

**Brown Hill Keswick Creek**  
STORMWATER PROJECT

# Annual Report

## Brown Hill and Keswick Creeks Stormwater Board

*For the cities of Adelaide, Burnside, Mitcham,  
Unley and West Torrens*

23



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# Acknowledgment of Country

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The Brown Hill and Keswick Creeks Stormwater Board acknowledges that the project and our Constituent Councils are located on the traditional Country of the Kurna People of the Adelaide Plains and pays respect to Elders past and present.

We recognise and respect their cultural heritage, beliefs and relationship with the land. We acknowledge that they are of continuing importance to the Kurna people living today.

We also extend that respect to other Aboriginal Language groups and other First Nations.

*The Brown Hill and Keswick Creeks Stormwater Board tampendi, ngadlu Kurna yertangga banbabanbalyarnendi (inbarendi). Kurna meyunna yaiitya mattanya Womma Tarndanyako.*

*Parnako yailtya, parnuko tappa purruna, parnuko yerta ngadlu tampendi. Yellaka Kurna meyunna itto yailtya, tappa purruna, yerta kuma burro martendi, burro warriappendi, burro tangka martulyaiendi.*

*Kumarta yaiitya miyurna iyangka yalaka ngadlu tampinthe.*

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Kurna people play a key role in the design and delivery of the Brown Hill Keswick Creeks Stormwater Project and we value the input and guidance of representatives of the Kurna Nation Cultural Heritage Association (KNCHA) and RAW SA.

## **Willawilla - Brown Hill Creek**



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# 1. Chairperson's Report

*This is the seventh annual report of the Brown Hill and Keswick Creeks Stormwater Board, a regional subsidiary established in February 2018 under the Local Government Act 1999 (SA).*



The report canvasses the achievements of the Board over the preceding 12 months in implementing the Stormwater Management Plan and provides updates on the progress of continuing projects. The work of the Board and its contract partners and stakeholders in developing the Pakapakanthi Wetland in the South Park Lands was recognised in multiple awards including:

- National Award – Landscape Architect, Parks and Open Space
- National Award – Climate Positive Design Award
- Asia-Pacific Region – Award of Excellence, Parks and Open Space

The Board has been successful in achieving additional funding, including grant funding under the Urban Rivers and Catchments Program and the Disaster Ready Fund. The Board expresses its thanks to the State and Federal government, agencies and partners for their continued support of this important work.

The Board continues to work closely with the North South Corridor Project and the Department of Transport and Infrastructure in the integration of the Board's work into this significant infrastructure project.

As at the end of the 2024 financial year, works nearing completion included three packages of works along Lower Brown Hill Creek and works along Upper Brown Hill Creek at Millswood, with another five packages of work due to commence along Upper Brown Hill Creek.

The Chair, on behalf of the Board, extends thanks and appreciation to the project delivery team and in particular the Project Director. The Board wishes to acknowledge and thank our stakeholders including the Constituent Councils and Stormwater Management Authority for their continuing support and significant contributions.

***Judith Choate***

## 2. Project Director's Report



As we move into a new financial year, it has been wonderful to reflect on the accomplishments of the Board over the past 12 months. Capital expenditure for the year exceeded \$15m, our largest year to date by a significant margin. Our ability to deliver capital projects across multiple sites in a coordinated and efficient manner is testament to the processes that have been established and the team of professionals we are fortunate to work with. I aim for the Board to be a client of choice for local industry and it has been rewarding to see successful project outcomes delivered on the back of collaborative working relationships. We are fortunate to see our team of consultants seeking to continue engaging with the Board to provide services on future work packages.

Our ability to accelerate capital works projects has an immediate impact on flood affected locations throughout the catchment and the high flow event on 28 November 2023 was a stark reminder of the devastation experienced by residents and local community. I had the opportunity to meet with groups of residents following this event to hear of their experience and see the aftermath first-hand. Pursuit of project funding to further accelerate works and increase flood protection across the catchment remains a core focus.

The Commonwealth Government's \$10m funding contribution under the Preparing Australian Communities Program has allowed for accelerated delivery of packages 1-3 of the Lower Brown Hill Creek upgrades and we are now entering the final year of delivery of these works. We are also progressing the design phase of several works packages across Upper Brown Hill Creek – in Forestville Reserve, Orphanage Park, Betty Long Gardens, and additional locations within Forestville and Hawthorn. These works are supported by Commonwealth Government funding under the Disaster Ready Fund and the Urban Rivers and Catchments Program.

Our project is made possible because of the significant long-term funding commitment made by the Stormwater Management Authority and our Constituent Councils – the Cities of Adelaide, Burnside, Mitcham, Unley and West Torrens. The cooperation between these organisations to develop and implement a whole of catchment plan is demonstration of the foresight, management and expertise of those involved along the way.

I again extend my appreciation and thanks to the members of the Board, the Audit and Risk Committee and the Owners Executive Committee for your continued support.

***Peta Mantzarapis***

## 3. Strategy

### Our Purpose

*To effectively and efficiently deliver infrastructure works to mitigate serious flood risks and help safeguard properties across the Brown Hill Keswick Creek catchment.*



### Our Vision

To create a flood safe Brown Hill Keswick Creek catchment for residents and the public.

