and therefore Central WWPS and RM would be required.

NPV		NPV 4%	NPV 7%	NPV 10%	Year 0 2014	1 2015	2 2016	3 2017	4 2018	5 2019	6 2020	7 2021	8 2022	9 2023	10 2024	11 2025	12 2026	13 2027	14 2028	15 2029
Capital Cost	**Total**	**$ 12,508,856**	**$ 10,464,593**	**$ 9,071,050**	**4,264,606**	**295,563**	**394,320**	**314,088**	**253,180**	**351,684**	**348,751**	**387,316**	**448,917**	**4,082,259**	**307,571**	**243,139**	**246,038**	**1,079,979**	**281,368**	**314,709**
	Reticulation				468,504	295,563	394,320	314,088	253,180	351,684	348,751	387,316	448,917	982,259	307,571	243,139	246,038	1,079,979	281,368	314,709
	Temporary & Permanent Vacuum Pump Stations				1,900,000									3,100,000						
	Central WWPS and RM				1,896,102															
Operation and Maintenance Cost																				
Vacuum Reticulation Network	5%	$ 4,265,235	$ 2,608,468	$ 1,689,922		23,425	38,203	57,919	73,624	86,283	103,867	121,305	140,670	163,116	212,229	227,608	239,765	252,067	306,065	320,134
Vacuum Sewage Pump Station	7.75%	$ 3,462,925	$ 2,375,356	$ 1,729,227		147,250	147,250	147,250	147,250	147,250	147,250	147,250	147,250	147,250	240,250	240,250	240,250	240,250	240,250	240,250
Central WWPS O&M Cost	*2.25%*	$ 602,057	$ 432,045	$ 328,217		34,817	34,817	34,817	34,817	34,817	34,817	34,817	34,817	34,817	34,817	34,817	34,817	34,817	34,817	34,817
Trunk Rising Main O&M Cost	*0.25%*	$ 15,073	$ 10,817	$ 8,217		872	872	872	872	872	872	872	872	872	872	872	872	872	872	872
Odour Control		$ 1,032,304	$ 874,923	$ 759,058		220,000	110,000	110,000	110,000	110,000	90,000	90,000	90,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000
Annual GHG Abatement Cost	not included	$ -	$ -	$ -																
TOTAL		**$ 21,886,450**	**$ 16,766,202**	**$ 13,585,691**																

NPV		16 2030	17 2031	18 2032	19 2033	20 2034	21 2035	22 2036	23 2037	24 2038	25 2039	26 2040	27 2041	28 2042	29 2043	30 2044	TOTAL
Capital Cost	**Total**	**266,704**	**189,312**	**319,051**	**1,044,064**	**113,763**	**417,191**	**98,959**	**273,362**	**243,113**	**268,765**	**175,990**	**0**	**0**	**0**	**0**	**17,023,762**
	Reticulation	266,704	189,312	319,051	1,044,064	113,763	417,191	98,959	273,362	243,113	268,765	175,990					**10,127,660**
	Temporary & Permanent Vacuum Pump Stations																**5,000,000**
																	0
	Central WWPS and RM																**1,896,102**
Operation and Maintenance Cost																	
Vacuum Reticulation Network	5%	335,869	349,205	358,670	374,623	426,826	432,514	453,374	458,322	471,990	484,145	497,583	506,383	506,383	506,383	506,383	**9,034,932**
Vacuum Sewage Pump Station	7.75%	240,250	240,250	240,250	240,250	240,250	240,250	240,250	240,250	240,250	240,250	240,250	240,250	240,250	240,250	240,250	**6,370,500**
Central WWPS O&M Cost	*2.25%*	34,817	34,817	34,817	34,817	34,817	34,817	34,817	34,817	34,817	34,817	34,817	34,817	34,817	34,817	34,817	**1,044,510**
Trunk Rising Main O&M Cost	*0.25%*	872	872	872	872	872	872	872	872	872	872	872	872	872	872	872	**26,151**
Odour Control		30,000	30,000	30,000	30,000	30,000	30,000	30,000									**1,350,000**
Annual GHG Abatement Cost	not included																**0**
TOTAL																	**34,849,855**

PROJECT DESCRIPTION: North Tuncurry Development Project - Gravity System - Stage A

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 8,642.00	$ 8,642.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 15,000.00	$ 15,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 15,000.00	$ 15,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 12,000.00	$ 12,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 27,000.00	$ 27,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 6,000.00	$ 6,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 5,120.78	$ 5,120.78
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Gravity - section will be present if one or more gravity mains are specified

Item	Construction of Sewer Gravity Mains	Qty	Unit	Rate $/Unit	Amount $
HWG001	Service Location	Item	Lump Sum	$ 1,076.25	$ 1,076.25
HWG002	Supply all valves	Item	Lump Sum		$ -
HWG003	Supply all fittings	Item	Lump Sum		$ -
HWG004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
00FVSS	Nominal DN150 PVC pipe	1450	m	$ 12.00	$ 17,400.00
016VSS	Nominal DN225 PVC pipe	150	m	$ 35.00	$ 5,250.00
01EVSS	Nominal DN300 PVC pipe	155	m	$ 68.00	$ 10,540.00
HWG005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
00FV03	Nominal DN150 PVC (Trench type 3)	750	m	$ 85.40	$ 64,050.00
HWG006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m depth to invert in OTR				
00FV03	Nominal DN150 PVC (Trench type 3)	700	m	$ 136.40	$ 95,480.00
HWG007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m depth to invert in OTR				
016V03	Nominal DN225 PVC (Trench type 3)	150	m	$ 377.40	$ 56,610.00
HWG008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m depth to invert in OTR				
01EV03	Nominal DN300 PVC (Trench type 3)	155	m	$ 765.25	$ 118,613.75
HWG009	Excavate, backfill, supply and install access chambers including base, chamber, cover & surround and access ladder for the following nominal diameter access chambers:				

HWG010	Extra over rate for installation for Additional compaction		m3	$ 76.50	
HWG011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 78.75	
HWG012	Extra over rate for installation to supply, place & compact non cohesive material.		m3		
HWG013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 337.50	
HWG014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWG015	Supply & place ballast		tonnes	$ 90.00	
HWG016	External Dewatering of trench including establishment & disestablishment	305	m3	$ 7.42	$ 2,262.90
HWG017	Supply and place treated timber piling for pipe support		m		
HWG018	Road / creek crossings				
HWG019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWG020	Supply & installation of river crossing includes supply of MSCL pipe, welding, testing of welds, 150mm concrete encasement, mobilisation & demobilisation of dredge, excavation & disposal of excavated material, backfilling, lay, bed & test:				
HWG021	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWG022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206		Each		
HWG023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWG024	Flow Relief Structures		Each		
HWG025	EMPTY				
HWG026	Supply and construct vent stacks		each		
HWG027	Preparation of line sheets	1755	each	$ 1.00	$ 1,755.00
HWG028	Acceptance testing - gravity main		m		
HWG029	**Miscellaneous**				
HWG000	***Sub Total***				$373,038

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -

HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		
HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 14,040.00	$ 14,040.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	$ 475,840.68

B.	**PRE-CONSTRUCTION COST (Table 10)**	
HW0016	Design	$ 95,168.14
HW0017	Project Management of Design	$ 29,033.63
HW0018	Land Matters	$ -
HW0024	Community Consultation	
	Sub Total(B1)	$ 124,201.76
	Pre construction contingency (30% of B1)	$ 37,260.53
	TOTAL PRE-CONSTRUCTION COST (B)	$ 161,462.29

C.	**CONSTRUCTION COST**	
	Total Estimated Contract Award Sum (A)	$ 475,840.68
HW0019	Principal Supplied Pipe (as applicable)	$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)	$ -
HW0021	Principal Supplied Fittings (as applicable)	$ -
HW0022	Pump Station HV Power Supply	$ -
HW0023	Construction Management (Table 11)	$ 47,584.07
	Sub Total (C1)	$ 523,424.75
	Construction contingency (Table 12) (30% of C1) Preliminary Estimate	$ 157,027.43
	TOTAL CONSTRUCTION COST (C)	$ 680,452.18

TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	$ 841,914.47

Note:
Pumping station PS1 included in a separate estimate.

PROJECT DESCRIPTION: North Tuncurry Development Project - Gravity System - Stage B

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 7,347.00	$ 7,347.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 15,000.00	$ 15,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 15,000.00	$ 15,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 8,000.00	$ 8,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 18,000.00	$ 18,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 4,473.53	$ 4,473.53
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Gravity - section will be present if one or more gravity mains are specified

Item	Construction of Sewer Gravity Mains	Qty	Unit	Rate $/Unit	Amount $
HWG001	Service Location	Item	Lump Sum	$ 571.80	$ 571.80
HWG002	Supply all valves	Item	Lump Sum		$ -
HWG003	Supply all fittings	Item	Lump Sum		$ -
HWG004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
00FVSS	Nominal DN150 PVC pipe	640	m	$ 12.00	$ 7,680.00
016VSS	Nominal DN225 PVC pipe	313	m	$ 35.00	$ 10,955.00
HWG005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
HWG006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m depth to invert in OTR				
00FV03	Nominal DN150 PVC (Trench type 3)	640	m	$ 136.40	$ 87,296.00
016V03	Nominal DN225 PVC (Trench type 3)	313	m	$ 150.90	$ 47,231.70
HWG007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m depth to invert in OTR				
HWG008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m depth to invert in OTR				
HWG009	Excavate, backfill, supply and install access chambers including base, chamber, cover & surround and access ladder for the following nominal diameter access chambers:				
HWG010	Extra over rate for installation for Additional compaction		m3	$ 30.60	

HWG011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	
HWG012	Extra over rate for installation to supply, place & compact non cohesive material.		m3		
HWG013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWG014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWG015	Supply & place ballast		tonnes	$ 90.00	
HWG016	External Dewatering of trench including establishment & disestablishment	953	m3	$ 183.67	$ 175,041.44
HWG017	Supply and place treated timber piling for pipe support		m		
HWG018	Road / creek crossings				
HWG019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWG020	Supply & installation of river crossing includes supply of MSCL pipe, welding, testing of welds, 150mm concrete encasement, mobilisation & demobilisation of dredge, excavation & disposal of excavated material, backfilling, lay, bed & test:				
HWG021	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWG022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206		Each		
HWG023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWG024	Flow Relief Structures		Each		
HWG025	EMPTY				
HWG026	Supply and construct vent stacks		each		
HWG027	Preparation of line sheets	953	each	$ 1.00	$ 953.00
HWG028	Acceptance testing - gravity main		m		
HWG029	**Miscellaneous**				
HWG000	***Sub Total***				$329,729

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		

HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		
HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 7,624.00	$ 7,624.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	$ 409,173.47

B.	**PRE-CONSTRUCTION COST (Table 10)**	
HW0016	Design	$ 81,834.69
HW0017	Project Management of Design	$ 26,366.94
HW0018	Land Matters	$ -
HW0024	Community Consultation	
	Sub Total(B1)	$ 108,201.63
	Pre construction contingency (30% of B1)	$ 32,460.49
	TOTAL PRE-CONSTRUCTION COST (B)	$ 140,662.12

C.	**CONSTRUCTION COST**	
	Total Estimated Contract Award Sum (A)	$ 409,173.47
HW0019	Principal Supplied Pipe (as applicable)	$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)	$ -
HW0021	Principal Supplied Fittings (as applicable)	$ -
HW0022	Pump Station HV Power Supply	$ -
HW0023	Construction Management (Table 11)	$ 40,917.35
	Sub Total (C1)	$ 450,090.81
	Construction contingency (Table 12) (30% of C1) — Preliminary Estimate	$ 135,027.24
	TOTAL CONSTRUCTION COST (C)	$ 585,118.06

TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	$ 725,780.18

PROJECT DESCRIPTION: North Tuncurry Development Project - Gravity System - Stage C

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 3,619.00	$ 3,619.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 2,000.00	$ 2,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 2,609.57	$ 2,609.57
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Gravity - section will be present if one or more gravity mains are specified

Item	Construction of Sewer Gravity Mains	Qty	Unit	Rate $/Unit	Amount $
HWG001	Service Location	Item	Lump Sum	$ 930.60	$ 930.60
HWG002	Supply all valves	Item	Lump Sum		$ -
HWG003	Supply all fittings	Item	Lump Sum		$ -
HWG004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
00FVSS	Nominal DN150 PVC pipe	1551	m	$ 12.00	$ 18,612.00
HWG005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
00FV03	Nominal DN150 PVC (Trench type 3)	1551	m	$ 85.40	$ 132,455.40
HWG006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m depth to invert in OTR				
HWG007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m depth to invert in OTR				
HWG008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m depth to invert in OTR				
HWG009	Excavate, backfill, supply and install access chambers including base, chamber, cover & surround and access ladder for the following nominal diameter access chambers:				
HWG010	Extra over rate for installation for Additional compaction		m3	$ 15.30	
HWG011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	
HWG012	Extra over rate for installation to supply, place & compact non cohesive material.		m3		

HWG013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWG014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWG015	Supply & place ballast		tonnes	$ 90.00	
HWG016	External Dewatering of trench including establishment & disestablishment		m3		
HWG017	Supply and place treated timber piling for pipe support		m		
HWG018	Road / creek crossings				
HWG019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWG020	Supply & installation of river crossing includes supply of MSCL pipe, welding, testing of welds, 150mm concrete encasement, mobilisation & demobilisation of dredge, excavation & disposal of excavated material, backfilling, lay, bed & test:				
HWG021	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWG022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206		Each		
HWG023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWG024	Flow Relief Structures		Each		
HWG025	EMPTY				
HWG026	Supply and construct vent stacks		each		
HWG027	Preparation of line sheets	1551	each	$ 1.00	$ 1,551.00
HWG028	Acceptance testing - gravity main		m		
HWG029	**Miscellaneous**				
HWG000	***Sub Total***				$153,549

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		
HW0009.12	Hydromulch		m2		

HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 12,408.00	$ 12,408.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	$ 205,185.57

B.	**PRE-CONSTRUCTION COST (Table 10)**	
HW0016	Design	$ 41,037.11
HW0017	Project Management of Design	$ 18,207.42
HW0018	Land Matters	$ -
HW0024	Community Consultation	
	Sub Total(B1)	$ 59,244.54
	Pre construction contingency (30% of B1)	$ 17,773.36
	TOTAL PRE-CONSTRUCTION COST (B)	$ 77,017.90

C.	**CONSTRUCTION COST**	
	Total Estimated Contract Award Sum (A)	$ 205,185.57
HW0019	Principal Supplied Pipe (as applicable)	$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)	$ -
HW0021	Principal Supplied Fittings (as applicable)	$ -
HW0022	Pump Station HV Power Supply	$ -
HW0023	Construction Management (Table 11)	$ 5,000.00
	Sub Total (C1)	$ 210,185.57
	Construction contingency (Table 12) (30% of C1) Preliminary Estimate	$ 63,055.67
	TOTAL CONSTRUCTION COST (C)	$ 273,241.24

TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	$ 350,259.14

PROJECT DESCRIPTION: North Tuncurry Development Project - Gravity System - Stage D

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 3,458.00	$ 3,458.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 8,000.00	$ 8,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 18,000.00	$ 18,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 2,529.05	$ 2,529.05
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Gravity - section will be present if one or more gravity mains are specified

Item	Construction of Sewer Gravity Mains	Qty	Unit	Rate $/Unit	Amount $
HWG001	Service Location	Item	Lump Sum	$ 780.00	$ 780.00
HWG002	Supply all valves	Item	Lump Sum		$ -
HWG003	Supply all fittings	Item	Lump Sum		$ -
HWG004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
00FVSS	Nominal DN150 PVC pipe	1270	m	$ 12.00	$ 15,240.00
016VSS	Nominal DN225 PVC pipe	30	m	$ 35.00	$ 1,050.00
HWG005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
00FV03	Nominal DN150 PVC (Trench type 3)	1270	m	$ 85.40	$ 108,458.00
HWG006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m depth to invert in OTR				
016V03	Nominal DN225 PVC (Trench type 3)	30	m	$ 150.90	$ 4,527.00
HWG007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m depth to invert in OTR				
HWG008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m depth to invert in OTR				
HWG009	Excavate, backfill, supply and install access chambers including base, chamber, cover & surround and access ladder for the following nominal diameter access chambers:				
HWG010	Extra over rate for installation for Additional compaction		m3	$ 30.60	

HWG011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	
HWG012	Extra over rate for installation to supply, place & compact non cohesive material.		m3		
HWG013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWG014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWG015	Supply & place ballast		tonnes	$ 90.00	
HWG016	External Dewatering of trench including establishment & disestablishment	30	m3	$ 38.33	$ 1,150.00
HWG017	Supply and place treated timber piling for pipe support		m		
HWG018	Road / creek crossings				
HWG019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWG020	Supply & installation of river crossing includes supply of MSCL pipe, welding, testing of welds, 150mm concrete encasement, mobilisation & demobilisation of dredge, excavation & disposal of excavated material, backfilling, lay, bed & test:				
HWG021	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWG022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206		Each		
HWG023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWG024	Flow Relief Structures		Each		
HWG025	EMPTY				
HWG026	Supply and construct vent stacks		each		
HWG027	Preparation of line sheets	1300	each	$ 1.00	$ 1,300.00
HWG028	Acceptance testing - gravity main		m		
HWG029	**Miscellaneous**				
HWG000	***Sub Total***				$132,505

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		

HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		
HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 10,400.00	$ 10,400.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	$ 196,892.05

B.	**PRE-CONSTRUCTION COST (Table 10)**	
HW0016	Design	$ 39,378.41
HW0017	Project Management of Design	$ 17,875.68
HW0018	Land Matters	$ -
HW0024	Community Consultation	
	Sub Total(B1)	$ 57,254.09
	Pre construction contingency (30% of B1)	$ 17,176.23
	TOTAL PRE-CONSTRUCTION COST (B)	$ 74,430.32

C.	**CONSTRUCTION COST**	
	Total Estimated Contract Award Sum (A)	$ 196,892.05
HW0019	Principal Supplied Pipe (as applicable)	$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)	$ -
HW0021	Principal Supplied Fittings (as applicable)	$ -
HW0022	Pump Station HV Power Supply	$ -
HW0023	Construction Management (Table 11)	$ 5,000.00
	Sub Total (C1)	$ 201,892.05
	Construction contingency (Table 12) (30% of C1) — Preliminary Estimate	$ 60,567.61
	TOTAL CONSTRUCTION COST (C)	$ 262,459.67

TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	$ 336,889.98

PROJECT DESCRIPTION: North Tuncurry Development Project - Gravity System - Stage E

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 3,868.00	$ 3,868.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 8,000.00	$ 8,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 18,000.00	$ 18,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 2,734.12	$ 2,734.12
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Gravity - section will be present if one or more gravity mains are specified

Item	Construction of Sewer Gravity Mains	Qty	Unit	Rate $/Unit	Amount $
HWG001	Service Location	Item	Lump Sum	$ 480.75	$ 480.75
HWG002	Supply all valves	Item	Lump Sum		$ -
HWG003	Supply all fittings	Item	Lump Sum		$ -
HWG004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
00FVSS	Nominal DN150 PVC pipe	560	m	$ 12.00	$ 6,720.00
01EVSS	Nominal DN300 PVC pipe	193	m	$ 68.00	$ 13,124.00
HWG005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
00FV03	Nominal DN150 PVC (Trench type 3)	410	m	$ 85.40	$ 35,014.00
HWG006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m depth to invert in OTR				
00FV03	Nominal DN150 PVC (Trench type 3)	150	m	$ 136.40	$ 20,460.00
HWG007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m depth to invert in OTR				
01EV03	Nominal DN300 PVC (Trench type 3)	193	m	$ 408.25	$ 78,792.25
HWG008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m depth to invert in OTR				
HWG009	Excavate, backfill, supply and install access chambers including base, chamber, cover & surround and access ladder for the following nominal diameter access chambers:				
HWG010	Extra over rate for installation for Additional compaction		m3	$ 57.38	

HWG011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 78.75	
HWG012	Extra over rate for installation to supply, place & compact non cohesive material.		m3		
HWG013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 337.50	
HWG014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWG015	Supply & place ballast		tonnes	$ 90.00	
HWG016	External Dewatering of trench including establishment & disestablishment	343	m3	$ 5.96	$ 2,043.78
HWG017	Supply and place treated timber piling for pipe support		m		
HWG018	Road / creek crossings				
HWG019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWG020	Supply & installation of river crossing includes supply of MSCL pipe, welding, testing of welds, 150mm concrete encasement, mobilisation & demobilisation of dredge, excavation & disposal of excavated material, backfilling, lay, bed & test:				
HWG021	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWG022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206		Each		
HWG023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWG024	Flow Relief Structures		Each		
HWG025	EMPTY				
HWG026	Supply and construct vent stacks		each		
HWG027	Preparation of line sheets	753	each	$ 1.00	$ 753.00
HWG028	Acceptance testing - gravity main		m		
HWG029	**Miscellaneous**				
HWG000	***Sub Total***				$157,388

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		

HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		
HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 6,024.00	$ 6,024.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	$ 218,013.90

B.	**PRE-CONSTRUCTION COST (Table 10)**	
HW0016	Design	$ 43,602.78
HW0017	Project Management of Design	$ 18,720.56
HW0018	Land Matters	$ -
HW0024	Community Consultation	
	Sub Total(B1)	$ 62,323.34
	Pre construction contingency (30% of B1)	$ 18,697.00
	TOTAL PRE-CONSTRUCTION COST (B)	$ 81,020.34

C.	**CONSTRUCTION COST**	
	Total Estimated Contract Award Sum (A)	$ 218,013.90
HW0019	Principal Supplied Pipe (as applicable)	$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)	$ -
HW0021	Principal Supplied Fittings (as applicable)	$ -
HW0022	Pump Station HV Power Supply	$ -
HW0023	Construction Management (Table 11)	$ 5,000.00
	Sub Total (C1)	$ 223,013.90
	Construction contingency (Table 12) (30% of C1) — Preliminary Estimate	$ 66,904.17
	TOTAL CONSTRUCTION COST (C)	$ 289,918.07

TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	$ 370,938.41

PROJECT DESCRIPTION: North Tuncurry Development Project - Gravity System - Stage F

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 2,020.00	$ 2,020.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 8,000.00	$ 8,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 18,000.00	$ 18,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 1,810.25	$ 1,810.25
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Gravity - section will be present if one or more gravity mains are specified

Item	Construction of Sewer Gravity Mains	Qty	Unit	Rate $/Unit	Amount $
HWG001	Service Location	Item	Lump Sum	$ 279.00	$ 279.00
HWG002	Supply all valves	Item	Lump Sum		$ -
HWG003	Supply all fittings	Item	Lump Sum		$ -
HWG004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
00FVSS	Nominal DN150 PVC pipe	265	m	$ 12.00	$ 3,180.00
01EVSS	Nominal DN300 PVC pipe	160	m	$ 68.00	$ 10,880.00
HWG005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
00FV03	Nominal DN150 PVC (Trench type 3)	265	m	$ 85.40	$ 22,631.00
HWG006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m depth to invert in OTR				
01EV03	Nominal DN300 PVC (Trench type 3)	160	m	$ 181.75	$ 29,080.00
HWG007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m depth to invert in OTR				
HWG008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m depth to invert in OTR				
HWG009	Excavate, backfill, supply and install access chambers including base, chamber, cover & surround and access ladder for the following nominal diameter access chambers:				
HWG010	Extra over rate for installation for Additional compaction		m3	$ 38.25	

HWG011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 78.75	
HWG012	Extra over rate for installation to supply, place & compact non cohesive material.		m3		
HWG013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 337.50	
HWG014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWG015	Supply & place ballast		tonnes	$ 90.00	
HWG016	External Dewatering of trench including establishment & disestablishment	160	m3	$ 7.19	$ 1,150.00
HWG017	Supply and place treated timber piling for pipe support		m		
HWG018	Road / creek crossings				
HWG019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWG020	Supply & installation of river crossing includes supply of MSCL pipe, welding, testing of welds, 150mm concrete encasement, mobilisation & demobilisation of dredge, excavation & disposal of excavated material, backfilling, lay, bed & test:				
HWG021	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWG022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206		Each		
HWG023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWG024	Flow Relief Structures		Each		
HWG025	EMPTY				
HWG026	Supply and construct vent stacks		each		
HWG027	Preparation of line sheets	425	each	$ 1.00	$ 425.00
HWG028	Acceptance testing - gravity main		m		
HWG029	**Miscellaneous**				
HWG000	***Sub Total***				$67,625

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		

HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		
HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 3,400.00	$ 3,400.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	$ 122,855.25

B.	**PRE-CONSTRUCTION COST (Table 10)**	
HW0016	Design	$ 24,571.05
HW0017	Project Management of Design	$ 14,914.21
HW0018	Land Matters	$ -
HW0024	Community Consultation	
	Sub Total(B1)	$ 39,485.26
	Pre construction contingency (30% of B1)	$ 11,845.58
	TOTAL PRE-CONSTRUCTION COST (B)	$ 51,330.84

C.	**CONSTRUCTION COST**		
	Total Estimated Contract Award Sum (A)		$ 122,855.25
HW0019	Principal Supplied Pipe (as applicable)		$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)		$ -
HW0021	Principal Supplied Fittings (as applicable)		$ -
HW0022	Pump Station HV Power Supply		$ -
HW0023	Construction Management (Table 11)		$ 5,000.00
	Sub Total (C1)		$ 127,855.25
	Construction contingency (Table 12) (30% of C1)	Preliminary Estimate	$ 38,356.58
	TOTAL CONSTRUCTION COST (C)		$ 166,211.83

TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	$ 217,542.66

PROJECT DESCRIPTION: North Tuncurry Development Project - Gravity System - Stage G

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 3,467.00	$ 3,467.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 8,000.00	$ 8,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 18,000.00	$ 18,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 2,533.60	$ 2,533.60
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Gravity - section will be present if one or more gravity mains are specified

Item	Construction of Sewer Gravity Mains	Qty	Unit	Rate $/Unit	Amount $
HWG001	Service Location	Item	Lump Sum	$ 736.50	$ 736.50
HWG002	Supply all valves	Item	Lump Sum		$ -
HWG003	Supply all fittings	Item	Lump Sum		$ -
HWG004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
00FVSS	Nominal DN150 PVC pipe	940	m	$ 12.00	$ 11,280.00
01EVSS	Nominal DN300 PVC pipe	230	m	$ 68.00	$ 15,640.00
HWG005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
00FV03	Nominal DN150 PVC (Trench type 3)	940	m	$ 85.40	$ 80,276.00
01EV03	Nominal DN300 PVC (Trench type 3)	230	m	$ 108.25	$ 24,897.50
HWG006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m depth to invert in OTR				
HWG007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m depth to invert in OTR				
HWG008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m depth to invert in OTR				
HWG009	Excavate, backfill, supply and install access chambers including base, chamber, cover & surround and access ladder for the following nominal diameter access chambers:				
HWG010	Extra over rate for installation for Additional compaction		m3	$ 19.13	

HWG011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 78.75	
HWG012	Extra over rate for installation to supply, place & compact non cohesive material.		m3		
HWG013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 337.50	
HWG014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWG015	Supply & place ballast		tonnes	$ 90.00	
HWG016	External Dewatering of trench including establishment & disestablishment		m3		
HWG017	Supply and place treated timber piling for pipe support		m		
HWG018	Road / creek crossings				
HWG019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWG020	Supply & installation of river crossing includes supply of MSCL pipe, welding, testing of welds, 150mm concrete encasement, mobilisation & demobilisation of dredge, excavation & disposal of excavated material, backfilling, lay, bed & test:				
HWG021	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWG022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206		Each		
HWG023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWG024	Flow Relief Structures		Each		
HWG025	EMPTY				
HWG026	Supply and construct vent stacks		each		
HWG027	Preparation of line sheets	1170	each	$ 1.00	$ 1,170.00
HWG028	Acceptance testing - gravity main		m		
HWG029	**Miscellaneous**				
HWG000	***Sub Total***				$134,000

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		

HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		
HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 9,360.00	$ 9,360.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	$ 197,360.60

B.	**PRE-CONSTRUCTION COST (Table 10)**	
HW0016	Design	$ 39,472.12
HW0017	Project Management of Design	$ 17,894.42
HW0018	Land Matters	$ -
HW0024	Community Consultation	
	Sub Total(B1)	$ 57,366.54
	Pre construction contingency (30% of B1)	$ 17,209.96
	TOTAL PRE-CONSTRUCTION COST (B)	$ 74,576.51

C.	**CONSTRUCTION COST**	
	Total Estimated Contract Award Sum (A)	$ 197,360.60
HW0019	Principal Supplied Pipe (as applicable)	$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)	$ -
HW0021	Principal Supplied Fittings (as applicable)	$ -
HW0022	Pump Station HV Power Supply	$ -
HW0023	Construction Management (Table 11)	$ 5,000.00
	Sub Total (C1)	$ 202,360.60
	Construction contingency (Table 12) (30% of C1) — Preliminary Estimate	$ 60,708.18
	TOTAL CONSTRUCTION COST (C)	$ 263,068.78

TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	$ 337,645.29

PROJECT DESCRIPTION: North Tuncurry Development Project - Gravity System - Stage H

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 3,628.00	$ 3,628.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 2,000.00	$ 2,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 2,614.11	$ 2,614.11
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Gravity - section will be present if one or more gravity mains are specified

Item	Construction of Sewer Gravity Mains	Qty	Unit	Rate $/Unit	Amount $
HWG001	Service Location	Item	Lump Sum	$ 883.80	$ 883.80
HWG002	Supply all valves	Item	Lump Sum		$ -
HWG003	Supply all fittings	Item	Lump Sum		$ -
HWG004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
00FVSS	Nominal DN150 PVC pipe	1473	m	$ 12.00	$ 17,676.00
HWG005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
00FV03	Nominal DN150 PVC (Trench type 3)	1323	m	$ 85.40	$ 112,984.20
HWG006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m depth to invert in OTR				
00FV03	Nominal DN150 PVC (Trench type 3)	150	m	$ 136.40	$ 20,460.00
HWG007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m depth to invert in OTR				
HWG008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m depth to invert in OTR				
HWG009	Excavate, backfill, supply and install access chambers including base, chamber, cover & surround and access ladder for the following nominal diameter access chambers:				
HWG010	Extra over rate for installation for Additional compaction		m3	$ 16.86	
HWG011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	

HWG012	Extra over rate for installation to supply, place & compact non cohesive material.		m3		
HWG013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWG014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWG015	Supply & place ballast		tonnes	$ 90.00	
HWG016	External Dewatering of trench including establishment & disestablishment	150	m3	$ 7.67	$ 1,150.00
HWG017	Supply and place treated timber piling for pipe support		m		
HWG018	Road / creek crossings				
HWG019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWG020	Supply & installation of river crossing includes supply of MSCL pipe, welding, testing of welds, 150mm concrete encasement, mobilisation & demobilisation of dredge, excavation & disposal of excavated material, backfilling, lay, bed & test:				
HWG021	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWG022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206		Each		
HWG023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWG024	Flow Relief Structures		Each		
HWG025	EMPTY				
HWG026	Supply and construct vent stacks		each		
HWG027	Preparation of line sheets	1473	each	$ 1.00	$ 1,473.00
HWG028	Acceptance testing - gravity main		m		
HWG029	**Miscellaneous**				
HWG000	***Sub Total***				$154,627

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		

HW0009.11	Grass seeding		m2		
HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 11,784.00	$ 11,784.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	$ 205,653.11

B.	**PRE-CONSTRUCTION COST (Table 10)**	
HW0016	Design	$ 41,130.62
HW0017	Project Management of Design	$ 18,226.12
HW0018	Land Matters	$ -
HW0024	Community Consultation	
	Sub Total(B1)	$ 59,356.75
	Pre construction contingency (30% of B1)	$ 17,807.02
	TOTAL PRE-CONSTRUCTION COST (B)	$ 77,163.77

C.	**CONSTRUCTION COST**	
	Total Estimated Contract Award Sum (A)	$ 205,653.11
HW0019	Principal Supplied Pipe (as applicable)	$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)	$ -
HW0021	Principal Supplied Fittings (as applicable)	$ -
HW0022	Pump Station HV Power Supply	$ -
HW0023	Construction Management (Table 11)	$ 5,000.00
	Sub Total (C1)	$ 210,653.11
	Construction contingency (Table 12) (30% of C1) Preliminary Estimate	$ 63,195.93
	TOTAL CONSTRUCTION COST (C)	$ 273,849.04

TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	$ 351,012.81

PROJECT DESCRIPTION: North Tuncurry Development Project - Gravity System - Stage I

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 21,608.00	$ 21,608.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 30,000.00	$ 30,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 30,000.00	$ 30,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 8,000.00	$ 8,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 18,000.00	$ 18,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 11,603.85	$ 11,603.85
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Gravity - section will be present if one or more gravity mains are specified

Item	Construction of Sewer Gravity Mains	Qty	Unit	Rate $/Unit	Amount $
HWG001	Service Location	Item	Lump Sum	$ 1,203.75	$ 1,203.75
HWG002	Supply all valves	Item	Lump Sum		$ -
HWG003	Supply all fittings	Item	Lump Sum		$ -
HWG004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
00FVSS	Nominal DN150 PVC pipe	1450	m	$ 12.00	$ 17,400.00
01EVSS	Nominal DN300 PVC pipe	445	m	$ 68.00	$ 30,260.00
HWG005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
00FV03	Nominal DN150 PVC (Trench type 3)	1150	m	$ 85.40	$ 98,210.00
HWG006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m depth to invert in OTR				
00FV03	Nominal DN150 PVC (Trench type 3)	300	m	$ 136.40	$ 40,920.00
HWG007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m depth to invert in OTR				
HWG008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m depth to invert in OTR				
01EV03	Nominal DN300 PVC (Trench type 3)	445	m	$ 765.25	$ 340,536.25
HWG009	Excavate, backfill, supply and install access chambers including base, chamber, cover & surround and access ladder for the following nominal diameter access chambers:				
HWG010	Extra over rate for installation for Additional compaction		m3	$ 76.50	

HWG011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 78.75	
HWG012	Extra over rate for installation to supply, place & compact non cohesive material.		m3		
HWG013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 337.50	
HWG014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWG015	Supply & place ballast		tonnes	$ 90.00	
HWG016	External Dewatering of trench including establishment & disestablishment	745	m3	$ 677.58	$ 504,800.28
HWG017	Supply and place treated timber piling for pipe support		m		
HWG018	Road / creek crossings				
HWG019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWG020	Supply & installation of river crossing includes supply of MSCL pipe, welding, testing of welds, 150mm concrete encasement, mobilisation & demobilisation of dredge, excavation & disposal of excavated material, backfilling, lay, bed & test:				
HWG021	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWG022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206		Each		
HWG023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWG024	Flow Relief Structures		Each		
HWG025	EMPTY				
HWG026	Supply and construct vent stacks		each		
HWG027	Preparation of line sheets	1895	each	$ 1.00	$ 1,895.00
HWG028	Acceptance testing - gravity main		m		
HWG029	**Miscellaneous**				
HWG000	***Sub Total***				$1,035,225

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		

HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		
HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 15,160.00	$ 15,160.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	$ 1,173,597.13

B.	**PRE-CONSTRUCTION COST (Table 10)**	
HW0016	Design	$ 140,831.66
HW0017	Project Management of Design	$ 38,166.33
HW0018	Land Matters	$ -
HW0024	Community Consultation	
	Sub Total(B1)	$ 178,997.99
	Pre construction contingency (30% of B1)	$ 53,699.40
	TOTAL PRE-CONSTRUCTION COST (B)	$ 232,697.38

C.	**CONSTRUCTION COST**	
	Total Estimated Contract Award Sum (A)	$ 1,173,597.13
HW0019	Principal Supplied Pipe (as applicable)	$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)	$ -
HW0021	Principal Supplied Fittings (as applicable)	$ -
HW0022	Pump Station HV Power Supply	$ -
HW0023	Construction Management (Table 11)	$ 117,359.71
	Sub Total (C1)	$ 1,290,956.84
	Construction contingency (Table 12) (30% of C1) Preliminary Estimate	$ 387,287.05
	TOTAL CONSTRUCTION COST (C)	$ 1,678,243.90

TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	$ 1,910,941.28

PROJECT DESCRIPTION: North Tuncurry Development Project - Gravity System - Stage J

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 8,111.00	$ 8,111.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 15,000.00	$ 15,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 15,000.00	$ 15,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 8,000.00	$ 8,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 18,000.00	$ 18,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 4,855.54	$ 4,855.54
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Gravity - section will be present if one or more gravity mains are specified

Item	Construction of Sewer Gravity Mains	Qty	Unit	Rate $/Unit	Amount $
HWG001	Service Location	Item	Lump Sum	$ 1,044.00	$ 1,044.00
HWG002	Supply all valves	Item	Lump Sum		$ -
HWG003	Supply all fittings	Item	Lump Sum		$ -
HWG004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
00FVSS	Nominal DN150 PVC pipe	1300	m	$ 12.00	$ 15,600.00
016VSS	Nominal DN225 PVC pipe	440	m	$ 35.00	$ 15,400.00
HWG005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
00FV03	Nominal DN150 PVC (Trench type 3)	1000	m	$ 85.40	$ 85,400.00
HWG006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m depth to invert in OTR				
00FV03	Nominal DN150 PVC (Trench type 3)	300	m	$ 136.40	$ 40,920.00
016V03	Nominal DN225 PVC (Trench type 3)	440	m	$ 150.90	$ 66,396.00
HWG007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m depth to invert in OTR				
HWG008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m depth to invert in OTR				
HWG009	Excavate, backfill, supply and install access chambers including base, chamber, cover & surround and access ladder for the following nominal diameter access chambers:				
HWG010	Extra over rate for installation for Additional compaction		m3	$ 30.60	

HWG011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	
HWG012	Extra over rate for installation to supply, place & compact non cohesive material.		m3		
HWG013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWG014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWG015	Supply & place ballast		tonnes	$ 90.00	
HWG016	External Dewatering of trench including establishment & disestablishment	740	m3	$ 182.61	$ 135,134.09
HWG017	Supply and place treated timber piling for pipe support		m		
HWG018	Road / creek crossings				
HWG019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWG020	Supply & installation of river crossing includes supply of MSCL pipe, welding, testing of welds, 150mm concrete encasement, mobilisation & demobilisation of dredge, excavation & disposal of excavated material, backfilling, lay, bed & test:				
HWG021	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWG022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206		Each		
HWG023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWG024	Flow Relief Structures		Each		
HWG025	EMPTY				
HWG026	Supply and construct vent stacks		each		
HWG027	Preparation of line sheets	1740	each	$ 1.00	$ 1,740.00
HWG028	Acceptance testing - gravity main		m		
HWG029	**Miscellaneous**				
HWG000	***Sub Total***				$361,634

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		

HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		
HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 13,920.00	$ 13,920.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	$ 448,520.63

B.	**PRE-CONSTRUCTION COST (Table 10)**	
HW0016	Design	$ 89,704.13
HW0017	Project Management of Design	$ 27,940.83
HW0018	Land Matters	$ -
HW0024	Community Consultation	
	Sub Total(B1)	$ 117,644.95
	Pre construction contingency (30% of B1)	$ 35,293.49
	TOTAL PRE-CONSTRUCTION COST (B)	$ 152,938.44

C.	**CONSTRUCTION COST**	
	Total Estimated Contract Award Sum (A)	$ 448,520.63
HW0019	Principal Supplied Pipe (as applicable)	$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)	$ -
HW0021	Principal Supplied Fittings (as applicable)	$ -
HW0022	Pump Station HV Power Supply	$ -
HW0023	Construction Management (Table 11)	$ 44,852.06
	Sub Total (C1)	$ 493,372.69
	Construction contingency (Table 12) (30% of C1) — Preliminary Estimate	$ 148,011.81
	TOTAL CONSTRUCTION COST (C)	$ 641,384.50

TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	$ 794,322.94

PROJECT DESCRIPTION: North Tuncurry Development Project - Gravity System - Stage K

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 2,611.00	$ 2,611.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 2,000.00	$ 2,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 2,105.60	$ 2,105.60
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Gravity - section will be present if one or more gravity mains are specified

Item	Construction of Sewer Gravity Mains	Qty	Unit	Rate $/Unit	Amount $
HWG001	Service Location	Item	Lump Sum	$ 648.00	$ 648.00
HWG002	Supply all valves	Item	Lump Sum		$ -
HWG003	Supply all fittings	Item	Lump Sum		$ -
HWG004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
00FVSS	Nominal DN150 PVC pipe	1080	m	$ 12.00	$ 12,960.00
HWG005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
00FV03	Nominal DN150 PVC (Trench type 3)	1080	m	$ 85.40	$ 92,232.00
HWG006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m depth to invert in OTR				
HWG007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m depth to invert in OTR				
HWG008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m depth to invert in OTR				
HWG009	Excavate, backfill, supply and install access chambers including base, chamber, cover & surround and access ladder for the following nominal diameter access chambers:				
HWG010	Extra over rate for installation for Additional compaction		m3	$ 15.30	
HWG011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	
HWG012	Extra over rate for installation to supply, place & compact non cohesive material.		m3		

