



Appendix N

Project Number 117098
 Project Name North Byron FRMS
 Date 16/01/2020
 Filename 01_Byron_Cost_Estimate

1	2	3	4	5	6	7	8	9	10	11	12	13	14		
		Levee/ Embankment Features						Excavation		Pipe					
Option ID	Brief Description	Length (m)	Height (m)	Crest Width (m)	Batter Slope (1v: xh)	Footprint Width (m)	Fill Volume (m ³)	Cut Volume (m ³)	Surface Area (m ²)	Pipe Upgrade Length (m)	Culvert Diameter (m)	Trench Width (m)	Total Trench Volume (m ³)	Total	Total
AC	Avocado Court/Grevillea Avenue Drainage upgrade Increase pipe diameter from 600/750 to 900/1200, add two inlet pits	-	-	-	-	-	-	-	-	363	900	1.35	490	\$ 550,000.00	\$0.55 M
BL	Billinudgel Levee + Billinudgel Upgrade	650	3	5	1	10	12,188		6,500	165	2	3	446	\$ 1,390,000.00	\$1.39 M
BI	Billnudgel Infrastructure	110					-	4,600	-	-	-	-	-	\$ 850,000.00	\$0.85 M

Option ID: AC

Avocado Court/Grevillea Avenue Drainage upgrade
 Increase pipe diameter from 600/750 to 900/1200, add two inlet pits

[NOTE: Edit Quantities and Sizes in the Options Summary table, not in the below box](#)

3	4	5	6	7	8
Length (m)	Height (m)	Crest Width (m)	Batter Slope (1v: xh)	Embankment Footprint Width (m)	Fill Volume (m ³)
0	0	0	0	0	0
9	10	11	12	13	14
Cut Volume (m ³)	Surface Area (m ²)	Pipe Upgrade Length (m)	Culvert Diameter (m)	Trench Width (m)	Total Trench Volume
0	0	363	900	1.35	490.05

	Fixed Costs	UNIT	QUANTITY	Rate (ex GST)	COST
Design	Design, Consultations, Approvals and Construction Management	item	1	\$ 20,000.00	\$ 20,000.00
	Project Management & General Construction Cost (15% of subtotal)	item	1	15%	\$ 71,507.17
Roadworks	Site Preparation, removal of existing road surface	m ²	545	\$ 40.00	\$ 21,780.00
	Control of traffic during works (nominal allowance) (assumed \$500 per lin.m)	lin.m	10	\$ 500.00	\$ 5,000.00
	Reinstate Road Surface	m ²	545	\$ 40.00	\$ 21,780.00
	Adjustment of existing services (nominal allowance) (assumed 10% of drainage installation cost)	item	1	10%	\$ 18,262.40
Earthworks	Removal of top soil and vegetation (100 mm)	m ³	0	\$ 16.00	\$
	Excavation	m ³	0	\$ 50.00	\$
	Improvement of Excavated material	m ³	0	\$ 18.00	\$
	Haulage of imported Fill	km	0	\$ 18.00	\$
	Disposal of Contaminated Spoil	m ³	0	\$ 80.00	\$
	Fill in embankment	m ³	0	\$ 55.00	\$
	Fuel	l/m ³	0	\$ 0.75	\$
	Compaction	m ³	0	\$ 8.00	\$
	Top soil placement/seeding	m ²	0	\$ 15.00	\$
	Erosion Protection/ RipRap/ Site Remediation	item	0	\$ 5,000.00	\$
	Remove Rail and Bridge Infrastructure	m ²	0	\$ 100.00	\$
Culvert Upgrade	Box Culvert: 2.7m x 2.4m	m	0	\$ 2,783.33	\$
	Box Culvert: 1.8m x 2m	m	0	\$ 980.20	\$
	Box Culvert: 1.8m x 1.8m	m	0	\$ 980.20	\$
	Pipe 375 x 2.44 RJ Class 4	m	37	\$ 65.00	\$ 2,405.00
	Pipe 600 x 2.44 RJ Class 4	m	0	\$ 172.31	\$
	Pipe 750 x 2.44 RJ Class 4	m	0	\$ 279.81	\$
	Pipe 900 x 2.44 RJ Class 4	m	138	\$ 256.00	\$ 35,328.00
	Pipe 1200 x 2.44 RJ Class 4	m	188	\$ 670.08	\$ 125,975.04
	Pipe 1800 x 2.44 RJ Class 4	m	0	\$ 978.28	\$
	Single Cell Headwall to suit 375DN pipe	item	0	\$ 315.00	\$
	Single Cell Headwall to suit 600DN pipe	item	0	\$ 410.00	\$
	Single Cell Headwall to suit 750DN pipe	item	0	\$ 720.00	\$
	Single Cell Headwall to suit 900DN pipe	item	0	\$ 945.00	\$
	Single Cell Headwall to suit 1200DN pipe	item	0	\$ 1,190.00	\$
	Single Cell Headwall to suit 1800DN pipe	item	0	\$ 14,175.14	\$
	Drainage Pit	item	2	\$ 5,000.00	\$ 10,000.00
	Junction Pit	item	1	\$ 5,000.00	\$ 5,000.00
	Excavate Trench	m ³	490	\$ 80.00	\$ 39,204.00
	Install Culvert	m	363	\$ 280.00	\$ 101,640.00
	Backfill and Site Remediation	m	363	\$ 180.00	\$ 65,340.00
Install new outlet structure, including erosion protection as required	item	1	\$ 5,000.00	\$ 5,000.00	
Total					\$0.55 M