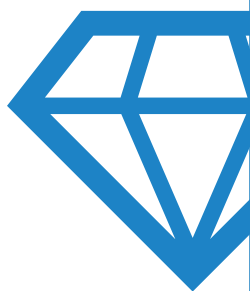
The cities of Adelaide, Burnside, Mitcham, Unley and West Torrens aim to become water sensitive cities. This vision is underpinned by six key objectives, the first of which is protection from flooding.



### Our Values

The values that underpin the operations of the Board include:

- **Integrity** – acting ethically, doing what is right and doing what we say we will do
- **Collaboration** – respectful and insightful engagement with all stakeholders
- **Excellence** – striving for the best in all that we do and stretching our capabilities
- **Progressive** – thinking outside the box to innovate and improve
- **Simplicity** – focussing our efforts on the things that are important



### Strategic Focus Areas

- Effective and efficient delivery of the Stormwater Management Plan
- Pursue opportunities for accelerated delivery
- Maximise the utility of our assets
- Enhance our partnerships and engagement
- Strengthen organisational performance

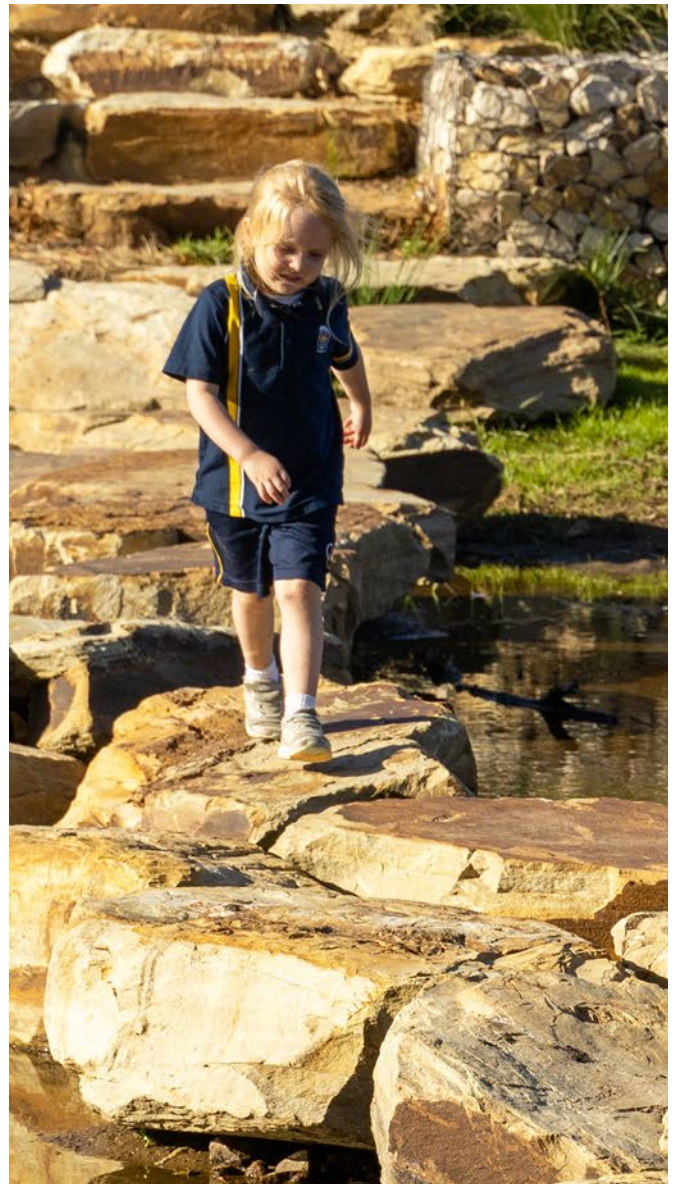


## 4. Establishment

The Brown Hill Keswick Creek Stormwater Project is the culmination of many years of investigation and planning. The Cities of Adelaide, Burnside, Mitcham, Unley and West Torrens have worked collaboratively to develop a comprehensive Stormwater Management Plan to mitigate serious flood risk and help safeguard properties across the catchment.

From its inception in 2007 until February 2018, the project was conducted as a joint arrangement between the Constituent Councils. The Plan was developed during this phase, leading to its subsequent approval by the Stormwater Management Authority and gazettal of its adoption in February 2017. A condition of the Stormwater Management Authority approving the Plan was that a regional subsidiary be established within 12 months to implement the plan and manage its works. The Brown Hill and Keswick Creeks Stormwater Board was established in February 2018 as a regional subsidiary pursuant to section 43 of and schedule 2 to the Local Government Act 1999.

The Board is governed by a Charter prepared by the five Constituent Councils and subsequently approved by the Minister for Local Government. The inaugural Board was appointed in August 2018 and is responsible for the administration of the affairs of the regional subsidiary.



