

APPENDIX D. FLOOD MODIFICATION OPTIONS COSTS



North Creek FRMS&P Cost Database

Task	Description	Unit	Raw Rate	Factored Rate	Source
Construction Preliminaries	Establishment (Project Inception, Management and Coordination)	ea		\$ 10,000.00	Estimation of Council Costs
	Preparation and implementation of preliminaries (e.g. CEMP, SMP, TCP, C	ea		\$ 20,000.00	Estimation
	Survey and set out works	day	\$ 1,200.00	\$ 1,221.54	Estimation \$150/h
	Temporary Access Track	m	\$ 100.00	\$ 101.79	Estimation
	Temporary Fencing (light duty site mesh)	m	\$ 15.00	\$ 15.27	Rawlinsons 2024 Australian Construction Handbook
	Temporary Fencing (chainwire)	m	\$ 38.00	\$ 38.68	Rawlinsons 2024 Australian Construction Handbook
	Temporary Signage	ea	\$ 500.00	\$ 508.97	Estimation
	Portable Toilet	week	\$ 70.00	\$ 88.55	Rawlinsons 2018 Australian Construction Handbook
	Single chemical pan toilet including pumping out and cleaning	week	\$ 65.00	\$ 66.17	Rawlinsons 2024 Australian Construction Handbook
	Silt fence	m	\$ 20.60	\$ 20.97	Estimate based on costing from other Councils
	Silt sausage	m	\$ 19.35	\$ 19.70	Rawlinsons 2024 Australian Construction Handbook
	Geotech during construction	day	\$ 1,200.00	\$ 1,221.54	Estimation \$150/h
	Traffic Control - Road closure	day	\$ 300.00	\$ 305.38	Estimation with signage of closure (VMS) and detours in place
	Traffic Control	day	\$ 1,776.00	\$ 1,807.87	Estimation with 2 controllers, 2 VMS, plus management
Site Preparation	Land clearing (medium vegetation)	m ²	\$ 0.64	\$ 0.65	Rawlinsons 2024 Australian Construction Handbook
	Cut down tree, grub up stump, roots and cart away or burn on site (1000,	ea	\$ 564.00	\$ 574.12	Rawlinsons 2024 Australian Construction Handbook
	Breakup and remove reinforced concrete in open excavations	m ³	\$ 338.00	\$ 344.07	Rawlinsons 2024 Australian Construction Handbook
	Breakup and remove reinforced concrete in trenches	m ³	\$ 418.00	\$ 425.50	Rawlinsons 2024 Australian Construction Handbook
	Break up and remove bitumen paving with basecourse under	m ²	\$ 4.20	\$ 4.28	Rawlinsons 2024 Australian Construction Handbook
	Remove kerbs	m	\$ 34.00	\$ 34.61	Estimate based on costing from other Councils
	Remove Pipes	m	\$ 120.00	\$ 122.15	Estimate based on costing from other Councils
	Remove Pits	ea	\$ 566.00	\$ 576.16	Estimate based on costing from other Councils
	Take down and remove timber fence	m	\$ 8.50	\$ 8.65	Rawlinsons 2024 Australian Construction Handbook
	Take down and remove chain link fence	m	\$ 8.50	\$ 8.65	Rawlinsons 2024 Australian Construction Handbook
	Take down and remove spear head security fence	m	\$ 20.00	\$ 20.36	Estimate based on costing from other Councils
	Remove retaining wall	m	\$ 55.00	\$ 55.99	Estimate based on costing from other Councils
	Remove signage	ea	\$ 36.00	\$ 36.65	Estimate based on costing from other Councils
	Dismantle large sign	ea	\$ 2,000.00	\$ 2,035.89	Estimation
	Excavate over site to reduce levels in light soil	m ³	\$ 26.90	\$ 27.38	Rawlinsons 2024 Australian Construction Handbook
	Excavate trenches (up to 1m deep in light soil, incl backfilling)	m ³	\$ 60.00	\$ 61.08	Rawlinsons 2024 Australian Construction Handbook
	Excavate trenches (up to 2m deep in light soil, incl backfilling)	m ³	\$ 68.50	\$ 69.73	Rawlinsons 2024 Australian Construction Handbook