HWG013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWG014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWG015	Supply & place ballast		tonnes	$ 90.00	
HWG016	External Dewatering of trench including establishment & disestablishment		m3		
HWG017	Supply and place treated timber piling for pipe support		m		
HWG018	Road / creek crossings				
HWG019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWG020	Supply & installation of river crossing includes supply of MSCL pipe, welding, testing of welds, 150mm concrete encasement, mobilisation & demobilisation of dredge, excavation & disposal of excavated material, backfilling, lay, bed & test:				
HWG021	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWG022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206		Each		
HWG023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWG024	Flow Relief Structures		Each		
HWG025	EMPTY				
HWG026	Supply and construct vent stacks		each		
HWG027	Preparation of line sheets	1080	each	$ 1.00	$ 1,080.00
HWG028	Acceptance testing - gravity main		m		
HWG029	**Miscellaneous**				
HWG000	***Sub Total***				$106,920

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		
HW0009.12	Hydromulch		m2		

HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 8,640.00	$ 8,640.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	$ 153,276.60

B.	**PRE-CONSTRUCTION COST (Table 10)**	
HW0016	Design	$ 30,655.32
HW0017	Project Management of Design	$ 16,131.06
HW0018	Land Matters	$ -
HW0024	Community Consultation	
	Sub Total(B1)	$ 46,786.38
	Pre construction contingency (30% of B1)	$ 14,035.92
	TOTAL PRE-CONSTRUCTION COST (B)	$ 60,822.30

C.	**CONSTRUCTION COST**	
	Total Estimated Contract Award Sum (A)	$ 153,276.60
HW0019	Principal Supplied Pipe (as applicable)	$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)	$ -
HW0021	Principal Supplied Fittings (as applicable)	$ -
HW0022	Pump Station HV Power Supply	$ -
HW0023	Construction Management (Table 11)	$ 5,000.00
	Sub Total (C1)	$ 158,276.60
	Construction contingency (Table 12) (30% of C1) Preliminary Estimate	$ 47,482.98
	TOTAL CONSTRUCTION COST (C)	$ 205,759.58

TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	$ 266,581.88

PROJECT DESCRIPTION: North Tuncurry Development Project - Gravity System - Stage L

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 4,126.00	$ 4,126.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 12,000.00	$ 12,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 12,000.00	$ 12,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 8,000.00	$ 8,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 18,000.00	$ 18,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 2,863.20	$ 2,863.20
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Gravity - section will be present if one or more gravity mains are specified

Item	Construction of Sewer Gravity Mains	Qty	Unit	Rate $/Unit	Amount $
HWG001	Service Location	Item	Lump Sum	$ 468.00	$ 468.00
HWG002	Supply all valves	Item	Lump Sum		$ -
HWG003	Supply all fittings	Item	Lump Sum		$ -
HWG004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
00FVSS	Nominal DN150 PVC pipe	555	m	$ 12.00	$ 6,660.00
01EVSS	Nominal DN300 PVC pipe	180	m	$ 68.00	$ 12,240.00
HWG005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
HWG006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m depth to invert in OTR				
00FV03	Nominal DN150 PVC (Trench type 3)	555	m	$ 136.40	$ 75,702.00
HWG007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m depth to invert in OTR				
01EV03	Nominal DN300 PVC (Trench type 3)	180	m	$ 408.25	$ 73,485.00
HWG008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m depth to invert in OTR				
HWG009	Excavate, backfill, supply and install access chambers including base, chamber, cover & surround and access ladder for the following nominal diameter access chambers:				
HWG010	Extra over rate for installation for Additional compaction		m3	$ 57.38	

HWG011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 78.75	
HWG012	Extra over rate for installation to supply, place & compact non cohesive material.		m3		
HWG013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 337.50	
HWG014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWG015	Supply & place ballast		tonnes	$ 90.00	
HWG016	External Dewatering of trench including establishment & disestablishment	180	m3	$ 6.39	$ 1,150.00
HWG017	Supply and place treated timber piling for pipe support		m		
HWG018	Road / creek crossings				
HWG019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWG020	Supply & installation of river crossing includes supply of MSCL pipe, welding, testing of welds, 150mm concrete encasement, mobilisation & demobilisation of dredge, excavation & disposal of excavated material, backfilling, lay, bed & test:				
HWG021	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWG022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206		Each		
HWG023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWG024	Flow Relief Structures		Each		
HWG025	EMPTY				
HWG026	Supply and construct vent stacks		each		
HWG027	Preparation of line sheets	735	each	$ 1.00	$ 735.00
HWG028	Acceptance testing - gravity main		m		
HWG029	**Miscellaneous**				
HWG000	***Sub Total***				$170,440

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		

HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		
HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 5,880.00	$ 5,880.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	$ 237,309.20

B.	**PRE-CONSTRUCTION COST (Table 10)**	
HW0016	Design	$ 47,461.84
HW0017	Project Management of Design	$ 19,492.37
HW0018	Land Matters	$ -
HW0024	Community Consultation	
	Sub Total(B1)	$ 66,954.21
	Pre construction contingency (30% of B1)	$ 20,086.26
	TOTAL PRE-CONSTRUCTION COST (B)	$ 87,040.47

C.	**CONSTRUCTION COST**	
	Total Estimated Contract Award Sum (A)	$ 237,309.20
HW0019	Principal Supplied Pipe (as applicable)	$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)	$ -
HW0021	Principal Supplied Fittings (as applicable)	$ -
HW0022	Pump Station HV Power Supply	$ -
HW0023	Construction Management (Table 11)	$ 5,000.00
	Sub Total (C1)	$ 242,309.20
	Construction contingency (Table 12) (30% of C1) Preliminary Estimate	$ 72,692.76
	TOTAL CONSTRUCTION COST (C)	$ 315,001.96

TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	$ 402,042.43

PROJECT DESCRIPTION: North Tuncurry Development Project - Gravity System - Stage VC

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 4,378.00	$ 4,378.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 12,000.00	$ 12,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 12,000.00	$ 12,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 8,000.00	$ 8,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 18,000.00	$ 18,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 2,989.11	$ 2,989.11
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Gravity - section will be present if one or more gravity mains are specified

Item	Construction of Sewer Gravity Mains	Qty	Unit	Rate $/Unit	Amount $
HWG001	Service Location	Item	Lump Sum	$ 456.30	$ 456.30
HWG002	Supply all valves	Item	Lump Sum		$ -
HWG003	Supply all fittings	Item	Lump Sum		$ -
HWG004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
00FVSS	Nominal DN150 PVC pipe	573	m	$ 12.00	$ 6,876.00
01EVSS	Nominal DN300 PVC pipe	150	m	$ 68.00	$ 10,200.00
HWG005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
00FV03	Nominal DN150 PVC (Trench type 3)	573	m	$ 85.40	$ 48,934.20
HWG006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m depth to invert in OTR				
HWG007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m depth to invert in OTR				
HWG008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m depth to invert in OTR				
01EV03	Nominal DN300 PVC (Trench type 3)	150	m	$ 765.25	$ 114,787.50
HWG009	Excavate, backfill, supply and install access chambers including base, chamber, cover & surround and access ladder for the following nominal diameter access chambers:				
HWG010	Extra over rate for installation for Additional compaction		m3	$ 76.50	

HWG011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 78.75	
HWG012	Extra over rate for installation to supply, place & compact non cohesive material.		m3		
HWG013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 337.50	
HWG014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWG015	Supply & place ballast		tonnes	$ 90.00	
HWG016	External Dewatering of trench including establishment & disestablishment	150	m3	$ 7.67	$ 1,150.00
HWG017	Supply and place treated timber piling for pipe support		m		
HWG018	Road / creek crossings				
HWG019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWG020	Supply & installation of river crossing includes supply of MSCL pipe, welding, testing of welds, 150mm concrete encasement, mobilisation & demobilisation of dredge, excavation & disposal of excavated material, backfilling, lay, bed & test:				
HWG021	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWG022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206		Each		
HWG023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWG024	Flow Relief Structures		Each		
HWG025	EMPTY				
HWG026	Supply and construct vent stacks		each		
HWG027	Preparation of line sheets	723	each	$ 1.00	$ 723.00
HWG028	Acceptance testing - gravity main		m		
HWG029	**Miscellaneous**				
HWG000	***Sub Total***				$183,127

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		

HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		
HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 5,784.00	$ 5,784.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	$ 250,278.11

B.	**PRE-CONSTRUCTION COST (Table 10)**	
HW0016	Design	$ 50,055.62
HW0017	Project Management of Design	$ 20,011.12
HW0018	Land Matters	$ -
HW0024	Community Consultation	
	Sub Total(B1)	$ 70,066.75
	Pre construction contingency (30% of B1)	$ 21,020.02
	TOTAL PRE-CONSTRUCTION COST (B)	$ 91,086.77

C.	**CONSTRUCTION COST**	
	Total Estimated Contract Award Sum (A)	$ 250,278.11
HW0019	Principal Supplied Pipe (as applicable)	$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)	$ -
HW0021	Principal Supplied Fittings (as applicable)	$ -
HW0022	Pump Station HV Power Supply	$ -
HW0023	Construction Management (Table 11)	$ 25,027.81
	Sub Total (C1)	$ 275,305.92
	Construction contingency (Table 12) (30% of C1) — Preliminary Estimate	$ 82,591.78
	TOTAL CONSTRUCTION COST (C)	$ 357,897.70

TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	$ 448,984.47

PROJECT DESCRIPTION: North Tuncurry Development Project - Gravity System - Stage M

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 2,975.00	$ 2,975.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 2,000.00	$ 2,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 2,287.50	$ 2,287.50
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Gravity - section will be present if one or more gravity mains are specified

Item	Construction of Sewer Gravity Mains	Qty	Unit	Rate $/Unit	Amount $
HWG001	Service Location	Item	Lump Sum	$ 750.00	$ 750.00
HWG002	Supply all valves	Item	Lump Sum		$ -
HWG003	Supply all fittings	Item	Lump Sum		$ -
HWG004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
00FVSS	Nominal DN150 PVC pipe	1250	m	$ 12.00	$ 15,000.00
HWG005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
00FV03	Nominal DN150 PVC (Trench type 3)	1250	m	$ 85.40	$ 106,750.00
HWG006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m depth to invert in OTR				
HWG007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m depth to invert in OTR				
HWG008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m depth to invert in OTR				
HWG009	Excavate, backfill, supply and install access chambers including base, chamber, cover & surround and access ladder for the following nominal diameter access chambers:				
HWG010	Extra over rate for installation for Additional compaction		m3	$ 15.30	
HWG011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	
HWG012	Extra over rate for installation to supply, place & compact non cohesive material.		m3		

HWG013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWG014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWG015	Supply & place ballast		tonnes	$ 90.00	
HWG016	External Dewatering of trench including establishment & disestablishment		m3		
HWG017	Supply and place treated timber piling for pipe support		m		
HWG018	Road / creek crossings				
HWG019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWG020	Supply & installation of river crossing includes supply of MSCL pipe, welding, testing of welds, 150mm concrete encasement, mobilisation & demobilisation of dredge, excavation & disposal of excavated material, backfilling, lay, bed & test:				
HWG021	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWG022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206		Each		
HWG023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWG024	Flow Relief Structures		Each		
HWG025	EMPTY				
HWG026	Supply and construct vent stacks		each		
HWG027	Preparation of line sheets	1250	each	$ 1.00	$ 1,250.00
HWG028	Acceptance testing - gravity main		m		
HWG029	**Miscellaneous**				
HWG000	***Sub Total***				$123,750

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		
HW0009.12	Hydromulch		m2		

HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 10,000.00	$ 10,000.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	$ 172,012.50

B.	**PRE-CONSTRUCTION COST (Table 10)**	
HW0016	Design	$ 34,402.50
HW0017	Project Management of Design	$ 16,880.50
HW0018	Land Matters	$ -
HW0024	Community Consultation	
	Sub Total(B1)	$ 51,283.00
	Pre construction contingency (30% of B1)	$ 15,384.90
	TOTAL PRE-CONSTRUCTION COST (B)	$ 66,667.90

C.	**CONSTRUCTION COST**		
	Total Estimated Contract Award Sum (A)		$ 172,012.50
HW0019	Principal Supplied Pipe (as applicable)		$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)		$ -
HW0021	Principal Supplied Fittings (as applicable)		$ -
HW0022	Pump Station HV Power Supply		$ -
HW0023	Construction Management (Table 11)		$ 5,000.00
	Sub Total (C1)		$ 177,012.50
	Construction contingency (Table 12) (30% of C1)	Preliminary Estimate	$ 53,103.75
	TOTAL CONSTRUCTION COST (C)		$ 230,116.25

TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	$ 296,784.15

PROJECT DESCRIPTION: North Tuncurry Development Project - Gravity System - Stage N

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 5,231.00	$ 5,231.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 12,000.00	$ 12,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 12,000.00	$ 12,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 12,000.00	$ 12,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 27,000.00	$ 27,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 6,000.00	$ 6,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 3,415.60	$ 3,415.60
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Gravity - section will be present if one or more gravity mains are specified

Item	Construction of Sewer Gravity Mains	Qty	Unit	Rate $/Unit	Amount $
HWG001	Service Location	Item	Lump Sum	$ 627.75	$ 627.75
HWG002	Supply all valves	Item	Lump Sum		$ -
HWG003	Supply all fittings	Item	Lump Sum		$ -
HWG004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
00FVSS	Nominal DN150 PVC pipe	885	m	$ 12.00	$ 10,620.00
016VSS	Nominal DN225 PVC pipe	130	m	$ 35.00	$ 4,550.00
01EVSS	Nominal DN300 PVC pipe	25	m	$ 68.00	$ 1,700.00
HWG005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
00FV03	Nominal DN150 PVC (Trench type 3)	485	m	$ 85.40	$ 41,419.00
HWG006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m depth to invert in OTR				
00FV03	Nominal DN150 PVC (Trench type 3)	400	m	$ 136.40	$ 54,560.00
HWG007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m depth to invert in OTR				
016V03	Nominal DN225 PVC (Trench type 3)	130	m	$ 377.40	$ 49,062.00
HWG008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m depth to invert in OTR				
01EV03	Nominal DN300 PVC (Trench type 3)	25	m	$ 765.25	$ 19,131.25
HWG009	Excavate, backfill, supply and install access chambers including base, chamber, cover & surround and access ladder for the following nominal diameter access chambers:				

HWG010	Extra over rate for installation for Additional compaction		m3	$ 76.50	
HWG011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 78.75	
HWG012	Extra over rate for installation to supply, place & compact non cohesive material.		m3		
HWG013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 337.50	
HWG014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWG015	Supply & place ballast		tonnes	$ 90.00	
HWG016	External Dewatering of trench including establishment & disestablishment	555	m3	$ 46.00	$ 25,530.00
HWG017	Supply and place treated timber piling for pipe support		m		
HWG018	Road / creek crossings				
HWG019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWG020	Supply & installation of river crossing includes supply of MSCL pipe, welding, testing of welds, 150mm concrete encasement, mobilisation & demobilisation of dredge, excavation & disposal of excavated material, backfilling, lay, bed & test:				
HWG021	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWG022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206		Each		
HWG023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWG024	Flow Relief Structures		Each		
HWG025	EMPTY				
HWG026	Supply and construct vent stacks		each		
HWG027	Preparation of line sheets	1040	each	$ 1.00	$ 1,040.00
HWG028	Acceptance testing - gravity main		m		
HWG029	**Miscellaneous**				
HWG000	***Sub Total***				$208,240

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -

HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		
HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 8,320.00	$ 8,320.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	$ 294,206.60

B.	**PRE-CONSTRUCTION COST (Table 10)**	
HW0016	Design	$ 58,841.32
HW0017	Project Management of Design	$ 21,768.26
HW0018	Land Matters	$ -
HW0024	Community Consultation	
	Sub Total(B1)	$ 80,609.58
	Pre construction contingency (30% of B1)	$ 24,182.88
	TOTAL PRE-CONSTRUCTION COST (B)	$ 104,792.46

C.	**CONSTRUCTION COST**	
	Total Estimated Contract Award Sum (A)	$ 294,206.60
HW0019	Principal Supplied Pipe (as applicable)	$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)	$ -
HW0021	Principal Supplied Fittings (as applicable)	$ -
HW0022	Pump Station HV Power Supply	$ -
HW0023	Construction Management (Table 11)	$ 29,420.66
	Sub Total (C1)	$ 323,627.26
	Construction contingency (Table 12) (30% of C1) Preliminary Estimate	$ 97,088.18
	TOTAL CONSTRUCTION COST (C)	$ 420,715.44

	TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	$ 525,507.90

PROJECT DESCRIPTION: North Tuncurry Development Project - Gravity System - Stage O

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 4,143.00	$ 4,143.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 12,000.00	$ 12,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 12,000.00	$ 12,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 2,000.00	$ 2,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 2,871.43	$ 2,871.43
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Gravity - section will be present if one or more gravity mains are specified

Item	Construction of Sewer Gravity Mains	Qty	Unit	Rate $/Unit	Amount $
HWG001	Service Location	Item	Lump Sum	$ 630.00	$ 630.00
HWG002	Supply all valves	Item	Lump Sum		$ -
HWG003	Supply all fittings	Item	Lump Sum		$ -
HWG004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
00FVSS	Nominal DN150 PVC pipe	1050	m	$ 12.00	$ 12,600.00
HWG005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
00FV03	Nominal DN150 PVC (Trench type 3)	550	m	$ 85.40	$ 46,970.00
HWG006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m depth to invert in OTR				
00FV03	Nominal DN150 PVC (Trench type 3)	500	m	$ 136.40	$ 68,200.00
HWG007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m depth to invert in OTR				
HWG008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m depth to invert in OTR				
HWG009	Excavate, backfill, supply and install access chambers including base, chamber, cover & surround and access ladder for the following nominal diameter access chambers:				
HWG010	Extra over rate for installation for Additional compaction		m3	$ 22.59	
HWG011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	

HWG012	Extra over rate for installation to supply, place & compact non cohesive material.		m3		
HWG013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWG014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWG015	Supply & place ballast		tonnes	$ 90.00	
HWG016	External Dewatering of trench including establishment & disestablishment	500	m3	$ 108.59	$ 54,292.86
HWG017	Supply and place treated timber piling for pipe support		m		
HWG018	Road / creek crossings				
HWG019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWG020	Supply & installation of river crossing includes supply of MSCL pipe, welding, testing of welds, 150mm concrete encasement, mobilisation & demobilisation of dredge, excavation & disposal of excavated material, backfilling, lay, bed & test:				
HWG021	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWG022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206		Each		
HWG023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWG024	Flow Relief Structures		Each		
HWG025	EMPTY				
HWG026	Supply and construct vent stacks		each		
HWG027	Preparation of line sheets	1050	each	$ 1.00	$ 1,050.00
HWG028	Acceptance testing - gravity main		m		
HWG029	**Miscellaneous**				
HWG000	***Sub Total***				$183,743

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		

HW0009.11	Grass seeding		m2		
HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 8,400.00	$ 8,400.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	$ 238,157.29

B.	**PRE-CONSTRUCTION COST (Table 10)**	
HW0016	Design	$ 47,631.46
HW0017	Project Management of Design	$ 19,526.29
HW0018	Land Matters	$ -
HW0024	Community Consultation	
	Sub Total(B1)	$ 67,157.75
	Pre construction contingency (30% of B1)	$ 20,147.32
	TOTAL PRE-CONSTRUCTION COST (B)	$ 87,305.07

C.	**CONSTRUCTION COST**	
	Total Estimated Contract Award Sum (A)	$ 238,157.29
HW0019	Principal Supplied Pipe (as applicable)	$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)	$ -
HW0021	Principal Supplied Fittings (as applicable)	$ -
HW0022	Pump Station HV Power Supply	$ -
HW0023	Construction Management (Table 11)	$ 5,000.00
	Sub Total (C1)	$ 243,157.29
	Construction contingency (Table 12) (30% of C1) Preliminary Estimate	$ 72,947.19
	TOTAL CONSTRUCTION COST (C)	$ 316,104.47

TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	$ 403,409.55

PROJECT DESCRIPTION: North Tuncurry Development Project - Gravity System - Stage P

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 4,216.00	$ 4,216.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 12,000.00	$ 12,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 12,000.00	$ 12,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 2,000.00	$ 2,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 2,907.94	$ 2,907.94
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Gravity - section will be present if one or more gravity mains are specified

Item	Construction of Sewer Gravity Mains	Qty	Unit	Rate $/Unit	Amount $
HWG001	Service Location	Item	Lump Sum	$ 654.00	$ 654.00
HWG002	Supply all valves	Item	Lump Sum		$ -
HWG003	Supply all fittings	Item	Lump Sum		$ -
HWG004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
00FVSS	Nominal DN150 PVC pipe	1090	m	$ 12.00	$ 13,080.00
HWG005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
00FV03	Nominal DN150 PVC (Trench type 3)	590	m	$ 85.40	$ 50,386.00
HWG006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m depth to invert in OTR				
00FV03	Nominal DN150 PVC (Trench type 3)	500	m	$ 136.40	$ 68,200.00
HWG007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m depth to invert in OTR				
HWG008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m depth to invert in OTR				
HWG009	Excavate, backfill, supply and install access chambers including base, chamber, cover & surround and access ladder for the following nominal diameter access chambers:				
HWG010	Extra over rate for installation for Additional compaction		m3	$ 22.32	
HWG011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	

HWG012	Extra over rate for installation to supply, place & compact non cohesive material.		m3		
HWG013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWG014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWG015	Supply & place ballast		tonnes	$ 90.00	
HWG016	External Dewatering of trench including establishment & disestablishment	500	m3	$ 107.33	$ 53,663.76
HWG017	Supply and place treated timber piling for pipe support		m		
HWG018	Road / creek crossings				
HWG019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWG020	Supply & installation of river crossing includes supply of MSCL pipe, welding, testing of welds, 150mm concrete encasement, mobilisation & demobilisation of dredge, excavation & disposal of excavated material, backfilling, lay, bed & test:				
HWG021	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWG022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206		Each		
HWG023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWG024	Flow Relief Structures		Each		
HWG025	EMPTY				
HWG026	Supply and construct vent stacks		each		
HWG027	Preparation of line sheets	1090	each	$ 1.00	$ 1,090.00
HWG028	Acceptance testing - gravity main		m		
HWG029	**Miscellaneous**				
HWG000	***Sub Total***				$187,074

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		

HW0009.11	Grass seeding		m2		
HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 8,720.00	$ 8,720.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	$ 241,917.70

B.	**PRE-CONSTRUCTION COST (Table 10)**	
HW0016	Design	$ 48,383.54
HW0017	Project Management of Design	$ 19,676.71
HW0018	Land Matters	$ -
HW0024	Community Consultation	
	Sub Total(B1)	$ 68,060.25
	Pre construction contingency (30% of B1)	$ 20,418.07
	TOTAL PRE-CONSTRUCTION COST (B)	$ 88,478.32

C.	**CONSTRUCTION COST**	
	Total Estimated Contract Award Sum (A)	$ 241,917.70
HW0019	Principal Supplied Pipe (as applicable)	$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)	$ -
HW0021	Principal Supplied Fittings (as applicable)	$ -
HW0022	Pump Station HV Power Supply	$ -
HW0023	Construction Management (Table 11)	$ 5,000.00
	Sub Total (C1)	$ 246,917.70
	Construction contingency (Table 12) (30% of C1) Preliminary Estimate	$ 74,075.31
	TOTAL CONSTRUCTION COST (C)	$ 320,993.01

TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	$ 409,471.33

PROJECT DESCRIPTION: North Tuncurry Development Project - Gravity System - Stage Q

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 10,672.00	$ 10,672.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 15,000.00	$ 15,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 15,000.00	$ 15,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 2,000.00	$ 2,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 6,135.90	$ 6,135.90
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Gravity - section will be present if one or more gravity mains are specified

Item	Construction of Sewer Gravity Mains	Qty	Unit	Rate $/Unit	Amount $
HWG001	Service Location	Item	Lump Sum	$ 403.20	$ 403.20
HWG002	Supply all valves	Item	Lump Sum		$ -
HWG003	Supply all fittings	Item	Lump Sum		$ -
HWG004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
00FVSS	Nominal DN150 PVC pipe	672	m	$ 12.00	$ 8,064.00
HWG005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
HWG006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m depth to invert in OTR				
HWG007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m depth to invert in OTR				
00FV03	Nominal DN150 PVC (Trench type 3)	672	m	$ 343.40	$ 230,764.80
HWG008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m depth to invert in OTR				
HWG009	Excavate, backfill, supply and install access chambers including base, chamber, cover & surround and access ladder for the following nominal diameter access chambers:				
HWG010	Extra over rate for installation for Additional compaction		m3	$ 45.90	
HWG011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	
HWG012	Extra over rate for installation to supply, place & compact non cohesive material.		m3		

HWG013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWG014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWG015	Supply & place ballast		tonnes	$ 90.00	
HWG016	External Dewatering of trench including establishment & disestablishment	672	m3	$ 406.71	$ 273,310.00
HWG017	Supply and place treated timber piling for pipe support		m		
HWG018	Road / creek crossings				
HWG019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWG020	Supply & installation of river crossing includes supply of MSCL pipe, welding, testing of welds, 150mm concrete encasement, mobilisation & demobilisation of dredge, excavation & disposal of excavated material, backfilling, lay, bed & test:				
HWG021	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWG022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206		Each		
HWG023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWG024	Flow Relief Structures		Each		
HWG025	EMPTY				
HWG026	Supply and construct vent stacks		each		
HWG027	Preparation of line sheets	672	each	$ 1.00	$ 672.00
HWG028	Acceptance testing - gravity main		m		
HWG029	**Miscellaneous**				
HWG000	***Sub Total***				$513,214

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		
HW0009.12	Hydromulch		m2		

HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 5,376.00	$ 5,376.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	$ 580,397.90

B.	**PRE-CONSTRUCTION COST (Table 10)**	
HW0016	Design	$ 87,059.69
HW0017	Project Management of Design	$ 27,411.94
HW0018	Land Matters	$ -
HW0024	Community Consultation	
	Sub Total(B1)	$ 114,471.62
	Pre construction contingency (30% of B1)	$ 34,341.49
	TOTAL PRE-CONSTRUCTION COST (B)	$ 148,813.11

C.	**CONSTRUCTION COST**	
	Total Estimated Contract Award Sum (A)	$ 580,397.90
HW0019	Principal Supplied Pipe (as applicable)	$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)	$ -
HW0021	Principal Supplied Fittings (as applicable)	$ -
HW0022	Pump Station HV Power Supply	$ -
HW0023	Construction Management (Table 11)	$ 58,039.79
	Sub Total (C1)	$ 638,437.69
	Construction contingency (Table 12) (30% of C1) Preliminary Estimate	$ 191,531.31
	TOTAL CONSTRUCTION COST (C)	$ 829,969.00

TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	$ 978,782.11

PROJECT DESCRIPTION: North Tuncurry Development Project - Gravity System - Stage R

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 4,308.00	$ 4,308.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 12,000.00	$ 12,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 12,000.00	$ 12,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 2,000.00	$ 2,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 2,954.19	$ 2,954.19
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Gravity - section will be present if one or more gravity mains are specified

Item	Construction of Sewer Gravity Mains	Qty	Unit	Rate $/Unit	Amount $
HWG001	Service Location	Item	Lump Sum	$ 684.00	$ 684.00
HWG002	Supply all valves	Item	Lump Sum		$ -
HWG003	Supply all fittings	Item	Lump Sum		$ -
HWG004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
00FVSS	Nominal DN150 PVC pipe	1140	m	$ 12.00	$ 13,680.00
HWG005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
00FV03	Nominal DN150 PVC (Trench type 3)	640	m	$ 85.40	$ 54,656.00
HWG006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m depth to invert in OTR				
00FV03	Nominal DN150 PVC (Trench type 3)	500	m	$ 136.40	$ 68,200.00
HWG007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m depth to invert in OTR				
HWG008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m depth to invert in OTR				
HWG009	Excavate, backfill, supply and install access chambers including base, chamber, cover & surround and access ladder for the following nominal diameter access chambers:				
HWG010	Extra over rate for installation for Additional compaction		m3	$ 22.01	
HWG011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	

HWG012	Extra over rate for installation to supply, place & compact non cohesive material.		m3		
HWG013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWG014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWG015	Supply & place ballast		tonnes	$ 90.00	
HWG016	External Dewatering of trench including establishment & disestablishment	500	m3	$ 105.88	$ 52,939.47
HWG017	Supply and place treated timber piling for pipe support		m		
HWG018	Road / creek crossings				
HWG019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWG020	Supply & installation of river crossing includes supply of MSCL pipe, welding, testing of welds, 150mm concrete encasement, mobilisation & demobilisation of dredge, excavation & disposal of excavated material, backfilling, lay, bed & test:				
HWG021	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWG022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206		Each		
HWG023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWG024	Flow Relief Structures		Each		
HWG025	EMPTY				
HWG026	Supply and construct vent stacks		each		
HWG027	Preparation of line sheets	1140	each	$ 1.00	$ 1,140.00
HWG028	Acceptance testing - gravity main		m		
HWG029	**Miscellaneous**				
HWG000	***Sub Total***				$191,299

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		

HW0009.11	Grass seeding		m2		
HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 9,120.00	$ 9,120.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	$ 246,681.66

B.	**PRE-CONSTRUCTION COST (Table 10)**	
HW0016	Design	$ 49,336.33
HW0017	Project Management of Design	$ 19,867.27
HW0018	Land Matters	$ -
HW0024	Community Consultation	
	Sub Total(B1)	$ 69,203.60
	Pre construction contingency (30% of B1)	$ 20,761.08
	TOTAL PRE-CONSTRUCTION COST (B)	$ 89,964.68

C.	**CONSTRUCTION COST**	
	Total Estimated Contract Award Sum (A)	$ 246,681.66
HW0019	Principal Supplied Pipe (as applicable)	$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)	$ -
HW0021	Principal Supplied Fittings (as applicable)	$ -
HW0022	Pump Station HV Power Supply	$ -
HW0023	Construction Management (Table 11)	$ 5,000.00
	Sub Total (C1)	$ 251,681.66
	Construction contingency (Table 12) (30% of C1) Preliminary Estimate	$ 75,504.50
	TOTAL CONSTRUCTION COST (C)	$ 327,186.16

TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	$ 417,150.84

PROJECT DESCRIPTION: North Tuncurry Development Project - Gravity System - Stage S

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 10,804.00	$ 10,804.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 15,000.00	$ 15,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 15,000.00	$ 15,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 2,000.00	$ 2,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 6,201.87	$ 6,201.87
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Gravity - section will be present if one or more gravity mains are specified

Item	Construction of Sewer Gravity Mains	Qty	Unit	Rate $/Unit	Amount $
HWG001	Service Location	Item	Lump Sum	$ 747.00	$ 747.00
HWG002	Supply all valves	Item	Lump Sum		$ -
HWG003	Supply all fittings	Item	Lump Sum		$ -
HWG004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
00FVSS	Nominal DN150 PVC pipe	1245	m	$ 12.00	$ 14,940.00
HWG005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
00FV03	Nominal DN150 PVC (Trench type 3)	345	m	$ 85.40	$ 29,463.00
HWG006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m depth to invert in OTR				
00FV03	Nominal DN150 PVC (Trench type 3)	300	m	$ 136.40	$ 40,920.00
HWG007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m depth to invert in OTR				
00FV03	Nominal DN150 PVC (Trench type 3)	300	m	$ 343.40	$ 103,020.00
HWG008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m depth to invert in OTR				
00FV03	Nominal DN150 PVC (Trench type 3)	300	m	$ 638.90	$ 191,670.00
HWG009	Excavate, backfill, supply and install access chambers including base, chamber, cover & surround and access ladder for the following nominal diameter access chambers:				
HWG010	Extra over rate for installation for Additional compaction		m3	$ 37.42	

HWG011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	
HWG012	Extra over rate for installation to supply, place & compact non cohesive material.		m3		
HWG013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWG014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWG015	Supply & place ballast		tonnes	$ 90.00	
HWG016	External Dewatering of trench including establishment & disestablishment	600	m3	$ 222.04	$ 133,222.29
HWG017	Supply and place treated timber piling for pipe support		m		
HWG018	Road / creek crossings				
HWG019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWG020	Supply & installation of river crossing includes supply of MSCL pipe, welding, testing of welds, 150mm concrete encasement, mobilisation & demobilisation of dredge, excavation & disposal of excavated material, backfilling, lay, bed & test:				
HWG021	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWG022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206		Each		
HWG023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWG024	Flow Relief Structures		Each		
HWG025	EMPTY				
HWG026	Supply and construct vent stacks		each		
HWG027	Preparation of line sheets	1245	each	$ 1.00	$ 1,245.00
HWG028	Acceptance testing - gravity main		m		
HWG029	**Miscellaneous**				
HWG000	***Sub Total***				$515,227

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		

HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		
HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 9,960.00	$ 9,960.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	$ 587,193.16

B.	**PRE-CONSTRUCTION COST (Table 10)**	
HW0016	Design	$ 88,078.97
HW0017	Project Management of Design	$ 27,615.79
HW0018	Land Matters	$ -
HW0024	Community Consultation	
	Sub Total(B1)	$ 115,694.77
	Pre construction contingency (30% of B1)	$ 34,708.43
	TOTAL PRE-CONSTRUCTION COST (B)	$ 150,403.20

C.	**CONSTRUCTION COST**	
	Total Estimated Contract Award Sum (A)	$ 587,193.16
HW0019	Principal Supplied Pipe (as applicable)	$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)	$ -
HW0021	Principal Supplied Fittings (as applicable)	$ -
HW0022	Pump Station HV Power Supply	$ -
HW0023	Construction Management (Table 11)	$ 58,719.32
	Sub Total (C1)	$ 645,912.48
	Construction contingency (Table 12) (30% of C1) Preliminary Estimate	$ 193,773.74
	TOTAL CONSTRUCTION COST (C)	$ 839,686.22

	TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	$ 990,089.42

PROJECT DESCRIPTION: North Tuncurry Development Project - Gravity System - Stage T

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 514.00	$ 514.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 3,000.00	$ 3,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 3,000.00	$ 3,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 2,000.00	$ 2,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 1,057.00	$ 1,057.00
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Gravity - section will be present if one or more gravity mains are specified

Item	Construction of Sewer Gravity Mains	Qty	Unit	Rate $/Unit	Amount $
HWG001	Service Location	Item	Lump Sum	$ 60.00	$ 60.00
HWG002	Supply all valves	Item	Lump Sum		$ -
HWG003	Supply all fittings	Item	Lump Sum		$ -
HWG004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
00FVSS	Nominal DN150 PVC pipe	100	m	$ 12.00	$ 1,200.00
HWG005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
00FV03	Nominal DN150 PVC (Trench type 3)	100	m	$ 85.40	$ 8,540.00
HWG006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m depth to invert in OTR				
HWG007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m depth to invert in OTR				
HWG008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m depth to invert in OTR				
HWG009	Excavate, backfill, supply and install access chambers including base, chamber, cover & surround and access ladder for the following nominal diameter access chambers:				
HWG010	Extra over rate for installation for Additional compaction		m3	$ 15.30	
HWG011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	
HWG012	Extra over rate for installation to supply, place & compact non cohesive material.		m3		

HWG013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWG014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWG015	Supply & place ballast		tonnes	$ 90.00	
HWG016	External Dewatering of trench including establishment & disestablishment		m3		
HWG017	Supply and place treated timber piling for pipe support		m		
HWG018	Road / creek crossings				
HWG019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWG020	Supply & installation of river crossing includes supply of MSCL pipe, welding, testing of welds, 150mm concrete encasement, mobilisation & demobilisation of dredge, excavation & disposal of excavated material, backfilling, lay, bed & test:				
HWG021	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWG022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206		Each		
HWG023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWG024	Flow Relief Structures		Each		
HWG025	EMPTY				
HWG026	Supply and construct vent stacks		each		
HWG027	Preparation of line sheets	100	each	$ 1.00	$ 100.00
HWG028	Acceptance testing - gravity main		m		
HWG029	**Miscellaneous**				
HWG000	***Sub Total***				$9,900

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		
HW0009.12	Hydromulch		m2		

HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 800.00	$ 800.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	$ 33,271.00

B.	**PRE-CONSTRUCTION COST (Table 10)**	
HW0016	Design	$ 6,654.20
HW0017	Project Management of Design	$ 11,330.84
HW0018	Land Matters	$ -
HW0024	Community Consultation	
	Sub Total(B1)	$ 17,985.04
	Pre construction contingency (30% of B1)	$ 5,395.51
	TOTAL PRE-CONSTRUCTION COST (B)	$ 23,380.55

C.	**CONSTRUCTION COST**	
	Total Estimated Contract Award Sum (A)	$ 33,271.00
HW0019	Principal Supplied Pipe (as applicable)	$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)	$ -
HW0021	Principal Supplied Fittings (as applicable)	$ -
HW0022	Pump Station HV Power Supply	$ -
HW0023	Construction Management (Table 11)	$ 5,000.00
	Sub Total (C1)	$ 38,271.00
	Construction contingency (Table 12) (30% of C1) Preliminary Estimate	$ 11,481.30
	TOTAL CONSTRUCTION COST (C)	$ 49,752.30

TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	$ 73,132.85

PROJECT DESCRIPTION: North Tuncurry Development Project - Gravity System - Stage U

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 3,861.00	$ 3,861.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 2,000.00	$ 2,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 2,730.48	$ 2,730.48
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Gravity - section will be present if one or more gravity mains are specified

Item	Construction of Sewer Gravity Mains	Qty	Unit	Rate $/Unit	Amount $
HWG001	Service Location	Item	Lump Sum	$ 998.40	$ 998.40
HWG002	Supply all valves	Item	Lump Sum		$ -
HWG003	Supply all fittings	Item	Lump Sum		$ -
HWG004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
00FVSS	Nominal DN150 PVC pipe	1664	m	$ 12.00	$ 19,968.00
HWG005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
00FV03	Nominal DN150 PVC (Trench type 3)	1664	m	$ 85.40	$ 142,105.60
HWG006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m depth to invert in OTR				
HWG007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m depth to invert in OTR				
HWG008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m depth to invert in OTR				
HWG009	Excavate, backfill, supply and install access chambers including base, chamber, cover & surround and access ladder for the following nominal diameter access chambers:				
HWG010	Extra over rate for installation for Additional compaction		m3	$ 15.30	
HWG011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	
HWG012	Extra over rate for installation to supply, place & compact non cohesive material.		m3		

HWG013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWG014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWG015	Supply & place ballast		tonnes	$ 90.00	
HWG016	External Dewatering of trench including establishment & disestablishment		m3		
HWG017	Supply and place treated timber piling for pipe support		m		
HWG018	Road / creek crossings				
HWG019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWG020	Supply & installation of river crossing includes supply of MSCL pipe, welding, testing of welds, 150mm concrete encasement, mobilisation & demobilisation of dredge, excavation & disposal of excavated material, backfilling, lay, bed & test:				
HWG021	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWG022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206		Each		
HWG023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWG024	Flow Relief Structures		Each		
HWG025	EMPTY				
HWG026	Supply and construct vent stacks		each		
HWG027	Preparation of line sheets	1664	each	$ 1.00	$ 1,664.00
HWG028	Acceptance testing - gravity main		m		
HWG029	**Miscellaneous**				
HWG000	***Sub Total***				$164,736

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		
HW0009.12	Hydromulch		m2		

HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 13,312.00	$ 13,312.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	$ 217,639.48

B.	**PRE-CONSTRUCTION COST (Table 10)**	
HW0016	Design	$ 43,527.90
HW0017	Project Management of Design	$ 18,705.58
HW0018	Land Matters	$ -
HW0024	Community Consultation	
	Sub Total(B1)	$ 62,233.48
	Pre construction contingency (30% of B1)	$ 18,670.04
	TOTAL PRE-CONSTRUCTION COST (B)	$ 80,903.52

C.	**CONSTRUCTION COST**	
	Total Estimated Contract Award Sum (A)	$ 217,639.48
HW0019	Principal Supplied Pipe (as applicable)	$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)	$ -
HW0021	Principal Supplied Fittings (as applicable)	$ -
HW0022	Pump Station HV Power Supply	$ -
HW0023	Construction Management (Table 11)	$ 5,000.00
	Sub Total (C1)	$ 222,639.48
	Construction contingency (Table 12) (30% of C1) Preliminary Estimate	$ 66,791.84
	TOTAL CONSTRUCTION COST (C)	$ 289,431.32

TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	$ 370,334.84

PROJECT DESCRIPTION: North Tuncurry Development Project - Gravity System - Stage V

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 639.00	$ 639.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 3,000.00	$ 3,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 3,000.00	$ 3,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 2,000.00	$ 2,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 1,119.50	$ 1,119.50
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Gravity - section will be present if one or more gravity mains are specified