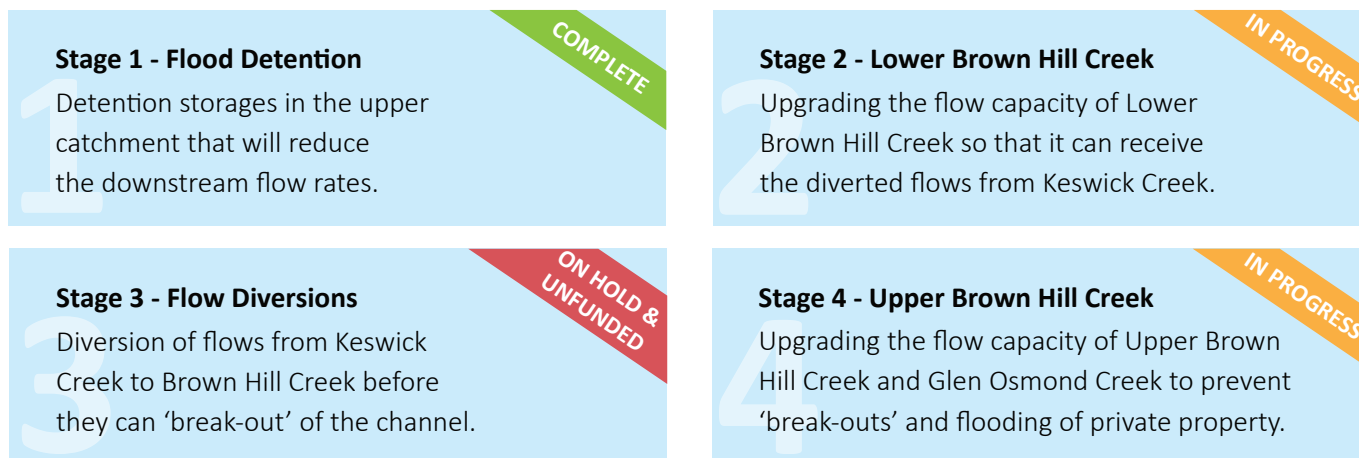




## 5. The Project

The Brown Hill Keswick Creek Stormwater Project aims to mitigate significant flood risk arising from four major watercourses in metropolitan Adelaide; Brown Hill, Keswick, Glen Osmond and Park Lands Creeks. The catchment is largely contained within the Constituent Council local government areas, which are home to more than 200,000 residents. The Brown Hill Keswick Creek Catchment Stormwater Management Plan outlines a whole-of-catchment flood mitigation strategy that comprises 4 key stages:

The plan is designed to provide flood protection to the community in the event of a 100-year average recurrence interval (ARI) flood event which would impact almost 4,000 properties and result in significant impact to the Adelaide Airport, Ashford Hospital, major arterial roads and freight corridors<sup>1</sup>. Economic modelling undertaken in 2021 indicated that total damage estimates associated with a significant flood event was \$418.5 million and the completed project would reduce that damage estimate to \$7.5 million, a net benefit of \$411 million.



<sup>1</sup> Brown Hill Keswick Creek Stormwater Project Business Case January 2022

**Adelaide Airport**

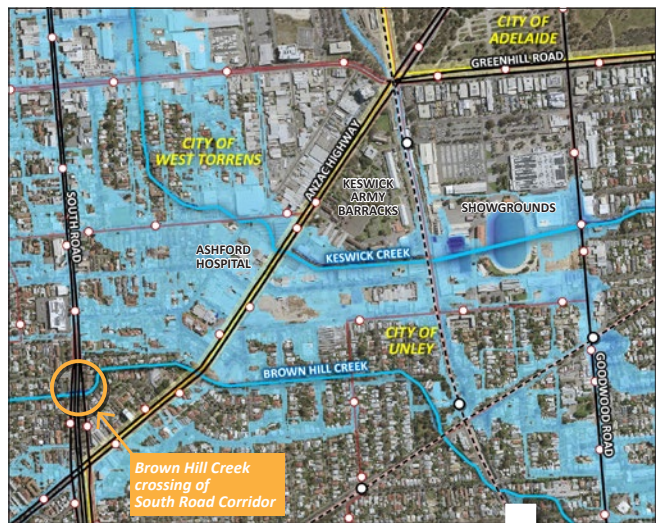


1 in 100 year event - base case



1 in 100 year event - with mitigation

**Keswick Army Barracks, Ashford Hospital & Showgrounds**



1 in 100 year event - base case



1 in 100 year event - with mitigation

## 6. Governance

The Brown Hill Keswick Creek Stormwater Project is administered by an independent Board in accordance with the requirements of the Local Government Act 1999 and the Board's Charter. A robust governance structure has been established, including well considered reporting framework, policies and procedures.

The Board is comprised of 5 independent members, appointed following recommendations made by a Nominations Committee of representatives from each of the Constituent Councils. Each Board member contributes a unique set of skills and experience, particularly covering:

- Corporate financial management
- Corporate governance
- Project management
- General management
- Engineering
- Economics
- Environmental management

### Current Board Members



**Judith Choate**  
Chairperson  
Appointed August 2018



**Geoff Vogt**  
Deputy Chairperson  
Appointed August 2018



**Rachel Barratt**  
Appointed August 2018



**Rob Gregory**  
Appointed August 2020



**Howard Lacy**  
Appointed August 2021

**Independent Member of Audit and Risk Committee**



**David Linder-Patton**  
Appointed February 2023

**Project Director**



**Peta Mantzarapis**  
Appointed January 2019

The Board’s Audit and Risk Committee comprises nominated Board members along with an independent member and meets quarterly.

The Board appoints a Project Director who is responsible for implementing the decisions of the Board and managing the operational requirements of the project.

