



Abstract

The Copper Coast Council has adopted and applied the use of a Stormwater Management Plan to manage stormwater run-off within the Copper Coast Region in order to minimize flooding, danger and damage, and the impacts of run-off on the receiving waters. This plan has been prepared in accordance with Moonta, and Kadina Stormwater Management Plans.

5 Year Stormwater Management Plan

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1. INTRODUCTION

The Copper Coast Council has adopted and applied the use of a Stormwater Management Plan to manage stormwater run-off within the Copper Coast Region. Stormwater Management is designed to minimize flooding, danger and damage, and the impacts of run-off on the receiving waters. Stormwater run-off is referred to as rainfall that flows over the ground surface and created when urban development takes place in rural catchment such as roads, driveways, parking lots and rooftops.

This plan to be read in conjunction with the following associated Council document:

- Copper Coast Council Infrastructure & Asset Management Plan 2017-2027
- 5 Year Road Transport Plan
- 5 Year Sealed Footpath Plan
- Sealing of Unsealed Roads within Built-up Areas
- Stormwater Management Plan Project No. 150500 Doc No. WGA150500-RP-CV-0002 Rev G 28 August 2019
- Moonta, Moonta Bay & Port Hughes Stormwater Management Plan District Council of the Copper Coast Ref: 12026-3G Southfront.

2. PLAN OBJECTIVE

- Enable the control of stormwater to prevent flooding of properties during a 1 in 5 years storm event
- Minimise damage to properties during a 1 in 100 years storm event
- Provide pollution control.

This group of assets include a combination of underground stormwater systems, pumping stations, wetlands and detention basins, and open channel systems, which combine to provide flood prevention and protection to the Copper Coast Council.

3. DECISION PROCESS OBJECTIVES

As per the Copper Coast Council Infrastructure & Asset Management Plan 2017-2027, Stormwater Management works are assessed on the following criteria;

- Analysis of Drainage deficiencies against the occurrence of a one in five storm event
- Provide an acceptable level of protection from flooding
- Manage the quality of run-off and effect on the receiving waters (marine environment)
- Identify opportunities for stormwater harvesting
- Promote Water Sensitive Urban Design (WSUD) measures that can maximise the potential to achieve multi-objective outcome
- Attain desirable planning outcomes associated with new development
- Promote sustainable management of stormwater infrastructure, including maintenance
- Assets are maintained in a strategic way from planning and creation, through to lifecycle of use, maintenance and repair, to renewal or upgrade
- Financial Commitments – Identified for asset management at planned levels of service and availability, including the availability of Grants and Co-Funding agreements
- Information and Assessment Systems support the optimum management of assets, allocation of required funding and continuous improvement of practices
- Levels of service are maintained, regular reviewed and revised if required.

4. MOONTA STORMWATER MANAGEMENT PLAN 2020-2026



Moonta Stormwater Management Plan 2020- 2021

Street Name	Project Title	Locality	Construction Year	Approx. Length (m)	Approx. cost (\$)
Moonta Road	Open channel	East Terrace to Marine Parade	2020	1,100	\$100,000
East Terrace	Underground pipe System & swale drain	Narangga to Moonta Road	2020	NA	\$50,000
Carlisle, Monmouth & Cambridge Street	Underground pipe system	Carlisle Street between Monmouth & Cambridge Street	2020	200	\$110,000
Part of Gulf and Trelawney Street	Kerb & underground pipe system	Between Gulf Street & Rossiters Road	2020	100m pipe & 660 kerb	\$176,000
				Total Estimated Cost	\$436,000

Moonta Stormwater Management Plan 2021-2022

Street Name	Project Title	Locality	Construction Year	Approx. Length (m)	Approx. cost (\$)
Moonta CBD	Underground pipe system	George, Henry, Robert & William Street	2021	500	\$200,000
Carlisle Street	Kerb	Narangga Street to Monmouth Street	2021	240	\$50,000
Randolph, Edward, Charles & West Tce (Port Hughes)	Underground pipe system design	Randolph, Edward, Charles & West Terrace (Port Hughes)	2021	NA	\$10,000 - \$15,000
Narangga Terrace	Kerb	Between Brokenshire & Carlisle Street, North side only	2021	540	\$110,000
Chapman Road	Swale drain	Chapman Road	2021	NA	\$80,000
				Total Estimated Cost	\$455,000

Moonta Stormwater Management Plan 2022-2023

Street Name	Project Title	Locality	Construction Year	Approx. Length (m)	Approx. Cost (\$)
Randolph, Edward, Charles & West Tce (Port Hughes)	Underground pipe system	Randolph, Edward, Charles & West Terrace (Port Hughes)	2022	N/A	\$150,000
Narangga Terrace	Kerb	Between Chapman & Brokenshire Street, North side only	2022	260	\$52,000
Victoria Street	Kerb	Victoria Street (North side only)	2022	360	\$74,000
Princess Street	Kerb	Princess Street	2022	180	\$36,000
Falmouth Street	Kerb	Falmouth Street	2022	230	\$46,000
				Total Estimated Cost	\$358,000

Moonta Stormwater Management Plan 2023-2024

Street Name	Project Title	Locality	Construction Year	Approx. Length (m)	Approx. Cost (\$)
Coast Road	Underground pipe system	Between Monmouth & Moonta Road	2023	180	\$76,000
Monmouth Street	Kerb	Between Coast Road & Carlisle Street	2023	660	\$130,000
Randolph, Edward, Charles & West Terrace (Port Hughes)	Underground pipe system	Randolph, Edward, Charles & West Terrace (Port Hughes)	2023	N/A	\$150,000
Trelawney Street	Kerb & underground pipe system	Between Gulf & Francis Place	2023	430	\$110,000
				Total Estimated Cost	\$466,000