Item	Construction of Sewer Gravity Mains	Qty	Unit	Rate $/Unit	Amount $
HWG001	Service Location	Item	Lump Sum	$ 60.00	$ 60.00
HWG002	Supply all valves	Item	Lump Sum		$ -
HWG003	Supply all fittings	Item	Lump Sum		$ -
HWG004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
00FVSS	Nominal DN150 PVC pipe	100	m	$ 12.00	$ 1,200.00
HWG005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
HWG006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m depth to invert in OTR				
00FV03	Nominal DN150 PVC (Trench type 3)	100	m	$ 136.40	$ 13,640.00
HWG007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m depth to invert in OTR				
HWG008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m depth to invert in OTR				
HWG009	Excavate, backfill, supply and install access chambers including base, chamber, cover & surround and access ladder for the following nominal diameter access chambers:				
HWG010	Extra over rate for installation for Additional compaction		m3	$ 30.60	
HWG011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	
HWG012	Extra over rate for installation to supply, place & compact non cohesive material.		m3		

HWG013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWG014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWG015	Supply & place ballast		tonnes	$ 90.00	
HWG016	External Dewatering of trench including establishment & disestablishment	100	m3	$ 11.50	$ 1,150.00
HWG017	Supply and place treated timber piling for pipe support		m		
HWG018	Road / creek crossings				
HWG019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWG020	Supply & installation of river crossing includes supply of MSCL pipe, welding, testing of welds, 150mm concrete encasement, mobilisation & demobilisation of dredge, excavation & disposal of excavated material, backfilling, lay, bed & test:				
HWG021	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWG022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206		Each		
HWG023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWG024	Flow Relief Structures		Each		
HWG025	EMPTY				
HWG026	Supply and construct vent stacks		each		
HWG027	Preparation of line sheets	100	each	$ 1.00	$ 100.00
HWG028	Acceptance testing - gravity main		m		
HWG029	**Miscellaneous**				
HWG000	***Sub Total***				$16,150

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		
HW0009.12	Hydromulch		m2		

HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 800.00	$ 800.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	$ 39,708.50

B.	**PRE-CONSTRUCTION COST (Table 10)**	
HW0016	Design	$ 7,941.70
HW0017	Project Management of Design	$ 11,588.34
HW0018	Land Matters	$ -
HW0024	Community Consultation	
	Sub Total(B1)	$ 19,530.04
	Pre construction contingency (30% of B1)	$ 5,859.01
	TOTAL PRE-CONSTRUCTION COST (B)	$ 25,389.05

C.	**CONSTRUCTION COST**		
	Total Estimated Contract Award Sum (A)		$ 39,708.50
HW0019	Principal Supplied Pipe (as applicable)		$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)		$ -
HW0021	Principal Supplied Fittings (as applicable)		$ -
HW0022	Pump Station HV Power Supply		$ -
HW0023	Construction Management (Table 11)		$ 5,000.00
	Sub Total (C1)		$ 44,708.50
	Construction contingency (Table 12) (30% of C1)	Preliminary Estimate	$ 13,412.55
	TOTAL CONSTRUCTION COST (C)		$ 58,121.05

TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	$ 83,510.10

PROJECT DESCRIPTION: North Tuncurry Development Project - Gravity System - Stage W

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 2,590.00	$ 2,590.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 2,000.00	$ 2,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 2,094.90	$ 2,094.90
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Gravity - section will be present if one or more gravity mains are specified

Item	Construction of Sewer Gravity Mains	Qty	Unit	Rate $/Unit	Amount $
HWG001	Service Location	Item	Lump Sum	$ 642.00	$ 642.00
HWG002	Supply all valves	Item	Lump Sum		$ -
HWG003	Supply all fittings	Item	Lump Sum		$ -
HWG004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
00FVSS	Nominal DN150 PVC pipe	1070	m	$ 12.00	$ 12,840.00
HWG005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
00FV03	Nominal DN150 PVC (Trench type 3)	1070	m	$ 85.40	$ 91,378.00
HWG006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m depth to invert in OTR				
HWG007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m depth to invert in OTR				
HWG008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m depth to invert in OTR				
HWG009	Excavate, backfill, supply and install access chambers including base, chamber, cover & surround and access ladder for the following nominal diameter access chambers:				
HWG010	Extra over rate for installation for Additional compaction		m3	$ 15.30	
HWG011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	
HWG012	Extra over rate for installation to supply, place & compact non cohesive material.		m3		

HWG013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWG014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWG015	Supply & place ballast		tonnes	$ 90.00	
HWG016	External Dewatering of trench including establishment & disestablishment		m3		
HWG017	Supply and place treated timber piling for pipe support		m		
HWG018	Road / creek crossings				
HWG019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWG020	Supply & installation of river crossing includes supply of MSCL pipe, welding, testing of welds, 150mm concrete encasement, mobilisation & demobilisation of dredge, excavation & disposal of excavated material, backfilling, lay, bed & test:				
HWG021	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWG022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206		Each		
HWG023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWG024	Flow Relief Structures		Each		
HWG025	EMPTY				
HWG026	Supply and construct vent stacks		each		
HWG027	Preparation of line sheets	1070	each	$ 1.00	$ 1,070.00
HWG028	Acceptance testing - gravity main		m		
HWG029	**Miscellaneous**				
HWG000	***Sub Total***				$105,930

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		
HW0009.12	Hydromulch		m2		

HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 8,560.00	$ 8,560.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	$ 152,174.90

B.	**PRE-CONSTRUCTION COST (Table 10)**	
HW0016	Design	$ 30,434.98
HW0017	Project Management of Design	$ 16,087.00
HW0018	Land Matters	$ -
HW0024	Community Consultation	
	Sub Total(B1)	$ 46,521.98
	Pre construction contingency (30% of B1)	$ 13,956.59
	TOTAL PRE-CONSTRUCTION COST (B)	$ 60,478.57

C.	**CONSTRUCTION COST**	
	Total Estimated Contract Award Sum (A)	$ 152,174.90
HW0019	Principal Supplied Pipe (as applicable)	$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)	$ -
HW0021	Principal Supplied Fittings (as applicable)	$ -
HW0022	Pump Station HV Power Supply	$ -
HW0023	Construction Management (Table 11)	$ 5,000.00
	Sub Total (C1)	$ 157,174.90
	Construction contingency (Table 12) (30% of C1) Preliminary Estimate	$ 47,152.47
	TOTAL CONSTRUCTION COST (C)	$ 204,327.37

TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	$ 264,805.94

PROJECT DESCRIPTION: North Tuncurry Development Project - Gravity System - Stage X

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 1,524.00	$ 1,524.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 6,000.00	$ 6,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 6,000.00	$ 6,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 2,000.00	$ 2,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 1,562.04	$ 1,562.04
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Gravity - section will be present if one or more gravity mains are specified

Item	Construction of Sewer Gravity Mains	Qty	Unit	Rate $/Unit	Amount $
HWG001	Service Location	Item	Lump Sum	$ 343.20	$ 343.20
HWG002	Supply all valves	Item	Lump Sum		$ -
HWG003	Supply all fittings	Item	Lump Sum		$ -
HWG004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
00FVSS	Nominal DN150 PVC pipe	572	m	$ 12.00	$ 6,864.00
HWG005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
00FV03	Nominal DN150 PVC (Trench type 3)	572	m	$ 85.40	$ 48,848.80
HWG006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m depth to invert in OTR				
HWG007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m depth to invert in OTR				
HWG008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m depth to invert in OTR				
HWG009	Excavate, backfill, supply and install access chambers including base, chamber, cover & surround and access ladder for the following nominal diameter access chambers:				
HWG010	Extra over rate for installation for Additional compaction		m3	$ 15.30	
HWG011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	
HWG012	Extra over rate for installation to supply, place & compact non cohesive material.		m3		

HWG013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWG014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWG015	Supply & place ballast		tonnes	$ 90.00	
HWG016	External Dewatering of trench including establishment & disestablishment		m3		
HWG017	Supply and place treated timber piling for pipe support		m		
HWG018	Road / creek crossings				
HWG019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWG020	Supply & installation of river crossing includes supply of MSCL pipe, welding, testing of welds, 150mm concrete encasement, mobilisation & demobilisation of dredge, excavation & disposal of excavated material, backfilling, lay, bed & test:				
HWG021	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWG022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206		Each		
HWG023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWG024	Flow Relief Structures		Each		
HWG025	EMPTY				
HWG026	Supply and construct vent stacks		each		
HWG027	Preparation of line sheets	572	each	$ 1.00	$ 572.00
HWG028	Acceptance testing - gravity main		m		
HWG029	**Miscellaneous**				
HWG000	***Sub Total***				$56,628

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		
HW0009.12	Hydromulch		m2		

HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 4,576.00	$ 4,576.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	$ 91,290.04

B.	**PRE-CONSTRUCTION COST (Table 10)**	
HW0016	Design	$ 18,258.01
HW0017	Project Management of Design	$ 13,651.60
HW0018	Land Matters	$ -
HW0024	Community Consultation	
	Sub Total(B1)	$ 31,909.61
	Pre construction contingency (30% of B1)	$ 9,572.88
	TOTAL PRE-CONSTRUCTION COST (B)	$ 41,482.49

C.	**CONSTRUCTION COST**		
	Total Estimated Contract Award Sum (A)		$ 91,290.04
HW0019	Principal Supplied Pipe (as applicable)		$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)		$ -
HW0021	Principal Supplied Fittings (as applicable)		$ -
HW0022	Pump Station HV Power Supply		$ -
HW0023	Construction Management (Table 11)		$ 5,000.00
	Sub Total (C1)		$ 96,290.04
	Construction contingency (Table 12) (30% of C1)	Preliminary Estimate	$ 28,887.01
	TOTAL CONSTRUCTION COST (C)		$ 125,177.05

TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	$ 166,659.54

PROJECT DESCRIPTION: North Tuncurry Development Project - Gravity System - Stage Y

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 3,185.00	$ 3,185.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 2,000.00	$ 2,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 2,392.70	$ 2,392.70
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Gravity - section will be present if one or more gravity mains are specified

Item	Construction of Sewer Gravity Mains	Qty	Unit	Rate $/Unit	Amount $
HWG001	Service Location	Item	Lump Sum	$ 456.00	$ 456.00
HWG002	Supply all valves	Item	Lump Sum		$ -
HWG003	Supply all fittings	Item	Lump Sum		$ -
HWG004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
00FVSS	Nominal DN150 PVC pipe	760	m	$ 12.00	$ 9,120.00
HWG005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
00FV03	Nominal DN150 PVC (Trench type 3)	360	m	$ 85.40	$ 30,744.00
HWG006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m depth to invert in OTR				
00FV03	Nominal DN150 PVC (Trench type 3)	200	m	$ 136.40	$ 27,280.00
HWG007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m depth to invert in OTR				
00FV03	Nominal DN150 PVC (Trench type 3)	200	m	$ 343.40	$ 68,680.00
HWG008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m depth to invert in OTR				
HWG009	Excavate, backfill, supply and install access chambers including base, chamber, cover & surround and access ladder for the following nominal diameter access chambers:				
HWG010	Extra over rate for installation for Additional compaction		m3	$ 27.38	

HWG011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	
HWG012	Extra over rate for installation to supply, place & compact non cohesive material.		m3		
HWG013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWG014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWG015	Supply & place ballast		tonnes	$ 90.00	
HWG016	External Dewatering of trench including establishment & disestablishment	200	m3	$ 5.75	$ 1,150.00
HWG017	Supply and place treated timber piling for pipe support		m		
HWG018	Road / creek crossings				
HWG019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWG020	Supply & installation of river crossing includes supply of MSCL pipe, welding, testing of welds, 150mm concrete encasement, mobilisation & demobilisation of dredge, excavation & disposal of excavated material, backfilling, lay, bed & test:				
HWG021	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWG022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206		Each		
HWG023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWG024	Flow Relief Structures		Each		
HWG025	EMPTY				
HWG026	Supply and construct vent stacks		each		
HWG027	Preparation of line sheets	760	each	$ 1.00	$ 760.00
HWG028	Acceptance testing - gravity main		m		
HWG029	**Miscellaneous**				
HWG000	***Sub Total***				$138,190

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		

HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		
HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 6,080.00	$ 6,080.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	$ 182,847.70

B.	**PRE-CONSTRUCTION COST (Table 10)**	
HW0016	Design	$ 36,569.54
HW0017	Project Management of Design	$ 17,313.91
HW0018	Land Matters	$ -
HW0024	Community Consultation	
	Sub Total(B1)	$ 53,883.45
	Pre construction contingency (30% of B1)	$ 16,165.03
	TOTAL PRE-CONSTRUCTION COST (B)	$ 70,048.48

C.	**CONSTRUCTION COST**		
	Total Estimated Contract Award Sum (A)		$ 182,847.70
HW0019	Principal Supplied Pipe (as applicable)		$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)		$ -
HW0021	Principal Supplied Fittings (as applicable)		$ -
HW0022	Pump Station HV Power Supply		$ -
HW0023	Construction Management (Table 11)		$ 5,000.00
	Sub Total (C1)		$ 187,847.70
	Construction contingency (Table 12) (30% of C1)	Preliminary Estimate	$ 56,354.31
	TOTAL CONSTRUCTION COST (C)		$ 244,202.01

TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	$ 314,250.49

PROJECT DESCRIPTION: North Tuncurry Development Project - Gravity System - Stage Z

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 1,424.00	$ 1,424.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 6,000.00	$ 6,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 6,000.00	$ 6,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 2,000.00	$ 2,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 1,511.75	$ 1,511.75
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Gravity - section will be present if one or more gravity mains are specified

Item	Construction of Sewer Gravity Mains	Qty	Unit	Rate $/Unit	Amount $
HWG001	Service Location	Item	Lump Sum	$ 315.00	$ 315.00
HWG002	Supply all valves	Item	Lump Sum		$ -
HWG003	Supply all fittings	Item	Lump Sum		$ -
HWG004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
00FVSS	Nominal DN150 PVC pipe	525	m	$ 12.00	$ 6,300.00
HWG005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
00FV03	Nominal DN150 PVC (Trench type 3)	525	m	$ 85.40	$ 44,835.00
HWG006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m depth to invert in OTR				
HWG007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m depth to invert in OTR				
HWG008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m depth to invert in OTR				
HWG009	Excavate, backfill, supply and install access chambers including base, chamber, cover & surround and access ladder for the following nominal diameter access chambers:				
HWG010	Extra over rate for installation for Additional compaction		m3	$ 15.30	
HWG011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	
HWG012	Extra over rate for installation to supply, place & compact non cohesive material.		m3		

HWG013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWG014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWG015	Supply & place ballast		tonnes	$ 90.00	
HWG016	External Dewatering of trench including establishment & disestablishment		m3		
HWG017	Supply and place treated timber piling for pipe support		m		
HWG018	Road / creek crossings				
HWG019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWG020	Supply & installation of river crossing includes supply of MSCL pipe, welding, testing of welds, 150mm concrete encasement, mobilisation & demobilisation of dredge, excavation & disposal of excavated material, backfilling, lay, bed & test:				
HWG021	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWG022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206		Each		
HWG023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWG024	Flow Relief Structures		Each		
HWG025	EMPTY				
HWG026	Supply and construct vent stacks		each		
HWG027	Preparation of line sheets	525	each	$ 1.00	$ 525.00
HWG028	Acceptance testing - gravity main		m		
HWG029	**Miscellaneous**				
HWG000	***Sub Total***				$51,975

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		
HW0009.12	Hydromulch		m2		

HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 4,200.00	$ 4,200.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	$ 86,110.75

B.	**PRE-CONSTRUCTION COST (Table 10)**	
HW0016	Design	$ 17,222.15
HW0017	Project Management of Design	$ 13,444.43
HW0018	Land Matters	$ -
HW0024	Community Consultation	
	Sub Total(B1)	$ 30,666.58
	Pre construction contingency (30% of B1)	$ 9,199.97
	TOTAL PRE-CONSTRUCTION COST (B)	$ 39,866.55

C.	**CONSTRUCTION COST**		
	Total Estimated Contract Award Sum (A)		$ 86,110.75
HW0019	Principal Supplied Pipe (as applicable)		$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)		$ -
HW0021	Principal Supplied Fittings (as applicable)		$ -
HW0022	Pump Station HV Power Supply		$ -
HW0023	Construction Management (Table 11)		$ 5,000.00
	Sub Total (C1)		$ 91,110.75
	Construction contingency (Table 12) (30% of C1)	Preliminary Estimate	$ 27,333.23
	TOTAL CONSTRUCTION COST (C)		$ 118,443.98

TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	$ 158,310.53

PROJECT DESCRIPTION: North Tuncurry Development Project - Gravity System - PS2

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 5,974.00	$ 5,974.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 12,000.00	$ 12,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 12,000.00	$ 12,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 7,000.00	$ 7,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 14,000.00	$ 14,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 6,200.00	$ 6,200.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 3,786.88	$ 3,786.88
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Rising - section will be present if one or more rising mains are specified

Item	Construction of Sewer Rising Mains	Qty	Unit	Rate $/Unit	Amount $
HWR001	Service Location	Item	Lump Sum	$ 297.00	$ 297.00
HWR002	Supply all valves	Item	Lump Sum		$ -
HWR003	Supply all fittings	Item	Lump Sum		$ -
HWR004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
114VSS	Nominal DN200 PVC pipe	495	m	$ 48.00	$ 23,760.00
HWR005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
114V03	Nominal DN200 PVC (Trench type 3)	495	m	$ 71.40	$ 35,343.00
HWR006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m to invert in OTR.				
HWR007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m to invert in OTR.				
HWR008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m to invert in OTR.				
HWR009	EMPTY				
HWR010	Extra over rate for installation for Additional compaction		m3	$ 15.30	
HWR011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	
HWR012	Extra over rate for installation to Supply & place & compact non cohesive material.		m3		
HWR013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWR014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWR015	Supply & place ballast		tonnes	$ 90.00	
HWR016	External Dewatering of trench including establishment & disestablishment		m		
HWR017	Supply and place treated timber piling for pipe support		m		
HWR018	Road / creek crossings				
HWR019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWR020	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				

HWR021	Supply and installation of pipe river crossing including supply of MSCL pipe, internal and external welding, testing of welds and 150 thick concrete encasement. Also includes mobilisation and demobilisation of dredge(if required) excavation & disposal of excavated material, backfilling, lay, bed and test for the following MSCL pipe sizes:				
HWR022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206	Item	Lump Sum		$ -
HWR023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWR024	Flow Relief Structures		Each		
HWR025	EMPTY				
HWR026	Supply and construct vent stacks	1	each	$ 9,500.00	$ 9,500.00
HWR027	Preparation of line sheets	495	m	$ 1.00	$ 495.00
HWR028	Acceptance testing - rising main		m		
HWR029	**Miscellaneous**				
HWR000	***Sub Total***				$69,395

PS2

Item	*Pump Station - Name*	Qty	Unit	Rate $/Unit	Amount $
HW0201	**PS2 2.1m dia 2 Pump(s)**				
	Clear, excavate & backfill in OTR conditions, construct precast pump station, lid and plugged with 1.5m of plain concrete.	Item	Lump Sum	$ 30,343.51	$ 30,343.51
HW0202	**Pumps for Pumping Stations - Supply and install pumps and associated fittings, connection to pipework, testing and commissioning.**	2	Lump Sum	$ 15,112.50	$ 30,225.00
HW0203	**Pumping Station Electricals**				
HW0203.01	Pit and Conduit System	Item	Lump Sum	$ 4,812.50	$ 4,812.50
HW0203.02	LV Station Power Supply	Item	Lump Sum	$ 6,875.00	$ 6,875.00
HW0203.03	Station By-Pass arrangements	Item	Lump Sum		$ -
HW0203.04	Electrical Demolition works	Item	Lump Sum		$ -
HW0203.05	Switchboard	Item	Lump Sum	$ 52,937.50	$ 52,937.50
HW0203.06	PLC / Telemetry Hardware	Item	Lump Sum	$ 14,437.50	$ 14,437.50
HW0203.07	PLC / Telemetry / Scada Engineering and Software Development	Item	Lump Sum	$ 28,450.00	$ 28,450.00
HW0203.08	Stainless Steel Generator Box Cable Tray & Metering Box	Item	Lump Sum	$ -	$ -
HW0203.09	Building Services (Electrical)	Item	Lump Sum	$ -	$ -
HW0203.10	Pressure Transmitter/Gauge Board	Item	Lump Sum	$ -	$ -
HW0203.11	Installation/Cabling (Electrical)	Item	Lump Sum	$ 10,737.50	$ 10,737.50
HW0204	Empty				
HW0205	Empty				
HW0206	**Service Location**	Item	Lump Sum	$ 264.60	$ 264.60
HW0207	Excavation below design depth including disposal of excavated material (Contingent Item)	0	m3	$ 70.00	$ -
HW0208	Extra over Civil Works for excavation in rock:	0	m3	$ 120.00	$ -
HW0209	Cut and fill earthworks including compaction:	0	m3	$ 25.00	$ -
HW0210	Supply & place ballast (Contingent Item)	0	tonne	$ 90.00	$ -
HW0211	Import and place select fill including compaction <may be Contingent Item>	0	m3	$ 65.00	$ -
HW0212	Construct access road and hardstand				
HW0212.01	Prepare subgrade		m2	$ 4.20	
HW0212.02	Supply, place and compact 150mm thick basecourse		m2	$ 37.00	

HW0212.03	Supply, place and compact 200mm thick basecourse		m2	$ 47.00	
HW0212.04	Supply, place and compact 250mm thick basecourse		m2	$ 51.00	
HW0212.05	Supply, place and compact two coat bitumen seal		m2	$ 26.00	
HW0212.06	Supply, place and compact 30mm thick asphalt bitumen seal		m2	$ 37.00	
HW0212.07	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0212.08	Concrete driveway	0	m2	$ 178.00	$ -
HW0213	Supply all plant, material and labour to undertake the following Piling works:				
HW0213.01	Treated timber mini piles		m		
HW0213.02	Reinforced concrete bored piles	Item	Lump Sum		$ -
HW0214	Supply all plant, material and labour to undertake the following Retaining Wall works:				
HW0214.01	Timber(Koppers Log) up to 1.5m high		m2	$ 300.00	
HW0214.02	Concrete Keystone up to 1m high		m2	$ 380.00	
HW0214.03	Concrete Keystone between 1m and 3m high		m2	$ 560.00	
HW0214.04	Concrete Keystone greater than 3m high		m2	$ 560.00	
HW0214.05	Concrete Crib Block up to 2m high		m2	$ 630.00	
HW0214.06	Concrete Crib Block between 2m and 3m high		m2	$ 704.00	
HW0215	Acid sulphate soil				
HW0215.01	Initial testing for acid sulphate soils and prepare and submit report	5	per test	$ 110.00	$ 550.00
HW0215.02	Establish treatment facility	Item	Lump Sum		$ -
HW0215.03	Handling, treatment and testing of acid sulphate soils		m3	$ 60.00	
HW0215.04	Disposal off site of acid sulphate soil		tonne	$ 122.00	
HW0216	Series Pump Pit Structure	Item	Lump Sum		$ -
HW0217	Supply and Install valve pit concrete formwork, reinforced concrete complete with aluminium tread plate covers and including excavation and backfill	Item	Lump Sum	$ -	$ -
HW0218	Supply and install pipework items inside valve pit	Item	Lump Sum	$ -	$ -
HW0219	Supply and Install additional pipe Items outside station	Item	Lump Sum	$ -	$ -
HW0220	Supply and install pipework items inside station	Item	Lump Sum	$ -	$ -
HW0221	Supply and install Type 2 or 4 flow relief structures in accordance with Drgs SCP-502 and SCP-505	Item	Lump Sum		$ -
HW0222	Supply and install emergency storage structures		L/m		
HW0223	Supply and install fan forced ventilation	Item	Lump Sum		$ -
HW0224	Supply and install Soil Bed Filter	Item	Lump Sum		$ -
HW0225	Supply and Install Strainers	Item	Lump Sum		$ -
HW0226	Supply and Install Series Bypass	Item	Lump Sum		$ -
HW0227	Landscaping	Item	Lump Sum	$ -	$ -
HW0228	**Miscellaneous**				
HW0229	Preparation and submission of Operation and Maintenance Information	Item	Lump Sum		$ -
HW0230	Pre commissioning and commissioning	Item	Lump Sum	$ 8,000.00	$ 8,000.00
HW0231	Preparation and submission of Work as Constructed Information	Item	Lump Sum	$ 6,000.00	$ 6,000.00
HW2SP	***Sub Total***				$193,633

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -

HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		
HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 3,960.00	$ 3,960.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	$ 327,948.99

B.	**PRE-CONSTRUCTION COST (Table 10)**	
HW0016	Design	$ 65,589.80
HW0017	Project Management of Design	$ 23,117.96
HW0018	Land Matters	$ -
HW0024	Community Consultation	
	Sub Total(B1)	$ 88,707.76
	Pre construction contingency (30% of B1)	$ 26,612.33
	TOTAL PRE-CONSTRUCTION COST (B)	$ 115,320.08

C.	**CONSTRUCTION COST**		
	Total Estimated Contract Award Sum (A)		$ 327,948.99
HW0019	Principal Supplied Pipe (as applicable)		$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)		$ -
HW0021	Principal Supplied Fittings (as applicable)		$ -
HW0022	Pump Station HV Power Supply		$ 100,000.00
HW0023	Construction Management (Table 11)		$ 32,794.90
	Sub Total (C1)		$ 460,743.89
	Construction contingency (Table 12) (30% of C1)	Preliminary Estimate	$ 138,223.17
	TOTAL CONSTRUCTION COST (C)		$ 598,967.06

TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	$ 714,287.14

WWPS Contract Award Cost	*$ 224,113.44*
RM Contract Award Cost	*$ 103,835.44*
WWPS Capital Cost	$ 488,128.97
RM Capital Cost	$ 226,158.17

PROJECT DESCRIPTION: North Tuncurry Development Project - Gravity System - PS3

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 5,293.00	$ 5,293.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 12,000.00	$ 12,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 12,000.00	$ 12,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 7,000.00	$ 7,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 14,000.00	$ 14,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 6,200.00	$ 6,200.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 3,446.58	$ 3,446.58
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Rising - section will be present if one or more rising mains are specified

Item	Construction of Sewer Rising Mains	Qty	Unit	Rate $/Unit	Amount $
HWR001	Service Location	Item	Lump Sum	$ 294.00	$ 294.00
HWR002	Supply all valves	Item	Lump Sum		$ -
HWR003	Supply all fittings	Item	Lump Sum		$ -
HWR004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
10FVSS	Nominal DN150 PVC pipe	490	m	$ 28.00	$ 13,720.00
HWR005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
10FV03	Nominal DN150 PVC (Trench type 3)	490	m	$ 67.40	$ 33,026.00
HWR006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m to invert in OTR.				
HWR007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m to invert in OTR.				
HWR008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m to invert in OTR.				
HWR009	EMPTY				
HWR010	Extra over rate for installation for Additional compaction		m3	$ 15.30	
HWR011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	
HWR012	Extra over rate for installation to Supply & place & compact non cohesive material.		m3		
HWR013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWR014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWR015	Supply & place ballast		tonnes	$ 90.00	
HWR016	External Dewatering of trench including establishment & disestablishment		m		
HWR017	Supply and place treated timber piling for pipe support		m		
HWR018	Road / creek crossings				
HWR019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWR020	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				

HWR021	Supply and installation of pipe river crossing including supply of MSCL pipe, internal and external welding, testing of welds and 150 thick concrete encasement. Also includes mobilisation and demobilisation of dredge(if required) excavation & disposal of excavated material, backfilling, lay, bed and test for the following MSCL pipe sizes:				
HWR022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206	Item	Lump Sum		$ -
HWR023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWR024	Flow Relief Structures		Each		
HWR025	EMPTY				
HWR026	Supply and construct vent stacks	1	each	$ 9,500.00	$ 9,500.00
HWR027	Preparation of line sheets	490	m	$ 1.00	$ 490.00
HWR028	Acceptance testing - rising main		m		
HWR029	**Miscellaneous**				
HWR000	***Sub Total***				$57,030

PS3

Item	*Pump Station - Name*	Qty	Unit	Rate $/Unit	Amount $
HW0201	**PS3 1.8m dia 2 Pump(s)**				
	Clear, excavate & backfill in OTR conditions, construct precast pump station, lid and plugged with 1.5m of plain concrete.	Item	Lump Sum	$ 22,751.18	$ 22,751.18
HW0202	**Pumps for Pumping Stations - Supply and install pumps and associated fittings, connection to pipework, testing and commissioning.**	2	Lump Sum	$ 10,537.50	$ 21,075.00
HW0203	**Pumping Station Electricals**				
HW0203.01	Pit and Conduit System	Item	Lump Sum	$ 4,812.50	$ 4,812.50
HW0203.02	LV Station Power Supply	Item	Lump Sum	$ 5,625.00	$ 5,625.00
HW0203.03	Station By-Pass arrangements	Item	Lump Sum		$ -
HW0203.04	Electrical Demolition works	Item	Lump Sum		$ -
HW0203.05	Switchboard	Item	Lump Sum	$ 49,375.00	$ 49,375.00
HW0203.06	PLC / Telemetry Hardware	Item	Lump Sum	$ 14,437.50	$ 14,437.50
HW0203.07	PLC / Telemetry / Scada Engineering and Software Development	Item	Lump Sum	$ 28,450.00	$ 28,450.00
HW0203.08	Stainless Steel Generator Box Cable Tray & Metering Box	Item	Lump Sum	$ -	$ -
HW0203.09	Building Services (Electrical)	Item	Lump Sum	$ -	$ -
HW0203.10	Pressure Transmitter/Gauge Board	Item	Lump Sum	$ -	$ -
HW0203.11	Installation/Cabling (Electrical)	Item	Lump Sum	$ 10,737.50	$ 10,737.50
HW0204	Empty				
HW0205	Empty				
HW0206	**Service Location**	Item	Lump Sum	$ 194.40	$ 194.40
HW0207	Excavation below design depth including disposal of excavated material (Contingent Item)	0	m3	$ 70.00	$ -
HW0208	Extra over Civil Works for excavation in rock:	0	m3	$ 120.00	$ -
HW0209	Cut and fill earthworks including compaction:	0	m3	$ 25.00	$ -
HW0210	Supply & place ballast (Contingent Item)	0	tonne	$ 90.00	$ -
HW0211	Import and place select fill including compaction <may be Contingent Item>	0	m3	$ 65.00	$ -
HW0212	Construct access road and hardstand				
HW0212.01	Prepare subgrade		m2	$ 4.20	
HW0212.02	Supply, place and compact 150mm thick basecourse		m2	$ 37.00	

HW0212.03	Supply, place and compact 200mm thick basecourse		m2	$ 47.00	
HW0212.04	Supply, place and compact 250mm thick basecourse		m2	$ 51.00	
HW0212.05	Supply, place and compact two coat bitumen seal		m2	$ 26.00	
HW0212.06	Supply, place and compact 30mm thick asphalt bitumen seal		m2	$ 37.00	
HW0212.07	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0212.08	Concrete driveway	0	m2	$ 178.00	$ -
HW0213	Supply all plant, material and labour to undertake the following Piling works:				
HW0213.01	Treated timber mini piles		m		
HW0213.02	Reinforced concrete bored piles	Item	Lump Sum		$ -
HW0214	Supply all plant, material and labour to undertake the following Retaining Wall works:				
HW0214.01	Timber(Koppers Log) up to 1.5m high		m2	$ 300.00	
HW0214.02	Concrete Keystone up to 1m high		m2	$ 380.00	
HW0214.03	Concrete Keystone between 1m and 3m high		m2	$ 560.00	
HW0214.04	Concrete Keystone greater than 3m high		m2	$ 560.00	
HW0214.05	Concrete Crib Block up to 2m high		m2	$ 630.00	
HW0214.06	Concrete Crib Block between 2m and 3m high		m2	$ 704.00	
HW0215	Acid sulphate soil				
HW0215.01	Initial testing for acid sulphate soils and prepare and submit report	5	per test	$ 110.00	$ 550.00
HW0215.02	Establish treatment facility	Item	Lump Sum		$ -
HW0215.03	Handling, treatment and testing of acid sulphate soils		m3	$ 60.00	
HW0215.04	Disposal off site of acid sulphate soil		tonne	$ 122.00	
HW0216	Series Pump Pit Structure	Item	Lump Sum		$ -
HW0217	Supply and Install valve pit concrete formwork, reinforced concrete complete with aluminium tread plate covers and including excavation and backfill	Item	Lump Sum	$ -	$ -
HW0218	Supply and install pipework items inside valve pit	Item	Lump Sum	$ -	$ -
HW0219	Supply and Install additional pipe Items outside station	Item	Lump Sum	$ -	$ -
HW0220	Supply and install pipework items inside station	Item	Lump Sum	$ -	$ -
HW0221	Supply and install Type 2 or 4 flow relief structures in accordance with Drgs SCP-502 and SCP-505	Item	Lump Sum		$ -
HW0222	Supply and install emergency storage structures		L/m		
HW0223	Supply and install fan forced ventilation	Item	Lump Sum		$ -
HW0224	Supply and install Soil Bed Filter	Item	Lump Sum		$ -
HW0225	Supply and Install Strainers	Item	Lump Sum		$ -
HW0226	Supply and Install Series Bypass	Item	Lump Sum		$ -
HW0227	Landscaping	Item	Lump Sum	$ -	$ -
HW0228	**Miscellaneous**				
HW0229	Preparation and submission of Operation and Maintenance Information	Item	Lump Sum		$ -
HW0230	Pre commissioning and commissioning	Item	Lump Sum	$ 8,000.00	$ 8,000.00
HW0231	Preparation and submission of Work as Constructed Information	Item	Lump Sum	$ 6,000.00	$ 6,000.00
HW2SP	***Sub Total***				$172,008

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -

HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		
HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 3,920.00	$ 3,920.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	$ 292,897.66

B.	**PRE-CONSTRUCTION COST (Table 10)**	
HW0016	Design	$ 58,579.53
HW0017	Project Management of Design	$ 21,715.91
HW0018	Land Matters	$ -
HW0024	Community Consultation	
	Sub Total(B1)	$ 80,295.44
	Pre construction contingency (30% of B1)	$ 24,088.63
	TOTAL PRE-CONSTRUCTION COST (B)	$ 104,384.07

C.	**CONSTRUCTION COST**		
	Total Estimated Contract Award Sum (A)		$ 292,897.66
HW0019	Principal Supplied Pipe (as applicable)		$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)		$ -
HW0021	Principal Supplied Fittings (as applicable)		$ -
HW0022	Pump Station HV Power Supply		$ -
HW0023	Construction Management (Table 11)		$ 29,289.77
	Sub Total (C1)		$ 322,187.43
	Construction contingency (Table 12) (30% of C1)	Preliminary Estimate	$ 96,656.23
	TOTAL CONSTRUCTION COST (C)		$ 418,843.65

	TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	$ 523,227.72

	WWPS Contract Award Cost	*$ 201,977.79*
	RM Contract Award Cost	*$ 90,919.79*
	WWPS Capital Cost	$ 360,810.01
	RM Capital Cost	$ 162,417.71

PROJECT DESCRIPTION: North Tuncurry Development Project - Gravity System - PS4

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 4,789.00	$ 4,789.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 12,000.00	$ 12,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 12,000.00	$ 12,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 7,000.00	$ 7,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 14,000.00	$ 14,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 6,200.00	$ 6,200.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 3,194.58	$ 3,194.58
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Rising - section will be present if one or more rising mains are specified

Item	Construction of Sewer Rising Mains	Qty	Unit	Rate $/Unit	Amount $
HWR001	Service Location	Item	Lump Sum	$ 150.00	$ 150.00
HWR002	Supply all valves	Item	Lump Sum		$ -
HWR003	Supply all fittings	Item	Lump Sum		$ -
HWR004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
10FVSS	Nominal DN150 PVC pipe	250	m	$ 28.00	$ 7,000.00
HWR005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
10FV03	Nominal DN150 PVC (Trench type 3)	250	m	$ 67.40	$ 16,850.00
HWR006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m to invert in OTR.				
HWR007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m to invert in OTR.				
HWR008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m to invert in OTR.				
HWR009	EMPTY				
HWR010	Extra over rate for installation for Additional compaction		m3	$ 15.30	
HWR011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	
HWR012	Extra over rate for installation to Supply & place & compact non cohesive material.		m3		
HWR013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWR014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWR015	Supply & place ballast		tonnes	$ 90.00	
HWR016	External Dewatering of trench including establishment & disestablishment		m		
HWR017	Supply and place treated timber piling for pipe support		m		
HWR018	Road / creek crossings				
HWR019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWR020	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				

HWR021	Supply and installation of pipe river crossing including supply of MSCL pipe, internal and external welding, testing of welds and 150 thick concrete encasement. Also includes mobilisation and demobilisation of dredge(if required) excavation & disposal of excavated material, backfilling, lay, bed and test for the following MSCL pipe sizes:				
HWR022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206	Item	Lump Sum		$ -
HWR023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWR024	Flow Relief Structures		Each		
HWR025	EMPTY				
HWR026	Supply and construct vent stacks	1	each	$ 9,500.00	$ 9,500.00
HWR027	Preparation of line sheets	250	m	$ 1.00	$ 250.00
HWR028	Acceptance testing - rising main		m		
HWR029	**Miscellaneous**				
HWR000	***Sub Total***				$33,750

PS4

Item	*Pump Station - Name*	Qty	Unit	Rate $/Unit	Amount $
HW0201	**PS4 1.8m dia 2 Pump(s)**				
	Clear, excavate & backfill in OTR conditions, construct precast pump station, lid and plugged with 1.5m of plain concrete.	Item	Lump Sum	$ 22,751.18	$ 22,751.18
HW0202	**Pumps for Pumping Stations - Supply and install pumps and associated fittings, connection to pipework, testing and commissioning.**	2	Lump Sum	$ 10,537.50	$ 21,075.00
HW0203	**Pumping Station Electricals**				
HW0203.01	Pit and Conduit System	Item	Lump Sum	$ 4,812.50	$ 4,812.50
HW0203.02	LV Station Power Supply	Item	Lump Sum	$ 5,625.00	$ 5,625.00
HW0203.03	Station By-Pass arrangements	Item	Lump Sum		$ -
HW0203.04	Electrical Demolition works	Item	Lump Sum		$ -
HW0203.05	Switchboard	Item	Lump Sum	$ 49,375.00	$ 49,375.00
HW0203.06	PLC / Telemetry Hardware	Item	Lump Sum	$ 14,437.50	$ 14,437.50
HW0203.07	PLC / Telemetry / Scada Engineering and Software Development	Item	Lump Sum	$ 28,450.00	$ 28,450.00
HW0203.08	Stainless Steel Generator Box Cable Tray & Metering Box	Item	Lump Sum	$ -	$ -
HW0203.09	Building Services (Electrical)	Item	Lump Sum	$ -	$ -
HW0203.10	Pressure Transmitter/Gauge Board	Item	Lump Sum	$ -	$ -
HW0203.11	Installation/Cabling (Electrical)	Item	Lump Sum	$ 10,737.50	$ 10,737.50
HW0204	Empty				
HW0205	Empty				
HW0206	**Service Location**	Item	Lump Sum	$ 194.40	$ 194.40
HW0207	Excavation below design depth including disposal of excavated material (Contingent Item)	0	m3	$ 70.00	$ -
HW0208	Extra over Civil Works for excavation in rock:	0	m3	$ 120.00	$ -
HW0209	Cut and fill earthworks including compaction:	0	m3	$ 25.00	$ -
HW0210	Supply & place ballast (Contingent Item)	0	tonne	$ 90.00	$ -
HW0211	Import and place select fill including compaction <may be Contingent Item>	0	m3	$ 65.00	$ -
HW0212	Construct access road and hardstand				
HW0212.01	Prepare subgrade		m2	$ 4.20	
HW0212.02	Supply, place and compact 150mm thick basecourse		m2	$ 37.00	