Option ID: BI

Billnudge Infrastructure

NOTE: Edit Quantities and Sizes in the Options Summary table, not in the below box

3	4	5	6	7	8
Length (m)	Height (m)	Crest Width (m)	Batter Slope (1v: xh)	Embankment Footprint Width (m)	Fill Volume (m ³)
110	0	0	0	0	0
9	10	11	12	13	14
Cut Volume (m ³)	Surface Area (m ²)	Pipe Upgrade Length (m)	Culvert Diameter (m)	Trench Width (m)	Total Trench Volume
4600	0	0	0	0	0

	Fixed Costs	UNIT	QUANTITY	Rate (ex GST)	COST
Design	Design, Consultations, Approvals and Construction Management	item	1	\$ 20,000.00	\$ 20,000.00
	Project Management & General Construction Cost (15% of subtotal)	item	1	15%	\$ 110,580.00
Roadworks	Site Preparation, removal of existing road surface	m ²	0	\$ 40.00	\$
	Control of traffic during works (nominal allowance) (assumed \$500 per lin.m)	lin.m	0	\$ 500.00	\$
	Reinstate Road Surface	m ²	0	\$ 40.00	\$
	Adjustment of existing services (nominal allowance) (assumed 10% of drainage installation cost)	item	0	10%	\$
Earthworks	Removal of top soil and vegetation (100 mm)	m ³	0	\$ 16.00	\$
	Excavation	m ³	4,600	\$ 50.00	\$ 230,000.00
	Improvement of Excavated material	m ³	4,600	\$ 18.00	\$ 82,800.00
	Haulage of imported Fill	km	0	\$ 18.00	\$
	Disposal of Contaminated Spoil	m ³	3,680	\$ 80.00	\$ 294,400.00
	Fill in embankment	m ³	0	\$ 55.00	\$
	Fuel	l/m ³	0	\$ 0.75	\$
	Compaction	m ³	0	\$ 8.00	\$
	Top soil placement/seeding	m ²	0	\$ 15.00	\$
	Erosion Protection/ RipRap/ Site Remediation	item	0	\$ 5,000.00	\$
	Remove Rail and Bridge Infrastructure	m ²	1,100	\$ 100.00	\$ 110,000.00
Culvert Upgrade	Box Culvert: 2.7m x 2.4m	m	0	\$ 2,783.33	\$
	Box Culvert: 1.8m x 2m	m	0	\$ 980.20	\$
	Box Culvert: 1.8m x 1.8m	m	0	\$ 980.20	\$
	Pipe 375 x 2.44 RJ Class 4	m	0	\$ 65.00	\$
	Pipe 600 x 2.44 RJ Class 4	m	0	\$ 172.31	\$
	Pipe 750 x 2.44 RJ Class 4	m	0	\$ 279.81	\$
	Pipe 900 x 2.44 RJ Class 4	m	0	\$ 256.00	\$
	Pipe 1200 x 2.44 RJ Class 4	m	0	\$ 670.08	\$
	Pipe 1800 x 2.44 RJ Class 4	m	0	\$ 978.28	\$
	Single Cell Headwall to suit 375DN pipe	item	0	\$ 315.00	\$
	Single Cell Headwall to suit 600DN pipe	item	0	\$ 410.00	\$
	Single Cell Headwall to suit 750DN pipe	item	0	\$ 720.00	\$
	Single Cell Headwall to suit 900DN pipe	item	0	\$ 945.00	\$
	Single Cell Headwall to suit 1200DN pipe	item	0	\$ 1,190.00	\$
	Single Cell Headwall to suit 1800DN pipe	item	0	\$ 14,175.14	\$
	Drainage Pit	item	0	\$ 5,000.00	\$
	Junction Pit	item	0	\$ 5,000.00	\$
	Excavate Trench	m ³	0	\$ 80.00	\$
	Install Culvert	m	0	\$ 280.00	\$
	Backfill and Site Remediation	m	0	\$ 180.00	\$
Install new outlet structure, including erosion protection as required	item	0	\$ 5,000.00	\$	
Total					\$0.85 M