Moonta Stormwater Management Plan 2024-2025

Street Name	Project Title	Locality	Construction Year	Approx. Length (m)	Approx. cost (\$)
Elphick Street	Kerb	Snell Ave to Dowling Drive	2024	240	\$50,000
Dowling Way	Kerb	Snell Ave to Dowling Drive	2024	240	\$50,000
Randolph, Edward, Charles & West Terrace (Port Hughes)	Underground pipe system	Randolph, Edward, Charles & West Terrace (Port Hughes)	2024	NA	\$100,000
Trelawney Street	Kerb	Between Simms Cove & Francis Place	2024	470	\$100,000
Moontana Ave	Kerb	Between Gulf & Rossiters Road	2024	260	\$50,000
Gulf Street	Kerb	Between Trelawney & Coast Road	2024	400	\$80,000
				Total Estimated Cost	\$430,000

5. MOONTA AND PORT HUGHES WORKS SUMMARY 2020/2025

Moonta and Port Hughes Works Summary 2020/2021

1. Moonta Road Open Channel

The works will involve expansion of the stormwater channel on Moonta Road (East Terrace to Marine Parade). The new channel will drain to a culvert under East Terrace and Carlisle Street. It will be approximately 1.1 kilometres long. The cost of this project has been preliminarily estimated to be \$100,000.

2. East Terrace Underground Pipe and Swale Drain

The works will involve the construction of **a side entry pit** and **100m of underground concrete pipe** as well as swale drain along East Terrace. The cost of this project has been preliminarily estimated to be \$50,000.

3. Carlisle, Monmouth Street & Cambridge Street Underground Pipe

The works will involve the construction of **6 side entry pit**, **200m of underground concrete pipe**, and **a culvert box** under Carlisle Street. The cost of this project has been preliminarily estimated to be \$110,000.

4. Part of Gulf and Trelawney Street Kerbing and Underground Pipe

The works will involve the construction of **2 side entry pit**, **100m of concrete pipe**, **660m of kerbing**, and **4 pram ramp**. The cost of this project has been preliminarily estimated to be \$176,000.





Project 4 locations

Moonta and Port Hughes Works Summary 2021/2022

1. Moonta CBD (George, Henry, Robert & William Street)

The works will involve the construction of **several side entry pits** and **approximately 500m of underground concrete pipe**. The cost of this project has been estimated around \$200,000.

2. Carlisle Street (kerbing)

The works will involve the construction of **240m kerbing** and **2 pram ramp**. The cost of this project has been estimated around \$50,000.

3. Port Hughes (Randolph, Edward, Charles & West Terrace underground concrete pipe)

There is minimal existing underground infrastructure and kerbs in Port Hughes. Further guidance is required from engineers for a detailed design. Estimated costs of \$10,000 to \$15,000.

4. Narangga Terrace Kerbing (Between Brokenshire & Carlisle Street, North side only)

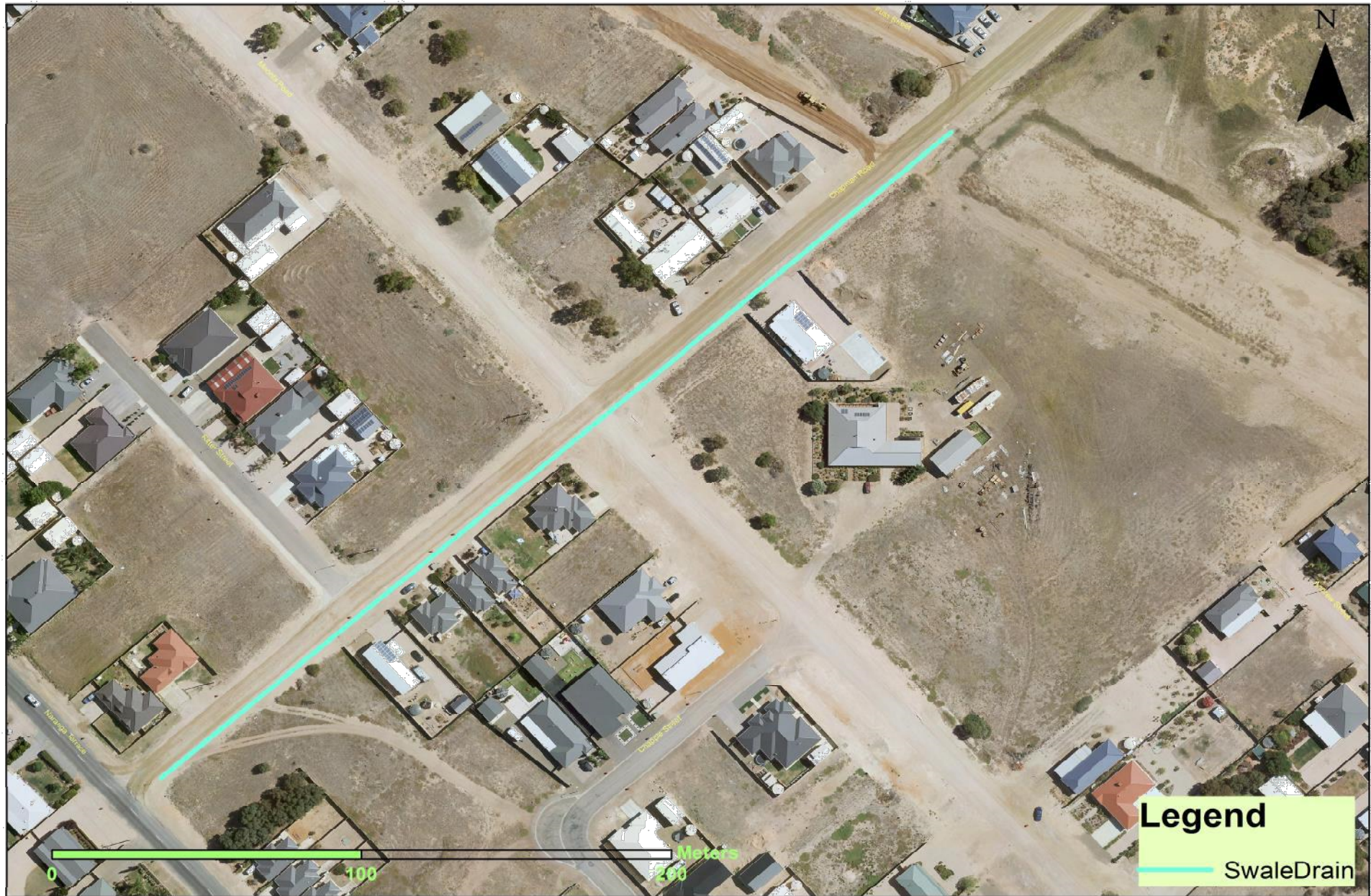
The works will involve the construction of **540m kerbing**. The cost of this project has been estimated around \$110,000.