HW0212.03	Supply, place and compact 200mm thick basecourse		m2	$ 47.00	
HW0212.04	Supply, place and compact 250mm thick basecourse		m2	$ 51.00	
HW0212.05	Supply, place and compact two coat bitumen seal		m2	$ 26.00	
HW0212.06	Supply, place and compact 30mm thick asphalt bitumen seal		m2	$ 37.00	
HW0212.07	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0212.08	Concrete driveway	0	m2	$ 178.00	$ -
HW0213	Supply all plant, material and labour to undertake the following Piling works:				
HW0213.01	Treated timber mini piles		m		
HW0213.02	Reinforced concrete bored piles	Item	Lump Sum		$ -
HW0214	Supply all plant, material and labour to undertake the following Retaining Wall works:				
HW0214.01	Timber(Koppers Log) up to 1.5m high		m2	$ 300.00	
HW0214.02	Concrete Keystone up to 1m high		m2	$ 380.00	
HW0214.03	Concrete Keystone between 1m and 3m high		m2	$ 560.00	
HW0214.04	Concrete Keystone greater than 3m high		m2	$ 560.00	
HW0214.05	Concrete Crib Block up to 2m high		m2	$ 630.00	
HW0214.06	Concrete Crib Block between 2m and 3m high		m2	$ 704.00	
HW0215	Acid sulphate soil				
HW0215.01	Initial testing for acid sulphate soils and prepare and submit report	5	per test	$ 110.00	$ 550.00
HW0215.02	Establish treatment facility	Item	Lump Sum		$ -
HW0215.03	Handling, treatment and testing of acid sulphate soils		m3	$ 60.00	
HW0215.04	Disposal off site of acid sulphate soil		tonne	$ 122.00	
HW0216	Series Pump Pit Structure	Item	Lump Sum		$ -
HW0217	Supply and Install valve pit concrete formwork, reinforced concrete complete with aluminium tread plate covers and including excavation and backfill	Item	Lump Sum	$ -	$ -
HW0218	Supply and install pipework items inside valve pit	Item	Lump Sum	$ -	$ -
HW0219	Supply and Install additional pipe Items outside station	Item	Lump Sum	$ -	$ -
HW0220	Supply and install pipework items inside station	Item	Lump Sum	$ -	$ -
HW0221	Supply and install Type 2 or 4 flow relief structures in accordance with Drgs SCP-502 and SCP-505	Item	Lump Sum		$ -
HW0222	Supply and install emergency storage structures		L/m		
HW0223	Supply and install fan forced ventilation	Item	Lump Sum		$ -
HW0224	Supply and install Soil Bed Filter	Item	Lump Sum		$ -
HW0225	Supply and Install Strainers	Item	Lump Sum		$ -
HW0226	Supply and Install Series Bypass	Item	Lump Sum		$ -
HW0227	Landscaping	Item	Lump Sum	$ -	$ -
HW0228	**Miscellaneous**				
HW0229	Preparation and submission of Operation and Maintenance Information	Item	Lump Sum		$ -
HW0230	Pre commissioning and commissioning	Item	Lump Sum	$ 8,000.00	$ 8,000.00
HW0231	Preparation and submission of Work as Constructed Information	Item	Lump Sum	$ 6,000.00	$ 6,000.00
HW2SP	***Sub Total***				$172,008

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -

HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		
HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 2,000.00	$ 2,000.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	$ 266,941.66

B.	**PRE-CONSTRUCTION COST (Table 10)**	
HW0016	Design	$ 53,388.33
HW0017	Project Management of Design	$ 20,677.67
HW0018	Land Matters	$ -
HW0024	Community Consultation	
	Sub Total(B1)	$ 74,066.00
	Pre construction contingency (30% of B1)	$ 22,219.80
	TOTAL PRE-CONSTRUCTION COST (B)	$ 96,285.80

C.	**CONSTRUCTION COST**		
	Total Estimated Contract Award Sum (A)		$ 266,941.66
HW0019	Principal Supplied Pipe (as applicable)		$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)		$ -
HW0021	Principal Supplied Fittings (as applicable)		$ -
HW0022	Pump Station HV Power Supply		$ -
HW0023	Construction Management (Table 11)		$ 26,694.17
	Sub Total (C1)		$ 293,635.83
	Construction contingency (Table 12) (30% of C1)	Preliminary Estimate	$ 88,090.75
	TOTAL CONSTRUCTION COST (C)		$ 381,726.57

	TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	$ 478,012.37

	WWPS Contract Award Cost	*$ 201,599.79*
	RM Contract Award Cost	*$ 65,341.79*
	WWPS Capital Cost	$ 361,004.81
	RM Capital Cost	$ 117,007.56

PROJECT DESCRIPTION: North Tuncurry Development Project - Gravity System - PS5

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 5,178.00	$ 5,178.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 12,000.00	$ 12,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 12,000.00	$ 12,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 7,000.00	$ 7,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 14,000.00	$ 14,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 6,200.00	$ 6,200.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 3,388.84	$ 3,388.84
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Rising - section will be present if one or more rising mains are specified

Item	Construction of Sewer Rising Mains	Qty	Unit	Rate $/Unit	Amount $
HWR001	Service Location	Item	Lump Sum	$ 336.00	$ 336.00
HWR002	Supply all valves	Item	Lump Sum		$ -
HWR003	Supply all fittings	Item	Lump Sum		$ -
HWR004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
108ESS	Nominal DN80 PE pipe	560	m	$ 19.00	$ 10,640.00
HWR005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
1.08E+05	Nominal DN80 PE (Trench type 3)	560	m	$ 69.40	$ 38,864.00
HWR006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m to invert in OTR.				
HWR007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m to invert in OTR.				
HWR008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m to invert in OTR.				
HWR009	EMPTY				
HWR010	Extra over rate for installation for Additional compaction		m3	$ 15.30	
HWR011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	
HWR012	Extra over rate for installation to Supply & place & compact non cohesive material.		m3		
HWR013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWR014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWR015	Supply & place ballast		tonnes	$ 90.00	
HWR016	External Dewatering of trench including establishment & disestablishment		m		
HWR017	Supply and place treated timber piling for pipe support		m		
HWR018	Road / creek crossings				
HWR019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWR020	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				

HWR021	Supply and installation of pipe river crossing including supply of MSCL pipe, internal and external welding, testing of welds and 150 thick concrete encasement. Also includes mobilisation and demobilisation of dredge(if required) excavation & disposal of excavated material, backfilling, lay, bed and test for the following MSCL pipe sizes:				
HWR022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206	Item	Lump Sum		$ -
HWR023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWR024	Flow Relief Structures		Each		
HWR025	EMPTY				
HWR026	Supply and construct vent stacks	1	each	$ 9,500.00	$ 9,500.00
HWR027	Preparation of line sheets	560	m	$ 1.00	$ 560.00
HWR028	Acceptance testing - rising main		m		
HWR029	**Miscellaneous**				
HWR000	***Sub Total***				$59,900

PS5

Item	*Pump Station - Name*	Qty	Unit	Rate $/Unit	Amount $
HW0201	**PS5 1.5m dia 2 Pump(s)**				
	Clear, excavate & backfill in OTR conditions, construct precast pump station, lid and plugged with 1.5m of plain concrete.	Item	Lump Sum	$ 13,606.08	$ 13,606.08
HW0202	**Pumps for Pumping Stations - Supply and install pumps and associated fittings, connection to pipework, testing and commissioning.**	2	Lump Sum	$ 10,537.50	$ 21,075.00
HW0203	**Pumping Station Electricals**				
HW0203.01	Pit and Conduit System	Item	Lump Sum	$ 4,812.50	$ 4,812.50
HW0203.02	LV Station Power Supply	Item	Lump Sum	$ 5,625.00	$ 5,625.00
HW0203.03	Station By-Pass arrangements	Item	Lump Sum		$ -
HW0203.04	Electrical Demolition works	Item	Lump Sum		$ -
HW0203.05	Switchboard	Item	Lump Sum	$ 49,375.00	$ 49,375.00
HW0203.06	PLC / Telemetry Hardware	Item	Lump Sum	$ 14,437.50	$ 14,437.50
HW0203.07	PLC / Telemetry / Scada Engineering and Software Development	Item	Lump Sum	$ 28,450.00	$ 28,450.00
HW0203.08	Stainless Steel Generator Box Cable Tray & Metering Box	Item	Lump Sum	$ -	$ -
HW0203.09	Building Services (Electrical)	Item	Lump Sum	$ -	$ -
HW0203.10	Pressure Transmitter/Gauge Board	Item	Lump Sum	$ -	$ -
HW0203.11	Installation/Cabling (Electrical)	Item	Lump Sum	$ 10,737.50	$ 10,737.50
HW0204	Empty				
HW0205	Empty				
HW0206	**Service Location**	Item	Lump Sum	$ 135.00	$ 135.00
HW0207	Excavation below design depth including disposal of excavated material (Contingent Item)	0	m3	$ 70.00	$ -
HW0208	Extra over Civil Works for excavation in rock:	0	m3	$ 120.00	$ -
HW0209	Cut and fill earthworks including compaction:	0	m3	$ 25.00	$ -
HW0210	Supply & place ballast (Contingent Item)	0	tonne	$ 90.00	$ -
HW0211	Import and place select fill including compaction <may be Contingent Item>	0	m3	$ 65.00	$ -
HW0212	Construct access road and hardstand				
HW0212.01	Prepare subgrade		m2	$ 4.20	
HW0212.02	Supply, place and compact 150mm thick basecourse		m2	$ 37.00	

HW0212.03	Supply, place and compact 200mm thick basecourse		m2	$ 47.00	
HW0212.04	Supply, place and compact 250mm thick basecourse		m2	$ 51.00	
HW0212.05	Supply, place and compact two coat bitumen seal		m2	$ 26.00	
HW0212.06	Supply, place and compact 30mm thick asphalt bitumen seal		m2	$ 37.00	
HW0212.07	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0212.08	Concrete driveway	0	m2	$ 178.00	$ -
HW0213	Supply all plant, material and labour to undertake the following Piling works:				
HW0213.01	Treated timber mini piles		m		
HW0213.02	Reinforced concrete bored piles	Item	Lump Sum		$ -
HW0214	Supply all plant, material and labour to undertake the following Retaining Wall works:				
HW0214.01	Timber(Koppers Log) up to 1.5m high		m2	$ 300.00	
HW0214.02	Concrete Keystone up to 1m high		m2	$ 380.00	
HW0214.03	Concrete Keystone between 1m and 3m high		m2	$ 560.00	
HW0214.04	Concrete Keystone greater than 3m high		m2	$ 560.00	
HW0214.05	Concrete Crib Block up to 2m high		m2	$ 630.00	
HW0214.06	Concrete Crib Block between 2m and 3m high		m2	$ 704.00	
HW0215	Acid sulphate soil				
HW0215.01	Initial testing for acid sulphate soils and prepare and submit report	5	per test	$ 110.00	$ 550.00
HW0215.02	Establish treatment facility	Item	Lump Sum		$ -
HW0215.03	Handling, treatment and testing of acid sulphate soils		m3	$ 60.00	
HW0215.04	Disposal off site of acid sulphate soil		tonne	$ 122.00	
HW0216	Series Pump Pit Structure	Item	Lump Sum		$ -
HW0217	Supply and Install valve pit concrete formwork, reinforced concrete complete with aluminium tread plate covers and including excavation and backfill	Item	Lump Sum	$ -	$ -
HW0218	Supply and install pipework items inside valve pit	Item	Lump Sum	$ -	$ -
HW0219	Supply and Install additional pipe Items outside station	Item	Lump Sum	$ -	$ -
HW0220	Supply and install pipework items inside station	Item	Lump Sum	$ -	$ -
HW0221	Supply and install Type 2 or 4 flow relief structures in accordance with Drgs SCP-502 and SCP-505	Item	Lump Sum		$ -
HW0222	Supply and install emergency storage structures		L/m		
HW0223	Supply and install fan forced ventilation	Item	Lump Sum		$ -
HW0224	Supply and install Soil Bed Filter	Item	Lump Sum		$ -
HW0225	Supply and Install Strainers	Item	Lump Sum		$ -
HW0226	Supply and Install Series Bypass	Item	Lump Sum		$ -
HW0227	Landscaping	Item	Lump Sum	$ -	$ -
HW0228	**Miscellaneous**				
HW0229	Preparation and submission of Operation and Maintenance Information	Item	Lump Sum		$ -
HW0230	Pre commissioning and commissioning	Item	Lump Sum	$ 8,000.00	$ 8,000.00
HW0231	Preparation and submission of Work as Constructed Information	Item	Lump Sum	$ 6,000.00	$ 6,000.00
HW2SP	***Sub Total***				$162,804

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -

HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		
HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 4,480.00	$ 4,480.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	$ 286,950.42

B.	**PRE-CONSTRUCTION COST (Table 10)**	
HW0016	Design	$ 57,390.08
HW0017	Project Management of Design	$ 21,478.02
HW0018	Land Matters	$ -
HW0024	Community Consultation	
	Sub Total(B1)	$ 78,868.10
	Pre construction contingency (30% of B1)	$ 23,660.43
	TOTAL PRE-CONSTRUCTION COST (B)	$ 102,528.53

C.	**CONSTRUCTION COST**		
	Total Estimated Contract Award Sum (A)		$ 286,950.42
HW0019	Principal Supplied Pipe (as applicable)		$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)		$ -
HW0021	Principal Supplied Fittings (as applicable)		$ -
HW0022	Pump Station HV Power Supply		$ -
HW0023	Construction Management (Table 11)		$ 28,695.04
	Sub Total (C1)		$ 315,645.46
	Construction contingency (Table 12) (30% of C1)	Preliminary Estimate	$ 94,693.64
	TOTAL CONSTRUCTION COST (C)		$ 410,339.10

	TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	$ 512,867.63

WWPS Contract Award Cost	*$*	*192,687.42*
RM Contract Award Cost	*$*	*94,263.42*
WWPS Capital Cost	$	344,390.49
RM Capital Cost	$	168,477.14

PROJECT DESCRIPTION: North Tuncurry Development Project - Gravity System - PS6

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 5,021.00	$ 5,021.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 12,000.00	$ 12,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 12,000.00	$ 12,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 7,000.00	$ 7,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 14,000.00	$ 14,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 6,200.00	$ 6,200.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 3,310.44	$ 3,310.44
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Rising - section will be present if one or more rising mains are specified

Item	Construction of Sewer Rising Mains	Qty	Unit	Rate $/Unit	Amount $
HWR001	Service Location	Item	Lump Sum	$ 288.00	$ 288.00
HWR002	Supply all valves	Item	Lump Sum		$ -
HWR003	Supply all fittings	Item	Lump Sum		$ -
HWR004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
108ESS	Nominal DN80 PE pipe	480	m	$ 19.00	$ 9,120.00
HWR005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
1.08E+05	Nominal DN80 PE (Trench type 3)	480	m	$ 69.40	$ 33,312.00
HWR006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m to invert in OTR.				
HWR007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m to invert in OTR.				
HWR008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m to invert in OTR.				
HWR009	EMPTY				
HWR010	Extra over rate for installation for Additional compaction		m3	$ 15.30	
HWR011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	
HWR012	Extra over rate for installation to Supply & place & compact non cohesive material.		m3		
HWR013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWR014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWR015	Supply & place ballast		tonnes	$ 90.00	
HWR016	External Dewatering of trench including establishment & disestablishment		m		
HWR017	Supply and place treated timber piling for pipe support		m		
HWR018	Road / creek crossings				
HWR019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWR020	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				

HWR021	Supply and installation of pipe river crossing including supply of MSCL pipe, internal and external welding, testing of welds and 150 thick concrete encasement. Also includes mobilisation and demobilisation of dredge(if required) excavation & disposal of excavated material, backfilling, lay, bed and test for the following MSCL pipe sizes:				
HWR022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206	Item	Lump Sum		$ -
HWR023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWR024	Flow Relief Structures		Each		
HWR025	EMPTY				
HWR026	Supply and construct vent stacks	1	each	$ 9,500.00	$ 9,500.00
HWR027	Preparation of line sheets	480	m	$ 1.00	$ 480.00
HWR028	Acceptance testing - rising main		m		
HWR029	**Miscellaneous**				
HWR000	***Sub Total***				$52,700

PS6

Item	*Pump Station - Name*	Qty	Unit	Rate $/Unit	Amount $
HW0201	**PS6 1.5m dia 2 Pump(s)**				
	Clear, excavate & backfill in OTR conditions, construct precast pump station, lid and plugged with 1.5m of plain concrete.	Item	Lump Sum	$ 13,606.08	$ 13,606.08
HW0202	**Pumps for Pumping Stations - Supply and install pumps and associated fittings, connection to pipework, testing and commissioning.**	2	Lump Sum	$ 10,537.50	$ 21,075.00
HW0203	**Pumping Station Electricals**				
HW0203.01	Pit and Conduit System	Item	Lump Sum	$ 4,812.50	$ 4,812.50
HW0203.02	LV Station Power Supply	Item	Lump Sum	$ 5,625.00	$ 5,625.00
HW0203.03	Station By-Pass arrangements	Item	Lump Sum		$ -
HW0203.04	Electrical Demolition works	Item	Lump Sum		$ -
HW0203.05	Switchboard	Item	Lump Sum	$ 49,375.00	$ 49,375.00
HW0203.06	PLC / Telemetry Hardware	Item	Lump Sum	$ 14,437.50	$ 14,437.50
HW0203.07	PLC / Telemetry / Scada Engineering and Software Development	Item	Lump Sum	$ 28,450.00	$ 28,450.00
HW0203.08	Stainless Steel Generator Box Cable Tray & Metering Box	Item	Lump Sum	$ -	$ -
HW0203.09	Building Services (Electrical)	Item	Lump Sum	$ -	$ -
HW0203.10	Pressure Transmitter/Gauge Board	Item	Lump Sum	$ -	$ -
HW0203.11	Installation/Cabling (Electrical)	Item	Lump Sum	$ 10,737.50	$ 10,737.50
HW0204	Empty				
HW0205	Empty				
HW0206	**Service Location**	Item	Lump Sum	$ 135.00	$ 135.00
HW0207	Excavation below design depth including disposal of excavated material (Contingent Item)	0	m3	$ 70.00	$ -
HW0208	Extra over Civil Works for excavation in rock:	0	m3	$ 120.00	$ -
HW0209	Cut and fill earthworks including compaction:	0	m3	$ 25.00	$ -
HW0210	Supply & place ballast (Contingent Item)	0	tonne	$ 90.00	$ -
HW0211	Import and place select fill including compaction <may be Contingent Item>	0	m3	$ 65.00	$ -
HW0212	Construct access road and hardstand				
HW0212.01	Prepare subgrade		m2	$ 4.20	
HW0212.02	Supply, place and compact 150mm thick basecourse		m2	$ 37.00	

HW0212.03	Supply, place and compact 200mm thick basecourse		m2	$ 47.00	
HW0212.04	Supply, place and compact 250mm thick basecourse		m2	$ 51.00	
HW0212.05	Supply, place and compact two coat bitumen seal		m2	$ 26.00	
HW0212.06	Supply, place and compact 30mm thick asphalt bitumen seal		m2	$ 37.00	
HW0212.07	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0212.08	Concrete driveway	0	m2	$ 178.00	$ -
HW0213	Supply all plant, material and labour to undertake the following Piling works:				
HW0213.01	Treated timber mini piles		m		
HW0213.02	Reinforced concrete bored piles	Item	Lump Sum		$ -
HW0214	Supply all plant, material and labour to undertake the following Retaining Wall works:				
HW0214.01	Timber(Koppers Log) up to 1.5m high		m2	$ 300.00	
HW0214.02	Concrete Keystone up to 1m high		m2	$ 380.00	
HW0214.03	Concrete Keystone between 1m and 3m high		m2	$ 560.00	
HW0214.04	Concrete Keystone greater than 3m high		m2	$ 560.00	
HW0214.05	Concrete Crib Block up to 2m high		m2	$ 630.00	
HW0214.06	Concrete Crib Block between 2m and 3m high		m2	$ 704.00	
HW0215	Acid sulphate soil				
HW0215.01	Initial testing for acid sulphate soils and prepare and submit report	5	per test	$ 110.00	$ 550.00
HW0215.02	Establish treatment facility	Item	Lump Sum		$ -
HW0215.03	Handling, treatment and testing of acid sulphate soils		m3	$ 60.00	
HW0215.04	Disposal off site of acid sulphate soil		tonne	$ 122.00	
HW0216	Series Pump Pit Structure	Item	Lump Sum		$ -
HW0217	Supply and Install valve pit concrete formwork, reinforced concrete complete with aluminium tread plate covers and including excavation and backfill	Item	Lump Sum	$ -	$ -
HW0218	Supply and install pipework items inside valve pit	Item	Lump Sum	$ -	$ -
HW0219	Supply and Install additional pipe Items outside station	Item	Lump Sum	$ -	$ -
HW0220	Supply and install pipework items inside station	Item	Lump Sum	$ -	$ -
HW0221	Supply and install Type 2 or 4 flow relief structures in accordance with Drgs SCP-502 and SCP-505	Item	Lump Sum		$ -
HW0222	Supply and install emergency storage structures		L/m		
HW0223	Supply and install fan forced ventilation	Item	Lump Sum		$ -
HW0224	Supply and install Soil Bed Filter	Item	Lump Sum		$ -
HW0225	Supply and Install Strainers	Item	Lump Sum		$ -
HW0226	Supply and Install Series Bypass	Item	Lump Sum		$ -
HW0227	Landscaping	Item	Lump Sum	$ -	$ -
HW0228	**Miscellaneous**				
HW0229	Preparation and submission of Operation and Maintenance Information	Item	Lump Sum		$ -
HW0230	Pre commissioning and commissioning	Item	Lump Sum	$ 8,000.00	$ 8,000.00
HW0231	Preparation and submission of Work as Constructed Information	Item	Lump Sum	$ 6,000.00	$ 6,000.00
HW2SP	***Sub Total***				$162,804

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -

HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		
HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 3,840.00	$ 3,840.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	$ 278,875.02

B.	**PRE-CONSTRUCTION COST (Table 10)**	
HW0016	Design	$ 55,775.00
HW0017	Project Management of Design	$ 21,155.00
HW0018	Land Matters	$ -
HW0024	Community Consultation	
	Sub Total(B1)	$ 76,930.00
	Pre construction contingency (30% of B1)	$ 23,079.00
	TOTAL PRE-CONSTRUCTION COST (B)	$ 100,009.01

C.	**CONSTRUCTION COST**		
	Total Estimated Contract Award Sum (A)		$ 278,875.02
HW0019	Principal Supplied Pipe (as applicable)		$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)		$ -
HW0021	Principal Supplied Fittings (as applicable)		$ -
HW0022	Pump Station HV Power Supply		$ -
HW0023	Construction Management (Table 11)		$ 27,887.50
	Sub Total (C1)		$ 306,762.52
	Construction contingency (Table 12) (30% of C1)	Preliminary Estimate	$ 92,028.76
	TOTAL CONSTRUCTION COST (C)		$ 398,791.28

	TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	$ 498,800.28

WWPS Contract Award Cost	*$*	*192,569.72*
RM Contract Award Cost	*$*	*86,305.72*
WWPS Capital Cost	$	344,432.74
RM Capital Cost	$	154,367.55

PROJECT DESCRIPTION: North Tuncurry Development Project - Gravity System - PS7

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 5,334.00	$ 5,334.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 12,000.00	$ 12,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 12,000.00	$ 12,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 7,000.00	$ 7,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 14,000.00	$ 14,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 6,200.00	$ 6,200.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 3,467.24	$ 3,467.24
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Rising - section will be present if one or more rising mains are specified

Item	Construction of Sewer Rising Mains	Qty	Unit	Rate $/Unit	Amount $
HWR001	Service Location	Item	Lump Sum	$ 384.00	$ 384.00
HWR002	Supply all valves	Item	Lump Sum		$ -
HWR003	Supply all fittings	Item	Lump Sum		$ -
HWR004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
108ESS	Nominal DN80 PE pipe	640	m	$ 19.00	$ 12,160.00
HWR005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
1.08E+05	Nominal DN80 PE (Trench type 3)	640	m	$ 69.40	$ 44,416.00
HWR006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m to invert in OTR.				
HWR007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m to invert in OTR.				
HWR008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m to invert in OTR.				
HWR009	EMPTY				
HWR010	Extra over rate for installation for Additional compaction		m3	$ 15.30	
HWR011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	
HWR012	Extra over rate for installation to Supply & place & compact non cohesive material.		m3		
HWR013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWR014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWR015	Supply & place ballast		tonnes	$ 90.00	
HWR016	External Dewatering of trench including establishment & disestablishment		m		
HWR017	Supply and place treated timber piling for pipe support		m		
HWR018	Road / creek crossings				
HWR019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWR020	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				

HWR021	Supply and installation of pipe river crossing including supply of MSCL pipe, internal and external welding, testing of welds and 150 thick concrete encasement. Also includes mobilisation and demobilisation of dredge(if required) excavation & disposal of excavated material, backfilling, lay, bed and test for the following MSCL pipe sizes:				
HWR022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206	Item	Lump Sum		$ -
HWR023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWR024	Flow Relief Structures		Each		
HWR025	EMPTY				
HWR026	Supply and construct vent stacks	1	each	$ 9,500.00	$ 9,500.00
HWR027	Preparation of line sheets	640	m	$ 1.00	$ 640.00
HWR028	Acceptance testing - rising main		m		
HWR029	**Miscellaneous**				
HWR000	***Sub Total***				$67,100

PS7

Item	*Pump Station - Name*	Qty	Unit	Rate $/Unit	Amount $
HW0201	**PS7 1.5m dia 2 Pump(s)**				
	Clear, excavate & backfill in OTR conditions, construct precast pump station, lid and plugged with 1.5m of plain concrete.	Item	Lump Sum	$ 13,606.08	$ 13,606.08
HW0202	**Pumps for Pumping Stations - Supply and install pumps and associated fittings, connection to pipework, testing and commissioning.**	2	Lump Sum	$ 10,537.50	$ 21,075.00
HW0203	**Pumping Station Electricals**				
HW0203.01	Pit and Conduit System	Item	Lump Sum	$ 4,812.50	$ 4,812.50
HW0203.02	LV Station Power Supply	Item	Lump Sum	$ 5,625.00	$ 5,625.00
HW0203.03	Station By-Pass arrangements	Item	Lump Sum		$ -
HW0203.04	Electrical Demolition works	Item	Lump Sum		$ -
HW0203.05	Switchboard	Item	Lump Sum	$ 49,375.00	$ 49,375.00
HW0203.06	PLC / Telemetry Hardware	Item	Lump Sum	$ 14,437.50	$ 14,437.50
HW0203.07	PLC / Telemetry / Scada Engineering and Software Development	Item	Lump Sum	$ 28,450.00	$ 28,450.00
HW0203.08	Stainless Steel Generator Box Cable Tray & Metering Box	Item	Lump Sum	$ -	$ -
HW0203.09	Building Services (Electrical)	Item	Lump Sum	$ -	$ -
HW0203.10	Pressure Transmitter/Gauge Board	Item	Lump Sum	$ -	$ -
HW0203.11	Installation/Cabling (Electrical)	Item	Lump Sum	$ 10,737.50	$ 10,737.50
HW0204	Empty				
HW0205	Empty				
HW0206	**Service Location**	Item	Lump Sum	$ 135.00	$ 135.00
HW0207	Excavation below design depth including disposal of excavated material (Contingent Item)	0	m3	$ 70.00	$ -
HW0208	Extra over Civil Works for excavation in rock:	0	m3	$ 120.00	$ -
HW0209	Cut and fill earthworks including compaction:	0	m3	$ 25.00	$ -
HW0210	Supply & place ballast (Contingent Item)	0	tonne	$ 90.00	$ -
HW0211	Import and place select fill including compaction <may be Contingent Item>	0	m3	$ 65.00	$ -
HW0212	Construct access road and hardstand				
HW0212.01	Prepare subgrade		m2	$ 4.20	
HW0212.02	Supply, place and compact 150mm thick basecourse		m2	$ 37.00	

HW0212.03	Supply, place and compact 200mm thick basecourse		m2	$ 47.00	
HW0212.04	Supply, place and compact 250mm thick basecourse		m2	$ 51.00	
HW0212.05	Supply, place and compact two coat bitumen seal		m2	$ 26.00	
HW0212.06	Supply, place and compact 30mm thick asphalt bitumen seal		m2	$ 37.00	
HW0212.07	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0212.08	Concrete driveway	0	m2	$ 178.00	$ -
HW0213	Supply all plant, material and labour to undertake the following Piling works:				
HW0213.01	Treated timber mini piles		m		
HW0213.02	Reinforced concrete bored piles	Item	Lump Sum		$ -
HW0214	Supply all plant, material and labour to undertake the following Retaining Wall works:				
HW0214.01	Timber(Koppers Log) up to 1.5m high		m2	$ 300.00	
HW0214.02	Concrete Keystone up to 1m high		m2	$ 380.00	
HW0214.03	Concrete Keystone between 1m and 3m high		m2	$ 560.00	
HW0214.04	Concrete Keystone greater than 3m high		m2	$ 560.00	
HW0214.05	Concrete Crib Block up to 2m high		m2	$ 630.00	
HW0214.06	Concrete Crib Block between 2m and 3m high		m2	$ 704.00	
HW0215	Acid sulphate soil				
HW0215.01	Initial testing for acid sulphate soils and prepare and submit report	5	per test	$ 110.00	$ 550.00
HW0215.02	Establish treatment facility	Item	Lump Sum		$ -
HW0215.03	Handling, treatment and testing of acid sulphate soils		m3	$ 60.00	
HW0215.04	Disposal off site of acid sulphate soil		tonne	$ 122.00	
HW0216	Series Pump Pit Structure	Item	Lump Sum		$ -
HW0217	Supply and Install valve pit concrete formwork, reinforced concrete complete with aluminium tread plate covers and including excavation and backfill	Item	Lump Sum	$ -	$ -
HW0218	Supply and install pipework items inside valve pit	Item	Lump Sum	$ -	$ -
HW0219	Supply and Install additional pipe Items outside station	Item	Lump Sum	$ -	$ -
HW0220	Supply and install pipework items inside station	Item	Lump Sum	$ -	$ -
HW0221	Supply and install Type 2 or 4 flow relief structures in accordance with Drgs SCP-502 and SCP-505	Item	Lump Sum		$ -
HW0222	Supply and install emergency storage structures		L/m		
HW0223	Supply and install fan forced ventilation	Item	Lump Sum		$ -
HW0224	Supply and install Soil Bed Filter	Item	Lump Sum		$ -
HW0225	Supply and Install Strainers	Item	Lump Sum		$ -
HW0226	Supply and Install Series Bypass	Item	Lump Sum		$ -
HW0227	Landscaping	Item	Lump Sum	$ -	$ -
HW0228	**Miscellaneous**				
HW0229	Preparation and submission of Operation and Maintenance Information	Item	Lump Sum		$ -
HW0230	Pre commissioning and commissioning	Item	Lump Sum	$ 8,000.00	$ 8,000.00
HW0231	Preparation and submission of Work as Constructed Information	Item	Lump Sum	$ 6,000.00	$ 6,000.00
HW2SP	***Sub Total***				$162,804

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -

HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		
HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 5,120.00	$ 5,120.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	$ 295,024.82

B.	**PRE-CONSTRUCTION COST (Table 10)**	
HW0016	Design	$ 59,004.96
HW0017	Project Management of Design	$ 21,800.99
HW0018	Land Matters	$ -
HW0024	Community Consultation	
	Sub Total(B1)	$ 80,805.96
	Pre construction contingency (30% of B1)	$ 24,241.79
	TOTAL PRE-CONSTRUCTION COST (B)	$ 105,047.74

C.	**CONSTRUCTION COST**		
	Total Estimated Contract Award Sum (A)		$ 295,024.82
HW0019	Principal Supplied Pipe (as applicable)		$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)		$ -
HW0021	Principal Supplied Fittings (as applicable)		$ -
HW0022	Pump Station HV Power Supply		$ -
HW0023	Construction Management (Table 11)		$ 29,502.48
	Sub Total (C1)		$ 324,527.30
	Construction contingency (Table 12) (30% of C1)	Preliminary Estimate	$ 97,358.19
	TOTAL CONSTRUCTION COST (C)		$ 421,885.49

	TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	$ 526,933.24

WWPS Contract Award Cost	*$*	*192,804.62*
RM Contract Award Cost	*$*	*102,220.62*
WWPS Capital Cost	$	344,360.92
RM Capital Cost	$	182,572.32

PROJECT DESCRIPTION: North Tuncurry Development Project – Vacuum System - Stage A

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 4,570.00	$ 4,570.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 12,000.00	$ 12,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 12,000.00	$ 12,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 8,000.00	$ 8,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 18,000.00	$ 18,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 3,085.22	$ 3,085.22
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Rising - section will be present if one or more rising mains are specified

Item	Construction of Sewer Rising Mains	Qty	Unit	Rate $/Unit	Amount $
HWR001	Service Location	Item	Lump Sum	$ 1,124.25	$ 1,124.25
HWR002	Supply all valves	Item	Lump Sum		$ -
HWR003	Supply all fittings	Item	Lump Sum		$ -
HWR004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
11EVSS	Nominal DN300 PVC pipe	475	m	$ 85.00	$ 40,375.00
10AVSS	Nominal DN100 PVC pipe	1280	m	$ 14.00	$ 17,920.00
HWR005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
11EV03	Nominal DN300 PVC (Trench type 3)	475	m	$ 85.25	$ 40,493.75
10AV03	Nominal DN100 PVC (Trench type 3)	1280	m	$ 63.80	$ 81,664.00
HWR006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m to invert in OTR.				
HWR007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m to invert in OTR.				
HWR008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m to invert in OTR.				
HWR009	EMPTY				
HWR010	Extra over rate for installation for Additional compaction		m3	$ 15.30	
HWR011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	
HWR012	Extra over rate for installation to Supply & place & compact non cohesive material.		m3		

HWR013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWR014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWR015	Supply & place ballast		tonnes	$ 90.00	
HWR016	External Dewatering of pots including establishment & disestablishment	6	no.	$ 1,046.00	$ 6,276.00
HWR017	Supply and place treated timber piling for pipe support		m		
HWR018	Road / creek crossings				
HWR019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWR020	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWR021	Supply and installation of pipe river crossing including supply of MSCL pipe, internal and external welding, testing of welds and 150 thick concrete encasement. Also includes mobilisation and demobilisation of dredge(if required) excavation & disposal of excavated material, backfilling, lay, bed and test for the following MSCL pipe sizes:				
HWR022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206	Item	Lump Sum		$ -
HWR023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWR024	Flow Relief Structures		Each		
HWR025	EMPTY				
HWR026	Supply and construct vent stacks		each		
HWR027	Preparation of line sheets	1755	m	$ 1.00	$ 1,755.00
HWR028	Acceptance testing - rising main		m		
HWR029	**Miscellaneous**				
HWR000	***Sub Total***				$ 189,608.00

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		

HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 14,040.00	$ 14,040.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	**$ 265,303**

B.	**PRE-CONSTRUCTION COST (Table 10)**			
HW0016	Design	20%		$ 53,060.64
HW0017	Project Management of Design	*variable*	*39%*	$ 20,800
HW0018	Land Matters			$ -
HW0024	Community Consultation			
	Sub Total(B1)			$ 73,860
	Pre construction contingency (30% of B1)			$ 22,158
	TOTAL PRE-CONSTRUCTION COST (B)			**$ 96,019**

C.	**CONSTRUCTION COST**		
	Total Estimated Contract Award Sum (A)		$ 265,303
HW0019	Principal Supplied Pipe (as applicable)		$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)		$ -
HW0021	Principal Supplied Fittings (as applicable)		$ -
HW0022	Pump Station HV Power Supply		$ -
HW0023	Construction Management (Table 11)	8%	$ 21,224
	Sub Total (C1)		$ 286,527
	Construction contingency (Table 12) (30% of C1)	Preliminary Estimate	$ 85,958
	TOTAL CONSTRUCTION COST (C)		**$ 372,486**

TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	**$ 468,504**

PROJECT DESCRIPTION: North Tuncurry Development Project – Vacuum System - Stage B

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 2,488.00	$ 2,488.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 8,000.00	$ 8,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 18,000.00	$ 18,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 2,044.03	$ 2,044.03
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Rising - section will be present if one or more rising mains are specified

Item	Construction of Sewer Rising Mains	Qty	Unit	Rate $/Unit	Amount $
HWR001	Service Location	Item	Lump Sum	$ 571.80	$ 571.80
HWR002	Supply all valves	Item	Lump Sum		$ -
HWR003	Supply all fittings	Item	Lump Sum		$ -
HWR004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
10AVSS	Nominal DN100 PVC pipe	800	m	$ 14.00	$ 11,200.00
119VSS	Nominal DN250 PVC pipe	153	m	$ 62.50	$ 9,562.50
HWR005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
10AV03	Nominal DN100 PVC (Trench type 3)	800	m	$ 63.80	$ 51,040.00
119V03	Nominal DN250 PVC (Trench type 3)	153	m	$ 80.40	$ 12,301.20
HWR006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m to invert in OTR.				
HWR007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m to invert in OTR.				
HWR008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m to invert in OTR.				
HWR009	EMPTY				
HWR010	Extra over rate for installation for Additional compaction		m3	$ 15.30	
HWR011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	
HWR012	Extra over rate for installation to Supply & place & compact non cohesive material.		m3		

HWR013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWR014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWR015	Supply & place ballast		tonnes	$ 90.00	
HWR016	External Dewatering of pots including establishment & disestablishment	15	no.	$ 1,046.00	$ 15,690.00
HWR017	Supply and place treated timber piling for pipe support		m		
HWR018	Road / creek crossings				
HWR019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWR020	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWR021	Supply and installation of pipe river crossing including supply of MSCL pipe, internal and external welding, testing of welds and 150 thick concrete encasement. Also includes mobilisation and demobilisation of dredge(if required) excavation & disposal of excavated material, backfilling, lay, bed and test for the following MSCL pipe sizes:				
HWR022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206	Item	Lump Sum		$ -
HWR023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWR024	Flow Relief Structures		Each		
HWR025	EMPTY				
HWR026	Supply and construct vent stacks		each		
HWR027	Preparation of line sheets	953	m	$ 1.00	$ 953.00
HWR028	Acceptance testing - rising main		m		
HWR029	**Miscellaneous**				
HWR000	***Sub Total***				$ 101,318.50

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		

HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 7,624.00	$ 7,624.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	**$ 161,475**

B.	**PRE-CONSTRUCTION COST (Table 10)**			
HW0016	Design	20%		$ 32,294.91
HW0017	Project Management of Design	*variable*	*54%*	$ 17,439
HW0018	Land Matters			$ -
HW0024	Community Consultation			
	Sub Total(B1)			$ 49,734
	Pre construction contingency (30% of B1)			$ 14,920
	TOTAL PRE-CONSTRUCTION COST (B)			$ 64,654

C.	**CONSTRUCTION COST**		
	Total Estimated Contract Award Sum (A)		$ 161,475
HW0019	Principal Supplied Pipe (as applicable)		$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)		$ -
HW0021	Principal Supplied Fittings (as applicable)		$ -
HW0022	Pump Station HV Power Supply		$ -
HW0023	Construction Management (Table 11)	10%	$ 16,147
	Sub Total (C1)		$ 177,622
	Construction contingency (Table 12) (30% of C1)	Preliminary Estimate	$ 53,287
	TOTAL CONSTRUCTION COST (C)		$ 230,909

TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	**$ 295,563**

PROJECT DESCRIPTION: North Tuncurry Development Project – Vacuum System - Stage C

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 3,884.00	$ 3,884.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 8,000.00	$ 8,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 18,000.00	$ 18,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 2,742.22	$ 2,742.22
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Rising - section will be present if one or more rising mains are specified

Item	Construction of Sewer Rising Mains	Qty	Unit	Rate $/Unit	Amount $
HWR001	Service Location	Item	Lump Sum	$ 1,020.00	$ 1,020.00
HWR002	Supply all valves	Item	Lump Sum		$ -
HWR003	Supply all fittings	Item	Lump Sum		$ -
HWR004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
114VSS	Nominal DN200 PVC pipe	376	m	$ 48.00	$ 18,048.00
10AVSS	Nominal DN100 PVC pipe	1324	m	$ 14.00	$ 18,536.00
HWR005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
114V03	Nominal DN200 PVC (Trench type 3)	376	m	$ 71.40	$ 26,846.40
10AV03	Nominal DN100 PVC (Trench type 3)	1324	m	$ 63.80	$ 84,471.20
HWR006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m to invert in OTR.				
HWR007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m to invert in OTR.				
HWR008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m to invert in OTR.				
HWR009	EMPTY				
HWR010	Extra over rate for installation for Additional compaction		m3	$ 15.30	
HWR011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	
HWR012	Extra over rate for installation to Supply & place & compact non cohesive material.		m3		

HWR013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWR014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWR015	Supply & place ballast		tonnes	$ 90.00	
HWR016	External Dewatering of pots including establishment & disestablishment	0	no.	$ 1,046.00	$ -
HWR017	Supply and place treated timber piling for pipe support		m		
HWR018	Road / creek crossings				
HWR019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWR020	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWR021	Supply and installation of pipe river crossing including supply of MSCL pipe, internal and external welding, testing of welds and 150 thick concrete encasement. Also includes mobilisation and demobilisation of dredge(if required) excavation & disposal of excavated material, backfilling, lay, bed and test for the following MSCL pipe sizes:				
HWR022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206	Item	Lump Sum		$ -
HWR023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWR024	Flow Relief Structures		Each		
HWR025	EMPTY				
HWR026	Supply and construct vent stacks		each		
HWR027	Preparation of line sheets	1700	m	$ 1.00	$ 1,700.00
HWR028	Acceptance testing - rising main		m		
HWR029	**Miscellaneous**				
HWR000	***Sub Total***				$ 150,621.60

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		

HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 13,600.00	$ 13,600.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	**$ 218,848**

B.	**PRE-CONSTRUCTION COST (Table 10)**			
HW0016	Design	20%		$ 43,769.56
HW0017	Project Management of Design	*variable*	*43%*	$ 18,821
HW0018	Land Matters			$ -
HW0024	Community Consultation			
	Sub Total(B1)			$ 62,590
	Pre construction contingency (30% of B1)			$ 18,777
	TOTAL PRE-CONSTRUCTION COST (B)			$ 81,368