	Excavate trenches (beyond 2m deep in light soil, incl backfilling)	m ³	\$ 102.75	\$ 104.59	Estimation
	Detailed excavation around pits	m ³	\$ 155.00	\$ 157.78	Estimate based on costing from other Councils
	Dewatering deep system with 150mm header pipe, 1500mm well point c	m ²	\$ 72.60	\$ 73.90	Rawlinsons 2024 Australian Construction Handbook
	Balance cut and fill (0.5/1m deep) in light soil	m ³	\$ 18.30	\$ 18.63	Rawlinsons 2024 Australian Construction Handbook
	Remove surplus excavated materail from site to tip not exceeding 10km c	m ³	\$ 27.50	\$ 27.99	Rawlinsons 2024 Australian Construction Handbook
	Cart excavated material	per 5km per m ³	\$ 30.00	\$ 30.54	Rawlinsons 2024 Australian Construction Handbook
	Dispose of demolition material - mixed	t	\$ 428.00	\$ 435.68	Rawlinsons 2024 Australian Construction Handbook
	Dispose of clean fill	t	\$ 351.00	\$ 357.30	Rawlinsons 2024 Australian Construction Handbook
	Dispose of contaminated soil (low level, assumed ASS)	t	\$ 397.50	\$ 404.63	Rawlinsons 2024 Australian Construction Handbook
	Dispose of contaminated soil (high level)	t	\$ 912.50	\$ 928.88	Rawlinsons 2024 Australian Construction Handbook
	Excavated material as filling (on site)	m ³	\$ 9.60	\$ 9.77	Rawlinsons 2024 Australian Construction Handbook
	Clean sand filling	m ³	\$ 80.00	\$ 81.44	Rawlinsons 2024 Australian Construction Handbook
	Crushed rock filling laid and consolidated in 150mm layers	m ³	\$ 88.00	\$ 89.58	Rawlinsons 2024 Australian Construction Handbook
	Labour forming sloping edge to filling	m	\$ 3.20	\$ 3.26	Rawlinsons 2024 Australian Construction Handbook
	Level ground surface under floor slabs, paving and the like, including com	m ²	\$ 4.20	\$ 4.28	Rawlinsons 2024 Australian Construction Handbook
Stormwater Management	Concrete pipe to AS 4058-1992 Class 4 600mm dia	m	\$ 540.00	\$ 549.69	Rawlinsons 2024 Australian Construction Handbook
	Concrete pipe to AS 4058-1992 Class 4 750mm dia	m	\$ 795.00	\$ 809.27	Estimation - Interpolation
	Concrete pipe to AS 4058-1992 Class 4 900mm dia	m	\$ 1,050.00	\$ 1,068.84	Rawlinsons 2024 Australian Construction Handbook
	Concrete pipe to AS 4058-1992 Class 4 1050mm dia	m	\$ 1,400.00	\$ 1,425.13	Estimation - Interpolation
	Concrete pipe to AS 4058-1992 Class 4 1200mm dia	m	\$ 1,750.00	\$ 1,781.41	Rawlinsons 2024 Australian Construction Handbook
	Concrete pipe to AS 4058-1992 Class 4 1500mm dia	m	\$ 2,500.00	\$ 2,544.87	Rawlinsons 2024 Australian Construction Handbook
	Precast headwall for 600mm diameter culvert	ea	\$ 1,380.00	\$ 1,404.77	Rawlinsons 2024 Australian Construction Handbook
	Precast headwall for 900mm diameter culvert	ea	\$ 1,500.00	\$ 1,526.92	Estimation, checked with Holcim/Humes/Rocla Quotes
	Precast headwall for 1050mm diameter culvert	ea	\$ 2,000.00	\$ 2,035.89	Estimation, checked with Holcim/Humes/Rocla Quotes
	Precast headwall for 1200mm diameter culvert	ea	\$ 3,000.00	\$ 3,053.84	Estimation, checked with Holcim/Humes/Rocla Quotes
	Precast headwall for 1500mm diameter culvert	ea	\$ 5,000.00	\$ 5,089.74	Estimation, checked with Holcim/Humes/Rocla Quotes
	Precast Concrete Box Culvert (375 x 225)	m	\$ 389.00	\$ 395.98	Rawlinsons 2024 Australian Construction Handbook