5. Chapman Road

The works will involve the construction of a **swale drain**. The cost of this project has been estimated around \$80,000.



Project 2 & 4 locations



Project 5 locations

Moonta and Port Hughes Works Summary 2022/2023

1. Port Hughes (Randolph, Edward, Charles & West Terrace underground concrete pipe)

The works will involve the construction of an **underground pipe**. The cost of this project has been estimated around \$150,000.

2. Narangga Terrace Kerbing (Between Chapman & Brokenshire Street, North side only)

The works will involve the construction of **260m kerbing**. The cost of this project has been estimated around \$52,000.

3. Victoria Street

The works will involve the construction of **360m kerbing (North side only)**. The cost of this project has been estimated around \$74,000.

4. Princess Street

The works will involve the construction of **180m kerbing**. The cost of this project has been estimated around \$36,000.

5. Falmouth Street

The works will involve the construction of **230m kerbing**. The cost of this project has been estimated around \$46,000.



Project 2 to 5 locations

Moonta and Port Hughes Works Summary 2023/2024

1. Coast Road (Between Monmouth & Moonta Road underground concrete pipe)

The works will involve the construction of a **180m underground concrete pipe** and **3 side entry pits**. The cost of this project has been estimated around \$76,000.

2. Monmouth Street Kerbing (Between Coast Road & Carlisle Street)

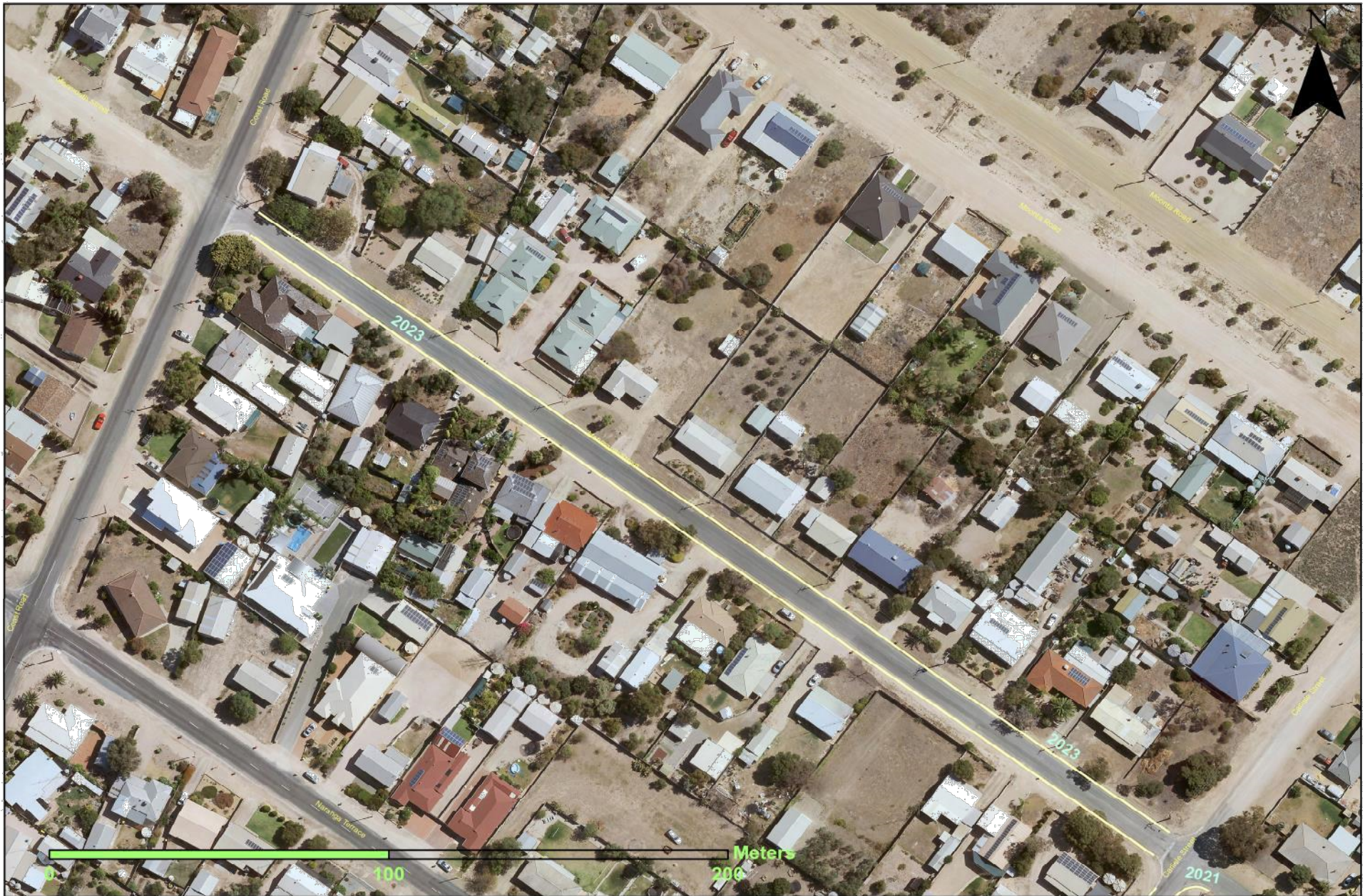
The works will involve the construction of **660m kerbing**. The cost of this project has been estimated around \$130,000.