C.	**CONSTRUCTION COST**		
	Total Estimated Contract Award Sum (A)		$ 218,848
HW0019	Principal Supplied Pipe (as applicable)		$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)		$ -
HW0021	Principal Supplied Fittings (as applicable)		$ -
HW0022	Pump Station HV Power Supply		$ -
HW0023	Construction Management (Table 11)	10%	$ 21,885
	Sub Total (C1)		$ 240,733
	Construction contingency (Table 12) (30% of C1)	Preliminary Estimate	$ 72,220
	TOTAL CONSTRUCTION COST (C)		$ 312,952

TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	**$ 394,320**

PROJECT DESCRIPTION: North Tuncurry Development Project – Vacuum System - Stage D

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 2,951.00	$ 2,951.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 8,000.00	$ 8,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 18,000.00	$ 18,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 2,275.34	$ 2,275.34
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Rising - section will be present if one or more rising mains are specified

Item	Construction of Sewer Rising Mains	Qty	Unit	Rate $/Unit	Amount $
HWR001	Service Location	Item	Lump Sum	$ 778.80	$ 778.80
HWR002	Supply all valves	Item	Lump Sum		$ -
HWR003	Supply all fittings	Item	Lump Sum		$ -
HWR004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
10FVSS	Nominal DN150 PVC pipe	167	m	$ 28.00	$ 4,676.00
10AVSS	Nominal DN100 PVC pipe	1131	m	$ 14.00	$ 15,834.00
HWR005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
10FV03	Nominal DN150 PVC (Trench type 3)	167	m	$ 67.40	$ 11,255.80
10AV03	Nominal DN100 PVC (Trench type 3)	1131	m	$ 63.80	$ 72,157.80
HWR006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m to invert in OTR.				
HWR007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m to invert in OTR.				
HWR008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m to invert in OTR.				
HWR009	EMPTY				
HWR010	Extra over rate for installation for Additional compaction		m3	$ 15.30	
HWR011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	
HWR012	Extra over rate for installation to Supply & place & compact non cohesive material.		m3		

HWR013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWR014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWR015	Supply & place ballast		tonnes	$ 90.00	
HWR016	External Dewatering of pots including establishment & disestablishment	3	no.	$ 1,046.00	$ 3,138.00
HWR017	Supply and place treated timber piling for pipe support		m		
HWR018	Road / creek crossings				
HWR019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWR020	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWR021	Supply and installation of pipe river crossing including supply of MSCL pipe, internal and external welding, testing of welds and 150 thick concrete encasement. Also includes mobilisation and demobilisation of dredge(if required) excavation & disposal of excavated material, backfilling, lay, bed and test for the following MSCL pipe sizes:				
HWR022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206	Item	Lump Sum		$ -
HWR023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWR024	Flow Relief Structures		Each		
HWR025	EMPTY				
HWR026	Supply and construct vent stacks		each		
HWR027	Preparation of line sheets	1298	m	$ 1.00	$ 1,298.00
HWR028	Acceptance testing - rising main		m		
HWR029	**Miscellaneous**				
HWR000	***Sub Total***				$ 109,138.40

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		

HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 10,384.00	$ 10,384.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	**$ 172,749**

B.	**PRE-CONSTRUCTION COST (Table 10)**			
HW0016	Design	20%		$ 34,549.75
HW0017	Project Management of Design	*variable*	*49%*	$ 17,033
HW0018	Land Matters			$ -
HW0024	Community Consultation			
	Sub Total(B1)			$ 51,583
	Pre construction contingency (30% of B1)			$ 15,475
	TOTAL PRE-CONSTRUCTION COST (B)			$ 67,058

C.	**CONSTRUCTION COST**			
	Total Estimated Contract Award Sum (A)			$ 172,749
HW0019	Principal Supplied Pipe (as applicable)			$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)			$ -
HW0021	Principal Supplied Fittings (as applicable)			$ -
HW0022	Pump Station HV Power Supply			$ -
HW0023	Construction Management (Table 11)		10%	$ 17,275
	Sub Total (C1)			$ 190,024
	Construction contingency (Table 12) (30% of C1)	Preliminary Estimate		$ 57,007
	TOTAL CONSTRUCTION COST (C)			$ 247,031

	TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	**$ 314,088**

PROJECT DESCRIPTION: North Tuncurry Development Project – Vacuum System - Stage E

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 2,293.00	$ 2,293.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 8,000.00	$ 8,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 18,000.00	$ 18,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 1,946.49	$ 1,946.49
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Rising - section will be present if one or more rising mains are specified

Item	Construction of Sewer Rising Mains	Qty	Unit	Rate $/Unit	Amount $
HWR001	Service Location	Item	Lump Sum	$ 480.45	$ 480.45
HWR002	Supply all valves	Item	Lump Sum		$ -
HWR003	Supply all fittings	Item	Lump Sum		$ -
HWR004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
11EVSS	Nominal DN300 PVC pipe	191	m	$ 85.00	$ 16,235.00
10AVSS	Nominal DN100 PVC pipe	562	m	$ 14.00	$ 7,868.00
HWR005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
11EV03	Nominal DN300 PVC (Trench type 3)	191	m	$ 85.25	$ 16,282.75
10AV03	Nominal DN100 PVC (Trench type 3)	562	m	$ 63.80	$ 35,855.60
HWR006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m to invert in OTR.				
HWR007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m to invert in OTR.				
HWR008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m to invert in OTR.				
HWR009	EMPTY				
HWR010	Extra over rate for installation for Additional compaction		m3	$ 15.30	
HWR011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	
HWR012	Extra over rate for installation to Supply & place & compact non cohesive material.		m3		

HWR013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWR014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWR015	Supply & place ballast		tonnes	$ 90.00	
HWR016	External Dewatering of pots including establishment & disestablishment	2	no.	$ 1,046.00	$ 2,092.00
HWR017	Supply and place treated timber piling for pipe support		m		
HWR018	Road / creek crossings				
HWR019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWR020	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWR021	Supply and installation of pipe river crossing including supply of MSCL pipe, internal and external welding, testing of welds and 150 thick concrete encasement. Also includes mobilisation and demobilisation of dredge(if required) excavation & disposal of excavated material, backfilling, lay, bed and test for the following MSCL pipe sizes:				
HWR022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206	Item	Lump Sum		$ -
HWR023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWR024	Flow Relief Structures		Each		
HWR025	EMPTY				
HWR026	Supply and construct vent stacks		each		
HWR027	Preparation of line sheets	753	m	$ 1.00	$ 753.00
HWR028	Acceptance testing - rising main		m		
HWR029	**Miscellaneous**				
HWR000	***Sub Total***				$ 79,566.80

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		

HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 6,024.00	$ 6,024.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	**$ 137,830**

B.	**PRE-CONSTRUCTION COST (Table 10)**			
HW0016	Design	20%		$ 27,566.06
HW0017	Project Management of Design	*variable*	*57%*	$ 15,575
HW0018	Land Matters			$ -
HW0024	Community Consultation			
	Sub Total(B1)			$ 43,141
	Pre construction contingency (30% of B1)			$ 12,942
	TOTAL PRE-CONSTRUCTION COST (B)			$ 56,083

C.	**CONSTRUCTION COST**		
	Total Estimated Contract Award Sum (A)		$ 137,830
HW0019	Principal Supplied Pipe (as applicable)		$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)		$ -
HW0021	Principal Supplied Fittings (as applicable)		$ -
HW0022	Pump Station HV Power Supply		$ -
HW0023	Construction Management (Table 11)	10%	$ 13,783
	Sub Total (C1)		$ 151,613
	Construction contingency (Table 12) (30% of C1)	Preliminary Estimate	$ 45,484
	TOTAL CONSTRUCTION COST (C)		$ 197,097

TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	**$ 253,180**

PROJECT DESCRIPTION: North Tuncurry Development Project – Vacuum System - Stage F

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 3,286.00	$ 3,286.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 8,000.00	$ 8,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 18,000.00	$ 18,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 2,442.76	$ 2,442.76
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Rising - section will be present if one or more rising mains are specified

Item	Construction of Sewer Rising Mains	Qty	Unit	Rate $/Unit	Amount $
HWR001	Service Location	Item	Lump Sum	$ 842.40	$ 842.40
HWR002	Supply all valves	Item	Lump Sum		$ -
HWR003	Supply all fittings	Item	Lump Sum		$ -
HWR004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
119VSS	Nominal DN250 PVC pipe	160	m	$ 62.50	$ 10,000.00
10AVSS	Nominal DN100 PVC pipe	1244	m	$ 14.00	$ 17,416.00
HWR005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
119V03	Nominal DN250 PVC (Trench type 3)	160	m	$ 80.40	$ 12,864.00
10AV03	Nominal DN100 PVC (Trench type 3)	1244	m	$ 63.80	$ 79,367.20
HWR006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m to invert in OTR.				
HWR007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m to invert in OTR.				
HWR008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m to invert in OTR.				
HWR009	EMPTY				
HWR010	Extra over rate for installation for Additional compaction		m3	$ 15.30	
HWR011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	
HWR012	Extra over rate for installation to Supply & place & compact non cohesive material.		m3		

HWR013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWR014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWR015	Supply & place ballast		tonnes	$ 90.00	
HWR016	External Dewatering of pots including establishment & disestablishment	7	no.	$ 1,046.00	$ 7,322.00
HWR017	Supply and place treated timber piling for pipe support		m		
HWR018	Road / creek crossings				
HWR019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWR020	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWR021	Supply and installation of pipe river crossing including supply of MSCL pipe, internal and external welding, testing of welds and 150 thick concrete encasement. Also includes mobilisation and demobilisation of dredge(if required) excavation & disposal of excavated material, backfilling, lay, bed and test for the following MSCL pipe sizes:				
HWR022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206	Item	Lump Sum		$ -
HWR023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWR024	Flow Relief Structures		Each		
HWR025	EMPTY				
HWR026	Supply and construct vent stacks		each		
HWR027	Preparation of line sheets	1404	m	$ 1.00	$ 1,404.00
HWR028	Acceptance testing - rising main		m		
HWR029	**Miscellaneous**				
HWR000	***Sub Total***				$ 129,215.60

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		

HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 11,232.00	$ 11,232.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	**$ 194,176**

B.	**PRE-CONSTRUCTION COST (Table 10)**			
HW0016	Design	20%		$ 38,835.27
HW0017	Project Management of Design	*variable*	*47%*	$ 18,097
HW0018	Land Matters			$ -
HW0024	Community Consultation			
	Sub Total(B1)			$ 56,933
	Pre construction contingency (30% of B1)			$ 17,080
	TOTAL PRE-CONSTRUCTION COST (B)			$ 74,012

C.	**CONSTRUCTION COST**		
	Total Estimated Contract Award Sum (A)		$ 194,176
HW0019	Principal Supplied Pipe (as applicable)		$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)		$ -
HW0021	Principal Supplied Fittings (as applicable)		$ -
HW0022	Pump Station HV Power Supply		$ -
HW0023	Construction Management (Table 11)	10%	$ 19,418
	Sub Total (C1)		$ 213,594
	Construction contingency (Table 12) (30% of C1)	Preliminary Estimate	$ 64,078
	TOTAL CONSTRUCTION COST (C)		$ 277,672

TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	**$ 351,684**

PROJECT DESCRIPTION: North Tuncurry Development Project – Vacuum System - Stage G

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 3,211.00	$ 3,211.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 8,000.00	$ 8,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 18,000.00	$ 18,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 2,405.38	$ 2,405.38
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Rising - section will be present if one or more rising mains are specified

Item	Construction of Sewer Rising Mains	Qty	Unit	Rate $/Unit	Amount $
HWR001	Service Location	Item	Lump Sum	$ 804.00	$ 804.00
HWR002	Supply all valves	Item	Lump Sum		$ -
HWR003	Supply all fittings	Item	Lump Sum		$ -
HWR004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
114VSS	Nominal DN200 PVC pipe	295	m	$ 48.00	$ 14,160.00
10AVSS	Nominal DN100 PVC pipe	1045	m	$ 14.00	$ 14,630.00
HWR005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
114V03	Nominal DN200 PVC (Trench type 3)	295	m	$ 71.40	$ 21,063.00
10AV03	Nominal DN100 PVC (Trench type 3)	1045	m	$ 63.80	$ 66,671.00
HWR006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m to invert in OTR.				
HWR007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m to invert in OTR.				
HWR008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m to invert in OTR.				
HWR009	EMPTY				
HWR010	Extra over rate for installation for Additional compaction		m3	$ 15.30	
HWR011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	
HWR012	Extra over rate for installation to Supply & place & compact non cohesive material.		m3		

HWR013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWR014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWR015	Supply & place ballast		tonnes	$ 90.00	
HWR016	External Dewatering of pots including establishment & disestablishment	9	no.	$ 1,046.00	$ 9,414.00
HWR017	Supply and place treated timber piling for pipe support		m		
HWR018	Road / creek crossings				
HWR019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWR020	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWR021	Supply and installation of pipe river crossing including supply of MSCL pipe, internal and external welding, testing of welds and 150 thick concrete encasement. Also includes mobilisation and demobilisation of dredge(if required) excavation & disposal of excavated material, backfilling, lay, bed and test for the following MSCL pipe sizes:				
HWR022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206	Item	Lump Sum		$ -
HWR023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWR024	Flow Relief Structures		Each		
HWR025	EMPTY				
HWR026	Supply and construct vent stacks		each		
HWR027	Preparation of line sheets	1340	m	$ 1.00	$ 1,340.00
HWR028	Acceptance testing - rising main		m		
HWR029	**Miscellaneous**				
HWR000	***Sub Total***				$ 128,082.00

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		

HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 10,720.00	$ 10,720.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	**$ 192,418**

B.	**PRE-CONSTRUCTION COST (Table 10)**			
HW0016	Design	20%		$ 38,483.68
HW0017	Project Management of Design	*variable*	*47%*	$ 18,126
HW0018	Land Matters			$ -
HW0024	Community Consultation			
	Sub Total(B1)			$ 56,609
	Pre construction contingency (30% of B1)			$ 16,983
	TOTAL PRE-CONSTRUCTION COST (B)			**$ 73,592**

C.	**CONSTRUCTION COST**		
	Total Estimated Contract Award Sum (A)		$ 192,418
HW0019	Principal Supplied Pipe (as applicable)		$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)		$ -
HW0021	Principal Supplied Fittings (as applicable)		$ -
HW0022	Pump Station HV Power Supply		$ -
HW0023	Construction Management (Table 11)	10%	$ 19,242
	Sub Total (C1)		$ 211,660
	Construction contingency (Table 12) (30% of C1)	Preliminary Estimate	$ 63,498
	TOTAL CONSTRUCTION COST (C)		**$ 275,158**

TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	**$ 348,751**

PROJECT DESCRIPTION: North Tuncurry Development Project – Vacuum System - Stage H

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 3,576.00	$ 3,576.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 8,000.00	$ 8,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 18,000.00	$ 18,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 2,587.95	$ 2,587.95
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Rising - section will be present if one or more rising mains are specified

Item	Construction of Sewer Rising Mains	Qty	Unit	Rate $/Unit	Amount $
HWR001	Service Location	Item	Lump Sum	$ 943.80	$ 943.80
HWR002	Supply all valves	Item	Lump Sum		$ -
HWR003	Supply all fittings	Item	Lump Sum		$ -
HWR004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
114VSS	Nominal DN200 PVC pipe	272	m	$ 48.00	$ 13,056.00
10AVSS	Nominal DN100 PVC pipe	1301	m	$ 14.00	$ 18,214.00
HWR005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
114V03	Nominal DN200 PVC (Trench type 3)	272	m	$ 71.40	$ 19,420.80
10AV03	Nominal DN100 PVC (Trench type 3)	1301	m	$ 63.80	$ 83,003.80
HWR006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m to invert in OTR.				
HWR007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m to invert in OTR.				
HWR008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m to invert in OTR.				
HWR009	EMPTY				
HWR010	Extra over rate for installation for Additional compaction		m3	$ 15.30	
HWR011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	
HWR012	Extra over rate for installation to Supply & place & compact non cohesive material.		m3		

HWR013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWR014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWR015	Supply & place ballast		tonnes	$ 90.00	
HWR016	External Dewatering of pots including establishment & disestablishment	11	no.	$ 1,046.00	$ 11,506.00
HWR017	Supply and place treated timber piling for pipe support		m		
HWR018	Road / creek crossings				
HWR019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWR020	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWR021	Supply and installation of pipe river crossing including supply of MSCL pipe, internal and external welding, testing of welds and 150 thick concrete encasement. Also includes mobilisation and demobilisation of dredge(if required) excavation & disposal of excavated material, backfilling, lay, bed and test for the following MSCL pipe sizes:				
HWR022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206	Item	Lump Sum		$ -
HWR023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWR024	Flow Relief Structures		Each		
HWR025	EMPTY				
HWR026	Supply and construct vent stacks		each		
HWR027	Preparation of line sheets	1573	m	$ 1.00	$ 1,573.00
HWR028	Acceptance testing - rising main		m		
HWR029	**Miscellaneous**				
HWR000	***Sub Total***				$ 147,717.40

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		

HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 12,584.00	$ 12,584.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	**$ 214,465**

B.	**PRE-CONSTRUCTION COST (Table 10)**			
HW0016	Design	20%		$ 42,893.07
HW0017	Project Management of Design	*variable*	*45%*	$ 19,130
HW0018	Land Matters			$ -
HW0024	Community Consultation			
	Sub Total(B1)			$ 62,023
	Pre construction contingency (30% of B1)			$ 18,607
	TOTAL PRE-CONSTRUCTION COST (B)			**$ 80,630**

C.	**CONSTRUCTION COST**		
	Total Estimated Contract Award Sum (A)		$ 214,465
HW0019	Principal Supplied Pipe (as applicable)		$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)		$ -
HW0021	Principal Supplied Fittings (as applicable)		$ -
HW0022	Pump Station HV Power Supply		$ -
HW0023	Construction Management (Table 11)	10%	$ 21,447
	Sub Total (C1)		$ 235,912
	Construction contingency (Table 12) (30% of C1)	Preliminary Estimate	$ 70,774
	TOTAL CONSTRUCTION COST (C)		**$ 306,685**

TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	**$ 387,316**

PROJECT DESCRIPTION: North Tuncurry Development Project – Vacuum System - Stage I

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 4,147.00	$ 4,147.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 12,000.00	$ 12,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 12,000.00	$ 12,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 8,000.00	$ 8,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 18,000.00	$ 18,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 2,873.44	$ 2,873.44
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Rising - section will be present if one or more rising mains are specified

Item	Construction of Sewer Rising Mains	Qty	Unit	Rate $/Unit	Amount $
HWR001	Service Location	Item	Lump Sum	$ 1,173.00	$ 1,173.00
HWR002	Supply all valves	Item	Lump Sum		$ -
HWR003	Supply all fittings	Item	Lump Sum		$ -
HWR004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
10FVSS	Nominal DN150 PVC pipe	368	m	$ 28.00	$ 10,304.00
10AVSS	Nominal DN100 PVC pipe	1587	m	$ 14.00	$ 22,218.00
HWR005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
10FV03	Nominal DN150 PVC (Trench type 3)	368	m	$ 67.40	$ 24,803.20
10AV03	Nominal DN100 PVC (Trench type 3)	1587	m	$ 63.80	$ 101,250.60
HWR006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m to invert in OTR.				
HWR007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m to invert in OTR.				
HWR008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m to invert in OTR.				
HWR009	EMPTY				
HWR010	Extra over rate for installation for Additional compaction		m3	$ 15.30	
HWR011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	
HWR012	Extra over rate for installation to Supply & place & compact non cohesive material.		m3		
HWR013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWR014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWR015	Supply & place ballast		tonnes	$ 90.00	
HWR016	External Dewatering of pots including establishment & disestablishment	11	no.	$ 1,046.00	$ 11,506.00
HWR017	Supply and place treated timber piling for pipe support		m		
HWR018	Road / creek crossings				
HWR019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWR020	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				

HWR021	Supply and installation of pipe river crossing including supply of MSCL pipe, internal and external welding, testing of welds and 150 thick concrete encasement. Also includes mobilisation and demobilisation of dredge(if required) excavation & disposal of excavated material, backfilling, lay, bed and test for the following MSCL pipe sizes:				
HWR022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206	Item	Lump Sum		$ -
HWR023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWR024	Flow Relief Structures		Each		
HWR025	EMPTY				
HWR026	Supply and construct vent stacks		each		
HWR027	Preparation of line sheets	1955	m	$ 1.00	$ 1,955.00
HWR028	Acceptance testing - rising main		m		
HWR029	**Miscellaneous**				
HWR000	***Sub Total***				$ 173,209.80

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		
HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 15,640.00	$ 15,640.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**			**$ 249,870**

B.	**PRE-CONSTRUCTION COST (Table 10)**			
HW0016	Design	20%		$ 49,974.05
HW0017	Project Management of Design	*variable*	*41%*	$ 20,489
HW0018	Land Matters			$ -
HW0024	Community Consultation			
	Sub Total(B1)			$ 70,463
	Pre construction contingency (30% of B1)			$ 21,139
	TOTAL PRE-CONSTRUCTION COST (B)			$ 91,602

$ 47,672.85
$ 19,534.57 0.409763008

C.	**CONSTRUCTION COST**	
	Total Estimated Contract Award Sum (A)	$ 249,870
HW0019	Principal Supplied Pipe (as applicable)	$ -

HW0020	Principal Supplied Valves and Flowmeters (as applicable)		$	-
HW0021	Principal Supplied Fittings (as applicable)		$	-
HW0022	Pump Station HV Power Supply		$	-
HW0023	Construction Management (Table 11)	10%	$	24,987
	Sub Total (C1)		$	274,857
	Construction contingency (Table 12) (30% of C1)	Preliminary Estimate	$	82,457
	TOTAL CONSTRUCTION COST (C)		$	357,314

TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	$	448,917

PROJECT DESCRIPTION: North Tuncurry Development Project – Vacuum System - Stage J

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 10,196.00	$ 10,196.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 15,000.00	$ 15,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 15,000.00	$ 15,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 8,000.00	$ 8,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 18,000.00	$ 18,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 5,898.20	$ 5,898.20
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Rising - section will be present if one or more rising mains are specified

Item	Construction of Sewer Rising Mains	Qty	Unit	Rate $/Unit	Amount $
HWR001	Service Location	Item	Lump Sum	$ 2,363.85	$ 2,363.85
HWR002	Supply all valves	Item	Lump Sum		$ -
HWR003	Supply all fittings	Item	Lump Sum		$ -
HWR004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
11EVSS	Nominal DN300 PVC pipe	1915	m	$ 85.00	$ 162,775.00
10AVSS	Nominal DN100 PVC pipe	1546	m	$ 14.00	$ 21,644.00
HWR005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
11EV03	Nominal DN300 PVC (Trench type 3)	1915	m	$ 85.25	$ 163,253.75
10AV03	Nominal DN100 PVC (Trench type 3)	1546	m	$ 63.80	$ 98,634.80
HWR006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m to invert in OTR.				
HWR007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m to invert in OTR.				
HWR008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m to invert in OTR.				
HWR009	EMPTY				
HWR010	Extra over rate for installation for Additional compaction		m3	$ 15.30	
HWR011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	
HWR012	Extra over rate for installation to Supply & place & compact non cohesive material.		m3		

HWR013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWR014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWR015	Supply & place ballast		tonnes	$ 90.00	
HWR016	External Dewatering of pots including establishment & disestablishment	6	no.	$ 1,046.00	$ 6,276.00
HWR017	Supply and place treated timber piling for pipe support		m		
HWR018	Road / creek crossings				
HWR019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWR020	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWR021	Supply and installation of pipe river crossing including supply of MSCL pipe, internal and external welding, testing of welds and 150 thick concrete encasement. Also includes mobilisation and demobilisation of dredge(if required) excavation & disposal of excavated material, backfilling, lay, bed and test for the following MSCL pipe sizes:				
HWR022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206	Item	Lump Sum		$ -
HWR023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWR024	Flow Relief Structures		Each		
HWR025	EMPTY				
HWR026	Supply and construct vent stacks		each		
HWR027	Preparation of line sheets	3461	m	$ 1.00	$ 3,461.00
HWR028	Acceptance testing - rising main		m		
HWR029	**Miscellaneous**				
HWR000	***Sub Total***				$ 458,408.40

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		

HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 27,688.00	$ 27,688.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	**$ 562,191**

B.	**PRE-CONSTRUCTION COST (Table 10)**			
HW0016	Design	20%		$ 112,438.12
HW0017	Project Management of Design	*variable*	*32%*	$ 35,980
HW0018	Land Matters			$ -
HW0024	Community Consultation			
	Sub Total(B1)			$ 148,418
	Pre construction contingency (30% of B1)			$ 44,525
	TOTAL PRE-CONSTRUCTION COST (B)			**$ 192,944**

C.	**CONSTRUCTION COST**		
	Total Estimated Contract Award Sum (A)		$ 562,191
HW0019	Principal Supplied Pipe (as applicable)		$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)		$ -
HW0021	Principal Supplied Fittings (as applicable)		$ -
HW0022	Pump Station HV Power Supply		$ -
HW0023	Construction Management (Table 11)	8%	$ 44,975
	Sub Total (C1)		$ 607,166
	Construction contingency (Table 12) (30% of C1)	Preliminary Estimate	$ 182,150
	TOTAL CONSTRUCTION COST (C)		**$ 789,316**

TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	**$ 982,259**

PROJECT DESCRIPTION: North Tuncurry Development Project – Vacuum System - Stage K

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 2,748.00	$ 2,748.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 8,000.00	$ 8,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 18,000.00	$ 18,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 2,174.16	$ 2,174.16
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Rising - section will be present if one or more rising mains are specified

Item	Construction of Sewer Rising Mains	Qty	Unit	Rate $/Unit	Amount $
HWR001	Service Location	Item	Lump Sum	$ 651.60	$ 651.60
HWR002	Supply all valves	Item	Lump Sum		$ -
HWR003	Supply all fittings	Item	Lump Sum		$ -
HWR004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
119VSS	Nominal DN250 PVC pipe	192	m	$ 62.50	$ 12,000.00
10AVSS	Nominal DN100 PVC pipe	894	m	$ 14.00	$ 12,516.00
HWR005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
119V03	Nominal DN250 PVC (Trench type 3)	192	m	$ 80.40	$ 15,436.80
10AV03	Nominal DN100 PVC (Trench type 3)	894	m	$ 63.80	$ 57,037.20
HWR006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m to invert in OTR.				
HWR007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m to invert in OTR.				
HWR008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m to invert in OTR.				
HWR009	EMPTY				
HWR010	Extra over rate for installation for Additional compaction		m3	$ 15.30	
HWR011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	
HWR012	Extra over rate for installation to Supply & place & compact non cohesive material.		m3		

HWR013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWR014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWR015	Supply & place ballast		tonnes	$ 90.00	
HWR016	External Dewatering of pots including establishment & disestablishment	8	no.	$ 1,046.00	$ 8,368.00
HWR017	Supply and place treated timber piling for pipe support		m		
HWR018	Road / creek crossings				
HWR019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWR020	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWR021	Supply and installation of pipe river crossing including supply of MSCL pipe, internal and external welding, testing of welds and 150 thick concrete encasement. Also includes mobilisation and demobilisation of dredge(if required) excavation & disposal of excavated material, backfilling, lay, bed and test for the following MSCL pipe sizes:				
HWR022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206	Item	Lump Sum		$ -
HWR023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWR024	Flow Relief Structures		Each		
HWR025	EMPTY				
HWR026	Supply and construct vent stacks		each		
HWR027	Preparation of line sheets	1086	m	$ 1.00	$ 1,086.00
HWR028	Acceptance testing - rising main		m		
HWR029	**Miscellaneous**				
HWR000	***Sub Total***				$ 107,095.60

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		

HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 8,688.00	$ 8,688.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	**$ 168,706**

B.	**PRE-CONSTRUCTION COST (Table 10)**			
HW0016	Design	20%		$ 33,741.15
HW0017	Project Management of Design	*variable*	*51%*	$ 17,275
HW0018	Land Matters			$ -
HW0024	Community Consultation			
	Sub Total(B1)			$ 51,017
	Pre construction contingency (30% of B1)			$ 15,305
	TOTAL PRE-CONSTRUCTION COST (B)			$ 66,322

C.	**CONSTRUCTION COST**			
	Total Estimated Contract Award Sum (A)			$ 168,706
HW0019	Principal Supplied Pipe (as applicable)			$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)			$ -
HW0021	Principal Supplied Fittings (as applicable)			$ -
HW0022	Pump Station HV Power Supply			$ -
HW0023	Construction Management (Table 11)		10%	$ 16,871
	Sub Total (C1)			$ 185,576
	Construction contingency (Table 12) (30% of C1)	Preliminary Estimate		$ 55,673
	TOTAL CONSTRUCTION COST (C)			$ 241,249

	TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	**$ 307,571**

PROJECT DESCRIPTION: North Tuncurry Development Project – Vacuum System - Stage L

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 2,028.00	$ 2,028.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 8,000.00	$ 8,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 18,000.00	$ 18,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 1,813.90	$ 1,813.90
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Rising - section will be present if one or more rising mains are specified

Item	Construction of Sewer Rising Mains	Qty	Unit	Rate $/Unit	Amount $
HWR001	Service Location	Item	Lump Sum	$ 440.40	$ 440.40
HWR002	Supply all valves	Item	Lump Sum		$ -
HWR003	Supply all fittings	Item	Lump Sum		$ -
HWR004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
114VSS	Nominal DN200 PVC pipe	174	m	$ 48.00	$ 8,352.00
10AVSS	Nominal DN100 PVC pipe	560	m	$ 14.00	$ 7,840.00
HWR005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
114V03	Nominal DN200 PVC (Trench type 3)	174	m	$ 71.40	$ 12,423.60
10AV03	Nominal DN100 PVC (Trench type 3)	560	m	$ 63.80	$ 35,728.00
HWR006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m to invert in OTR.				
HWR007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m to invert in OTR.				
HWR008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m to invert in OTR.				
HWR009	EMPTY				
HWR010	Extra over rate for installation for Additional compaction		m3	$ 15.30	
HWR011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	
HWR012	Extra over rate for installation to Supply & place & compact non cohesive material.		m3		

HWR013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWR014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWR015	Supply & place ballast		tonnes	$ 90.00	
HWR016	External Dewatering of pots including establishment & disestablishment	8	no.	$ 1,046.00	$ 8,368.00
HWR017	Supply and place treated timber piling for pipe support		m		
HWR018	Road / creek crossings				
HWR019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWR020	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWR021	Supply and installation of pipe river crossing including supply of MSCL pipe, internal and external welding, testing of welds and 150 thick concrete encasement. Also includes mobilisation and demobilisation of dredge(if required) excavation & disposal of excavated material, backfilling, lay, bed and test for the following MSCL pipe sizes:				
HWR022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206	Item	Lump Sum		$ -
HWR023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWR024	Flow Relief Structures		Each		
HWR025	EMPTY				
HWR026	Supply and construct vent stacks		each		
HWR027	Preparation of line sheets	734	m	$ 1.00	$ 734.00
HWR028	Acceptance testing - rising main		m		
HWR029	**Miscellaneous**				
HWR000	***Sub Total***				$ 73,886.00

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		

HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 5,872.00	$ 5,872.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	**$ 131,600**

B.	**PRE-CONSTRUCTION COST (Table 10)**			
HW0016	Design	20%		$ 26,319.98
HW0017	Project Management of Design	*variable*	*61%*	$ 15,950
HW0018	Land Matters			$ -
HW0024	Community Consultation			
	Sub Total(B1)			$ 42,270
	Pre construction contingency (30% of B1)			$ 12,681
	TOTAL PRE-CONSTRUCTION COST (B)			$ 54,951

C.	**CONSTRUCTION COST**		
	Total Estimated Contract Award Sum (A)		$ 131,600
HW0019	Principal Supplied Pipe (as applicable)		$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)		$ -
HW0021	Principal Supplied Fittings (as applicable)		$ -
HW0022	Pump Station HV Power Supply		$ -
HW0023	Construction Management (Table 11)	10%	$ 13,160
	Sub Total (C1)		$ 144,760
	Construction contingency (Table 12) (30% of C1)	Preliminary Estimate	$ 43,428
	TOTAL CONSTRUCTION COST (C)		$ 188,188

TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	**$ 243,139**

PROJECT DESCRIPTION: North Tuncurry Development Project – Vacuum System - Stage VC

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 2,082.00	$ 2,082.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 8,000.00	$ 8,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 18,000.00	$ 18,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 1,840.93	$ 1,840.93
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Rising - section will be present if one or more rising mains are specified

Item	Construction of Sewer Rising Mains	Qty	Unit	Rate $/Unit	Amount $
HWR001	Service Location	Item	Lump Sum	$ 487.80	$ 487.80
HWR002	Supply all valves	Item	Lump Sum		$ -
HWR003	Supply all fittings	Item	Lump Sum		$ -
HWR004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
114VSS	Nominal DN200 PVC pipe	73	m	$ 48.00	$ 3,504.00
10AVSS	Nominal DN100 PVC pipe	740	m	$ 14.00	$ 10,360.00
HWR005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
114V03	Nominal DN200 PVC (Trench type 3)	73	m	$ 71.40	$ 5,212.20
10AV03	Nominal DN100 PVC (Trench type 3)	740	m	$ 63.80	$ 47,212.00
HWR006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m to invert in OTR.				
HWR007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m to invert in OTR.				
HWR008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m to invert in OTR.				
HWR009	EMPTY				
HWR010	Extra over rate for installation for Additional compaction		m3	$ 15.30	
HWR011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	
HWR012	Extra over rate for installation to Supply & place & compact non cohesive material.		m3		

HWR013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWR014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWR015	Supply & place ballast		tonnes	$ 90.00	
HWR016	External Dewatering of pots including establishment & disestablishment	7	no.	$ 1,046.00	$ 7,322.00
HWR017	Supply and place treated timber piling for pipe support		m		
HWR018	Road / creek crossings				
HWR019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWR020	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWR021	Supply and installation of pipe river crossing including supply of MSCL pipe, internal and external welding, testing of welds and 150 thick concrete encasement. Also includes mobilisation and demobilisation of dredge(if required) excavation & disposal of excavated material, backfilling, lay, bed and test for the following MSCL pipe sizes:				
HWR022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206	Item	Lump Sum		$ -
HWR023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWR024	Flow Relief Structures		Each		
HWR025	EMPTY				
HWR026	Supply and construct vent stacks		each		
HWR027	Preparation of line sheets	813	m	$ 1.00	$ 813.00
HWR028	Acceptance testing - rising main		m		
HWR029	**Miscellaneous**				
HWR000	***Sub Total***				$ 74,911.00

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		

HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 6,504.00	$ 6,504.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	**$ 133,338**

B.	**PRE-CONSTRUCTION COST (Table 10)**			
HW0016	Design	20%		$ 26,667.59
HW0017	Project Management of Design	*variable*	*60%*	$ 15,921
HW0018	Land Matters			$ -
HW0024	Community Consultation			
	Sub Total(B1)			$ 42,588
	Pre construction contingency (30% of B1)			$ 12,776
	TOTAL PRE-CONSTRUCTION COST (B)			$ 55,365

C.	**CONSTRUCTION COST**		
	Total Estimated Contract Award Sum (A)		$ 133,338
HW0019	Principal Supplied Pipe (as applicable)		$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)		$ -
HW0021	Principal Supplied Fittings (as applicable)		$ -
HW0022	Pump Station HV Power Supply		$ -
HW0023	Construction Management (Table 11)	10%	$ 13,334
	Sub Total (C1)		$ 146,672
	Construction contingency (Table 12) (30% of C1)	Preliminary Estimate	$ 44,002
	TOTAL CONSTRUCTION COST (C)		$ 190,673

TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	**$ 246,038**

PROJECT DESCRIPTION: North Tuncurry Development Project – Vacuum System - Stage M

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 11,095.00	$ 11,095.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 15,000.00	$ 15,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 15,000.00	$ 15,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 8,000.00	$ 8,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 18,000.00	$ 18,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 6,347.70	$ 6,347.70
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Rising - section will be present if one or more rising mains are specified

Item	Construction of Sewer Rising Mains	Qty	Unit	Rate $/Unit	Amount $
HWR001	Service Location	Item	Lump Sum	$ 2,457.75	$ 2,457.75
HWR002	Supply all valves	Item	Lump Sum		$ -
HWR003	Supply all fittings	Item	Lump Sum		$ -
HWR004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
11EVSS	Nominal DN300 PVC pipe	2357	m	$ 85.00	$ 200,345.00
10AVSS	Nominal DN100 PVC pipe	1150	m	$ 14.00	$ 16,100.00
HWR005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
11EV03	Nominal DN300 PVC (Trench type 3)	2357	m	$ 85.25	$ 200,934.25
10AV03	Nominal DN100 PVC (Trench type 3)	1150	m	$ 63.80	$ 73,370.00
HWR006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m to invert in OTR.				
HWR007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m to invert in OTR.				
HWR008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m to invert in OTR.				
HWR009	EMPTY				
HWR010	Extra over rate for installation for Additional compaction		m3	$ 15.30	
HWR011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	
HWR012	Extra over rate for installation to Supply & place & compact non cohesive material.		m3		

HWR013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWR014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWR015	Supply & place ballast		tonnes	$ 90.00	
HWR016	External Dewatering of pots including establishment & disestablishment	16	no.	$ 1,046.00	$ 16,736.00
HWR017	Supply and place treated timber piling for pipe support		m		
HWR018	Road / creek crossings				
HWR019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWR020	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWR021	Supply and installation of pipe river crossing including supply of MSCL pipe, internal and external welding, testing of welds and 150 thick concrete encasement. Also includes mobilisation and demobilisation of dredge(if required) excavation & disposal of excavated material, backfilling, lay, bed and test for the following MSCL pipe sizes:				
HWR022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206	Item	Lump Sum		$ -
HWR023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWR024	Flow Relief Structures		Each		
HWR025	EMPTY				
HWR026	Supply and construct vent stacks		each		
HWR027	Preparation of line sheets	3507	m	$ 1.00	$ 3,507.00
HWR028	Acceptance testing - rising main		m		
HWR029	**Miscellaneous**				
HWR000	***Sub Total***				$ 513,450.00

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		

HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 28,056.00	$ 28,056.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	**$ 618,949**

B.	**PRE-CONSTRUCTION COST (Table 10)**			
HW0016	Design	20%		$ 123,789.74
HW0017	Project Management of Design	*variable*	*31%*	$ 38,499
HW0018	Land Matters			$ -
HW0024	Community Consultation			
	Sub Total(B1)			$ 162,288
	Pre construction contingency (30% of B1)			$ 48,687
	TOTAL PRE-CONSTRUCTION COST (B)			$ 210,975

C.	**CONSTRUCTION COST**		
	Total Estimated Contract Award Sum (A)		$ 618,949
HW0019	Principal Supplied Pipe (as applicable)		$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)		$ -
HW0021	Principal Supplied Fittings (as applicable)		$ -
HW0022	Pump Station HV Power Supply		$ -
HW0023	Construction Management (Table 11)	8%	$ 49,516
	Sub Total (C1)		$ 668,465
	Construction contingency (Table 12) (30% of C1)	Preliminary Estimate	$ 200,539
	TOTAL CONSTRUCTION COST (C)		$ 869,004

TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	**$ 1,079,979**

PROJECT DESCRIPTION: North Tuncurry Development Project – Vacuum System - Stage N

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 2,412.00	$ 2,412.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 8,000.00	$ 8,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 18,000.00	$ 18,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 2,006.23	$ 2,006.23
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Rising - section will be present if one or more rising mains are specified

Item	Construction of Sewer Rising Mains	Qty	Unit	Rate $/Unit	Amount $
HWR001	Service Location	Item	Lump Sum	$ 502.80	$ 502.80
HWR002	Supply all valves	Item	Lump Sum		$ -
HWR003	Supply all fittings	Item	Lump Sum		$ -
HWR004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
119VSS	Nominal DN250 PVC pipe	267	m	$ 62.50	$ 16,687.50
10AVSS	Nominal DN100 PVC pipe	571	m	$ 14.00	$ 7,994.00
HWR005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
119V03	Nominal DN250 PVC (Trench type 3)	267	m	$ 80.40	$ 21,466.80
10AV03	Nominal DN100 PVC (Trench type 3)	571	m	$ 63.80	$ 36,429.80
HWR006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m to invert in OTR.				
HWR007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m to invert in OTR.				
HWR008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m to invert in OTR.				
HWR009	EMPTY				
HWR010	Extra over rate for installation for Additional compaction		m3	$ 15.30	
HWR011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	
HWR012	Extra over rate for installation to Supply & place & compact non cohesive material.		m3		