	Precast Concrete Box Culvert (450 x 600)	m	\$ 546.00	\$ 555.80	Rawlinsons 2024 Australian Construction Handbook
	Precast Concrete Box Culvert (750 x 600)	m	\$ 709.00	\$ 721.72	Rawlinsons 2024 Australian Construction Handbook
	Precast Concrete Box Culvert (1200 x 1200)	m	\$ 2,000.00	\$ 2,035.89	Estimation, checked with Holcim/Humes/Rocla Quotes
	Precast Concrete Box Culvert (1800 x 1800)	m	\$ 3,000.00	\$ 3,053.84	Estimation, checked with Holcim/Humes/Rocla Quotes
	Precast Concrete Box Culvert (2700 x 900)	m	\$ 1,120.00	\$ 1,140.10	Estimate based on costing from other Councils
	Precast Concrete Box Culvert (4000 x 3115)	m	\$ 5,760.00	\$ 5,863.38	Rawlinsons 2024 Australian Construction Handbook
	Cast in-situ concrete culvert	m	\$ 6,675.00	\$ 6,794.80	Estimate based on costing from other Councils
	Cast in-situ concrete pit (900 x 900 x 900)	ea	\$ 2,650.00	\$ 2,697.56	Rawlinsons 2024 Australian Construction Handbook
	Additional pit depth beyond 900mm	per 100mm	\$ 250.00	\$ 254.49	Rawlinsons 2024 Australian Construction Handbook
	Precast concrete pit (1200 x 1200 x 1200)	ea	\$ 2,200.00	\$ 2,239.48	Estimate based on costing from other Councils
	Precast concrete pit (2400 x 2400 x 2400)	ea	\$ 4,000.00	\$ 4,071.79	Estimation
	Concrete covers (900 x 900 trafficable)	ea	\$ 410.00	\$ 417.36	Rawlinsons 2024 Australian Construction Handbook
	Grate (762 x 762 class D sump grate)	ea	\$ 1,700.00	\$ 1,730.51	Rawlinsons 2024 Australian Construction Handbook
	Grate (2m x 2m)	ea	\$ 2,000.00	\$ 2,035.89	Estimation
	2.4m lintel and grate	ea	\$ 1,600.00	\$ 1,628.72	Estimation, checked with Holcim/Humes/Rocla Quotes
	4.2m lintel and grate	ea	\$ 3,500.00	\$ 3,562.81	Estimation
	HumeGard GPT 600mm	ea	\$ 39,000.00	\$ 39,699.94	Rawlinsons 2024 Australian Construction Handbook
	HumeGard GPT 900mm	ea	\$ 80,000.00	\$ 81,435.77	Rawlinsons 2024 Australian Construction Handbook
	HumeGard GPT 1200mm	ea	\$ 125,000.00	\$ 127,243.38	Rawlinsons 2024 Australian Construction Handbook
	50mm sand bed laid in trenches	m ²	\$ 4.30	\$ 4.38	Rawlinsons 2024 Australian Construction Handbook
	Compaction of foundation trenches	m ²	\$ 4.00	\$ 4.07	Rawlinsons 2024 Australian Construction Handbook
	Preparation of culvert base	m ²	\$ 385.00	\$ 391.91	Estimate based on costing from other Councils
	Backfill of culvert	m ³	\$ 221.00	\$ 224.97	Estimate based on costing from other Councils
	Break into existing pit	ea	\$ 600.00	\$ 610.77	Estimation
	Bridge (2 lane conventional, reinforced concrete spans, safety rails, excl a	m ²	\$ 2,260.00	\$ 2,300.56	Rawlinsons 2024 Australian Construction Handbook
	Pipe Jacking Excavations (2)	ea	\$ 19,500.00	\$ 19,849.97	Gold Coast Water 2008, factored by 1.3 for current price
	Pipe Jacking 1050mm/1200mm dia	m	\$ 6,555.00	\$ 6,672.64	Estimation based on Gold Coast Water 2008, incl pipe cost, fact
	Reinforced Concrete 25 MPa in slabs thickening on fill (NE 150mm thick)	m ³	\$ 420.00	\$ 427.54	Rawlinsons 2024 Australian Construction Handbook
	Reinforced Concrete 25 MPa in slabs thickening on fill (150/300mm thick	m ³	\$ 415.00	\$ 422.45	Rawlinsons 2024 Australian Construction Handbook
	Outlet scour protection - reno mattress	m ²	\$ 500.00	\$ 508.97	Estimation
	Land Acquisition/Easement Costs	m ²			