**Owners Executive Committee**

The Owners Executive Committee is comprised of a representative from each of the Constituent Councils. Meetings between the Board and the Owners Executive Committee are scheduled quarterly and four meetings were held in the 2023/24 financial year.

We thank outgoing committee member Terry Buss for his significant contribution over many years and welcome Angelo Catinari representing the City of West Torrens. Membership of the committee is as follows:

- Tom McCready**  
Director, City Services  
*City of Adelaide*
- Chris Cowley**  
Chief Executive  
*City of Burnside*
- Daniel Baker**  
General Manager,  
Engineering &  
Horticulture  
*City of Mitcham*
- Aaron Wood**  
Manager Assets  
& Operations  
*City of Unley*
- Angelo Catinari**  
Chief Executive  
*City of West Torrens*

**Board Member Meeting Attendance 2023/24**

|                | Date | 11 Jul 2023 | 12 Sep 2023 | 14 Nov 2023 | 13 Feb 2024 | 12 Mar 2024 | 30 Apr 2024 | 11 Jun 2024 |
|----------------|------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Judith Choate  |      | ✓           | ✓           | ✓           | ✓           | ✓           | ✓           | ✓           |
| Geoff Vogt     |      | ✓           | ✓           | ✓           | ✓           | ✓           | ✓           | ✓           |
| Rachel Barratt |      | ✓           | ✓           | ✓           | ✓           | ✓           | ✓           | ✓           |
| Rob Gregory    |      | ✓           | ✓           | ✓           | ✓           | ✓           | —           | ✓           |
| Howard Lacy    |      | ✓           | ✓           | ✓           | ✓           | ✓           | ✓           | ✓           |

**Audit and Risk Committee Meeting Attendance 2023/24**

|                     | Date | 28 Aug 2023 | 1 Nov 2023 | 13 Feb 2024 | 28 May 2024 |
|---------------------|------|-------------|------------|-------------|-------------|
| Judith Choate       |      | ✓           | ✓          | ✓           | ✓           |
| Geoff Vogt          |      | ✓           | ✓          | ✓           | ✓           |
| Rachel Barratt      |      | ✓           | ✓          | ✓           | ✓           |
| Howard Lacy         |      | ✓           | ✓          | ✓           | ✓           |
| David Linder-Patton |      | ✓           | ✓          | ✓           | ✓           |

## 7. Key Stakeholders

The Brown Hill and Keswick Creeks Stormwater Board works to deliver successful project outcomes in an efficient and professional manner. We interact with a diverse range of internal and external stakeholders and value the contribution they make.



Constituent Councils



Stormwater Management Authority



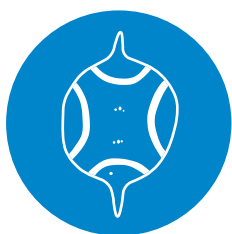
Green Adelaide



Federal and State Members



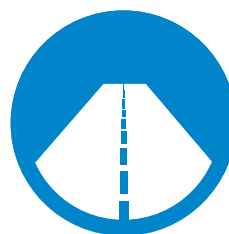
Adelaide Park Lands Authority



Karna Community



Residents



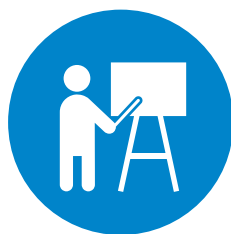
Commonwealth and State Government Departments



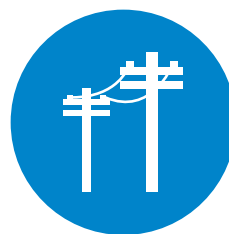
Community Groups



Suppliers



Consultants



Service Utility Providers



## 8. Project Partners

### Constituent Councils

The Brown Hill Keswick Creek Stormwater Project is the result of a collaborative effort over many years from our 5 Constituent Councils – the Cities of Adelaide, Burnside, Mitcham, Unley and West Torrens. Support is offered to the project from every level of Council, whether it be CEO or delegate involvement in the Owners Executive Committee, technical staff providing design input, finance staff liaison regarding project contributions and budgets, planning and environmental input to construction delivery, or engagement with asset managers regarding operational requirements. The project works in close liaison with our Constituent Councils to ensure we are working together to achieve successful project outcomes and identify opportunities to maximise the utility of our assets.



**Government of South Australia**  
Stormwater Management Authority

### Stormwater Management Authority

Continuing the collaborative approach adopted by the five Constituent Councils, the Stormwater Management Authority provides a key role in the delivery of the Project. Beyond the initial role the Authority played in the review and approval of the Plan, the Board's Project Director is in regular contact with the Authority's General Manager to ensure a well-informed and consistent approach to delivery. Through the Authority, the State Government has committed to providing Constituent Council matched capital funding of up to \$70m over a 20 year timeframe and this funding is vital to ensuring the Project is delivered. Board representatives have established a strong working relationship with the Authority and work in partnership to deliver the works set out in the approved Stormwater Management Plan.

We thank outgoing General Manager David Trebilcock for his support and collaboration over the past several years.