HWR013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWR014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWR015	Supply & place ballast		tonnes	$ 90.00	
HWR016	External Dewatering of pots including establishment & disestablishment	10	no.	$ 1,046.00	$ 10,460.00
HWR017	Supply and place treated timber piling for pipe support		m		
HWR018	Road / creek crossings				
HWR019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWR020	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWR021	Supply and installation of pipe river crossing including supply of MSCL pipe, internal and external welding, testing of welds and 150 thick concrete encasement. Also includes mobilisation and demobilisation of dredge(if required) excavation & disposal of excavated material, backfilling, lay, bed and test for the following MSCL pipe sizes:				
HWR022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206	Item	Lump Sum		$ -
HWR023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWR024	Flow Relief Structures		Each		
HWR025	EMPTY				
HWR026	Supply and construct vent stacks		each		
HWR027	Preparation of line sheets	838	m	$ 1.00	$ 838.00
HWR028	Acceptance testing - rising main		m		
HWR029	**Miscellaneous**				
HWR000	***Sub Total***				$ 94,378.90

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		

HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 6,704.00	$ 6,704.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	**$ 153,501**

B.	**PRE-CONSTRUCTION COST (Table 10)**			
HW0016	Design	20%		$ 30,700.23
HW0017	Project Management of Design	*variable*	*55%*	$ 16,885
HW0018	Land Matters			$ -
HW0024	Community Consultation			
	Sub Total(B1)			$ 47,585
	Pre construction contingency (30% of B1)			$ 14,276
	TOTAL PRE-CONSTRUCTION COST (B)			**$ 61,861**

C.	**CONSTRUCTION COST**		
	Total Estimated Contract Award Sum (A)		$ 153,501
HW0019	Principal Supplied Pipe (as applicable)		$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)		$ -
HW0021	Principal Supplied Fittings (as applicable)		$ -
HW0022	Pump Station HV Power Supply		$ -
HW0023	Construction Management (Table 11)	10%	$ 15,350
	Sub Total (C1)		$ 168,851
	Construction contingency (Table 12) (30% of C1)	Preliminary Estimate	$ 50,655
	TOTAL CONSTRUCTION COST (C)		**$ 219,507**

TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	**$ 281,368**

PROJECT DESCRIPTION: North Tuncurry Development Project – Vacuum System - Stage O

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 2,658.00	$ 2,658.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 8,000.00	$ 8,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 18,000.00	$ 18,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 2,128.77	$ 2,128.77
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Rising - section will be present if one or more rising mains are specified

Item	Construction of Sewer Rising Mains	Qty	Unit	Rate $/Unit	Amount $
HWR001	Service Location	Item	Lump Sum	$ 630.00	$ 630.00
HWR002	Supply all valves	Item	Lump Sum		$ -
HWR003	Supply all fittings	Item	Lump Sum		$ -
HWR004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
114VSS	Nominal DN200 PVC pipe	267	m	$ 48.00	$ 12,816.00
10AVSS	Nominal DN100 PVC pipe	783	m	$ 14.00	$ 10,962.00
HWR005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
114V03	Nominal DN200 PVC (Trench type 3)	267	m	$ 71.40	$ 19,063.80
10AV03	Nominal DN100 PVC (Trench type 3)	783	m	$ 63.80	$ 49,955.40
HWR006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m to invert in OTR.				
HWR007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m to invert in OTR.				
HWR008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m to invert in OTR.				
HWR009	EMPTY				
HWR010	Extra over rate for installation for Additional compaction		m3	$ 15.30	
HWR011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	
HWR012	Extra over rate for installation to Supply & place & compact non cohesive material.		m3		

HWR013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWR014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWR015	Supply & place ballast		tonnes	$ 90.00	
HWR016	External Dewatering of pots including establishment & disestablishment	16	no.	$ 1,046.00	$ 16,736.00
HWR017	Supply and place treated timber piling for pipe support		m		
HWR018	Road / creek crossings				
HWR019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWR020	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWR021	Supply and installation of pipe river crossing including supply of MSCL pipe, internal and external welding, testing of welds and 150 thick concrete encasement. Also includes mobilisation and demobilisation of dredge(if required) excavation & disposal of excavated material, backfilling, lay, bed and test for the following MSCL pipe sizes:				
HWR022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206	Item	Lump Sum		$ -
HWR023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWR024	Flow Relief Structures		Each		
HWR025	EMPTY				
HWR026	Supply and construct vent stacks		each		
HWR027	Preparation of line sheets	1050	m	$ 1.00	$ 1,050.00
HWR028	Acceptance testing - rising main		m		
HWR029	**Miscellaneous**				
HWR000	***Sub Total***				$ 111,213.20

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		

HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 8,400.00	$ 8,400.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	**$ 172,400**

B.	**PRE-CONSTRUCTION COST (Table 10)**			
HW0016	Design	20%		$ 34,479.99
HW0017	Project Management of Design	*variable*	*52%*	$ 17,964
HW0018	Land Matters			$ -
HW0024	Community Consultation			
	Sub Total(B1)			$ 52,444
	Pre construction contingency (30% of B1)			$ 15,733
	TOTAL PRE-CONSTRUCTION COST (B)			**$ 68,177**

C.	**CONSTRUCTION COST**			
	Total Estimated Contract Award Sum (A)			$ 172,400
HW0019	Principal Supplied Pipe (as applicable)			$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)			$ -
HW0021	Principal Supplied Fittings (as applicable)			$ -
HW0022	Pump Station HV Power Supply			$ -
HW0023	Construction Management (Table 11)		10%	$ 17,240
	Sub Total (C1)			$ 189,640
	Construction contingency (Table 12) (30% of C1)	Preliminary Estimate		$ 56,892
	TOTAL CONSTRUCTION COST (C)			**$ 246,532**

	TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	**$ 314,709**

PROJECT DESCRIPTION: North Tuncurry Development Project – Vacuum System - Stage P

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 2,205.00	$ 2,205.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 2,000.00	$ 2,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 1,902.66	$ 1,902.66
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Rising - section will be present if one or more rising mains are specified

Item	Construction of Sewer Rising Mains	Qty	Unit	Rate $/Unit	Amount $
HWR001	Service Location	Item	Lump Sum	$ 654.00	$ 654.00
HWR002	Supply all valves	Item	Lump Sum		$ -
HWR003	Supply all fittings	Item	Lump Sum		$ -
HWR004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
10AVSS	Nominal DN100 PVC pipe	1090	m	$ 14.00	$ 15,260.00
HWR005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
10AV03	Nominal DN100 PVC (Trench type 3)	1090	m	$ 63.80	$ 69,542.00
HWR006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m to invert in OTR.				
HWR007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m to invert in OTR.				
HWR008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m to invert in OTR.				
HWR009	EMPTY				
HWR010	Extra over rate for installation for Additional compaction		m3	$ 15.30	
HWR011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	
HWR012	Extra over rate for installation to Supply & place & compact non cohesive material.		m3		
HWR013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWR014	Extra over rate for installation for Supply, place and compact aggregate		m3		

HWR015	Supply & place ballast		tonnes	$ 90.00	
HWR016	External Dewatering of pots including establishment & disestablishment	12	no.	$ 1,046.00	$ 12,552.00
HWR017	Supply and place treated timber piling for pipe support		m		
HWR018	Road / creek crossings				
HWR019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWR020	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWR021	Supply and installation of pipe river crossing including supply of MSCL pipe, internal and external welding, testing of welds and 150 thick concrete encasement. Also includes mobilisation and demobilisation of dredge(if required) excavation & disposal of excavated material, backfilling, lay, bed and test for the following MSCL pipe sizes:				
HWR022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206	Item	Lump Sum		$ -
HWR023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWR024	Flow Relief Structures		Each		
HWR025	EMPTY				
HWR026	Supply and construct vent stacks		each		
HWR027	Preparation of line sheets	1090	m	$ 1.00	$ 1,090.00
HWR028	Acceptance testing - rising main		m		
HWR029	**Miscellaneous**				
HWR000	***Sub Total***				$ 99,098.00

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		
HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		

HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 8,720.00	$ 8,720.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	**$ 144,926**

B.	**PRE-CONSTRUCTION COST (Table 10)**			
HW0016	Design	20%		**$ 28,985.13**
HW0017	Project Management of Design	*variable*	*58%*	**$ 16,753**
HW0018	Land Matters			**$ -**
HW0024	Community Consultation			
	Sub Total(B1)			**$ 45,739**
	Pre construction contingency (30% of B1)			**$ 13,722**
	TOTAL PRE-CONSTRUCTION COST (B)			**$ 59,460**

C.	**CONSTRUCTION COST**			
	Total Estimated Contract Award Sum (A)			$ 144,926
HW0019	Principal Supplied Pipe (as applicable)			$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)			$ -
HW0021	Principal Supplied Fittings (as applicable)			$ -
HW0022	Pump Station HV Power Supply			$ -
HW0023	Construction Management (Table 11)		10%	**$ 14,493**
	Sub Total (C1)			**$ 159,418**
	Construction contingency (Table 12) (30% of C1)	Preliminary Estimate		**$ 47,825**
	TOTAL CONSTRUCTION COST (C)			**$ 207,244**

	TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	**$ 266,704**

PROJECT DESCRIPTION: North Tuncurry Development Project – Vacuum System - Stage Q

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 1,475.00	$ 1,475.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 6,000.00	$ 6,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 6,000.00	$ 6,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 2,000.00	$ 2,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 1,537.33	$ 1,537.33
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Rising - section will be present if one or more rising mains are specified

Item	Construction of Sewer Rising Mains	Qty	Unit	Rate $/Unit	Amount $
HWR001	Service Location	Item	Lump Sum	$ 403.20	$ 403.20
HWR002	Supply all valves	Item	Lump Sum		$ -
HWR003	Supply all fittings	Item	Lump Sum		$ -
HWR004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
10AVSS	Nominal DN100 PVC pipe	672	m	$ 14.00	$ 9,408.00
HWR005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
10AV03	Nominal DN100 PVC (Trench type 3)	672	m	$ 63.80	$ 42,873.60
HWR006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m to invert in OTR.				
HWR007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m to invert in OTR.				
HWR008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m to invert in OTR.				
HWR009	EMPTY				
HWR010	Extra over rate for installation for Additional compaction		m3	$ 15.30	
HWR011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	
HWR012	Extra over rate for installation to Supply & place & compact non cohesive material.		m3		
HWR013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWR014	Extra over rate for installation for Supply, place and compact aggregate		m3		

HWR015	Supply & place ballast		tonnes	$ 90.00	
HWR016	External Dewatering of pots including establishment & disestablishment	11	no.	$ 1,046.00	$ 11,506.00
HWR017	Supply and place treated timber piling for pipe support		m		
HWR018	Road / creek crossings				
HWR019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWR020	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWR021	Supply and installation of pipe river crossing including supply of MSCL pipe, internal and external welding, testing of welds and 150 thick concrete encasement. Also includes mobilisation and demobilisation of dredge(if required) excavation & disposal of excavated material, backfilling, lay, bed and test for the following MSCL pipe sizes:				
HWR022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206	Item	Lump Sum		$ -
HWR023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWR024	Flow Relief Structures		Each		
HWR025	EMPTY				
HWR026	Supply and construct vent stacks		each		
HWR027	Preparation of line sheets	672	m	$ 1.00	$ 672.00
HWR028	Acceptance testing - rising main		m		
HWR029	**Miscellaneous**				
HWR000	***Sub Total***				$ 64,862.80

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		
HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		

HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 5,376.00	$ 5,376.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	**$ 100,251**

B.	**PRE-CONSTRUCTION COST (Table 10)**			
HW0016	Design	20%		**$ 20,050.23**
HW0017	Project Management of Design	*variable*	*76%*	**$ 15,298**
HW0018	Land Matters			**$ -**
HW0024	Community Consultation			
	Sub Total(B1)			**$ 35,349**
	Pre construction contingency (30% of B1)			**$ 10,605**
	TOTAL PRE-CONSTRUCTION COST (B)			**$ 45,953**

C.	**CONSTRUCTION COST**			
	Total Estimated Contract Award Sum (A)			$ 100,251
HW0019	Principal Supplied Pipe (as applicable)			$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)			$ -
HW0021	Principal Supplied Fittings (as applicable)			$ -
HW0022	Pump Station HV Power Supply			$ -
HW0023	Construction Management (Table 11)		10%	**$ 10,025**
	Sub Total (C1)			**$ 110,276**
	Construction contingency (Table 12) (30% of C1)	Preliminary Estimate		**$ 33,083**
	TOTAL CONSTRUCTION COST (C)			**$ 143,359**

	TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	**$ 189,312**

PROJECT DESCRIPTION: North Tuncurry Development Project – Vacuum System - Stage R

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 2,663.00	$ 2,663.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 8,000.00	$ 8,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 18,000.00	$ 18,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 2,131.56	$ 2,131.56
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Rising - section will be present if one or more rising mains are specified

Item	Construction of Sewer Rising Mains	Qty	Unit	Rate $/Unit	Amount $
HWR001	Service Location	Item	Lump Sum	$ 684.00	$ 684.00
HWR002	Supply all valves	Item	Lump Sum		$ -
HWR003	Supply all fittings	Item	Lump Sum		$ -
HWR004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
10FVSS	Nominal DN150 PVC pipe	200	m	$ 28.00	$ 5,600.00
10AVSS	Nominal DN100 PVC pipe	940	m	$ 14.00	$ 13,160.00
HWR005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
10FV03	Nominal DN150 PVC (Trench type 3)	200	m	$ 67.40	$ 13,480.00
10AV03	Nominal DN100 PVC (Trench type 3)	940	m	$ 63.80	$ 59,972.00
HWR006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m to invert in OTR.				
HWR007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m to invert in OTR.				
HWR008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m to invert in OTR.				
HWR009	EMPTY				
HWR010	Extra over rate for installation for Additional compaction		m3	$ 15.30	
HWR011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	
HWR012	Extra over rate for installation to Supply & place & compact non cohesive material.		m3		

HWR013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWR014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWR015	Supply & place ballast		tonnes	$ 90.00	
HWR016	External Dewatering of pots including establishment & disestablishment	18	no.	$ 1,046.00	$ 18,828.00
HWR017	Supply and place treated timber piling for pipe support		m		
HWR018	Road / creek crossings				
HWR019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWR020	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWR021	Supply and installation of pipe river crossing including supply of MSCL pipe, internal and external welding, testing of welds and 150 thick concrete encasement. Also includes mobilisation and demobilisation of dredge(if required) excavation & disposal of excavated material, backfilling, lay, bed and test for the following MSCL pipe sizes:				
HWR022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206	Item	Lump Sum		$ -
HWR023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWR024	Flow Relief Structures		Each		
HWR025	EMPTY				
HWR026	Supply and construct vent stacks		each		
HWR027	Preparation of line sheets	1140	m	$ 1.00	$ 1,140.00
HWR028	Acceptance testing - rising main		m		
HWR029	**Miscellaneous**				
HWR000	***Sub Total***				$ 112,864.00

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		

HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 9,120.00	$ 9,120.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	**$ 174,779**

B.	**PRE-CONSTRUCTION COST (Table 10)**			
HW0016	Design	20%		$ 34,955.71
HW0017	Project Management of Design	*variable*	*52%*	$ 18,212
HW0018	Land Matters			$ -
HW0024	Community Consultation			
	Sub Total(B1)			$ 53,168
	Pre construction contingency (30% of B1)			$ 15,950
	TOTAL PRE-CONSTRUCTION COST (B)			$ 69,118

C.	**CONSTRUCTION COST**		
	Total Estimated Contract Award Sum (A)		$ 174,779
HW0019	Principal Supplied Pipe (as applicable)		$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)		$ -
HW0021	Principal Supplied Fittings (as applicable)		$ -
HW0022	Pump Station HV Power Supply		$ -
HW0023	Construction Management (Table 11)	10%	$ 17,478
	Sub Total (C1)		$ 192,256
	Construction contingency (Table 12) (30% of C1)	Preliminary Estimate	$ 57,677
	TOTAL CONSTRUCTION COST (C)		$ 249,933

TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	**$ 319,051**

PROJECT DESCRIPTION: North Tuncurry Development Project – Vacuum System - Stage S

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 10,628.00	$ 10,628.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 15,000.00	$ 15,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 15,000.00	$ 15,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 8,000.00	$ 8,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 18,000.00	$ 18,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 6,113.93	$ 6,113.93
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Rising - section will be present if one or more rising mains are specified

Item	Construction of Sewer Rising Mains	Qty	Unit	Rate $/Unit	Amount $
HWR001	Service Location	Item	Lump Sum	$ 2,382.75	$ 2,382.75
HWR002	Supply all valves	Item	Lump Sum		$ -
HWR003	Supply all fittings	Item	Lump Sum		$ -
HWR004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
11EVSS	Nominal DN300 PVC pipe	2181	m	$ 85.00	$ 185,385.00
10AVSS	Nominal DN100 PVC pipe	1245	m	$ 14.00	$ 17,430.00
HWR005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
11EV03	Nominal DN300 PVC (Trench type 3)	2181	m	$ 85.25	$ 185,930.25
10AV03	Nominal DN100 PVC (Trench type 3)	1245	m	$ 63.80	$ 79,431.00
HWR006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m to invert in OTR.				
HWR007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m to invert in OTR.				
HWR008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m to invert in OTR.				
HWR009	EMPTY				
HWR010	Extra over rate for installation for Additional compaction		m3	$ 15.30	
HWR011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	
HWR012	Extra over rate for installation to Supply & place & compact non cohesive material.		m3		

HWR013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWR014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWR015	Supply & place ballast		tonnes	$ 90.00	
HWR016	External Dewatering of pots including establishment & disestablishment	19	no.	$ 1,046.00	$ 19,874.00
HWR017	Supply and place treated timber piling for pipe support		m		
HWR018	Road / creek crossings				
HWR019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWR020	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWR021	Supply and installation of pipe river crossing including supply of MSCL pipe, internal and external welding, testing of welds and 150 thick concrete encasement. Also includes mobilisation and demobilisation of dredge(if required) excavation & disposal of excavated material, backfilling, lay, bed and test for the following MSCL pipe sizes:				
HWR022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206	Item	Lump Sum		$ -
HWR023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWR024	Flow Relief Structures		Each		
HWR025	EMPTY				
HWR026	Supply and construct vent stacks		each		
HWR027	Preparation of line sheets	3426	m	$ 1.00	$ 3,426.00
HWR028	Acceptance testing - rising main		m		
HWR029	**Miscellaneous**				
HWR000	***Sub Total***				$ 493,859.00

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		

HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 27,408.00	$ 27,408.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	**$ 598,009**

B.	**PRE-CONSTRUCTION COST (Table 10)**			
HW0016	Design	20%		$ 119,601.79
HW0017	Project Management of Design	*variable*	*32%*	$ 37,675
HW0018	Land Matters			$ -
HW0024	Community Consultation			
	Sub Total(B1)			$ 157,276
	Pre construction contingency (30% of B1)			$ 47,183
	TOTAL PRE-CONSTRUCTION COST (B)			**$ 204,459**

C.	**CONSTRUCTION COST**		
	Total Estimated Contract Award Sum (A)		$ 598,009
HW0019	Principal Supplied Pipe (as applicable)		$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)		$ -
HW0021	Principal Supplied Fittings (as applicable)		$ -
HW0022	Pump Station HV Power Supply		$ -
HW0023	Construction Management (Table 11)	8%	$ 47,841
	Sub Total (C1)		$ 645,850
	Construction contingency (Table 12) (30% of C1)	Preliminary Estimate	$ 193,755
	TOTAL CONSTRUCTION COST (C)		**$ 839,605**

TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	**$ 1,044,064**

PROJECT DESCRIPTION: North Tuncurry Development Project – Vacuum System - Stage T

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 991.00	$ 991.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 3,000.00	$ 3,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 3,000.00	$ 3,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 2,000.00	$ 2,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 1,295.60	$ 1,295.60
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Rising - section will be present if one or more rising mains are specified

Item	Construction of Sewer Rising Mains	Qty	Unit	Rate $/Unit	Amount $
HWR001	Service Location	Item	Lump Sum	$ 144.00	$ 144.00
HWR002	Supply all valves	Item	Lump Sum		$ -
HWR003	Supply all fittings	Item	Lump Sum		$ -
HWR004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
11EVSS	Nominal DN300 PVC pipe	192	m	$ 85.00	$ 16,320.00
HWR005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
11EV03	Nominal DN300 PVC (Trench type 3)	192	m	$ 85.25	$ 16,368.00
HWR006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m to invert in OTR.				
HWR007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m to invert in OTR.				
HWR008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m to invert in OTR.				
HWR009	EMPTY				
HWR010	Extra over rate for installation for Additional compaction		m3	$ 19.13	
HWR011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 78.75	
HWR012	Extra over rate for installation to Supply & place & compact non cohesive material.		m3		
HWR013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 337.50	
HWR014	Extra over rate for installation for Supply, place and compact aggregate		m3		

HWR015	Supply & place ballast		tonnes	$ 90.00	
HWR016	External Dewatering of pots including establishment & disestablishment	0	no.	$ 1,046.00	$ -
HWR017	Supply and place treated timber piling for pipe support		m		
HWR018	Road / creek crossings				
HWR019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWR020	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWR021	Supply and installation of pipe river crossing including supply of MSCL pipe, internal and external welding, testing of welds and 150 thick concrete encasement. Also includes mobilisation and demobilisation of dredge(if required) excavation & disposal of excavated material, backfilling, lay, bed and test for the following MSCL pipe sizes:				
HWR022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206	Item	Lump Sum		$ -
HWR023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWR024	Flow Relief Structures		Each		
HWR025	EMPTY				
HWR026	Supply and construct vent stacks		each		
HWR027	Preparation of line sheets	192	m	$ 1.00	$ 192.00
HWR028	Acceptance testing - rising main		m		
HWR029	**Miscellaneous**				
HWR000	***Sub Total***				$ 33,024.00

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		
HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		

HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 1,536.00	$ 1,536.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	**$ 57,847**

B.	**PRE-CONSTRUCTION COST (Table 10)**			
HW0016	Design	20%		$ 11,569.32
HW0017	Project Management of Design	*variable*	*106%*	$ 12,310
HW0018	Land Matters			$ -
HW0024	Community Consultation			
	Sub Total(B1)			$ 23,879
	Pre construction contingency (30% of B1)			$ 7,164
	TOTAL PRE-CONSTRUCTION COST (B)			**$ 31,043**

C.	**CONSTRUCTION COST**		
	Total Estimated Contract Award Sum (A)		$ 57,847
HW0019	Principal Supplied Pipe (as applicable)		$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)		$ -
HW0021	Principal Supplied Fittings (as applicable)		$ -
HW0022	Pump Station HV Power Supply		$ -
HW0023	Construction Management (Table 11)	10%	$ 5,785
	Sub Total (C1)		$ 63,631
	Construction contingency (Table 12) (30% of C1)	Preliminary Estimate	$ 19,089
	TOTAL CONSTRUCTION COST (C)		**$ 82,721**

	TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	**$ 113,763**

PROJECT DESCRIPTION: North Tuncurry Development Project – Vacuum System - Stage U

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 3,951.00	$ 3,951.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 8,000.00	$ 8,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 18,000.00	$ 18,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 2,775.68	$ 2,775.68
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Rising - section will be present if one or more rising mains are specified

Item	Construction of Sewer Rising Mains	Qty	Unit	Rate $/Unit	Amount $
HWR001	Service Location	Item	Lump Sum	$ 998.40	$ 998.40
HWR002	Supply all valves	Item	Lump Sum		$ -
HWR003	Supply all fittings	Item	Lump Sum		$ -
HWR004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
119VSS	Nominal DN250 PVC pipe	340	m	$ 62.50	$ 21,250.00
10AVSS	Nominal DN100 PVC pipe	1324	m	$ 14.00	$ 18,536.00
HWR005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
119V03	Nominal DN250 PVC (Trench type 3)	340	m	$ 80.40	$ 27,336.00
10AV03	Nominal DN100 PVC (Trench type 3)	1324	m	$ 63.80	$ 84,471.20
HWR006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m to invert in OTR.				
HWR007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m to invert in OTR.				
HWR008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m to invert in OTR.				
HWR009	EMPTY				
HWR010	Extra over rate for installation for Additional compaction		m3	$ 15.30	
HWR011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	
HWR012	Extra over rate for installation to Supply & place & compact non cohesive material.		m3		

HWR013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWR014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWR015	Supply & place ballast		tonnes	$ 90.00	
HWR016	External Dewatering of pots including establishment & disestablishment	9	no.	$ 1,046.00	$ 9,414.00
HWR017	Supply and place treated timber piling for pipe support		m		
HWR018	Road / creek crossings				
HWR019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWR020	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWR021	Supply and installation of pipe river crossing including supply of MSCL pipe, internal and external welding, testing of welds and 150 thick concrete encasement. Also includes mobilisation and demobilisation of dredge(if required) excavation & disposal of excavated material, backfilling, lay, bed and test for the following MSCL pipe sizes:				
HWR022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206	Item	Lump Sum		$ -
HWR023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWR024	Flow Relief Structures		Each		
HWR025	EMPTY				
HWR026	Supply and construct vent stacks		each		
HWR027	Preparation of line sheets	1664	m	$ 1.00	$ 1,664.00
HWR028	Acceptance testing - rising main		m		
HWR029	**Miscellaneous**				
HWR000	***Sub Total***				$ 163,669.60

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		

HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 13,312.00	$ 13,312.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	**$ 231,708**

B.	**PRE-CONSTRUCTION COST (Table 10)**			
HW0016	Design	20%		$ 46,341.66
HW0017	Project Management of Design	*variable*	*43%*	$ 19,695
HW0018	Land Matters			$ -
HW0024	Community Consultation			
	Sub Total(B1)			$ 66,037
	Pre construction contingency (30% of B1)			$ 19,811
	TOTAL PRE-CONSTRUCTION COST (B)			**$ 85,848**

C.	**CONSTRUCTION COST**		
	Total Estimated Contract Award Sum (A)		$ 231,708
HW0019	Principal Supplied Pipe (as applicable)		$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)		$ -
HW0021	Principal Supplied Fittings (as applicable)		$ -
HW0022	Pump Station HV Power Supply		$ -
HW0023	Construction Management (Table 11)	10%	$ 23,171
	Sub Total (C1)		$ 254,879
	Construction contingency (Table 12) (30% of C1)	Preliminary Estimate	$ 76,464
	TOTAL CONSTRUCTION COST (C)		**$ 331,343**

TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	**$ 417,191**

PROJECT DESCRIPTION: North Tuncurry Development Project – Vacuum System - Stage V

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 475.00	$ 475.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 3,000.00	$ 3,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 3,000.00	$ 3,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 2,000.00	$ 2,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 1,037.40	$ 1,037.40
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Rising - section will be present if one or more rising mains are specified

Item	Construction of Sewer Rising Mains	Qty	Unit	Rate $/Unit	Amount $
HWR001	Service Location	Item	Lump Sum	$ 60.00	$ 60.00
HWR002	Supply all valves	Item	Lump Sum		$ -
HWR003	Supply all fittings	Item	Lump Sum		$ -
HWR004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
10AVSS	Nominal DN100 PVC pipe	100	m	$ 14.00	$ 1,400.00
HWR005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
10AV03	Nominal DN100 PVC (Trench type 3)	100	m	$ 63.80	$ 6,380.00
HWR006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m to invert in OTR.				
HWR007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m to invert in OTR.				
HWR008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m to invert in OTR.				
HWR009	EMPTY				
HWR010	Extra over rate for installation for Additional compaction		m3	$ 15.30	
HWR011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	
HWR012	Extra over rate for installation to Supply & place & compact non cohesive material.		m3		
HWR013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWR014	Extra over rate for installation for Supply, place and compact aggregate		m3		

HWR015	Supply & place ballast		tonnes	$ 90.00	
HWR016	External Dewatering of pots including establishment & disestablishment	18	no.	$ 1,046.00	$ 18,828.00
HWR017	Supply and place treated timber piling for pipe support		m		
HWR018	Road / creek crossings				
HWR019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWR020	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWR021	Supply and installation of pipe river crossing including supply of MSCL pipe, internal and external welding, testing of welds and 150 thick concrete encasement. Also includes mobilisation and demobilisation of dredge(if required) excavation & disposal of excavated material, backfilling, lay, bed and test for the following MSCL pipe sizes:				
HWR022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206	Item	Lump Sum		$ -
HWR023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWR024	Flow Relief Structures		Each		
HWR025	EMPTY				
HWR026	Supply and construct vent stacks		each		
HWR027	Preparation of line sheets	100	m	$ 1.00	$ 100.00
HWR028	Acceptance testing - rising main		m		
HWR029	**Miscellaneous**				
HWR000	***Sub Total***				$ 26,768.00

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		
HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		

HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 800.00	$ 800.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	**$ 50,080**

B.	**PRE-CONSTRUCTION COST (Table 10)**			
HW0016	Design	20%		$ 10,016.08
HW0017	Project Management of Design	*variable*	*110%*	$ 11,018
HW0018	Land Matters			$ -
HW0024	Community Consultation			
	Sub Total(B1)			$ 21,034
	Pre construction contingency (30% of B1)			$ 6,310
	TOTAL PRE-CONSTRUCTION COST (B)			**$ 27,344**

C.	**CONSTRUCTION COST**		
	Total Estimated Contract Award Sum (A)		$ 50,080
HW0019	Principal Supplied Pipe (as applicable)		$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)		$ -
HW0021	Principal Supplied Fittings (as applicable)		$ -
HW0022	Pump Station HV Power Supply		$ -
HW0023	Construction Management (Table 11)	10%	$ 5,008
	Sub Total (C1)		$ 55,088
	Construction contingency (Table 12) (30% of C1)	Preliminary Estimate	$ 16,527
	TOTAL CONSTRUCTION COST (C)		$ 71,615

TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	**$ 98,959**

PROJECT DESCRIPTION: North Tuncurry Development Project – Vacuum System - Stage W

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 2,537.00	$ 2,537.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 8,000.00	$ 8,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 18,000.00	$ 18,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 2,068.46	$ 2,068.46
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Rising - section will be present if one or more rising mains are specified

Item	Construction of Sewer Rising Mains	Qty	Unit	Rate $/Unit	Amount $
HWR001	Service Location	Item	Lump Sum	$ 642.00	$ 642.00
HWR002	Supply all valves	Item	Lump Sum		$ -
HWR003	Supply all fittings	Item	Lump Sum		$ -
HWR004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
114VSS	Nominal DN200 PVC pipe	80	m	$ 48.00	$ 3,840.00
10AVSS	Nominal DN100 PVC pipe	990	m	$ 14.00	$ 13,860.00
HWR005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
114V03	Nominal DN200 PVC (Trench type 3)	80	m	$ 71.40	$ 5,712.00
10AV03	Nominal DN100 PVC (Trench type 3)	990	m	$ 63.80	$ 63,162.00
HWR006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m to invert in OTR.				
HWR007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m to invert in OTR.				
HWR008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m to invert in OTR.				
HWR009	EMPTY				
HWR010	Extra over rate for installation for Additional compaction		m3	$ 15.30	
HWR011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	
HWR012	Extra over rate for installation to Supply & place & compact non cohesive material.		m3		

HWR013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWR014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWR015	Supply & place ballast		tonnes	$ 90.00	
HWR016	External Dewatering of pots including establishment & disestablishment	0	no.	$ 1,046.00	$ -
HWR017	Supply and place treated timber piling for pipe support		m		
HWR018	Road / creek crossings				
HWR019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWR020	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWR021	Supply and installation of pipe river crossing including supply of MSCL pipe, internal and external welding, testing of welds and 150 thick concrete encasement. Also includes mobilisation and demobilisation of dredge(if required) excavation & disposal of excavated material, backfilling, lay, bed and test for the following MSCL pipe sizes:				
HWR022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206	Item	Lump Sum		$ -
HWR023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWR024	Flow Relief Structures		Each		
HWR025	EMPTY				
HWR026	Supply and construct vent stacks		each		
HWR027	Preparation of line sheets	1070	m	$ 1.00	$ 1,070.00
HWR028	Acceptance testing - rising main		m		
HWR029	**Miscellaneous**				
HWR000	***Sub Total***				$ 88,286.00

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		

HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 8,560.00	$ 8,560.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	**$ 149,451**

B.	**PRE-CONSTRUCTION COST (Table 10)**			
HW0016	Design	20%		$ 29,890.29
HW0017	Project Management of Design	*variable*	*54%*	$ 15,991
HW0018	Land Matters			$ -
HW0024	Community Consultation			
	Sub Total(B1)			$ 45,882
	Pre construction contingency (30% of B1)			$ 13,764
	TOTAL PRE-CONSTRUCTION COST (B)			$ 59,646

C.	**CONSTRUCTION COST**		
	Total Estimated Contract Award Sum (A)		$ 149,451
HW0019	Principal Supplied Pipe (as applicable)		$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)		$ -
HW0021	Principal Supplied Fittings (as applicable)		$ -
HW0022	Pump Station HV Power Supply		$ -
HW0023	Construction Management (Table 11)	10%	$ 14,945
	Sub Total (C1)		$ 164,397
	Construction contingency (Table 12) (30% of C1)	Preliminary Estimate	$ 49,319
	TOTAL CONSTRUCTION COST (C)		$ 213,716

TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	**$ 273,362**

PROJECT DESCRIPTION: North Tuncurry Development Project – Vacuum System - Stage X

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 1,970.00	$ 1,970.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 6,000.00	$ 6,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 6,000.00	$ 6,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 8,000.00	$ 8,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 18,000.00	$ 18,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 1,785.05	$ 1,785.05
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Rising - section will be present if one or more rising mains are specified

Item	Construction of Sewer Rising Mains	Qty	Unit	Rate $/Unit	Amount $
HWR001	Service Location	Item	Lump Sum	$ 343.20	$ 343.20
HWR002	Supply all valves	Item	Lump Sum		$ -
HWR003	Supply all fittings	Item	Lump Sum		$ -
HWR004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
114VSS	Nominal DN200 PVC pipe	445	m	$ 48.00	$ 21,360.00
10AVSS	Nominal DN100 PVC pipe	127	m	$ 14.00	$ 1,778.00
HWR005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
114V03	Nominal DN200 PVC (Trench type 3)	445	m	$ 71.40	$ 31,773.00
10AV03	Nominal DN100 PVC (Trench type 3)	127	m	$ 63.80	$ 8,102.60
HWR006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m to invert in OTR.				
HWR007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m to invert in OTR.				
HWR008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m to invert in OTR.				
HWR009	EMPTY				
HWR010	Extra over rate for installation for Additional compaction		m3	$ 15.30	
HWR011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	
HWR012	Extra over rate for installation to Supply & place & compact non cohesive material.		m3		

HWR013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWR014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWR015	Supply & place ballast		tonnes	$ 90.00	
HWR016	External Dewatering of pots including establishment & disestablishment	16	no.	$ 1,046.00	$ 16,736.00
HWR017	Supply and place treated timber piling for pipe support		m		
HWR018	Road / creek crossings				
HWR019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWR020	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWR021	Supply and installation of pipe river crossing including supply of MSCL pipe, internal and external welding, testing of welds and 150 thick concrete encasement. Also includes mobilisation and demobilisation of dredge(if required) excavation & disposal of excavated material, backfilling, lay, bed and test for the following MSCL pipe sizes:				
HWR022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206	Item	Lump Sum		$ -
HWR023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWR024	Flow Relief Structures		Each		
HWR025	EMPTY				
HWR026	Supply and construct vent stacks		each		
HWR027	Preparation of line sheets	572	m	$ 1.00	$ 572.00
HWR028	Acceptance testing - rising main		m		
HWR029	**Miscellaneous**				
HWR000	***Sub Total***				$ 80,664.80

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		

HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 4,576.00	$ 4,576.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	**$ 130,996**

B.	**PRE-CONSTRUCTION COST (Table 10)**			
HW0016	Design	20%		$ 26,199.17
HW0017	Project Management of Design	*variable*	*64%*	$ 16,715
HW0018	Land Matters			$ -
HW0024	Community Consultation			
	Sub Total(B1)			$ 42,914
	Pre construction contingency (30% of B1)			$ 12,874
	TOTAL PRE-CONSTRUCTION COST (B)			**$ 55,789**

C.	**CONSTRUCTION COST**		
	Total Estimated Contract Award Sum (A)		$ 130,996
HW0019	Principal Supplied Pipe (as applicable)		$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)		$ -
HW0021	Principal Supplied Fittings (as applicable)		$ -
HW0022	Pump Station HV Power Supply		$ -
HW0023	Construction Management (Table 11)	10%	$ 13,100
	Sub Total (C1)		$ 144,095
	Construction contingency (Table 12) (30% of C1)	Preliminary Estimate	$ 43,229
	TOTAL CONSTRUCTION COST (C)		**$ 187,324**

TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	**$ 243,113**

PROJECT DESCRIPTION: North Tuncurry Development Project – Vacuum System - Stage Y

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 2,120.00	$ 2,120.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 8,000.00	$ 8,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 18,000.00	$ 18,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 1,860.16	$ 1,860.16
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Rising - section will be present if one or more rising mains are specified

Item	Construction of Sewer Rising Mains	Qty	Unit	Rate $/Unit	Amount $
HWR001	Service Location	Item	Lump Sum	$ 456.00	$ 456.00
HWR002	Supply all valves	Item	Lump Sum		$ -
HWR003	Supply all fittings	Item	Lump Sum		$ -
HWR004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
10FVSS	Nominal DN150 PVC pipe	545	m	$ 28.00	$ 15,260.00
10AVSS	Nominal DN100 PVC pipe	215	m	$ 14.00	$ 3,010.00
HWR005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
10FV03	Nominal DN150 PVC (Trench type 3)	545	m	$ 67.40	$ 36,733.00
10AV03	Nominal DN100 PVC (Trench type 3)	215	m	$ 63.80	$ 13,717.00
HWR006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m to invert in OTR.				
HWR007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m to invert in OTR.				
HWR008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m to invert in OTR.				
HWR009	EMPTY				
HWR010	Extra over rate for installation for Additional compaction		m3	$ 15.30	
HWR011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	
HWR012	Extra over rate for installation to Supply & place & compact non cohesive material.		m3		

HWR013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWR014	Extra over rate for installation for Supply, place and compact aggregate		m3		
HWR015	Supply & place ballast		tonnes	$ 90.00	
HWR016	External Dewatering of pots including establishment & disestablishment	17	no.	$ 1,046.00	$ 17,782.00
HWR017	Supply and place treated timber piling for pipe support		m		
HWR018	Road / creek crossings				
HWR019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWR020	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWR021	Supply and installation of pipe river crossing including supply of MSCL pipe, internal and external welding, testing of welds and 150 thick concrete encasement. Also includes mobilisation and demobilisation of dredge(if required) excavation & disposal of excavated material, backfilling, lay, bed and test for the following MSCL pipe sizes:				
HWR022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206	Item	Lump Sum		$ -
HWR023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWR024	Flow Relief Structures		Each		
HWR025	EMPTY				
HWR026	Supply and construct vent stacks		each		
HWR027	Preparation of line sheets	760	m	$ 1.00	$ 760.00
HWR028	Acceptance testing - rising main		m		
HWR029	**Miscellaneous**				
HWR000	***Sub Total***				$ 87,718.00

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		

HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		
HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 6,080.00	$ 6,080.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	**$ 145,778**

B.	**PRE-CONSTRUCTION COST (Table 10)**			
HW0016	Design	20%		$ 29,155.63
HW0017	Project Management of Design	*variable*	*59%*	$ 17,231
HW0018	Land Matters			$ -
HW0024	Community Consultation			
	Sub Total(B1)			$ 46,387
	Pre construction contingency (30% of B1)			$ 13,916
	TOTAL PRE-CONSTRUCTION COST (B)			$ 60,303

C.	**CONSTRUCTION COST**		
	Total Estimated Contract Award Sum (A)		$ 145,778
HW0019	Principal Supplied Pipe (as applicable)		$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)		$ -
HW0021	Principal Supplied Fittings (as applicable)		$ -
HW0022	Pump Station HV Power Supply		$ -
HW0023	Construction Management (Table 11)	10%	$ 14,578
	Sub Total (C1)		$ 160,356
	Construction contingency (Table 12) (30% of C1)	Preliminary Estimate	$ 48,107
	TOTAL CONSTRUCTION COST (C)		$ 208,463

TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	**$ 268,765**

PROJECT DESCRIPTION: North Tuncurry Development Project – Vacuum System - Stage Z

Item No.	Item Description	Qty	Unit	Rate $/Unit	Amount $
HW0001	All work not included elsewhere in this schedule	Item	Lump Sum	$ 1,324.00	$ 1,324.00
HW0002	Site Establishment <Insert Max $>	Item	Lump Sum	$ 6,000.00	$ 6,000.00
HW0003	Site Disestablishment <Insert Min $>	Item	Lump Sum	$ 6,000.00	$ 6,000.00
HW0004	Preparation and implementation of the Construction EMP	Item	Lump Sum	$ 4,000.00	$ 4,000.00
HW0005	Preparation and implementation of the Safety Management Plan.	Item	Lump Sum	$ 9,000.00	$ 9,000.00
HW0006	Preparation and implementation of the Traffic Control Plan.	Item	Lump Sum	$ 2,000.00	$ 2,000.00
HW0007	Preparation and Implementation of Quality Management Plan	Item	Lump Sum	$ 1,462.16	$ 1,462.16
HW0008	Community Consultation	Item	Lump Sum	$ -	$ -