Rehabilitation	200mm crushed rock base	m ²	\$ 24.00	\$ 24.43	Rawlinsons 2024 Australian Construction Handbook
	Hot bituminous concrete 25mm thick	m ²	\$ 30.35	\$ 30.89	Rawlinsons 2024 Australian Construction Handbook
	Cast in-situ 250mm x 150mm kerb	m	\$ 115.00	\$ 117.06	Rawlinsons 2024 Australian Construction Handbook
	Kerb and gutter	m	\$ 1,294.50	\$ 1,317.73	Estimate based on costing from other Councils
	Pavement	m ²	\$ 300.00	\$ 305.38	Estimate based on costing from other Councils
	Composite Road 8m suburban with kerb	m	\$ 1,040.00	\$ 1,058.66	Rawlinsons 2024 Australian Construction Handbook
	Footpath 1500mm wide	m	\$ 260.00	\$ 264.67	Rawlinsons 2024 Australian Construction Handbook
	Footpath	m ²	\$ 304.00	\$ 309.46	Estimate based on costing from other Councils
	Line marking (100mm wide)	m	\$ 2.10	\$ 2.14	Rawlinsons 2024 Australian Construction Handbook
	Guard Rail	m	\$ 166.00	\$ 168.98	Rawlinsons 2024 Australian Construction Handbook
	F-Type concrete barrier 970mm high	m	\$ 425.00	\$ 432.63	Rawlinsons 2024 Australian Construction Handbook
	Prepare ground - rotary hoe	m ²	\$ 0.60	\$ 0.61	Rawlinsons 2024 Australian Construction Handbook
	Top soil spread and levelled 300mm thick	m ²	\$ 23.00	\$ 23.41	Rawlinsons 2024 Australian Construction Handbook
	Turf laid, rolled and watered - couch	m ²	\$ 12.00	\$ 12.22	Rawlinsons 2024 Australian Construction Handbook
	Level, seed, fertilise and water playing field	ha	\$ 9,660.00	\$ 9,833.37	Rawlinsons 2024 Australian Construction Handbook
	Pine bark chips	m ³	\$ 164.00	\$ 166.94	Rawlinsons 2024 Australian Construction Handbook
	Ground cover and planting	m ²	\$ 31.50	\$ 32.07	Rawlinsons 2024 Australian Construction Handbook
	Sign 450mm x 600mm	ea	\$ 460.00	\$ 468.26	Rawlinsons 2024 Australian Construction Handbook
	Reconstruct large sign	ea	\$ 10,000.00	\$ 10,179.47	Estimation
	Bollard removal and reinstatement	ea	\$ 212.00	\$ 215.80	Estimate based on costing from other Councils
	Keystone retaining wall	m	\$ 1,086.00	\$ 1,105.49	Estimate based on costing from other Councils
	Blockwork retaining wall (composite, reinforced)	m ²	\$ 355.00	\$ 361.37	Rawlinsons 2024 Australian Construction Handbook
	Install timber fence 1.8m high	m	\$ 116.00	\$ 118.08	Rawlinsons 2024 Australian Construction Handbook
	Install metal pool type fence 1.4m round top	m	\$ 168.00	\$ 171.02	Rawlinsons 2024 Australian Construction Handbook
	Install metal security fence 2m spear head	m	\$ 165.00	\$ 167.96	Rawlinsons 2024 Australian Construction Handbook
	Install metal chain mesh fence 1.8m high	m	\$ 87.00	\$ 88.56	Rawlinsons 2024 Australian Construction Handbook
Pre-construction costs	Design (includes Survey, Investigation Design, Geotech, REF, Concept & D	15%	of construction costs		Estimation
	Project Management of Design	15%	of design costs		Estimation
	Pre-construction contingency	40%	of total pre-construction costs		Estimation
Additional construction costs	Construction management/supervision	15%	of construction costs		Estimation
	Construction contingency	40%	of total construction costs		Estimation
Assumptions	No large tree clearing is necessary				
	No service relocation required				
	No land acquisition included				
	Used the upper limit of costs provided in Rawlinsons 2024, for Sydney				