3. Port Hughes (Randolph, Edward, Charles & West Terrace underground concrete pipe)

The works will involve the construction of an **underground pipe**. The cost of this project has been estimated around \$150,000.

4. Trelawney Street Kerbing & Underground Concrete Pipe (Between Gulf & Francis Pl)

The works will involve the construction of **430m kerbing** and **underground concrete pipe**. The cost of this project has been estimated around \$110,000.



Project 2 locations (kerbing)



Project 4 locations

Moonta and Port Hughes Works Summary 2024/2025

1. Elphick Street Kerbing

The works will involve the construction of **240m kerbing**. The cost of this project has been estimated around \$50,000.

2 Dowling Way

The works will involve the construction of **240m kerbing**. The cost of this project has been estimated around \$50,000.

3. Port Hughes (Randolph, Edward, Charles & West Terrace underground concrete pipe)

The works will involve the construction of an **underground pipe**. The cost of this project has been estimated around \$100,000.

4. Trelawney Street Kerbing (Between Simms Cove & Francis Pl)

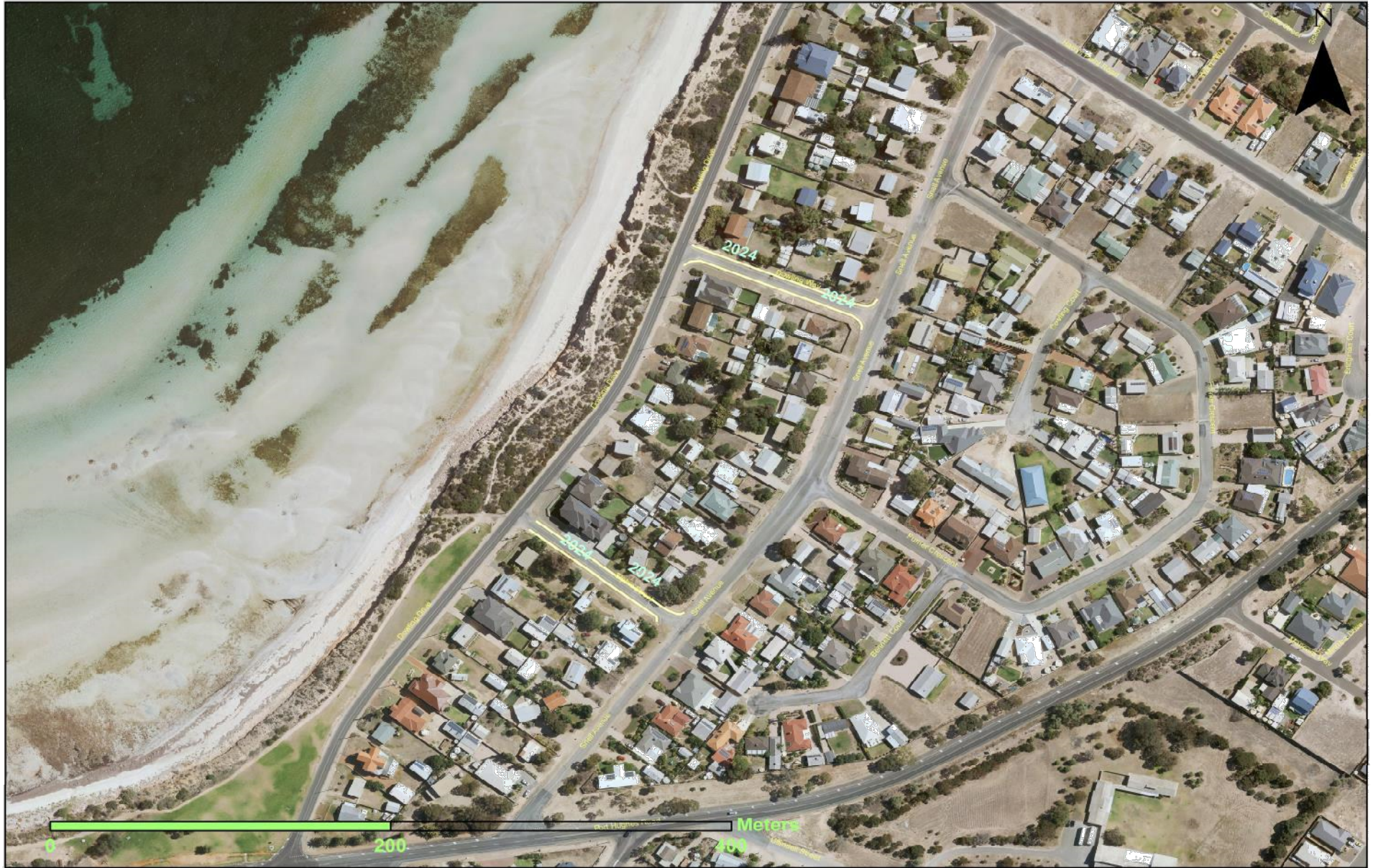
The works will involve the construction of **470m kerbing**. The cost of this project has been estimated around \$100,000.

5. Moontana Ave

The works will involve the construction of **260m kerbing**. The cost of this project has been estimated around \$50,000.

6. Gulf Street

The works will involve the construction of **400m kerbing**. The cost of this project has been estimated around \$80,000.