Sewer Pipeline - Rising - section will be present if one or more rising mains are specified

Item	Construction of Sewer Rising Mains	Qty	Unit	Rate $/Unit	Amount $
HWR001	Service Location	Item	Lump Sum	$ 351.60	$ 351.60
HWR002	Supply all valves	Item	Lump Sum		$ -
HWR003	Supply all fittings	Item	Lump Sum		$ -
HWR004	Supply all pipe materials including detector tape, pipe protection wrapping, rubber rings and lubricant for following pipe sizes:				
10AVSS	Nominal DN100 PVC pipe	586	m	$ 14.00	$ 8,204.00
HWR005	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Up to 1.5 m depth to invert in OTR.				
10AV03	Nominal DN100 PVC (Trench type 3)	586	m	$ 63.80	$ 37,386.80
HWR006	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >1.5m to 3.0m to invert in OTR.				
HWR007	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >3.0m to 4.5m to invert in OTR.				
HWR008	Clear, excavate, lay, join, bed, backfill & test pipelines (installation). Nominal depth >4.5m to invert in OTR.				
HWR009	EMPTY				
HWR010	Extra over rate for installation for Additional compaction		m3	$ 15.30	
HWR011	Excavate below specified design depth where directed including disposal of excess excavated material		m3	$ 63.00	
HWR012	Extra over rate for installation to Supply & place & compact non cohesive material.		m3		
HWR013	Extra over rate for installation for supply, place and compact stabilised sand cement (14:1) backfill		m3	$ 270.00	
HWR014	Extra over rate for installation for Supply, place and compact aggregate		m3		

HWR015	Supply & place ballast		tonnes	$ 90.00	
HWR016	External Dewatering of pots including establishment & disestablishment	11	no.	$ 1,046.00	$ 11,506.00
HWR017	Supply and place treated timber piling for pipe support		m		
HWR018	Road / creek crossings				
HWR019	Extra over rate for installation of trenchless technique under existing rail line		m		
HWR020	Supply and installation of pipe aerial creek crossing including supply of MSCL pipe with protection coating, internal and external welding, testing of welds. For the following MSCL pipe sizes:				
HWR021	Supply and installation of pipe river crossing including supply of MSCL pipe, internal and external welding, testing of welds and 150 thick concrete encasement. Also includes mobilisation and demobilisation of dredge(if required) excavation & disposal of excavated material, backfilling, lay, bed and test for the following MSCL pipe sizes:				
HWR022	Bulkheads and Trenchstops in accordance with WSAA drawing SEW-1206	Item	Lump Sum		$ -
HWR023	Supply and Install valve pits (excluding valves and fittings)	0	Each	$ -	$ -
HWR024	Flow Relief Structures		Each		
HWR025	EMPTY				
HWR026	Supply and construct vent stacks		each		
HWR027	Preparation of line sheets	586	m	$ 1.00	$ 586.00
HWR028	Acceptance testing - rising main		m		
HWR029	**Miscellaneous**				
HWR000	***Sub Total***				$ 58,034.40

Item No.	Item Description	Qty	Unit		Amount $
HW0009	Restoration - Pipelines:				
HW0009.01	Concrete kerb & gutter	0	m	$ 110.00	$ -
HW0009.02	Concrete driveway	0	m2	$ 178.00	$ -
HW0009.03	Exposed aggregate & stamped driveway	0	m2	$ 220.00	$ -
HW0009.04	Concrete footpath	0	m2	$ 155.00	$ -
HW0009.05	Bitumen footpath	0	m2	$ 117.00	$ -
HW0009.06	Gravel pavement	0	m2	$ 69.00	$ -
HW0009.07	Bitumen pavement		m2		
HW0009.08	AC pavement		m2		
HW0009.09	Pavers		m2		
HW0009.10	Turf		m2		
HW0009.11	Grass seeding		m2		
HW0009.12	Hydromulch		m2		
HW0010	Extra over item for Excavation in rock and disposal of excess excavated material		m3		

HW0011	Acid sulphate soil				
HW0011.01	Initial testing for acid sulphate soils and prepare and submit report		per test		
HW0011.02	Establish treatment facility		Item		
HW0011.03	Handling, treatment and testing of acid sulphate soils		m3		
HW0011.04	Disposal off site of acid sulphate soil		tonne		
HW0012	Preconstruction record				
HW0012.01	Photographic	Item	Lump Sum		$ -
HW0012.02	Video	Item	Lump Sum		$ -
HW0012.03	CCTV	Item	Lump Sum		$ -
HW0013	Work as Constructed Information <Insert Min $>	Item	Lump Sum	$ 4,688.00	$ 4,688.00

A.	**TOTAL ESTIMATED CONTRACT AWARD SUM**	**$ 92,509**

B.	**PRE-CONSTRUCTION COST (Table 10)**			
HW0016	Design	20%		$ 18,501.71
HW0017	Project Management of Design	*variable*	*82%*	$ 15,116
HW0018	Land Matters			$ -
HW0024	Community Consultation			
	Sub Total(B1)			$ 33,618
	Pre construction contingency (30% of B1)			$ 10,085
	TOTAL PRE-CONSTRUCTION COST (B)			**$ 43,703**

C.	**CONSTRUCTION COST**		
	Total Estimated Contract Award Sum (A)		$ 92,509
HW0019	Principal Supplied Pipe (as applicable)		$ -
HW0020	Principal Supplied Valves and Flowmeters (as applicable)		$ -
HW0021	Principal Supplied Fittings (as applicable)		$ -
HW0022	Pump Station HV Power Supply		$ -
HW0023	Construction Management (Table 11)	10%	$ 9,251
	Sub Total (C1)		$ 101,759
	Construction contingency (Table 12) (30% of C1)	Preliminary Estimate	$ 30,528
	TOTAL CONSTRUCTION COST (C)		$ 132,287

	TOTAL PRELIMINARY PROJECT ESTIMATE (B+C) (Preliminary Estimate)	**$ 175,990**

APPENDIX B – DESIGN CALCULATIONS

North Tuncurry Development Project

Gravity Wastewater System Loadings

Stage	Lots	Units	Employment	Total	ADWF	r	PDWF	SA	PWWF
	ET	ET	ET	ET	L/s		L/s	L/s	L/s
A	85			85	0.4	3.3	1.4	2.5	3.9
B	76			76	0.4	3.4	1.3	2.2	3.5
C	82			82	0.4	3.4	1.4	2.4	3.8
D	67	58		125	0.6	3.1	2.0	3.6	5.6
E	76			76	0.4	3.4	1.3	2.2	3.5
F	91			91	0.5	3.3	1.5	2.6	4.1
G	75			75	0.4	3.4	1.3	2.2	3.5
H	74			74	0.4	3.4	1.3	2.1	3.4
I	74			74	0.4	3.4	1.3	2.1	3.4
J	75			75	0.4	3.4	1.3	2.2	3.5
K	64			64	0.3	3.5	1.1	1.9	3.0
L	76			76	0.4	3.4	1.3	2.2	3.5
VC	55	98		153	0.8	3.0	2.3	4.4	6.8
M	73			73	0.4	3.4	1.3	2.1	3.4
N	82			82	0.4	3.4	1.4	2.4	3.8
O	63			63	0.3	3.5	1.1	1.8	2.9
P	69			69	0.3	3.5	1.2	2.0	3.2
Q	42			42	0.2	3.8	0.8	1.2	2.0
R	70			70	0.4	3.5	1.2	2.0	3.2
S	76			76	0.4	3.4	1.3	2.2	3.5
T	80			80	0.4	3.4	1.4	2.3	3.7
U	75			75	0.4	3.4	1.3	2.2	3.5
V	72			72	0.4	3.4	1.2	2.1	3.3
W	78			78	0.4	3.4	1.3	2.3	3.6
X	65	44		109	0.5	3.2	1.8	3.2	4.9
Y	66			66	0.3	3.5	1.2	1.9	3.1
Z	42			42	0.2	3.8	0.8	1.2	2.0
E1			90	90	0.5	3.3	1.5	2.6	4.1
E2			90	90	0.5	3.3	1.5	2.6	4.1
Sub-	1923	200	180						
Total	2123		180						
Total	2303			2303	11.5		38.8	66.8	105.6

E1 Employment 0.005 ET/ floor area (m^2) 17870 floor area (m^2) 90 ETs

E2 Employment No details known at this stage - assumed the same loading as for E1. 90 ETs

North Tuncurry Development Project

Gravity Wastewater System - Pumping Stations Duties

Area	Lots	Units	Employment
A	85		
B	76		
C	82		
D	67	58	
E	76		
F	91		
G	75		
H	74		
I	74		
J	75		
K	64		
L	76		
VC	55	98	
M	73		
N	82		
O	63		
P	69		
Q	42		
R	70		
S	76		
T	80		
U	75		
V	72		
W	78		
X	65	44	
Y	66		
Z	42		
E1			90
E2			90
Sub-Total	1923	200	180
		2123	180
Total		2303	

	Total ET	ADWF L/s	r	PDWF L/s	SA L/s	PWWF L/s	PWWF/ PS L/s	
	85	0.4	3.3	1.4	2.5	3.9	3.9	
	76	0.4	3.4	1.3	2.2	3.5	7.4	
	82	0.4	3.4	1.4	2.4	3.8	11.1	
	125	0.6	3.1	2.0	3.6	5.6	16.7	
	76	0.4	3.4	1.3	2.2	3.5	20.2	
	91	0.5	3.3	1.5	2.6	4.1	24.4	
	75	0.4	3.4	1.3	2.2	3.5	27.8	PS1
	74	0.4	3.4	1.3	2.1	3.4	3.4	
	74	0.4	3.4	1.3	2.1	3.4	6.8	
223	75	0.4	3.4	1.3	2.2	3.5	10.3	PS2
	64	0.3	3.5	1.1	1.9	3.0	3.0	
	76	0.4	3.4	1.3	2.2	3.5	6.5	
	153	0.8	3.0	2.3	4.4	6.8	13.2	
366	73	0.4	3.4	1.3	2.1	3.4	16.6	PS3
	82	0.4	3.4	1.4	2.4	3.8	3.8	
	63	0.3	3.5	1.1	1.8	2.9	2.9	
	69	0.3	3.5	1.2	2.0	3.2	3.2	
	42	0.2	3.8	0.8	1.2	2.0	4.9	
	70	0.4	3.5	1.2	2.0	3.2	8.2	PS6
	76	0.4	3.4	1.3	2.2	3.5	6.7	PS5
	80	0.4	3.4	1.4	2.3	3.7	7.4	
	75	0.4	3.4	1.3	2.2	3.5	10.9	
	72	0.4	3.4	1.2	2.1	3.3	14.2	
305	78	0.4	3.4	1.3	2.3	3.6	17.8	PS4
	109	0.5	3.2	1.8	3.2	4.9	4.9	
	66	0.3	3.5	1.2	1.9	3.1	8.0	
	42	0.2	3.8	0.8	1.2	2.0	10.0	PS7
	90	0.5	3.3	1.5	2.6	4.1		
	90	0.5	3.3	1.5	2.6	4.1		
	2303.0	11.5		38.8	66.8	105.6		105.6

	L/EP/d	240
	EP/ET	1.8
ADWF	L/s/ET	0.005

Pumping Stations Staging:

Stage 1	PS 1 pumping to MidCoast Water system	105.6
Stage 2	PS 2 pumping to PS 1	67.8 L/s
Stage 3	PS 3 pumping to PS 2	24.8 L/s
Stage 4	PS 4 pumping to PS 2	24.5 L/s
Stage 5	PS 5 pumping to PS 4	6.7 L/s
Stage 6	PS 6 pumping to PS 3	8.2 L/s
Stage 7	PS 7 pumping to PS 1	10.0 L/s

North Tuncurry Development Project

Gravity Wastewater System - Pumping Stations Preliminary Design

Pumping Station	WET WELL DESIGN										RISING MAIN HEAD														PUMPS		
	Ultimate Pump Rate	Wet Well Dia.	Surface	IL Depth	TWL	Control Volume	Control Depth	BWL	Min Subm.	PS Depth	(TWL+BWL)/2	High Point	Static Head	RM Length	RM Pipe Size	Roughness	Loss Coe.	Velocity	Velocity Head	Reynold's Number	Friction Factor	Friction Loss	Minor Loss	RM Head (m)	Pump Rate	Effic.	Pump motor rating
	m3/s	m	RLm	RLm	RLm	L	m	RLm	m	m	RLm	RLm	m	m	mm	mm	estimate	m/s	m			m	m	m	m3/s	%	kW
1	0.106	3	4.2	-1.2	-1.35	9506	1.35	-2.70	0.2	7.1																	
2	0.068	2.4	4.2	-1.4	-1.55	6102	1.35	-2.90	0.2	7.3	-2.2	5.2	7.4	495	200	0.1	3	2.2	0.2	427709	0.017	9.7	0.7	17.9	0.067798	70%	17.0
3	0.025	1.8	4.4	-1.1	-1.25	2232	0.88	-2.13	0.2	6.7	-1.7	4.2	5.9	490	140	0.1	3	1.6	0.1	223536	0.021	9.6	0.4	15.9	0.024803	70%	5.5
4	0.025	1.8	4.2	-1.3	-1.45	2205	0.87	-2.32	0.2	6.7	-1.9	4.4	6.3	250	140	0.1	1	1.6	0.1	220832	0.021	4.8	0.1	11.2	0.024503	70%	3.9
5	0.007	1.5	4.2	-0.8	-0.95	603	0.35	-1.30	0.2	5.7	-1.1	3.2	4.3	560	90	0.3	2	1.1	0.1	93909	0.028	9.9	0.1	14.3	0.006699	70%	1.3
6	0.008	1.5	4.2	-1.3	-1.45	737	0.42	-1.87	0.2	6.3	-1.7	3.2	4.9	480	90	0.2	1	1.3	0.1	114820	0.026	11.8	0.1	16.7	0.00819	70%	1.9
7	0.010	1.5	4.2	-0.8	-0.95	899	0.51	-1.46	0.2	5.9	-1.2	3.4	4.6	640	90	0.1	2	1.6	0.1	140064	0.023	21.0	0.3	25.9	0.009991	70%	3.6

North Tuncurry Development Project

Gravity Wastewater System - Pumping Stations and Rising Mains Detention Times

		Pumping Station						1	Pumping Station						2	Pumping Station						3	Pumping Station						4	Pumping Station						5	Pumping Station						6	Pumping Station						7
		Loading	Accum. Loading	ADWF	Pump Rate	RM Length	RM Dia	Det. Time	Accum. Loading	ADWF	Pump Rate	RM Length	RM Dia	Det. Time	Accum. Loading	ADWF	Pump Rate	RM Length	RM Dia	Det. Time	Accum. Loading	ADWF	Pump Rate	RM Length	RM Dia	Det. Time	Accum. Loading	ADWF	Pump Rate	RM Length	RM Dia	Det. Time	Accum. Loading	ADWF	Pump Rate	RM Length	RM Dia	Det. Time	Accum. Loading	ADWF	Pump Rate	RM Length	RM Dia	Det. Time	Accum. Loading	ADWF	Pump Rate	RM Length	RM Dia	Det. Time
		ET	ET	L/s	L/s	m	m	Hr	ET	L/s	L/s	m	m	Hr	ET	L/s	L/s	m	m	Hr	ET	L/s	L/s	m	m	Hr	ET	L/s	L/s	m	m	Hr	ET	L/s	L/s	m	m	Hr	ET	L/s	L/s	m	m	Hr	ET	L/s	L/s	m	m	Hr
PS1	A	85	85	0.43	105.6	1800	0.3	89.3																																									
	B	76	161	0.81	105.6	1800	0.3	47.2																																								
	C	82	243	1.22	105.6	1800	0.3	31.2																																								
	D	125	368	1.84	105.6	1800	0.3	20.6																																								
	E	76	444	2.22	105.6	1800	0.3	17.1																																								
	F	91	535	2.68	105.6	1800	0.3	14.2																																								
	G	75	610	3.05	105.6	1800	0.3	12.4																																								
PS2	H	74	684	3.42	105.6	1800	0.3	11.1	74	0.37	67.8	495	0.2	16.2																																			
	I	74	758	3.79	105.6	1800	0.3	10.0	148	0.74	67.8	495	0.2	8.1																																			
	J	75	833	4.17	105.6	1800	0.3	9.1	223	1.12	67.8	495	0.2	5.4																																			
PS3	K	64	897	4.49	105.6	1800	0.3	8.5	287	1.44	67.8	495	0.2	4.2	64	0.32	24.8	490	0.14	8.5																													
	L	76	973	4.87	105.6	1800	0.3	7.8	363	1.82	67.8	495	0.2	3.3	140	0.70	24.8	490	0.14	3.9																													
	VC	153	1126	5.63	105.6	1800	0.3	6.7	516	2.58	67.8	495	0.2	2.3	293	1.47	24.8	490	0.14	1.9																													
	M	73	1199	6.00	105.6	1800	0.3	6.3	589	2.95	67.8	495	0.2	2.0	366	1.83	24.8	490	0.14	1.5																													
PS4	N	82	1281	6.41	105.6	1800	0.3	5.9	671	3.36	67.8	495	0.2	1.8							82	0.41	24.5	250	0.14	4.1																							
	T	80	1361	6.81	105.6	1800	0.3	5.6	751	3.76	67.8	495	0.2	1.6							162	0.81	24.5	250	0.14	2.1																							
	U	75	1436	7.18	105.6	1800	0.3	5.3	826	4.13	67.8	495	0.2	1.5							237	1.19	24.5	250	0.14	1.4																							
	V	72	1508	7.54	105.6	1800	0.3	5.0	898	4.49	67.8	495	0.2	1.3							309	1.55	24.5	250	0.14	1.1																							
	W	78	1586	7.93	105.6	1800	0.3	4.8	976	4.88	67.8	495	0.2	1.2							387	1.94	24.5	250	0.14	0.9																							
PS5	P	69	1655	8.28	105.6	1800	0.3	4.6	1045	5.23	67.8	495	0.2	1.2							456	2.28	24.5	250	0.14	0.7	69	0.35	7	560	0.09	3.4																	
	S	76	1731	8.66	105.6	1800	0.3	4.4	1121	5.61	67.8	495	0.2	1.1							532	2.66	24.5	250	0.14	0.6	145	0.73	7	560	0.09	1.6																	
PS6	O	63	1794	8.97	105.6	1800	0.3	4.2	1184	5.92	67.8	495	0.2	1.0	429	2.15	24.8	490	0.14	1.3																			63	0.32	7	480	0.09	3.2						
	Q	42	1836	9.18	105.6	1800	0.3	4.1	1226	6.13	67.8	495	0.2	1.0	471	2.36	24.8	490	0.14	1.2																			105	0.53	7	480	0.09	1.9						
	R	70	1906	9.53	105.6	1800	0.3	4.0	1296	6.48	67.8	495	0.2	0.9	541	2.71	24.8	490	0.14	1.0																			175	0.88	7	480	0.09	1.2						
PS7	X	109	2015	10.08	105.6	1800	0.3	3.8																																					109	0.55	10	640	0.09	2.5
	Y	66	2081	10.41	105.6	1800	0.3	3.6																																					175	0.88	10	640	0.09	1.6
	Z	42	2123	10.62	105.6	1800	0.3	3.6																																					217	1.09	10	640	0.09	1.3
	E1	90	90	0.45	105.6	1800	0.3	84.3																																								
	E2	90	90	0.45	105.6	1800	0.3	84.3																																								

North Tuncurry Development Project

Vacuum Wastewater System Loadings

Stage	Lots	Units	Employment	Total	ADWF	r	PDWF	SA	PWWF
	ET	ET	ET	ET	L/s		L/s	L/s	L/s
A	85			85	0.4	3.3	1.4	1.0	2.4
B	76			76	0.4	3.4	1.3	0.9	2.2
C	82			82	0.4	3.4	1.4	1.0	2.4
D	67	58		125	0.6	3.1	2.0	1.5	3.5
E	76			76	0.4	3.4	1.3	0.9	2.2
F	91			91	0.5	3.3	1.5	1.1	2.6
G	75			75	0.4	3.4	1.3	0.9	2.2
H	74			74	0.4	3.4	1.3	0.9	2.2
I	74			74	0.4	3.4	1.3	0.9	2.2
J	75			75	0.4	3.4	1.3	0.9	2.2
K	64			64	0.3	3.5	1.1	0.8	1.9
L	76			76	0.4	3.4	1.3	0.9	2.2
VC	55	98		153	0.8	3.0	2.3	1.8	4.2
M	73			73	0.4	3.4	1.3	0.9	2.1
N	82			82	0.4	3.4	1.4	1.0	2.4
O	63			63	0.3	3.5	1.1	0.8	1.9
P	69			69	0.3	3.5	1.2	0.8	2.0
Q	42			42	0.2	3.8	0.8	0.5	1.3
R	70			70	0.4	3.5	1.2	0.8	2.1
S	76			76	0.4	3.4	1.3	0.9	2.2
T	80			80	0.4	3.4	1.4	1.0	2.3
U	75			75	0.4	3.4	1.3	0.9	2.2
V	72			72	0.4	3.4	1.2	0.9	2.1
W	78			78	0.4	3.4	1.3	0.9	2.3
X	65	44		109	0.5	3.2	1.8	1.3	3.1
Y	66			66	0.3	3.5	1.2	0.8	1.9
Z	42			42	0.2	3.8	0.8	0.5	1.3
E1			90	90	0.5	3.3	1.5	1.1	2.6
E2			90	90	0.5	3.3	1.5	1.1	2.6
Sub-	1923	200	180						
Total	2123		180						
Total	2303			2303	11.5		38.8	27.6	66.5

North Tuncurry Development Project

Preliminary Vacuum Mains Sizing

Area	Lots	Units	Employment	TOTAL	Vac main assigned	Accum. ET	Line Size
A	85			85	1	368	300
B	76			76	1	283	225
C	82			82	1	207	200
D	67	58		125	1	125	160
E	76			76	2	390	300
F	91			91	2	314	225
G	75			75	2	223	200
H	74			74	2	148	200
I	74			74	2	74	160
J	75			75	3	368	300
K	64			64	3	293	225
L	76			76	3	229	200
VC	55	98		153	3	153	200
M	73			73	4	399	300
N	82			82	4	326	225
O	63			63	4	244	200
P	69			69	4	181	200
Q	42			42	4	112	160
R	70			70	4	70	125
S	76			76	5	471	300
T	80			80	5	395	300
U	75			75	5	315	225
V	72			72	5	240	200
W	78			78	5	168	200
X	65	44		109	6	217	200
Y	66			66	6	108	150
Z	42			42	6	42	110
E1			90	90	1		
E2			90	90	5	90	

Sub-Total	1923	200	180	
	2123		180	
Total	2303			

North Tuncurry Development Project

Option 1 and Option 2 Central WWPS Rising Main Sizing

1. OPTION A - GRAVITY SEWER SYSTEM

1.1 Discharge Pipework Sizing

Design Flow	m^3/s	0.1056	0.1056	0.1056	0.1056	0.1056	0.1056	0.1056	0.1056
		DN1	DN2	DN3	DN4	DN5	DN6	DN7	DN8
Internal Diameter	mm	102	157	212	239	265	322	401	480
Velocity achieved	m/s	12.9	5.5	3.0	2.4	1.9	1.3	0.8	0.6
Is velocity < 4m/s (max recommended velocity)?		NO!!!	NO!!!	Yes	Yes	Yes	Yes	Yes	Yes
Is velocity ≥ 2m/s min recommended velocity)?		Yes	Yes	Yes	Yes	NO!!!	NO!!!	NO!!!	NO!!!

Selected discharge pipework diameter: **212** **mm**

1.2 Rising Main Sizing

Design Flow	m^3/s	0.1056	0.1056	0.1056	0.1056	0.1056	0.1056
		DN1	DN2	DN3	DN4	DN5	DN6
Internal Diameter	mm	160	210	235	260	313	387
Velocity achieved	m/s	5.3	3.0	2.4	2.0	1.4	0.9
Is velocity < 3m/s (max recommended velocity)?		NO!!!	NO!!!	Yes	Yes	Yes	Yes
Slime Control Velocity	m/s	0.96	1.00	1.01	1.02	1.05	1.08
Is velocity ≥ the slime control velocity?		Yes	Yes	Yes	Yes	Yes	NO!!!
Minimum Slime Control Velocity	m/s	0.56	0.58	0.60	0.60	0.62	0.64
Is velocity ≥ the slime control velocity?		Yes	Yes	Yes	Yes	Yes	Yes
Is velocity ≥ 0.6m/s (min velocity for solids transport)?		Yes	Yes	Yes	Yes	Yes	Yes

Selected rising main diameter: **313** **mm**

2. OPTION B- VACUUM SEWER SYSTEM

2.1 Discharge Pipework Sizing

Design Flow	m^3/s	0.0665	0.0665	0.0665	0.0665	0.0665	0.0665	0.0665	0.0665
		DN1	DN2	DN3	DN4	DN5	DN6	DN7	DN8
Internal Diameter	mm	102	157	212	239	265	322	401	480
Velocity achieved	m/s	8.1	3.4	1.9	1.5	1.2	0.8	0.5	0.4
Is velocity < 4m/s (max recommended velocity)?		NO!!!	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Is velocity ≥ 2m/s min recommended velocity)?		Yes	Yes	NO!!!	NO!!!	NO!!!	NO!!!	NO!!!	NO!!!

Selected discharge pipework diameter: **157** **mm**

2.2 Rising Main Sizing

Design Flow	m^3/s	0.0665	0.0665	0.0665	0.0665	0.0665	0.0665	0.0665	0.0665
		DN1	DN2	DN3	DN4	DN5	DN6
Internal Diameter	mm	160	210	235	260	313	387
Velocity achieved	m/s	3.3	1.9	1.5	1.3	0.9	0.6
Is velocity < 3m/s (max recommended velocity)?		NO!!!	Yes	Yes	Yes	Yes	Yes
Slime Control Velocity	m/s	0.96	1.00	1.01	1.02	1.05	1.08
Is velocity ≥ the slime control velocity?		Yes	Yes	Yes	Yes	NO!!!	NO!!!
Minimum Slime Control Velocity	m/s	0.56	0.58	0.60	0.60	0.62	0.64
Is velocity ≥ the slime control velocity?		Yes	Yes	Yes	Yes	Yes	NO!!!
Is velocity ≥ 0.6m/s (min velocity for solids transport)?		Yes	Yes	Yes	Yes	Yes	NO!!!

Selected rising main diameter: **235** **mm**

North Tuncurry Development Project

Option 1 and Option 2 Central WWPS Wet Well Sizing

1. OPTION A - GRAVITY SEWER SYSTEM

Design Flow	m^3/s	0.1056

		DN1	DN2	DN3	DN4	DN5	DN6	DN7
Wet Well Diameter	m	1.8	2.1	2.4	2.7	3	3.8	4.6
Control Depth	m	3.73	2.74	2.10	1.66	1.34	0.84	0.57

Max control depth 1.5m, min 0.3m

Sewer Invert Level	RLm	-1.20
MTWL	RLm	-1.20
TWL	RLm	-1.35
BWL	RLm	-2.69
Minimum Submergence	m	0.55
FL	RLm	-3.24
SL	RLm	4.2
WWPS Depth	m	7.44

Selected Wet Well Diameter **3** **m**

2. OPTION B - VACUUM SEWER SYSTEM

Design Flow	m^3/s	0.0665

		DN1	DN2	DN3	DN4	DN5	DN6	DN7
Wet Well Diameter	m	1.8	2.1	2.4	2.7	3	3.8	4.6
Control Depth	m	2.35	1.73	1.32	1.05	0.85	0.53	0.36

Max control depth 1.5m, min 0.3m

Sewer Invert Level	RLm	2.90
MTWL	RLm	2.90
TWL	RLm	2.75
BWL	RLm	1.43
Minimum Submergence	m	0.55
FL	RLm	0.88
SL	RLm	4.2
WWPS Depth	m	3.32

Selected Wet Well Diameter **2.4** **m**

North Tuncurry Development Project

Option 1 Central WWPS Rising Main Preliminary Design

1. OPTION A - GRAVITY SEWER SYSTEM

1.1 STATIC HEAD

Discharge Flow	m^3/s	0.1056
Average Liquid Level	RLm	-2.02
Highest Level	RLm	7.9
Static Head	m	9.92

HWC Design Manual	
velocity	k (mm)
2.00	0.06
1.50	0.15
1.00	0.30

1.2 FRICTION LOSSES

Temperature	°C	20
Kinematic Viscosity	m^2/s	1.01E-06

Pipe	Design Flow	Length of Pipe	Pipe Material	Pipe Size ID	Roughness	Loss Coefficient (Table)	Velocity	Velocity Head	Reynolds Number	Friction Factor	Friction Loss	Minor Loss	Pipe Loss
	m^3/s	m		mm	mm		m/s	m			m	m	m
Discharge - A	0.106	0.55	DICL	212.0	0.060	1.2	2.99	0.46	628478	0.0160	0.0	0.5	0.5
Discharge - B	0.106	3.00	DICL	212.0	0.060	0.0	2.99	0.46	628478	0.0160	0.1	0.0	0.1
Discharge - C	0.106	9.50	DICL	212.0	0.060	0.4	2.99	0.46	628478	0.0160	0.3	0.2	0.5
Rising Main - D	0.106	10521		313.0	0.188	2.6	1.37	0.10	425678	0.0185	59.8	0.2	60.1

			Discharge Pipe A		Discharge Pipe B		Discharge Pipe C		Rising Main D	
Loss Coefficient		Each	Input No. of	Total k	Input No. of	Total k	Input No. of	Total k	Input No. of	Total k
Entry Loss	Sharp edged	0.5	0	0.0	0	0.0	0	0.0	0	0.0
Bends	22.5	0.2	0	0.0	0	0.0	0	0.0	3	0.6
	45	0.4	0	0.0	0	0.0	1	0.4	0	0.0
	90	1	0	0.0	0	0.0	0	0.0	2	2.0
Tees	90 Allow	1.2	0	0.0	0	0.0	0	0.0	0	0.0
	45 Allow	0.6	0	0.0	0	0.0	0	0.0	0	0.0
Expansion	Large expansion Allow	0.8	0	0.0	0	0.0	0	0.0	0	0.0
	Small expansion Allow	0.2	0	0.0	0	0.0	0	0.0	0	0.0
Contraction	Large contraction Allow	0.5	0	0.0	0	0.0	0	0.0	0	0.0
	Small contraction Allow	0.2	0	0.0	0	0.0	0	0.0	0	0.0
Tapers	Contraction	0.1	0	0.0	0	0.0	0	0.0	0	0.0
	Large expansion allow	0.12	0	0.0	0	0.0	0	0.0	0	0.0
	Small expansion allow	0.03	0	0.0	0	0.0	0	0.0	0	0.0
Exit loss	Sharp edged	1	0	0.0	0	0.0	0	0.0	0	0.0
Valves	Gate (fully open)	0.15	1	0.2	0	0.0	0	0.0	0	0.0
	Globe	10	0	0.0	0	0.0	0	0.0	0	0.0
	Reflux	1	1	1.0	0	0.0	0	0.0	0	0.0
	Three valve	5	0	0.0	0	0.0	0	0.0	0	0.0
Total				1.2		0.0		0.4		2.6

1.3 TOTAL HEAD

	m	71.2

1.4 PUMPS kW RATING

Pump flow	m^3/s	0.1056
ADWF	m^3/s	0.012
Pump efficiency		0.6
Power	kW	122.85

2. OPTION B - VACUUM SEWER SYSTEM

2.1 STATIC HEAD

Discharge Flow	m^3/s	0.0665
Average Liquid Level	RLm	2.09
Highest Level	RLm	7.9
Static Head	m	5.81

HWC Design Manual	
velocity	k (mm)
2.00	0.06
1.50	0.15
1.00	0.30

2.2 FRICTION LOSSES

Temperature	°C	20
Kinematic Viscosity	m^2/s	1.01E-06

Pipe	Design Flow	Length of Pipe	Pipe Material	Pipe Size ID	Roughness	Loss Coefficient (Table)	Velocity	Velocity Head	Reynolds Number	Friction Factor	Friction Loss	Minor Loss	Pipe Loss
	m^3/s	m		mm	mm		m/s	m			m	m	m
Discharge - A	0.067	0.55	DICL	157.0	0.060	1.2	3.44	0.60	534421	0.0169	0.0	0.7	0.7
Discharge - B	0.067	3.00	DICL	157.0	0.060	0.0	3.44	0.60	534421	0.0169	0.2	0.0	0.2
Discharge - C	0.067	9.50	DICL	157.0	0.060	0.4	3.44	0.60	534421	0.0169	0.6	0.2	0.9
Rising Main - D	0.067	10521		235.0	0.144	2.6	1.53	0.12	357039	0.0188	100.7	0.3	101.0

Loss Coefficient		Each	Discharge Pipe A		Discharge Pipe B		Discharge Pipe C		Rising Main D	
			Input No. of	Total k	Input No. of	Total k	Input No. of	Total k	Input No. of	Total k
Entry Loss	Sharp edged	0.5	0	0.0	0	0.0	0	0.0	0	0.0
Bends	22.5	0.2	0	0.0	0	0.0	0	0.0	3	0.6
	45	0.4	0	0.0	0	0.0	1	0.4	0	0.0
	90	1	0	0.0	0	0.0	0	0.0	2	2.0
Tees	90 Allow	1.2	0	0.0	0	0.0	0	0.0	0	0.0
	45 Allow	0.6	0	0.0	0	0.0	0	0.0	0	0.0
Expansion	Large expansion Allow	0.8	0	0.0	0	0.0	0	0.0	0	0.0
	Small expansion Allow	0.2	0	0.0	0	0.0	0	0.0	0	0.0
Contraction	Large contraction Allow	0.5	0	0.0	0	0.0	0	0.0	0	0.0
	Small contraction Allow	0.2	0	0.0	0	0.0	0	0.0	0	0.0
Tapers	Contraction	0.1	0	0.0	0	0.0	0	0.0	0	0.0
	Large expansion allow	0.12	0	0.0	0	0.0	0	0.0	0	0.0
	Small expansion allow	0.03	0	0.0	0	0.0	0	0.0	0	0.0
Exit loss	Sharp edged	1	0	0.0	0	0.0	0	0.0	0	0.0
Valves	Gate (fully open)	0.15	1	0.2	0	0.0	0	0.0	0	0.0
	Globe	10	0	0.0	0	0.0	0	0.0	0	0.0
	Reflux	1	1	1.0	0	0.0	0	0.0	0	0.0
	Three valve	5	0	0.0	0	0.0	0	0.0	0	0.0
Total				1.2		0.0		0.4		2.6

2.3 TOTAL HEAD m 108.6

1.4 PUMPS kW RATING

Pump flow	m^3/s	0.0665
ADWF	m^3/s	0.012
Pump efficiency		0.6
Power	kW	118.09

North Tuncurry Development Project

Option 2 Central WWPS Rising Main Preliminary Design

1. OPTION A - GRAVITY SEWER SYSTEM

1.1 STATIC HEAD

Discharge Flow	m^3/s	0.1056
Average Liquid Level	RLm	-2.02
Highest Level	RLm	4.6
Static Head	m	6.62

HWC Design Manual	
velocity	k (mm)
2.00	0.06
1.50	0.15
1.00	0.30

1.2 FRICTION LOSSES

Temperature	°C	20
Kinematic Viscosity	m^2/s	1.01E-06

Pipe	Design Flow	Length of Pipe	Pipe Material	Pipe Size ID	Roughness	Loss Coefficient (Table)	Velocity	Velocity Head	Reynolds Number	Friction Factor	Friction Loss	Minor Loss	Pipe Loss
	m^3/s	m		mm	mm		m/s	m			m	m	m
Discharge - A	0.106	0.55	DICL	212.0	0.060	1.2	2.99	0.46	628478	0.0160	0.0	0.5	0.5
Discharge - B	0.106	3.00	DICL	212.0	0.060	0.0	2.99	0.46	628478	0.0160	0.1	0.0	0.1
Discharge - C	0.106	9.50	DICL	212.0	0.060	0.4	2.99	0.46	628478	0.0160	0.3	0.2	0.5
Rising Main - D	0.106	1801		313.0	0.188	6.6	1.37	0.10	425678	0.0185	10.2	0.6	10.9
Common	0.371	10		401.0	0.060	6.6	2.93	0.44	1166065	0.0140	0.2	2.9	3.0

			Discharge Pipe A		Discharge Pipe B		Discharge Pipe C		Rising Main D		Common	
Loss Coefficient		Each	Input No. of	Total k	Input No. of	Total k	Input No. of	Total k	Input No. of	Total k	Input No. of	Total k
Entry Loss	Sharp edged	0.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Bends	22.5	0.2	0	0.0	0	0.0	0	0.0	7	1.4	1	0.2
	45	0.4	0	0.0	0	0.0	1	0.4	2	0.8	6	2.4
	90	1	0	0.0	0	0.0	0	0.0	3	3.0	1	1.0
Tees	90 Allow	1.2	0	0.0	0	0.0	0	0.0	1	1.2	0	0.0
	45 Allow	0.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Expansion	Large expansion Allow	0.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	Small expansion Allow	0.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Contraction	Large contraction Allow	0.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	Small contraction Allow	0.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Tapers	Contraction	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	Large expansion allow	0.12	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	Small expansion allow	0.03	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Exit loss	Sharp edged	1	0	0.0	0	0.0	0	0.0	0	0.0	1	1.0
Valves	Gate (fully open)	0.15	1	0.2	0	0.0	0	0.0	1	0.2	1	0.2
	Globe	10	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	Reflux	1	1	1.0	0	0.0	0	0.0	0	0.0	0	0.0
	Three valve	5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total				1.2		0.0		0.4		6.6		4.8

1.3 TOTAL HEAD

	m	21.7

1.4 PUMPS kW RATING

Pump flow	m^3/s	0.1056
ADWF	m^3/s	0.012
Pump efficiency		0.6
Power	kW	37.43

2. OPTION B - VACUUM SEWER SYSTEM

2.1 STATIC HEAD

Discharge Flow	m^3/s	0.0665
Pump Level	RLm	4.20
Highest Level	RLm	4.60
Static Head	m	0.40

HWC Design Manual	
velocity	k (mm)
2.00	0.06
1.50	0.15
1.00	0.30

2.2 FRICTION LOSSES

Temperature	°C	20
Kinematic Viscosity	m^2/s	1.01E-06

Pipe	Design Flow	Length of Pipe	Pipe Material	Pipe Size ID	Roughness	Loss Coefficient (Table)	Velocity	Velocity Head	Reynolds Number	Friction Factor	Friction Loss	Minor Loss	Pipe Loss
	m^3/s	m		mm	mm		m/s	m			m	m	m
Discharge - A	0.067	15.00	DICL	157.0	0.060	1.2	3.44	0.60	534421	0.0169	1.0	0.7	1.7
Rising Main - D	0.067	1801		235.0	0.144	6.6	1.53	0.12	357039	0.0188	17.2	0.8	18.0
Common	0.265	10		401.0	0.060	4.8	2.10	0.22	833803	0.0144	0.1	1.1	1.1

			Discharge Pipe A		Discharge Pipe B		Discharge Pipe C		Rising Main D		Common	
Loss Coefficient		Each	Input No. of	Total k	Input No. of	Total k	Input No. of	Total k	Input No. of	Total k	Input No. of	Total k
Entry Loss	Sharp edged	0.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Bends	22.5	0.2	0	0.0	0	0.0	0	0.0	7	1.4	1	0.2
	45	0.4	0	0.0	0	0.0	1	0.4	2	0.8	6	2.4
	90	1	0	0.0	0	0.0	0	0.0	3	3.0	1	1.0
Tees	90 Allow	1.2	0	0.0	0	0.0	0	0.0	1	1.2	0	0.0
	45 Allow	0.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Expansion	Large expansion Allow	0.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	Small expansion Allow	0.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Contraction	Large contraction Allow	0.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	Small contraction Allow	0.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Tapers	Contraction	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	Large expansion allow	0.12	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	Small expansion allow	0.03	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Exit loss	Sharp edged	1	0	0.0	0	0.0	0	0.0	0	0.0	1	1.0
Valves	Gate (fully open)	0.15	1	0.2	0	0.0	0	0.0	1	0.2	1	0.2
	Globe	10	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	Reflux	1	1	1.0	0	0.0	0	0.0	0	0.0	0	0.0
	Three valve	5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total				1.2		0.0		0.4		6.6		4.8

2.3 TOTAL HEAD

m 21.2

2.4 PUMPS kW RATING

Pump flow	m^3/s	0.0665
ADWF	m^3/s	0.012
Pump efficiency		0.6
Power	kW	23.09

North Tuncurry Development Project

Option 3 Central WWPS Wet Well Sizing

1. OPTION A - GRAVITY SEWER SYSTEM

Design Flow **m^3/s** **0.194** (pumping alone)

		DN1	DN2	DN3	DN4	DN5	DN6	DN7
Wet Well Diameter	m	1.8	2.1	2.4	2.7	3	3.8	4.6
Control Depth	m	6.86	5.04	3.86	3.05	2.47	1.54	1.05