North Creek FRMS - Option Costs**PRELIMINARY PROJECT COST ESTIMATE FOR FLOOD MITIGATION WORKS**

Date of Estimate: Jun-25

Lakelands Bund

Involves the following construction works:

- Formation of bund (max 0.7m high)
- Reconstruction of pathway

ITEM DESCRIPTION	QTY	UNIT	RATE	SUB-TOTAL
1 Construction Preliminaries				
1.1 Establishment (Project Inception, Management and Coordination)	1	ea	\$ 10,000.00	\$ 10,000
1.2 Preparation and implementation of preliminaries (e.g. CEMP, SMP, TCP, QMP)	1	ea	\$ 20,000.00	\$ 20,000
1.3 Survey and set out works	2	day	\$ 1,221.54	\$ 2,443
1.4 Temporary Fencing (light duty site mesh)	130	m	\$ 15.27	\$ 1,985
1.5 Temporary Signage	2	ea	\$ 508.97	\$ 1,018
1.6 Portable Toilet	8	week	\$ 88.55	\$ 708
1.7 Silt sausage	10	m	\$ 19.70	\$ 197
1.8 Silt fence	130	m	\$ 20.97	\$ 2,726
2 Site Preparation				
2.1 Land clearing (medium vegetation)	514	m2	\$ 0.65	\$ 335
2.2 Break up and remove bitumen paving with basecourse under	514	m2	\$ 4.28	\$ 2,198
2.3 Clean sand filling	46	m3	\$ 81.44	\$ 3,770
2.4 Level ground surface under floor slabs, paving and the like, including compaction	514	m2	\$ 4.28	\$ 2,198
2.5 Labour forming sloping edge to filling	260	m	\$ 3.26	\$ 847
2.6 Dispose of demolition material - mixed	97	t	\$ 435.68	\$ 42,348
3 Rehabilitation				
4.1 Turf laid, rolled and watered - couch	122	m2	\$ 12.22	\$ 1,492
4.2 Ground cover and planting	122	m2	\$ 32.07	\$ 3,915
4.3 Pine bark chips	12	m3	\$ 166.94	\$ 2,038
4.4 Footpath	270	m2	\$ 309.46	\$ 83,553
TOTAL PRELIMINARY CONSTRUCTION COSTS				\$ 181,773
5 Pre-construction costs				
Design (includes Survey, Investigation Design, Geotech, REF, Concept & Detail Design)			15%	\$ 27,266
Project Management of Design			15%	\$ 4,090
Pre-construction sub-total				\$ 31,356
Pre-construction contingency			40%	\$ 12,542
TOTAL PRE-CONSTRUCTION COSTS				\$ 43,898
6 Additional construction costs				
Preliminary construction cost				\$ 181,773
Construction management/supervision			15%	\$ 27,266
Construction sub-total				\$ 209,039
Construction contingency			40%	\$ 83,616
TOTAL CONSTRUCTION COSTS				\$ 292,655
TOTAL PROJECT ESTIMATE				\$ 336,553