Project 1 & 2 locations



Project 3 locations (underground concrete pipe highlighted as red)



Project 5 & 6 locations



Project 1 locations

6. KADINA STORMWATER MANAGEMENT PLAN 2020-2025



Kadina Stormwater Management Plan 2020-2021

Street Name	Project Title	Locality	Construction Year	Approx. Length (m)	Approx. Cost (\$)
West Terrace & Paulson Road	Swale drain	West Terrace & Paulson Road	2020	N/A	\$26,000
Pannan Street	Underground pipe system	Harvest Christian College	2020	N/A	\$30,000-\$40,000
David Street	Kerb and Swale drain	Between George St & Brittain Rd	2020	480	\$85,000
Haynes Street	Swale drain	Haynes Street	2020	N/A	\$25,000
No 6 Lane	TBA	Between Hay & Waring Street	2020	N/A	TBA
				Total Estimated Cost	\$176,000

Kadina Stormwater Management Plan 2021-2022

Street Name	Project Title	Locality	Construction Year	Approx. Length (m)	Approx. Cost (\$)
Harris Road	Kerb	Between George St & Port Rd	2021	225	\$50,000
Musgrave Terrace	Swale drain upgrade	Musgrave Terrace	2021	N/A	\$85,000
Gurner Crescent	Swale drain & basin upgrade	Gurner Crescent	2021	N/A	\$40,000
				Total Estimated Cost	\$175,000

Kadina Stormwater Management Plan 2022-2023

Street Name	Project Title	Locality	Construction Year	Approx. Length (m)	Approx. Cost (\$)
Matta Road	Kerb & swale drain	Between Russell St & Farm Shed	2022	N/A	\$90,000
Dalrymple Street	Kerb	Between Matta Road & Daly Street	2022	N/A	\$80,000
Flinders Street	Kerb	Between Matta Road & Daly Street	2022	N/A	\$80,000
				Total Estimated Cost	\$250,000

Kadina Stormwater Management Plan 2023-2024

Street Name	Project Title	Locality	Construction Year	Approx. Length (m)	Approx. Cost (\$)
Lawrence Street	Basin upgrade	Lawrence Street	2023	NA	\$40,000
Goldsworthy & Russell St	Swale drain & Basin upgrade	Goldsworthy & Russell Street	2023	NA	\$105,000
David Street	Kerb & Swale drain	Between Lawrence St & Port Rd	2023	240	\$50,000
				Total Estimated Cost	\$195,000

Kadina Stormwater Management Plan 2024-2025

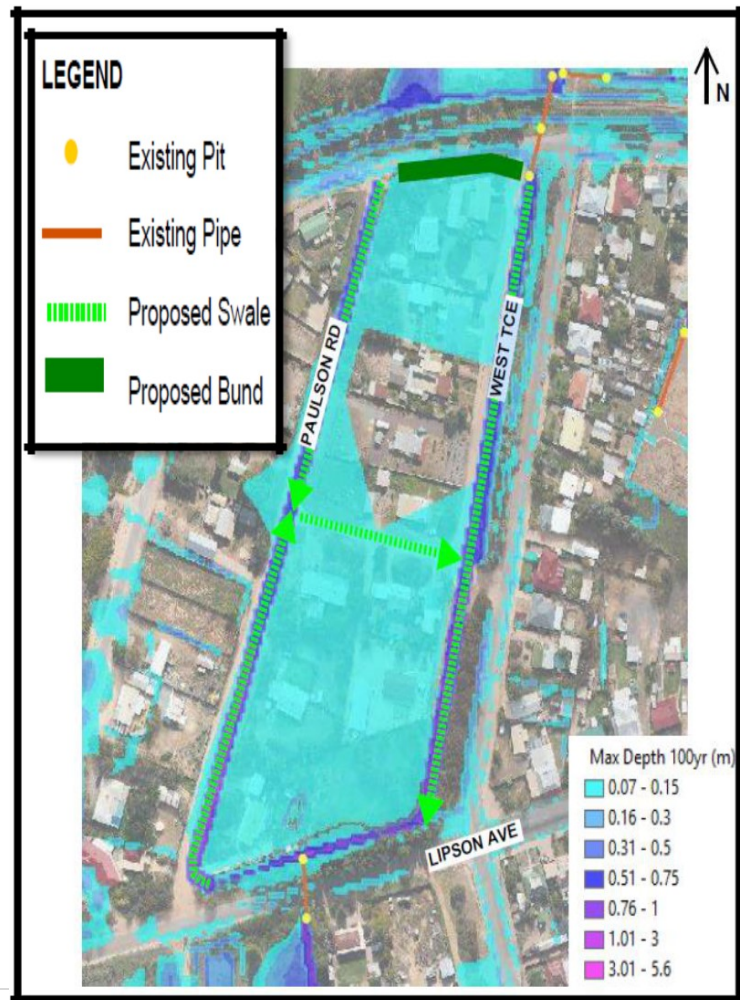
Street Name	Project Title	Locality	Construction Year	Approx. Length (m)	Approx. Cost (\$)
Gawler Street	Underground pipe system	Between Hay & Ewing Street	2024	250	\$100,000
East Terrace, No 7 Lane & Ward Street	Underground pipe system	East Terrace, No 7 Lane & Ward Street	2024	350	\$120,000
				Total Estimated Cost	\$220,000

7. KADINA WORKS SUMMARY 2020/2025

Kadina Works Summary 2020/2021

1. West Terrace & Paulson Road Swale Drain Upgrade

The works will involve the construction of a **swale drain along Paulson Road**, **upgrade swale drain on West Terrace** and a **bund**. The cost of this project has been estimated around \$26,000.



2. Pannan Street

Works are required for Pannan Street and design has not been completed as yet. However, it is estimated the project may cost \$30,000 to \$40,000.