### ***Not just flood mitigation***

The Board works with our project partners to provide enhanced environmental and community outcomes, particularly in areas of public open space. The delivery approach seeks to achieve naturalisation and biodiversity improvements with a focus on protection of significant trees, urban greening, improved water quality and habitat for native species, and opportunity for increased amenity and community interaction. Practical examples of these outcomes are seen at the Victoria Park wetland where over 100,000 new plants have been established and visitors flock to enjoy the site, at the Everard Park upgrade where a dilapidated open channel has been replaced by a larger underground culvert with significant ground level improvements offering increased connectivity to cyclists and pedestrians, and at Hawthorn Reserve where the banks of Brown Hill Creek have been laid back to achieve a more naturalised solution that encourages community interaction.

Design is now underway for works in Forestville Reserve, Orphanage Park and Betty Long Gardens with these sites offering further opportunities for multi-faceted outcomes.

In alignment with the Stormwater Management Plan objective of *beneficial reuse of stormwater*, flows are now being diverted from the Pakapakanthi Wetland to the ornamental lake in Murlawirrapurka/ Rymill Park (Park 14). This lake has been experiencing ongoing issues with leakage and poor water quality, requiring ongoing chemical treatment to manage algal blooms. Surplus water levels are being drawn from the wetland to holding tanks adjacent the lake for use when required. This process demonstrates the consideration of water as a precious resource.



## 9. Capital Funding

The Stormwater Management Plan proposed a funding model whereby the three spheres of Government – Commonwealth, State and Local, each contribute one third of the cost of capital works delivery over a 10-year construction program. The Plan further noted that:

*'If at the outset there is no positive response from the Commonwealth Government, the BHKC project would recommend that the catchment councils endorse a strategy along the following lines:*

- *The five councils allocate funding in their budgets for one third of the cost;*
- *a funding commitment is sought from the State Government to at least match that commitment; and*
- *once the State Government has agreed to that commitment, the five councils through the regional subsidiary work jointly with the State Government to obtain a commitment from the Commonwealth Government for a minimum of one third of the cost to offset against the state and local government contributions.'*

The South Australian Government's Stormwater Management Authority (SMA) has committed \$70m in funding toward the delivery of the project, with these funds being provided over a 20-year timeframe. The SMA funding is contingent upon matching funds being provided by the 5 Constituent Councils. While operating costs are shared equally between the 5 Councils, capital costs are based on the following principles:

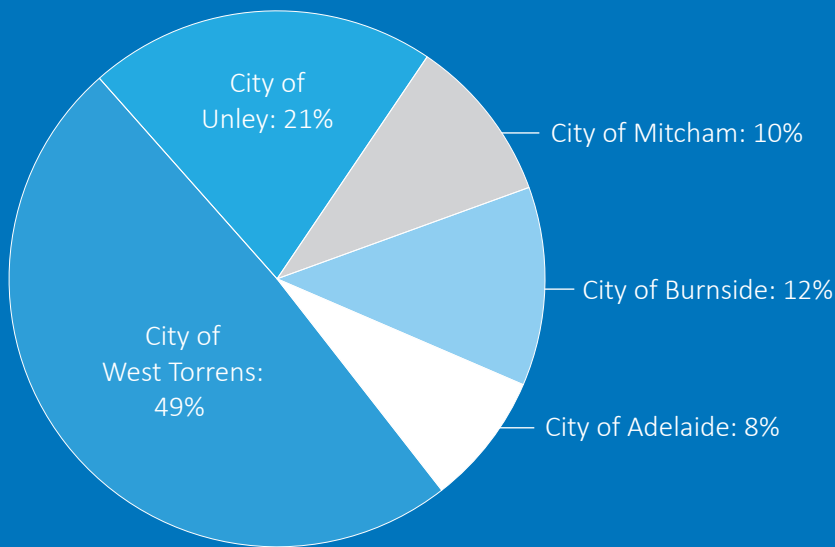
- *'The proposed works are the type of works covered by the 2006 agreement between the State of South Australia and the LGA on stormwater management and in particular, both spheres of government each have an interest in reducing flood risk.*
- *Cost sharing between councils should reflect both the extent of their contribution to the problem and the benefits that they each receive from any flood management actions and not be related to the specific location where those actions are implemented.*
- *The approach should be as simple and transparent as is reasonably possible.*

*The starting point for proposed local government cost apportionment is based on the benefits that each council will receive from the proposed mitigation works. These benefits are considered in two forms:*

1. *Benefit from the reduction in flood damages; and*
2. *Benefits from urban development that has already or may take place in the future that will contribute to the flooding problem downstream.'*

The cost sharing arrangement between Constituent Councils is defined within the Stormwater Management Plan and the Board's charter with capital contributions being provided at pre-determined percentage shares.

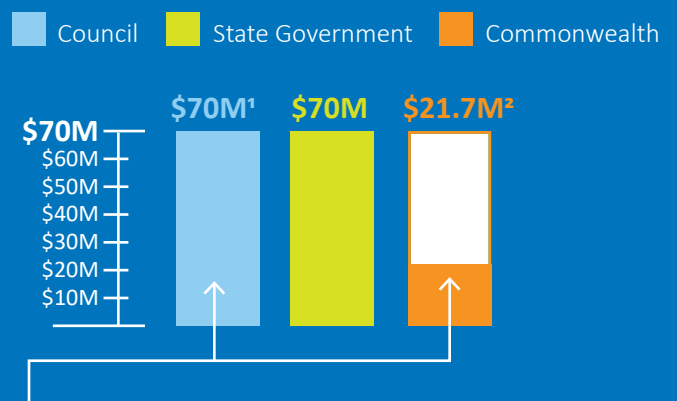
### Council Capital Contributions



A funding shortfall exists as a result of the lack of Commonwealth Government contribution to the project and the extended delivery timeframe. The Board is seeking to fill this shortfall through pursuit of opportunities to secure smaller grant funding injections and ‘whole-of-project’ funding from the Commonwealth Government.