North Creek FRMS - Option Costs**PRELIMINARY PROJECT COST ESTIMATE FOR FLOOD MITIGATION WORKS**

Date of Estimate: Jun-25

Wilton Close Basin

Involves the following construction works:

- Formation of bund (max 1.8m high)
- Excavation of basin
- Rehabilitation works

ITEM DESCRIPTION	QTY	UNIT	RATE	SUB-TOTAL
1 Construction Preliminaries				
1.1 Establishment (Project Inception, Management and Coordination)	1	ea	\$ 10,000.00	\$ 10,000
1.2 Preparation and implementation of preliminaries (e.g. CEMP, SMP, TCP, QMP)	1	ea	\$ 20,000.00	\$ 20,000
1.3 Survey and set out works	2	day	\$ 1,221.54	\$ 2,443
1.4 Temporary Fencing (light duty site mesh)	40	m	\$ 15.27	\$ 611
1.5 Temporary Signage	2	ea	\$ 508.97	\$ 1,018
1.6 Portable Toilet	16	week	\$ 88.55	\$ 1,417
1.7 Silt sausage	5	m	\$ 19.70	\$ 98
1.8 Silt fence	20	m	\$ 20.97	\$ 419
2 Site Preparation				
2.1 Land clearing (medium vegetation)	2,235	m2	\$ 0.65	\$ 1,456
2.2 Excavate over site to reduce levels in light soil	723	m3	\$ 27.38	\$ 19,804
2.3 Balance cut and fill (0.5/1m deep) in light soil	464	m3	\$ 18.63	\$ 8,637
2.4 Level ground surface under floor slabs, paving and the like, including compaction	1,470	m2	\$ 4.28	\$ 6,284
2.5 Labour forming sloping edge to filling	240	m	\$ 3.26	\$ 782
2.6 Cart excavated material	260	per 5km per m3	\$ 30.54	\$ 7,928
2.7 Dispose of clean fill	415	t	\$ 357.30	\$ 148,420
3 Rehabilitation				
4.1 Turf laid, rolled and watered - couch	2,011	m2	\$ 12.22	\$ 24,569
4.2 Ground cover and planting	223	m2	\$ 32.07	\$ 7,166
4.3 Pine bark chips	22	m3	\$ 166.94	\$ 3,731
4.4 Sign 450mm x 600mm	2	ea	\$ 468.26	\$ 937
TOTAL PRELIMINARY CONSTRUCTION COSTS				\$ 265,720
5 Pre-construction costs				
Design (includes Survey, Investigation Design, Geotech, REF, Concept & Detail Design)			15%	\$ 39,858
Project Management of Design			15%	\$ 5,979
Pre-construction sub-total				\$ 45,837
Pre-construction contingency			40%	\$ 18,335
TOTAL PRE-CONSTRUCTION COSTS				\$ 64,171
6 Additional construction costs				
Preliminary construction cost				\$ 265,720
Construction management/supervision			15%	\$ 39,858
Construction sub-total				\$ 305,578
Construction contingency			40%	\$ 122,231
TOTAL CONSTRUCTION COSTS				\$ 427,809
TOTAL PROJECT ESTIMATE				\$ 491,980