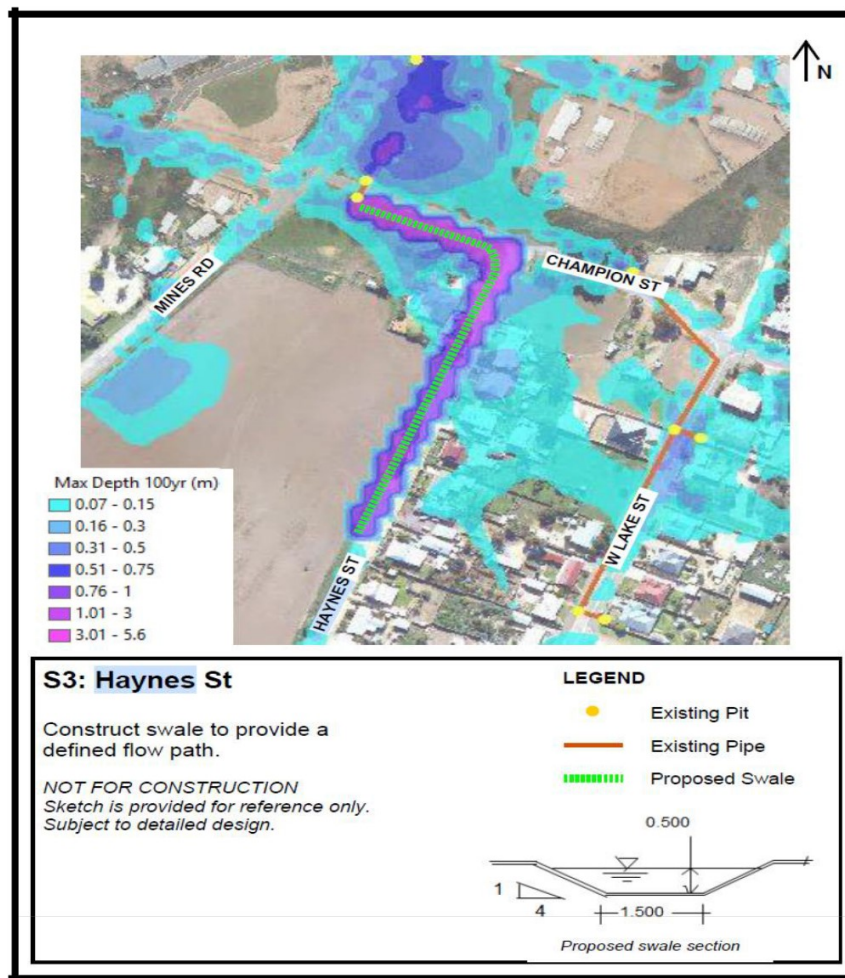


3. David Street

The works will involve the construction of a **swale drain on the western side of David Street and approximately 480m of kerbing on the other side**. The cost of this project has been estimated around \$85,000.

4. Haynes Street

The works will involve the construction of a **swale drain**. The cost of this project has been estimated around \$25,000.



5. No 6 Lane (Between Hay & Waring Street)

Water ponding in middle of the lane and there is no stormwater network around this lane. Investigation is continuing on finding a good solution.

Kadina Works Summary 2021/2022

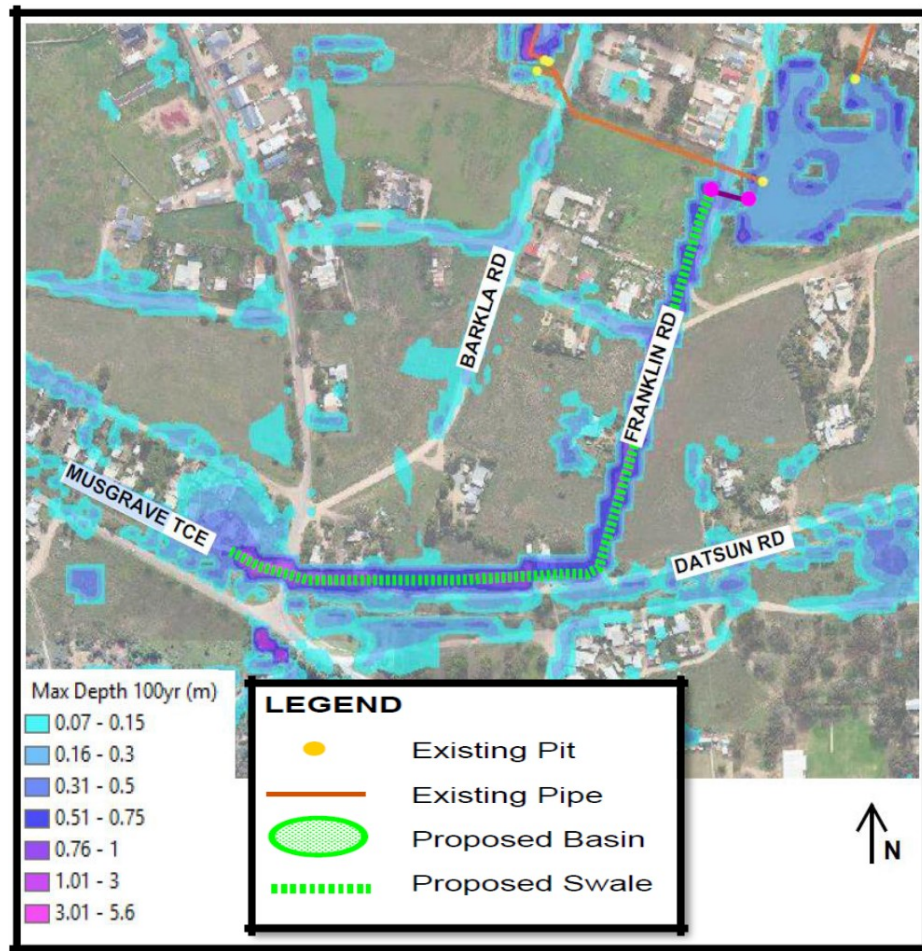
1. Harris Road

Harris Road listed for resealing in 2021/2022, however, the seal is in a fair condition. There is no drainage system along Harris Road and water ponding on gravel footpath. The cost of this project has been estimated around \$50,000.