Subsequent to preparation of the Project’s Business Case in 2021/22, \$21.7m in funding has been committed by the Commonwealth Government across 3 grant programs- \$10m committed under the Preparing Australian Communities Program, \$6.7m committed under the Disaster Ready Fund and \$5m committed under the Urban Rivers and Catchments Program.

### Current Funding Commitments



<sup>1</sup> City of West Torrens ongoing contribution to be reviewed in 2027/28.

<sup>2</sup> Commonwealth funding commitment includes \$10m under the Preparing Australian Communities Program, \$6.7m under the Disaster Ready Fund and \$5m under the Urban Rivers and Catchments Program.

## 10. Delivering with Local Industry

Integral to the success of the Brown Hill Keswick Creek Stormwater Project are the relationships established with local suppliers, consultants and organisations. The Board places particular emphasis on ensuring a collaborative approach, bringing together a team of professionals who are leaders in their field and are equipped to deliver results.

Our focus is on providing a pipeline of work to build capacity and capability in the local market, with flow-on benefits for the local economy. The construction scheduling and packaging of works has been specifically developed to maximise participation from local tier 2 and tier 3 contractors.

The project is supported by the knowledge and expertise of a wide range of professionals, providing services including project management, surveying, engineering, legal, environmental, cultural heritage, civil construction, geotechnical advice, property and arborial assessments.

ecoDynamics have been involved throughout all stages of delivering the Pakapakanthi Wetland – from pre-construction plant propagation and growth, establishment at the site during construction and post completion maintenance.

*“ I have worked with ecoDynamics for about 10 years, starting as a general labourer and moving up to my current position of Maintenance Supervisor. I have worked on the Wetland project from the construction phase to maintenance phase.*

*It has been amazing to see the changes and growth of the wetland since construction. My team have worked hard to maintain the wetland as it is and it shows not only in the growth and health of the plants, but also the feedback we receive from members of the public who tell us how beautiful it is.*

**” Ash Jackson, Supervisor**  
ecoDynamics

### Focus on Safety

The Brown Hill and Keswick Creeks Stormwater Board places great importance on the health and safety of our employees, our consultants and the communities within which we operate. Our extensive health and safety management systems ensure we partner with likeminded organisations and are subject to regular review and improvement.

In excess of 110,000 total site hours have been spent delivering our works, with zero notifiable incidents and zero lost time injuries reported.



# 11. Project Schedule

The Stormwater Management Plan outlines a whole-of-catchment flood mitigation strategy that comprises 4 stages:

## Stage 1 **COMPLETE**

Detention storages in the upper catchment that reduce the downstream flow rates.

## Stage 2 **IN PROGRESS**

Upgrading the flow capacity of Lower Brown Hill Creek so that it can receive the diverted flows from Keswick Creek.