Option ID: BL

Billinudgel Levee + Billinudgel Upgrade

NOTE: Edit Quantities and Sizes in the Options Summary table, not in the below box

3	4	5	6	7	8
Length (m)	Height (m)	Crest Width (m)	Batter Slope (1v: xh)	Embankment Footprint Width (m)	Fill Volume (m ³)
650	2.5	5	1	10	12187.5
9	10	11	12	13	14
Cut Volume (m ³)	Surface Area (m ²)	Pipe Upgrade Length (m)	Culvert Diameter (m)	Trench Width (m)	Total Trench Volume
0	6500	165	1.8	2.7	445.5

	Fixed Costs	UNIT	QUANTITY	Rate (ex GST)	COST
Design	Design, Consultations, Approvals and Construction Management	item	1	\$ 20,000.00	\$ 20,000.00
	Project Management & General Construction Cost (15% of subtotal)	item	1	15%	\$ 180,869.25
Roadworks	Site Preparation, removal of existing road surface	m ²	0	\$ 40.00	\$
	Control of traffic during works (nominal allowance) (assumed \$500 per lin.m)	lin.m	0	\$ 500.00	\$
	Reinstate Road Surface	m ²	0	\$ 40.00	\$
	Adjustment of existing services (nominal allowance) (assumed 10% of drainage installation cost)	item	0	10%	\$
Earthworks	Removal of top soil and vegetation (100 mm)	m ³	650	\$ 16.00	\$ 10,400.00
	Excavation	m ³	0	\$ 50.00	\$
	Improvement of Excavated material	m ³	0	\$ 18.00	\$
	Haulage of imported Fill	km	0	\$ 18.00	\$
	Disposal of Contaminated Spoil	m ³	0	\$ 80.00	\$
	Fill in embankment	m ³	12,188	\$ 55.00	\$ 670,312.50
	Fuel	l/m ³	12,188	\$ 0.75	\$ 9,140.63
	Compaction	m ³	12,188	\$ 8.00	\$ 97,500.00
	Top soil placement/seeding	m ²	6,500	\$ 15.00	\$ 97,500.00
	Erosion Protection/ RipRap/ Site Remediation	item	0	\$ 5,000.00	\$
Culvert Upgrade	Remove Rail and Bridge Infrastructure	m ²	100	\$ 100.00	\$ 10,000.00
	Box Culvert: 2.7m x 2.4m	m	0	\$ 2,783.33	\$
	Box Culvert: 1.8m x 2m	m	20	\$ 980.20	\$ 19,604.00
	Box Culvert: 1.8m x 1.8m	m	45	\$ 980.20	\$ 44,109.00
	Pipe 375 x 2.44 RJ Class 4	m	0	\$ 65.00	\$
	Pipe 600 x 2.44 RJ Class 4	m	20	\$ 172.31	\$ 3,446.20
	Pipe 750 x 2.44 RJ Class 4	m	0	\$ 279.81	\$
	Pipe 900 x 2.44 RJ Class 4	m	0	\$ 256.00	\$
	Pipe 1200 x 2.44 RJ Class 4	m	0	\$ 670.08	\$
	Pipe 1800 x 2.44 RJ Class 4	m	80	\$ 978.28	\$ 78,262.40
	Single Cell Headwall to suit 375DN pipe	item	2	\$ 315.00	\$ 630.00
	Single Cell Headwall to suit 600DN pipe	item	0	\$ 410.00	\$
	Single Cell Headwall to suit 750DN pipe	item	0	\$ 720.00	\$
	Single Cell Headwall to suit 900DN pipe	item	0	\$ 945.00	\$
	Single Cell Headwall to suit 1200DN pipe	item	0	\$ 1,190.00	\$
	Single Cell Headwall to suit 1800DN pipe	item	2	\$ 14,175.14	\$ 28,350.28
	Drainage Pit	item	0	\$ 5,000.00	\$
	Junction Pit	item	0	\$ 5,000.00	\$
	Excavate Trench	m ³	446	\$ 80.00	\$ 35,640.00
	Install Culvert	m	165	\$ 280.00	\$ 46,200.00
Backfill and Site Remediation	m	165	\$ 180.00	\$ 29,700.00	
Install new outlet structure, including erosion protection as required	item	1	\$ 5,000.00	\$ 5,000.00	
Total					\$1.39 M