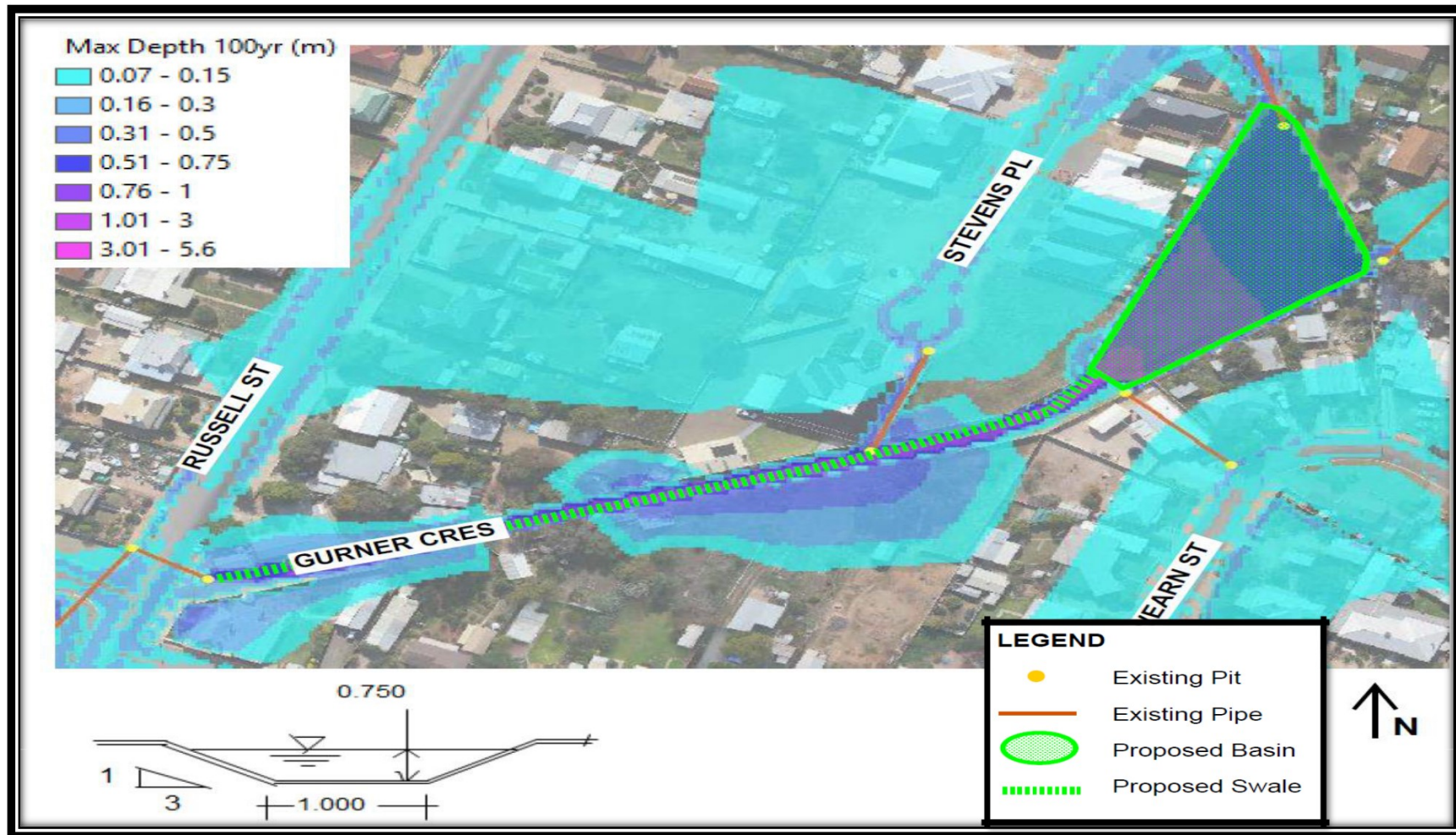
2. Musgrave Terrace

The works will involve upgrading of the **swale drain**. The cost of this project has been estimated around \$85,000.



3. Gurner Cres

The works will involve the upgrading of a **swale drain** and **basin**. The cost of this project has been estimated around \$40,000.



Kadina Works Summary 2022/2023

1. Matta Road (Kerbing & Swale Drain)

Matta Road listed for resealing in 2022/2023, however, the seal is in a fair condition. There is no drainage system along Matta Road. The works will involve constructing of **320m kerbing** on the southern side of street and a swale drain on the northern side. The cost of this project has been estimated around \$90,000.

2. Dalrymple Street Kerbing

Dalrymple Street listed for resealing in 2022/2023, however, the seal is in a fair condition. There is no drainage system along this road. The works will involve constructing of **400m kerbing**. The cost of this project has been estimated around \$80,000.

3. Flinders Street Kerbing

Flinders Street listed for resealing in 2022/2023, however, the seal is in a fair condition. There is no drainage system along this road. The works will involve constructing of **400m kerbing**. The cost of this project has been estimated around \$80,000.