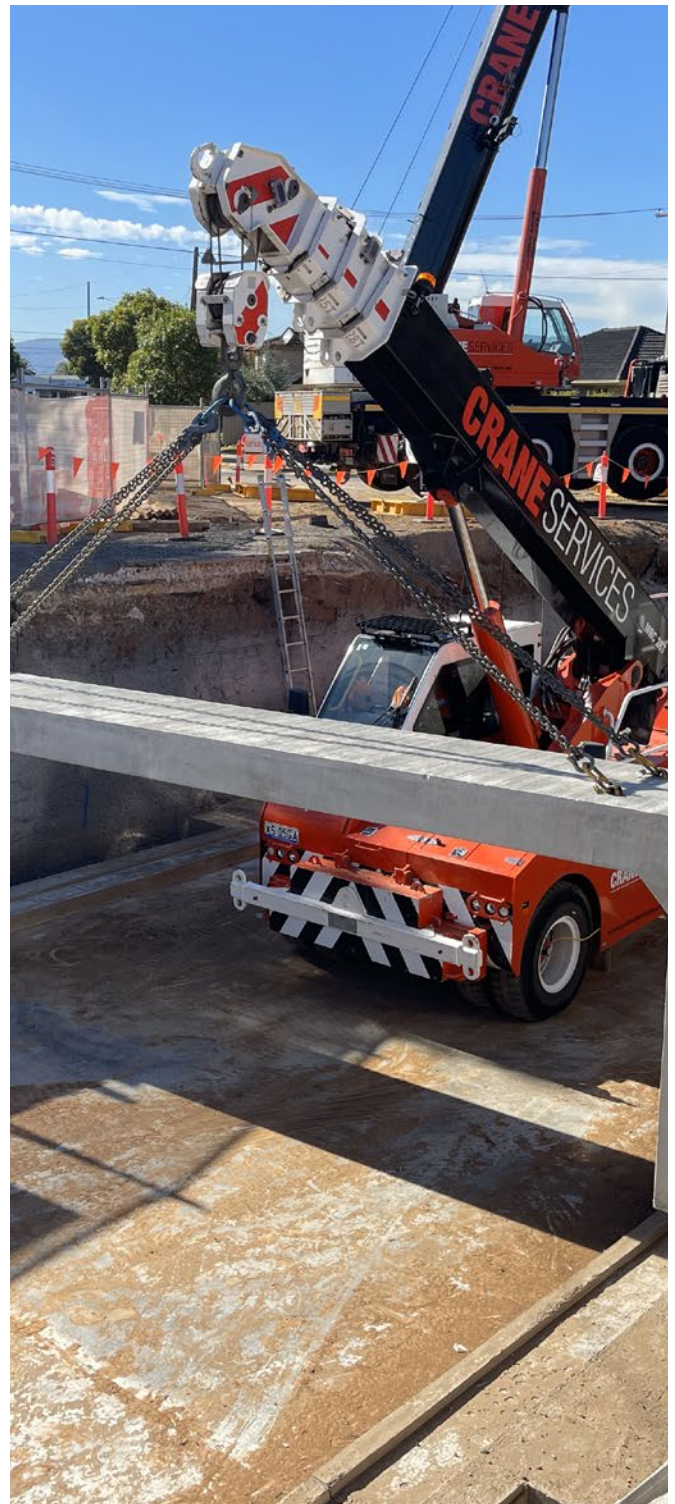
## Stage 3 **ON HOLD**

Diversion of flows from Keswick Creek to Brown Hill Creek, before they can 'break-out' of the channel (upstream of the Showgrounds) and continue overland through the south-western suburbs.

## Stage 4 **IN PROGRESS**

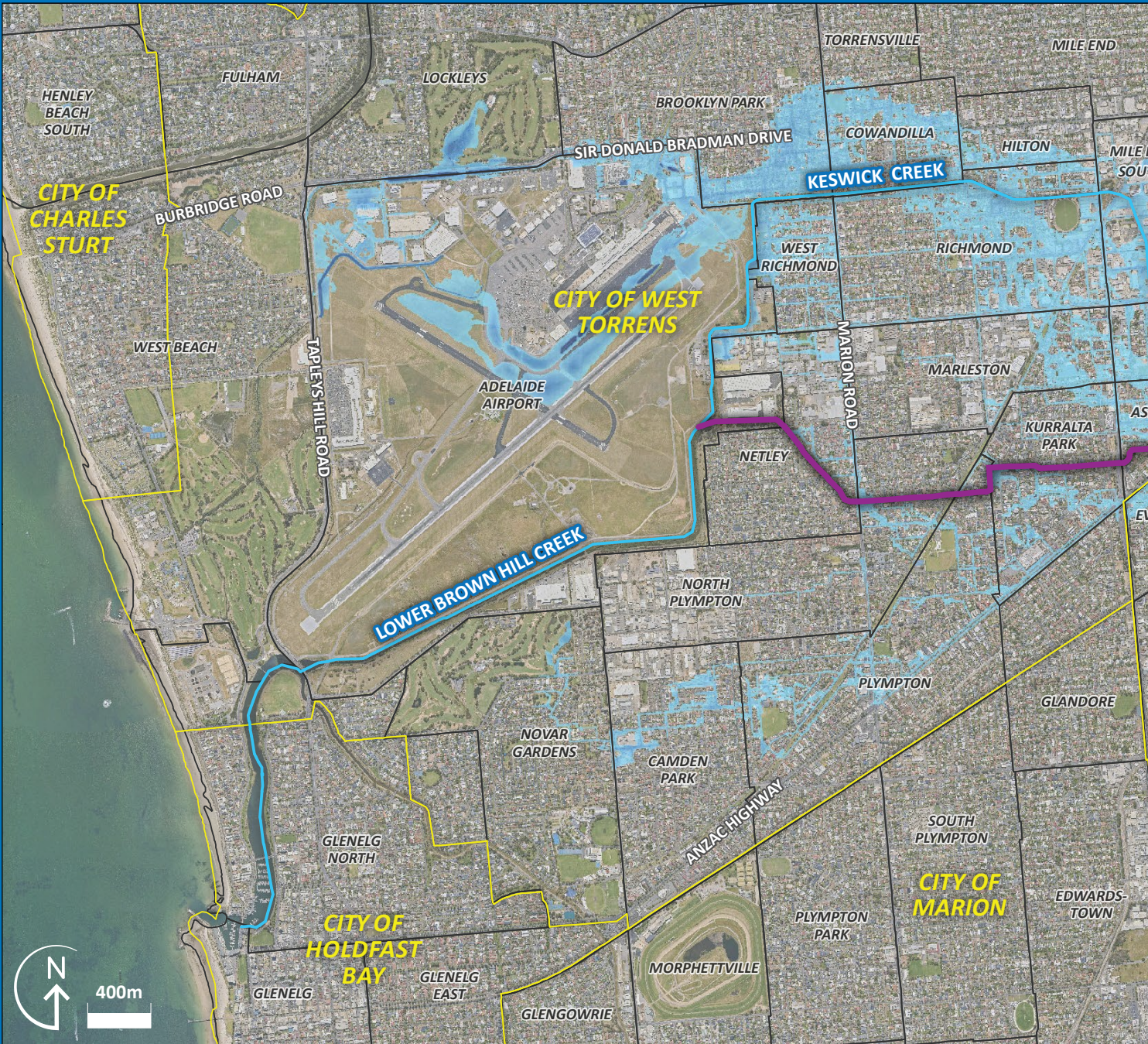
Upgrading the flow capacity of Upper Brown Hill Creek and Glen Osmond Creek to prevent 'break-outs' and flooding of private property.