Max control depth 1.5m, min 0.3m

Sewer Invert Level	RLm	-1.20
MTWL	RLm	-1.20
TWL	RLm	-1.35
BWL	RLm	-2.40
Minimum Submergence	m	0.63
FL	RLm	-3.03
SL	RLm	4.2
WWPS Depth	m	7.23

Selected Wet Well Diameter **4.6** **m**

2. OPTION B - VACUUM SEWER SYSTEM

Design Flow **m^3/s** **0.139** (pumping alone)

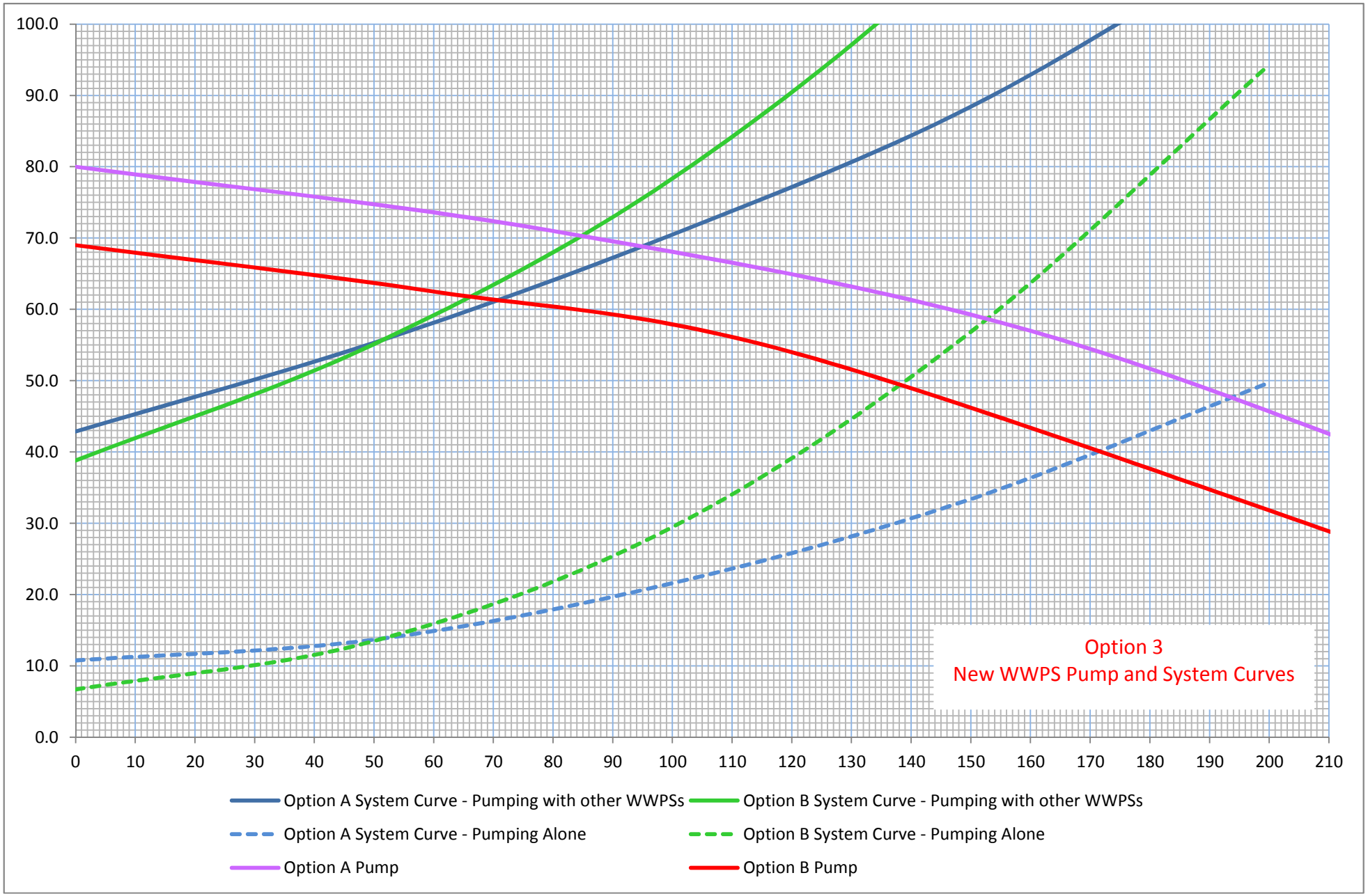
		DN1	DN2	DN3	DN4	DN5	DN6	DN7
Wet Well Diameter	m	1.8	2.1	2.4	2.7	3	3.8	4.6
Control Depth	m	4.92	3.61	2.77	2.18	1.77	1.10	0.75

Max control depth 1.5m, min 0.3m

Sewer Invert Level	RLm	2.90
MTWL	RLm	2.90
TWL	RLm	2.75
BWL	RLm	1.65
Minimum Submergence	m	0.63
FL	RLm	1.02
SL	RLm	4.2
WWPS Depth	m	3.18

Selected Wet Well Diameter **3.8** **m**

Option 3 Pump and System Curves



North Tuncurry Development Project

Option 3A Central WWPS Pumping with Other WWPS

Temperature(°C)	20	Rising Main IL at the WWPS	4.2	Tuncurry No. 23WWPS Flow	L/s	237
Kinematic Viscosity (m^2/s)	1.01E-06	Rising Main Discharge Level at WWTP	5.4	Flow from WWPS 1, 10, 6	L/s	358
		Common Rising Main Discharge Level at WWTP	7.9			

OPTION 3A - Gravity Wastewater Reticulation System

Pumping with Other WWPS

Flow		0.05				0.1				0.15				0.2		
Pipe Description	**Discharge Pipework**	**Rising Main**	**Common RM**	**Discharge**	**Discharge Pipework**	**Rising Main**	**Common RM**	**Discharge**	**Discharge Pipework**	**Rising Main**	**Common RM**	**Discharge**	**Discharge Pipework**	**Rising Main**	**Common RM**	**Discharge**
Design Flow (m3/s)	0.050	0.050	0.287	0.645	0.100	0.100	0.337	0.695	0.150	0.150	0.387	0.745	0.200	0.200	0.437	0.795
Length of Pipe (m)	13.05	655	9866	3	13.05	655	9866	3	13.05	655	9866	3	13.05	655	9866	3
Pipe Material																
Pipe Size ID (mm)	212	313	480	480	212	313	480	480	212	313	480	480	212	313	480	480
Roughness (mm)	0.175	0.300	0.135	0.060	0.060	0.210	0.085	0.060	0.060	0.069	0.060	0.060	0.060	0.060	0.060	0.060
Loss Coeficient (Table)	1.6	2.0	2.0	2.0	1.6	2.0	2.0	2.0	1.6	2.0	2.0	2.0	1.6	2.0	2.0	2.0
Velocity (m/s)	1.42	0.65	1.59	3.56	2.83	1.30	1.86	3.84	4.25	1.95	2.14	4.12	5.67	2.60	2.41	4.39
Velocity Head (m)	0.10	0.02	0.13	0.65	0.41	0.09	0.18	0.75	0.92	0.19	0.23	0.86	1.64	0.34	0.30	0.98
Reynold's Number	297575	201552	754401	1695431	595149	403104	885830	1826860	892724	604656	1017259	1958289	1190298	806209	1148688	2089718
Friction Factor	0.0200	0.0210	0.0158	0.0134	0.0160	0.0189	0.0146	0.0134	0.0157	0.0155	0.0138	0.0133	0.0155	0.0149	0.0137	0.0133
Friction Loss (m)	0.1	0.9	41.7	0.0	0.4	3.4	53.2	0.1	0.9	6.3	66.4	0.1	1.6	10.7	83.9	0.1
Minor Loss (m)	0.2	0.0	0.3	1.3	0.6	0.2	0.4	1.5	1.4	0.4	0.5	1.7	2.5	0.7	0.6	2.0
Pipe Friction Loss(m)	0.3	1.0	41.9	1.3	1.0	3.6	53.5	1.6	2.3	6.7	66.9	1.8	4.1	11.4	84.5	2.0
Static Head (m)		7.28		3.5		7.28		3.5		7.28		3.5		7.28		3.5
Total Head (m)		55.3				70.5				88.4				112.9		

System Curve

Flow (L/s)	Head (m)
0	42.9
50	55.3
100	70.5
150	88.4
200	112.9

When New WWPS pumps 0 L/s friction losses in the Common RM are 31m and in the discharge end 1.1m.

North Tuncurry Development Project

Option 3A Central WWPS Pumping Alone

Temperature(°C)	20	Rising Main IL at the WWPS	4.2	Tuncurry No. 23WWPS Flow	L/s	0	
Kinematic Viscosity (m^2/s)	1.01E-06	Rising Main Discharge Level at WWTP	5.4	Flow from WWPS 1, 10, 6	L/s	0	
		Common Rising Main Discharge Level at WWTP	7.9				

OPTION 3A - Gravity Wastewater Reticulation System

Pumping Alone

Flow		0.05				0.1				0.15				0.2		
Pipe Description	**Discharge Pipework**	**Rising Main**	**Common RM**	**Discharge**	**Discharge Pipework**	**Rising Main**	**Common RM**	**Discharge**	**Discharge Pipework**	**Rising Main**	**Common RM**	**Discharge**	**Discharge Pipework**	**Rising Main**	**Common RM**	**Discharge**
Design Flow (m3/s)	0.050	0.050	0.050	0.050	0.100	0.100	0.100	0.100	0.150	0.150	0.150	0.150	0.200	0.200	0.200	0.200
Length of Pipe (m)	13.05	655	9866	3	13.05	655	9866	3	13.05	655	9866	3	13.05	655	9866	3
Pipe Size ID (mm)	212	313	480	480	212	313	480	480	212	313	480	480	212	313	480	480
Roughness (mm)	0.175	0.300	0.300	0.300	0.060	0.210	0.300	0.300	0.060	0.069	0.300	0.300	0.060	0.060	0.268	0.268
Loss Coeficient (Table)	1.6	2.0	2.0	2.0	1.6	2.0	2.0	2.0	1.6	2.0	2.0	2.0	1.6	2.0	2.0	2.0
Velocity (m/s)	1.42	0.65	0.28	0.28	2.83	1.30	0.55	0.55	4.25	1.95	0.83	0.83	5.67	2.60	1.11	1.11
Velocity Head (m)	0.10	0.02	0.00	0.00	0.41	0.09	0.02	0.02	0.92	0.19	0.04	0.04	1.64	0.34	0.06	0.06
Reynold's Number	297575	201552	131429	131429	595149	403104	262858	262858	892724	604656	394286	394286	1190298	806209	525715	525715
Friction Factor	0.0200	0.0210	0.0203	0.0203	0.0160	0.0189	0.0192	0.0192	0.0157	0.0155	0.0187	0.0187	0.0155	0.0149	0.0181	0.0181
Friction Loss (m)	0.1	0.9	1.6	0.0	0.4	3.4	6.1	0.0	0.9	6.3	13.5	0.0	1.6	10.7	23.2	0.0
Minor Loss (m)	0.2	0.0	0.0	0.0	0.6	0.2	0.0	0.0	1.4	0.4	0.1	0.1	2.5	0.7	0.1	0.1
Pipe Friction Loss(m)	0.3	1.0	1.6	0.0	1.0	3.6	6.2	0.0	2.3	6.7	13.6	0.1	4.1	11.4	23.3	0.1
Static Head (m)		7.28		3.5		7.28		3.5		7.28		3.5		7.28		3.5
Total Head (m)		**13.7**				**21.6**				**33.4**				**49.7**		

System Curve

Flow (L/s)	Head (m)
0	10.8
50	13.7
100	21.6
150	33.4
200	49.7

North Tuncurry Development Project

Option 3B Central WWPS Pumping with Other WWPS

Temperature(°C)	20	Rising Main IL at the WWPS	4.2	Tuncurry No. 23WWPS Flow	L/s	237
Kinematic Viscosity (m^2/s)	1.01E-06	Rising Main Discharge Level at WWTP	5.4	Flow from WWPS 1, 10, 6	L/s	358
		Common Rising Main Discharge Level at WWTP	7.9			

OPTION 3B - Vacuum Wastewater Reticulation System

Pumping with Other WWPS

Flow		0.05				0.1				0.15				0.2		
Pipe Description	**Discharge Pipework**	**Rising Main**	**Common RM**	**Discharge**	**Discharge Pipework**	**Rising Main**	**Common RM**	**Discharge**	**Discharge Pipework**	**Rising Main**	**Common RM**	**Discharge**	**Discharge Pipework**	**Rising Main**	**Common RM**	**Discharge**
Design Flow (m3/s)	0.050	0.050	0.287	0.645	0.100	0.100	0.337	0.695	0.150	0.150	0.387	0.745	0.200	0.200	0.437	0.795
Length of Pipe (m)	13.05	655	9866	3	13.05	655	9866	3	13.05	655	9866	3	13.05	655	9866	3
Pipe Material																
Pipe Size ID (mm)	157	235	480	480	157	235	480	480	157	235	480	480	157	235	480	480
Roughness (mm)	0.060	0.254	0.135	0.060	0.060	0.060	0.085	0.060	0.060	0.060	0.060	0.060	0.060	0.060	0.060	0.060
Loss Coeficient (Table)	1.6	2.0	2.0	2.0	1.6	2.0	2.0	2.0	1.6	2.0	2.0	2.0	1.6	2.0	2.0	2.0
Velocity (m/s)	2.58	1.15	1.59	3.56	5.17	2.31	1.86	3.84	7.75	3.46	2.14	4.12	10.33	4.61	2.41	4.39
Velocity Head (m)	0.34	0.07	0.13	0.65	1.36	0.27	0.18	0.75	3.06	0.61	0.23	0.86	5.44	1.08	0.30	0.98
Reynold's Number	401821	268450	754401	1695431	803641	536901	885830	1826860	1205462	805351	1017259	1958289	1607282	1073801	1148688	2089718
Friction Factor	0.0172	0.0212	0.0158	0.0134	0.0166	0.0159	0.0146	0.0134	0.0163	0.0155	0.0138	0.0133	0.0162	0.0153	0.0137	0.0133
Friction Loss (m)	0.5	4.0	41.7	0.0	1.9	12.0	53.2	0.1	4.2	26.4	66.4	0.1	7.3	46.2	83.9	0.1
Minor Loss (m)	0.5	0.1	0.3	1.3	2.1	0.5	0.4	1.5	4.7	1.2	0.5	1.7	8.4	2.2	0.6	2.0
Pipe Friction Loss(m)	1.0	4.1	41.9	1.3	4.0	12.6	53.5	1.6	8.9	27.6	66.9	1.8	15.8	48.4	84.5	2.0
Static Head (m)		3.20		3.5		3.20		3.5		3.20		3.5		3.20		3.5
Total Head (m)		55.1				78.3				111.9				157.4		

System Curve

Flow (L/s)	Head (m)
0	38.8
50	55.1
100	78.3
150	111.9
200	157.4

When New WWPS pumps 0 L/s friction losses in the Common RM are 31m and in the discharge end 1.1m.

North Tuncurry Development Project

Option 3B Central WWPS Pumping Alone

Temperature(°C)	20	Rising Main IL at the WWPS	4.2	Tuncurry No. 23WWPS Flow	L/s	0
Kinematic Viscosity (m^2/s)	1.01E-06	Rising Main Discharge Level at WWTP	5.4	Flow from WWPS 1, 10, 6	L/s	0
		Common Rising Main Discharge Level at WWTP	7.9			

OPTION 3B - Vacuum Wastewater Reticulation System

Pumping Alone

Flow		0.05				0.1				0.15				0.2		
Pipe Description	**Discharge Pipework**	**Rising Main**	**Common RM**	**Discharge**	**Discharge Pipework**	**Rising Main**	**Common RM**	**Discharge**	**Discharge Pipework**	**Rising Main**	**Common RM**	**Discharge**	**Discharge Pipework**	**Rising Main**	**Common RM**	**Discharge**
Design Flow (m3/s)	0.050	0.050	0.050	0.050	0.100	0.100	0.100	0.100	0.150	0.150	0.150	0.150	0.200	0.200	0.200	0.200
Length of Pipe (m)	13.05	655	9866	3	13.05	655	9866	3	13.05	655	9866	3	13.05	655	9866	3
Pipe Material																
Pipe Size ID (mm)	157	235	480	480	157	235	480	480	157	235	480	480	157	235	480	480
Roughness (mm)	0.060	0.254	0.300	0.300	0.060	0.060	0.300	0.300	0.060	0.060	0.300	0.300	0.060	0.060	0.268	0.268
Loss Coeficient (Table)	1.6	2.0	2.0	2.0	1.6	2.0	2.0	2.0	1.6	2.0	2.0	2.0	1.6	2.0	2.0	2.0
Velocity (m/s)	2.58	1.15	0.28	0.28	5.17	2.31	0.55	0.55	7.75	3.46	0.83	0.83	10.33	4.61	1.11	1.11
Velocity Head (m)	0.34	0.07	0.00	0.00	1.36	0.27	0.02	0.02	3.06	0.61	0.04	0.04	5.44	1.08	0.06	0.06
Reynold's Number	401821	268450	131429	131429	803641	536901	262858	262858	1205462	805351	394286	394286	1607282	1073801	525715	525715
Friction Factor	0.0172	0.0212	0.0203	0.0203	0.0166	0.0159	0.0192	0.0192	0.0163	0.0155	0.0187	0.0187	0.0162	0.0153	0.0181	0.0181
Friction Loss (m)	0.5	4.0	1.6	0.0	1.9	12.0	6.1	0.0	4.2	26.4	13.5	0.0	7.3	46.2	23.2	0.0
Minor Loss (m)	0.5	0.1	0.0	0.0	2.1	0.5	0.0	0.0	4.7	1.2	0.1	0.1	8.4	2.2	0.1	0.1
Pipe Friction Loss(m)	1.0	4.1	1.6	0.0	4.0	12.6	6.2	0.0	8.9	27.6	13.6	0.1	15.8	48.4	23.3	0.1
Static Head (m)		3.20		3.5		3.20		3.5		3.20		3.5		3.20		3.5
Total Head (m)		**13.5**				**29.5**				**56.8**				**94.3**		

System Curve

Flow (L/s)	Head (m)
0	6.7
50	13.5
100	29.5
150	56.8
200	94.3

APPENDIX C – DATA FROM MIDCOAST WATER

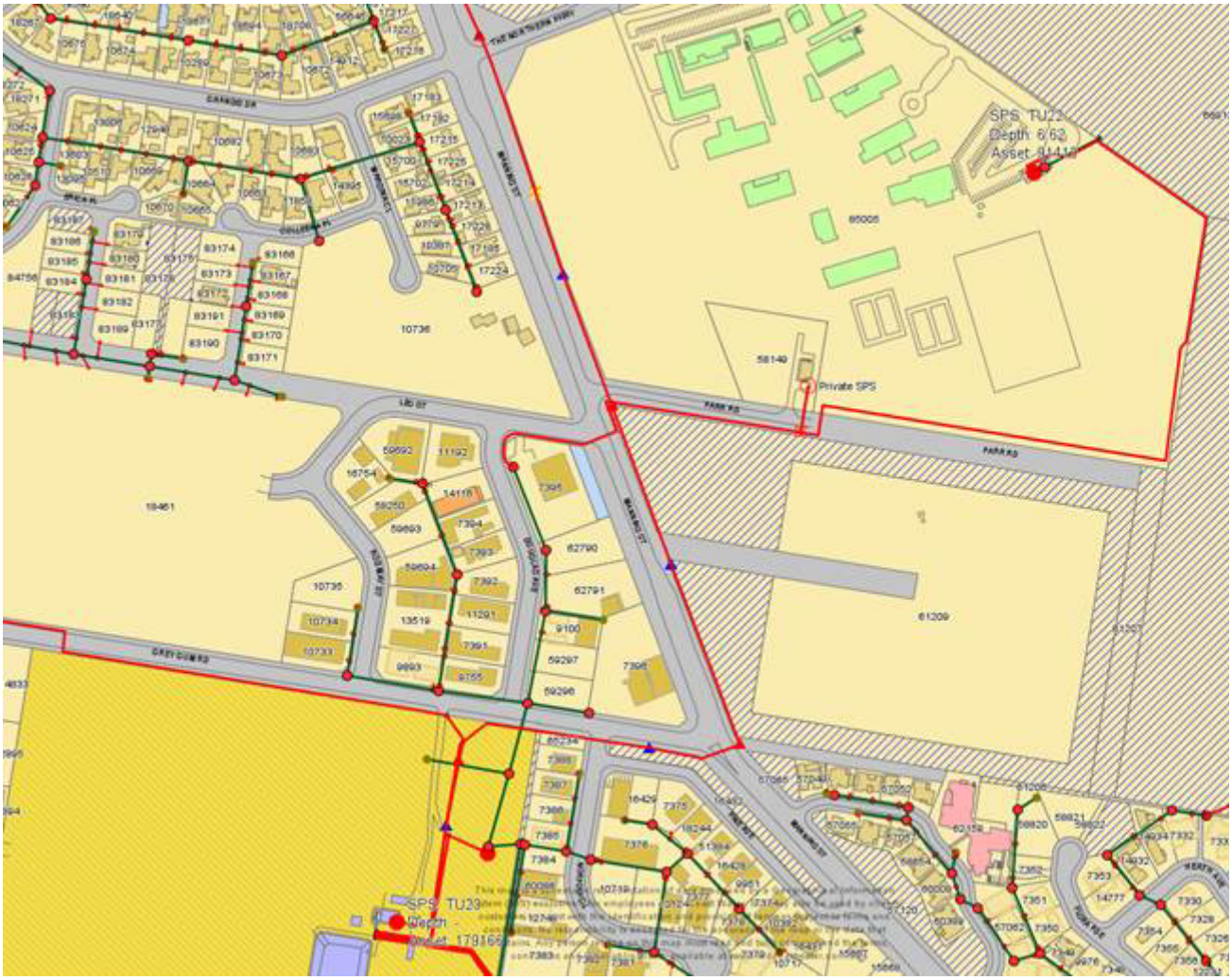
McCarthy, Marketa

From: Brendan Guiney <Brendan.Guiney@MidCoastWater.com.au>
Sent: Monday, 28 October 2013 4:12 PM
To: McCarthy, Marketa
Cc: Kuczera, Chris; Kniest, John; Daniel Brauer; David McKellar; Tracey Hamer; Michael Pring (Mpring@urbangrowth.nsw.gov.au)
Subject: RE: North Tuncurry Development Project - Water and Wastewater Servicing Strategies

Hi Marketa,

I would confirm that I met with Michael Pring on the same day as your email. Our answers to your questions follow:

- A plan of the gravity system is shown in the sketch below. Gravity sewers are dark green, sewer rising mains in red.
- The connection point would be the stub sewer provided out of Sewerage Pump Station TU22, located within the Great Lakes Education Campus. The system capacity nominally is about 300ET, so after the Great Lakes Education campus (70 ET) is catered for, it could accommodate a further 230 ET. The pump station itself has a generous volume, but the limitation would be the 150mm receiving sewer in Douglas Avenue. Any upgraded pumping arrangements after that would be recommended to be pumped past TU06 direct to Tuncurry's main sewerage pump station, SPS TU23.
- The existing gravity sewer level is nominally about 4 metres deep, and should be confirmed by survey. The potential sewer catchment area for this sewer pump station would depend on final fill levels for the development, since the site is relatively flat and will be re-graded during development. I believe this is to be resolved with local surveyors Lidbury Summers Whiteman.
- There is an existing 250mm water main located in The Northern Parkway, which would be satisfactory for a first stage up to the limit of the sewer capacity mentioned above. Given the size of the North Tuncurry Development Project our long term expectation is that the development be fed by at least two water main connections.
- Recycled water mains are also available in this vicinity. The recycled water undergoes membrane microfiltration and is suitable for unrestricted use in public open spaces. A modest treatment upgrade would probably be required for residential use to meet the Australian Recycled Water Guidelines.



Cheers,

Brendan Guiney
Executive Manager, Infrastructure Development

p 6591 7503 **m** 0407 894 765
e Brendan.Guiney@MidCoastWater.com.au
w www.midcoastwater.com.au
Mail: PO Box 671, TAREE, NSW 2430, Australia
Office: 16 Breese Parade, Forster, NSW, Australia

MIDCOAST WATER

From: McCarthy, Marketa [mailto:Marketa.McCarthy@smec.com]
Sent: Tuesday, 22 October 2013 9:21 AM
To: Brendan Guiney
Cc: Kuczera, Chris; Kniest, John
Subject: North Tuncurry Development Project - Water and Wastewater Servicing Strategies

Hi Brendan,

This is regarding the North Tuncurry Development Project. I am working on the Water and Wastewater Servicing Strategies for the development and was wondering if you could provide me some additional information.

In your comments on the strategies (letter of 6th September 2013) and previous discussions with SMEC you mentioned possibility to negotiate connections of the early stages of the development. It is understood that there may be potential to connect some southern portions of the development to the existing gravity sewer system.

We would like to investigate this option and I was wondering if you could provide me the following:

- A plan showing the existing gravity sewer system.
- Potential connection point, existing sewer invert levels at this point.
- Available capacity in the sewer system.

Could you please also advise us on the following:

- If there is an opportunity to connect the southern portions of the development to existing sewer system, would there be also an opportunity to supply the southern portions from the existing nearby water main.

Thank you,

Marketa McCarthy

Marketa McCarthy | Senior Water Infrastructure Engineer
SMEC Australia
74 Hunter Street, Newcastle, NSW, 2300, Australia
(PO Box 1346, Newcastle, NSW, 2059, Australia)
T +61 2 4925 9600 | **M** 0405 792 474 | **F** +61 2 4925 3888
Marketa.McCarthy@smec.com | www.smec.com |

McCarthy, Marketa

From: Brendan Guiney <Brendan.Guiney@MidCoastWater.com.au>
Sent: Tuesday, 29 October 2013 4:15 PM
To: McCarthy, Marketa
Cc: mpring@landcom.nsw.gov.au; Kniest, John; Kuczera, Chris
Subject: RE: North Tuncurry Development Project - Water and Wastewater Servicing Strategies

Hi Marketa.

Arguably, yes you could squeeze in some more ET's based on your suggestion.

Our current recommendation however is to make use of the existing gravity sewer pump station rather than incur the high up-front cost of a new pump station (even if it is a 'temporary' or 'skid mounted' vacuum pump station). Now that a layout and indicative staging plan has been provided, MidCoast Water can provide a bit more information on scope and indicative cost of a vacuum pump station that would address MCW requirements. We would need about a further week to do so.

Regards,

Brendan

Brendan Guiney
Executive Manager, Infrastructure Development

p 6591 7503 **m** 0407 894 765
e Brendan.Guiney@MidCoastWater.com.au
w www.midcoastwater.com.au
Mail: PO Box 671, TAREE, NSW 2430, Australia
Office: 16 Breese Parade, Forster, NSW, Australia

From: McCarthy, Marketa [mailto:Marketa.McCarthy@smec.com]
Sent: Tuesday, 29 October 2013 4:09 PM
To: Brendan Guiney
Cc: mpring@landcom.nsw.gov.au; Kniest, John; Kuczera, Chris
Subject: RE: North Tuncurry Development Project - Water and Wastewater Servicing Strategies

Hi Brendan,

Thank you for your email.

I just was wondering, would it be possible to discharge into the SPS TU22 more ETs if we use vacuum sewer reticulation system?

The below tables show, that 230 ET will result in PWWF of 9.9 L/s when conveyed via conventional gravity sewer system and PWWF of 6 L/s when conveyed via vacuum sewer system (lower storm allowance). The vacuum sewers could convey 395 ET with PWWF of 9.9 L/s.

Gravity

ET	ADWF	PDWF	SA	PWWF
	L/s	L/s	L/s	L/s
230	1.15	3.3	6.67	9.94

Vacuum

ET	ADWF	PDWF	SA	PWWF
	L/s	L/s	L/s	L/s
230	1.15	3.3	2.76	6.0
395	1.975	5.2	4.74	9.91

Please could you provide us your advice.

Thank you,

Marketa

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SMEC SNOWY MOUNTAINS ENGINEERING CORPORATION

Local People. Global Experience.

McCarthy, Marketa

From: David McKellar <David.McKellar@MidCoastWater.com.au>
Sent: Friday, 15 August 2014 4:23 PM
To: McCarthy, Marketa; Brendan Guiney
Subject: RE: North Tuncurry Development Project - Indicative O&M's

Marketa,

I've attached a table of indicative O&M costs for various asset classes.

Sewerage Pump Station Maintenance	2.25% Capital Cost PA
Gravity Sewerage Reticulation Mains Maintenance	0.75% Capital Cost PA
Gravity Sewerage Truck Mains Maintenance	0.50% Capital Cost PA
Sewerage Rising Main Maintenance	0.25% Capital Cost PA
Pressure Sewerage Network Maintenance	0.25% Capital Cost PA (excludes pressure unit maintenance)
Vacuum Sewerage Pump Station Maintenance	7.75% Capital Value PA
Vacuum Reticulation Network Maintenance	5.00% Capital Value PA (includes vac valve & pit)

BG,
Note the vacuum numbers look way too high but are not a mistake, they are based upon our analysis at Harrington as described below:
Pump station O&M tending to 90K per annum (around $200 per property) - assetic value for HR09 just under 1M, then I have assumed we can draw down the O&M with modern design.
Vac Retic O&M at Harrington trending the 50k per annum (around $100 per property). I have assumed 5 properties (average) per pit, with valve, pit & associated vac retic of estimated value $8,500 per 5 properties, again drawing down the % slightly for better design.

Regards,

David McKellar
Development Engineer

ph: 02 6591 7543 **fax:** 02 6555 8516
e david.mckellar@midcoastwater.com.au

-----Original Message-----
From: McCarthy, Marketa [mailto:Marketa.McCarthy@smec.com]
Sent: Wednesday, 25 June 2014 9:45 PM
To: David McKellar
Cc: Mpring@urbangrowth.nsw.gov.au; Mounser, Glenn
Subject: North Tuncurry Development Project

Hi David,

I am just following up on our previous conversation regarding the North Tuncurry Development Project.

Could you please let me know how you are going with the gravity and vacuum sewers maintenance costs estimates and if you need anything from us?

Thank you,

Marketa

Marketa McCarthy | Senior Water Infrastructure Engineer SMEC Australia
74 Hunter Street, Newcastle, NSW, 2300, Australia (PO Box 1346, Newcastle, NSW, 2300, Australia) T +61 2 4925 9600 | F +61 2 4925 3888 Marketa.McCarthy@smec.com | www.smec.com | LinkedIn

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SMEC SNOWY MOUNTAINS ENGINEERING CORPORATION

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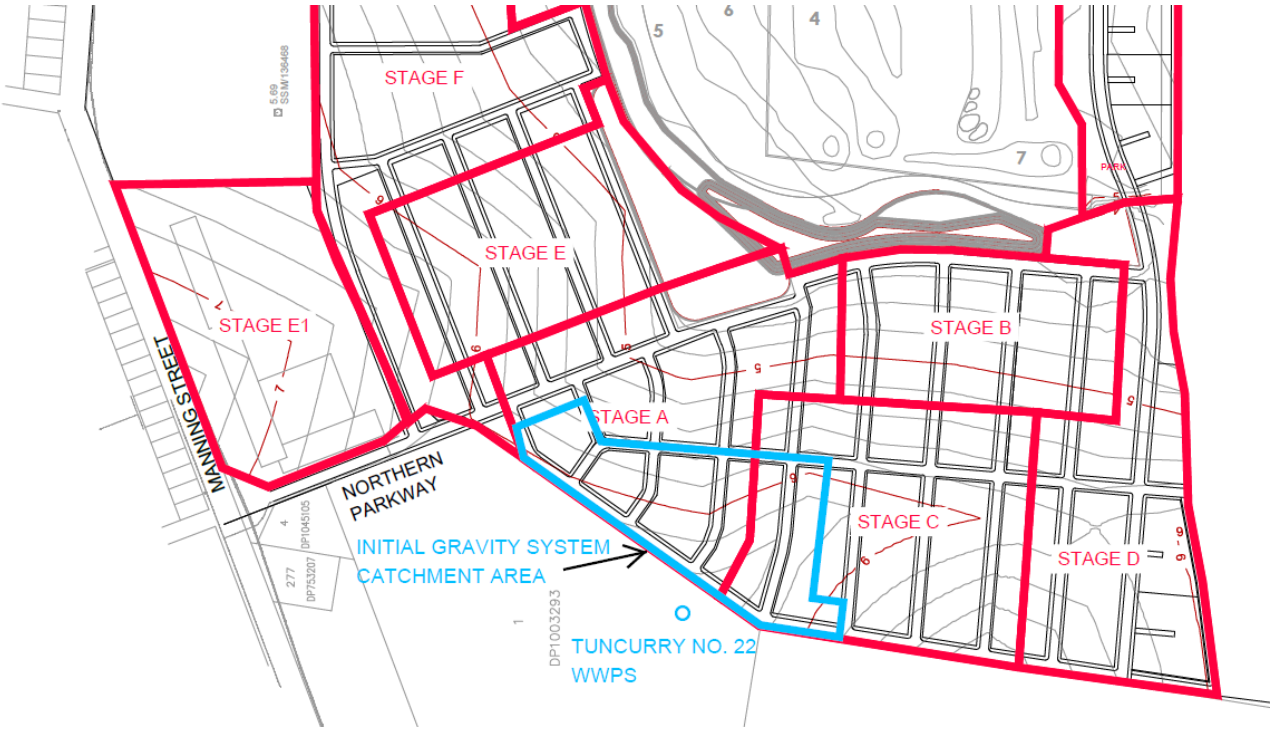
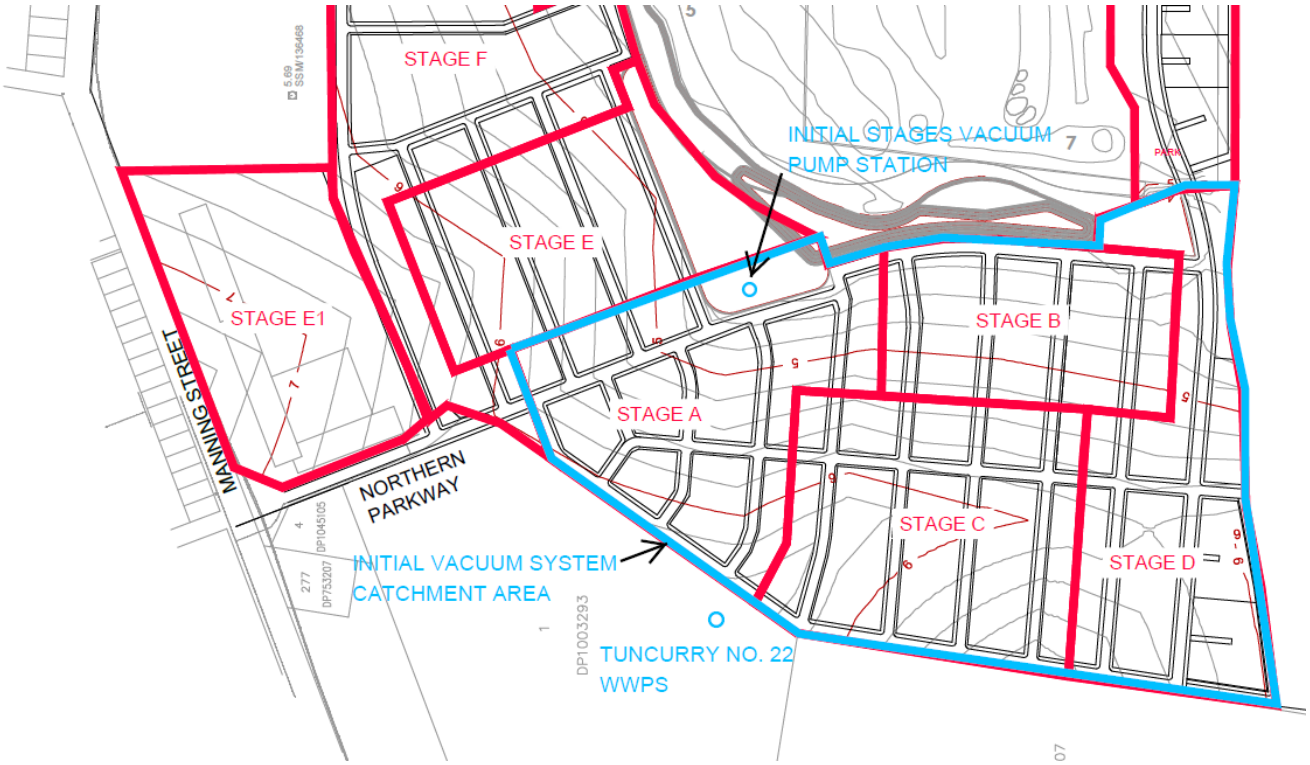
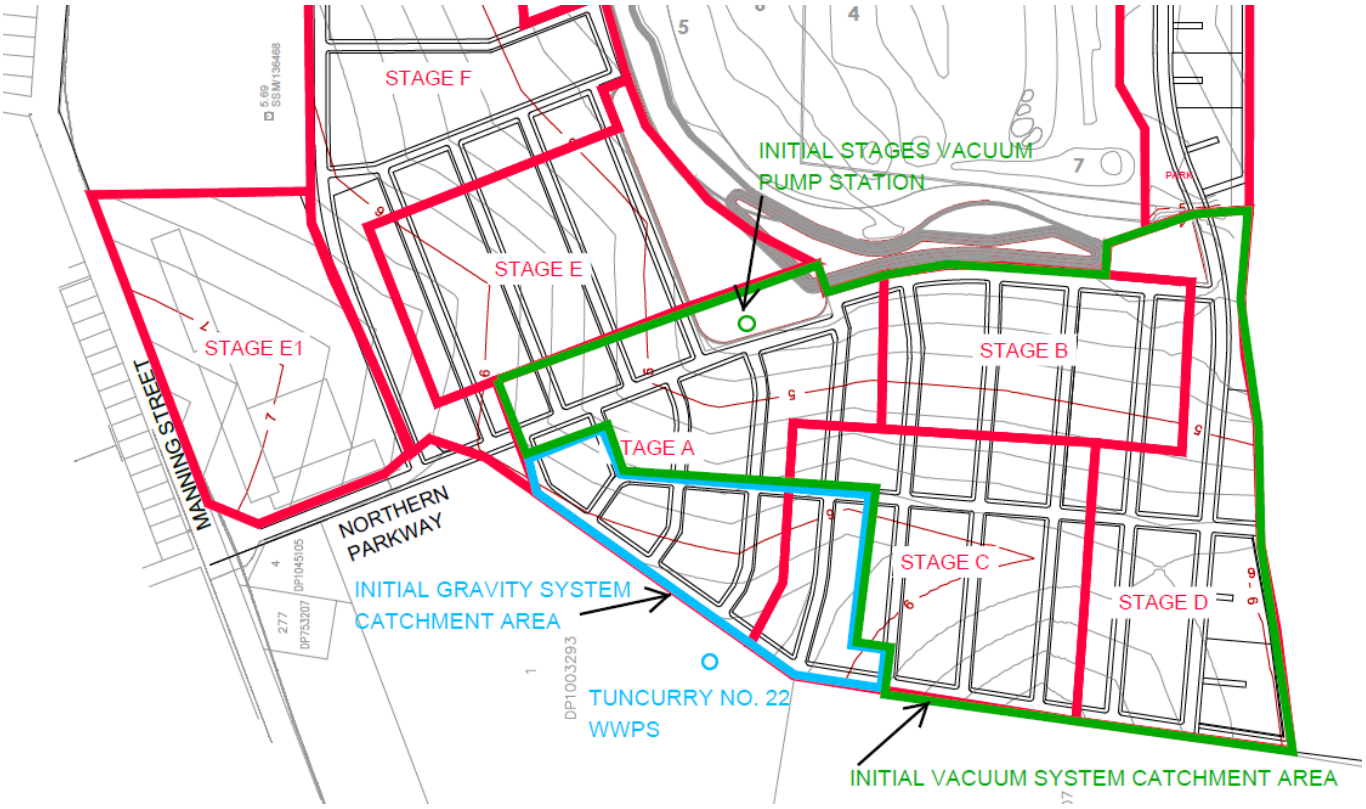
APPENDIX D – INTIAL STAGES OF THE DEVELOPMENT



OPTION 1 – Servicing Initial Stages of the Development via Gravity System



OPTION 2 – Servicing Initial Stages of the Development via Vacuum System



OPTION 3 – Servicing Initial Stages of the Development via Gravity and Vacuum Systems

Taree office
2 Pulteney Street | PO Box 482
Taree NSW 2430

18 February 2019

Michael Pring
Development Director
Landcom
Level 14, 60 Station Street
Parramatta NSW 2150

Ref: A663854

Dear Michael

Water and Sewerage Development Standards

I confirm that Council's development standards for water and sewerage have not changed since we commenced discussing the project in 2011.

Yours sincerely

Brendan Guiney
Director Water Services