Project 1 to 3 locations

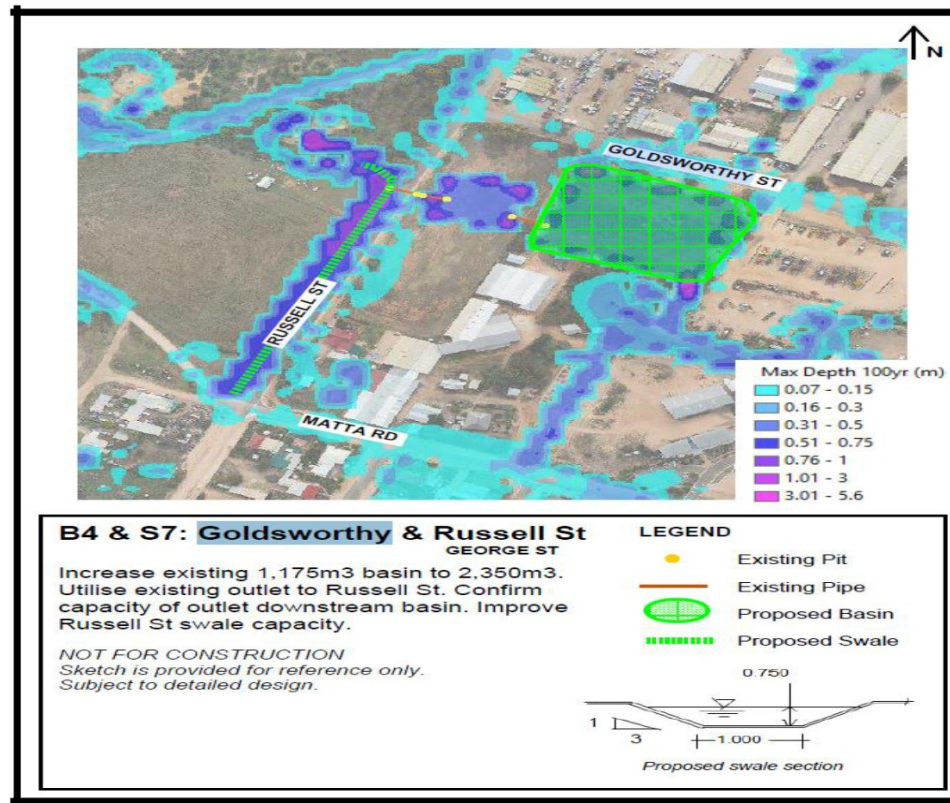
Kadina Works Summary 2023/2024

1. Lawrence Street Basin Upgrade

Investigation to determine impact of basin modifications and pump upgrades. The cost of this project has been estimated around \$40,000.

2. Goldsworthy & Russell Street Basin and Swale Drain Upgrade

The works will involve upgrading of the **swale drain** and **basin**. The cost of this project has been estimated around \$105,000.



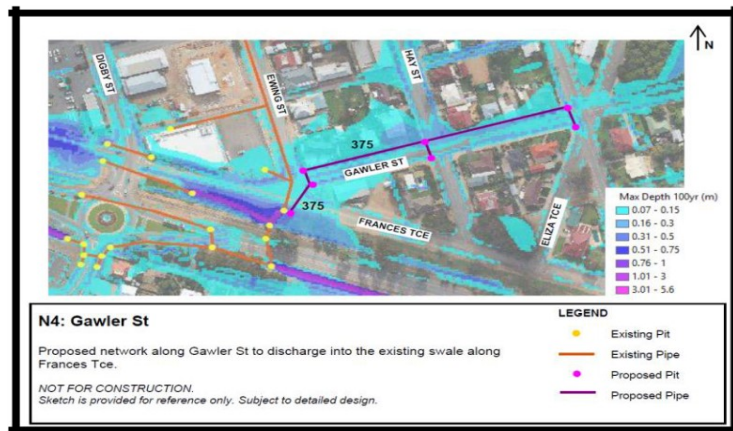
3. David Street Kerbing (Between Port Road & Lawrence Street)

The works will involve construction of **240m kerbing**. The cost of this project has been estimated around \$50,000.

Kadina Works Summary 2024/2025

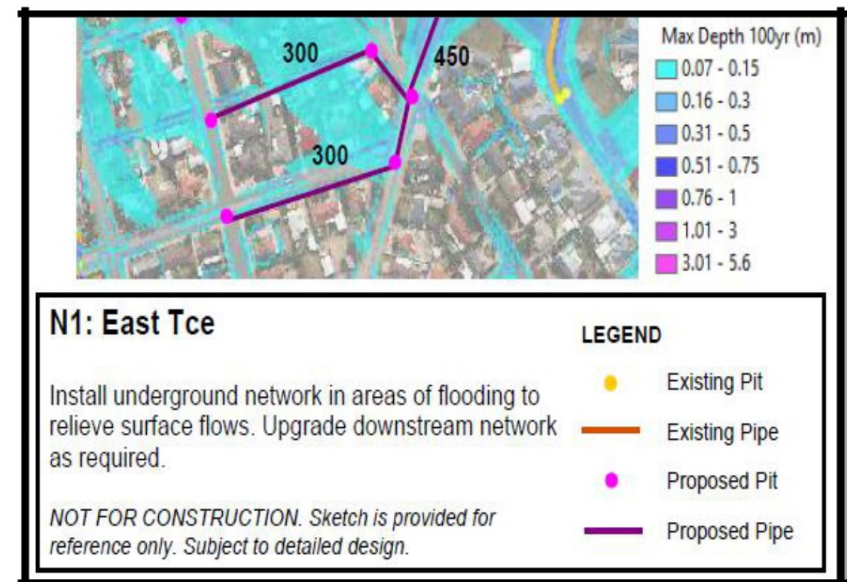
1. Gawler Street Kadina (Underground concrete pipe)

The works will involve constructing of 250m underground concrete pipe and several side entry pits. The cost of this project has been estimated around \$100,000.



2. East Terrace, No 7 Ln & Ward Street

The works will involve constructing of a **350m underground concrete pipe** and several side entry pits. The cost of this project has been estimated around \$120,000.



Financial summaries as per works program outlined below.

Financial Year	Kadina	Moonta/Port Hughes	Total Costs (\$)
2020/2021	\$176,000	\$436,000	\$612,000
2021/2022	\$175,000	\$455,000	\$630,000
2022/2023	\$250,000	\$358,000	\$608,000
2023/2024	\$195,000	\$466,000	\$661,000
2024/2025	\$220,000	\$430,000	\$650,000
		Total Estimated Cost	\$3,161,000