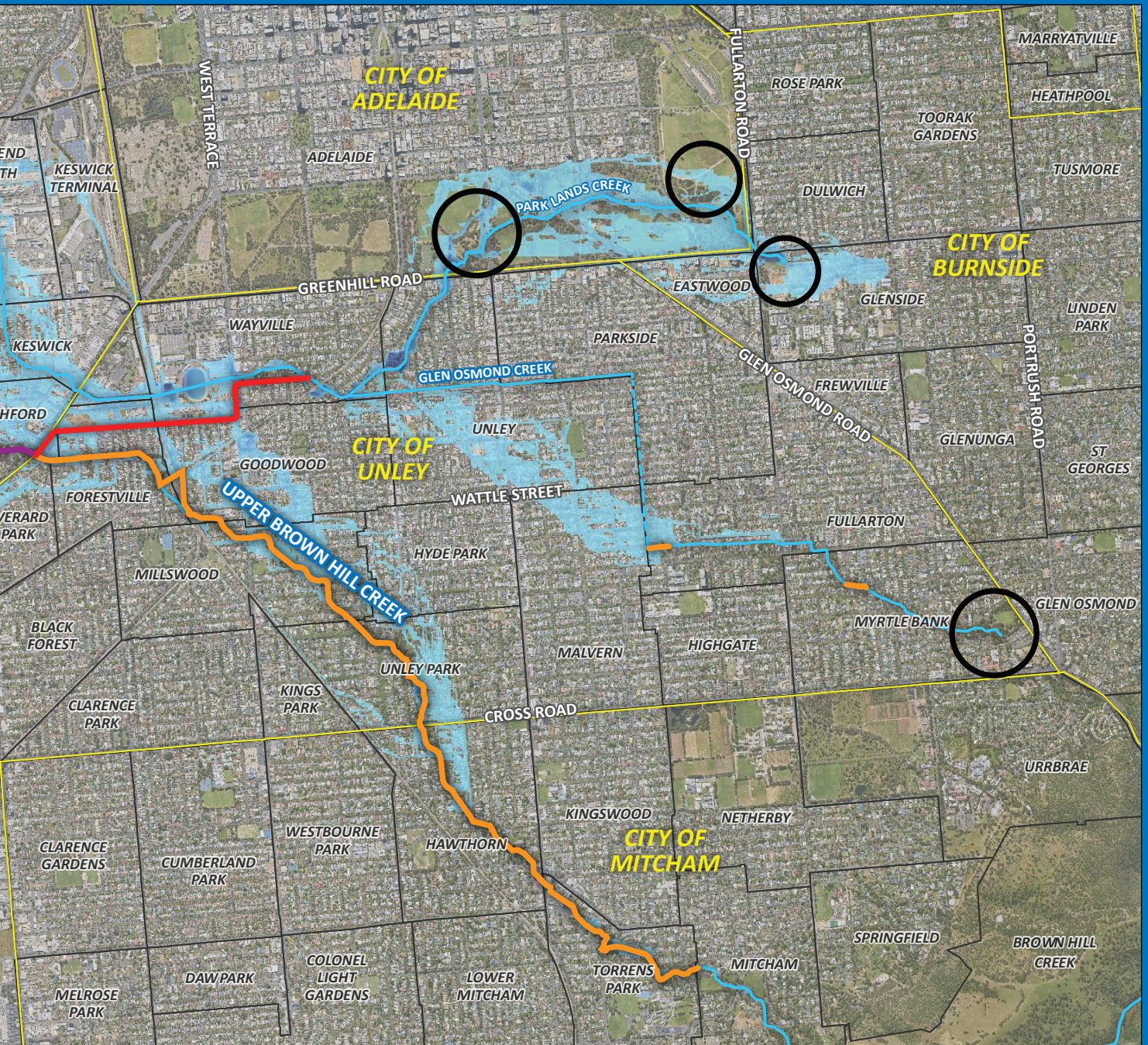
The Project has a significant funding shortfall which impacts on the ability for all remaining works to be delivered under the current funding model. Additional funding contributions are therefore required to ensure project completion. While priority remains on securing additional project funding to 'fill the gap', the Board's current delivery schedule prioritises completion of Lower Brown Hill Creek upgrades and targeted priority areas within Upper Brown Hill Creek. The Keswick Creek Flow Diversions remain unfunded under the current funding model and delivery will be reliant upon an injection of project funding.



# 12. Project Map

-  Stage 1 – Flood Detention
-  Stage 3 – Keswick Creek Flow Diversions
-  Stage 2 – Lower Brown Hill Creek Upgrades
-  Stage 4- Upper Brown Hill and Glen Osmond Creek Upgrades





# 13. Delivery of Capital Works

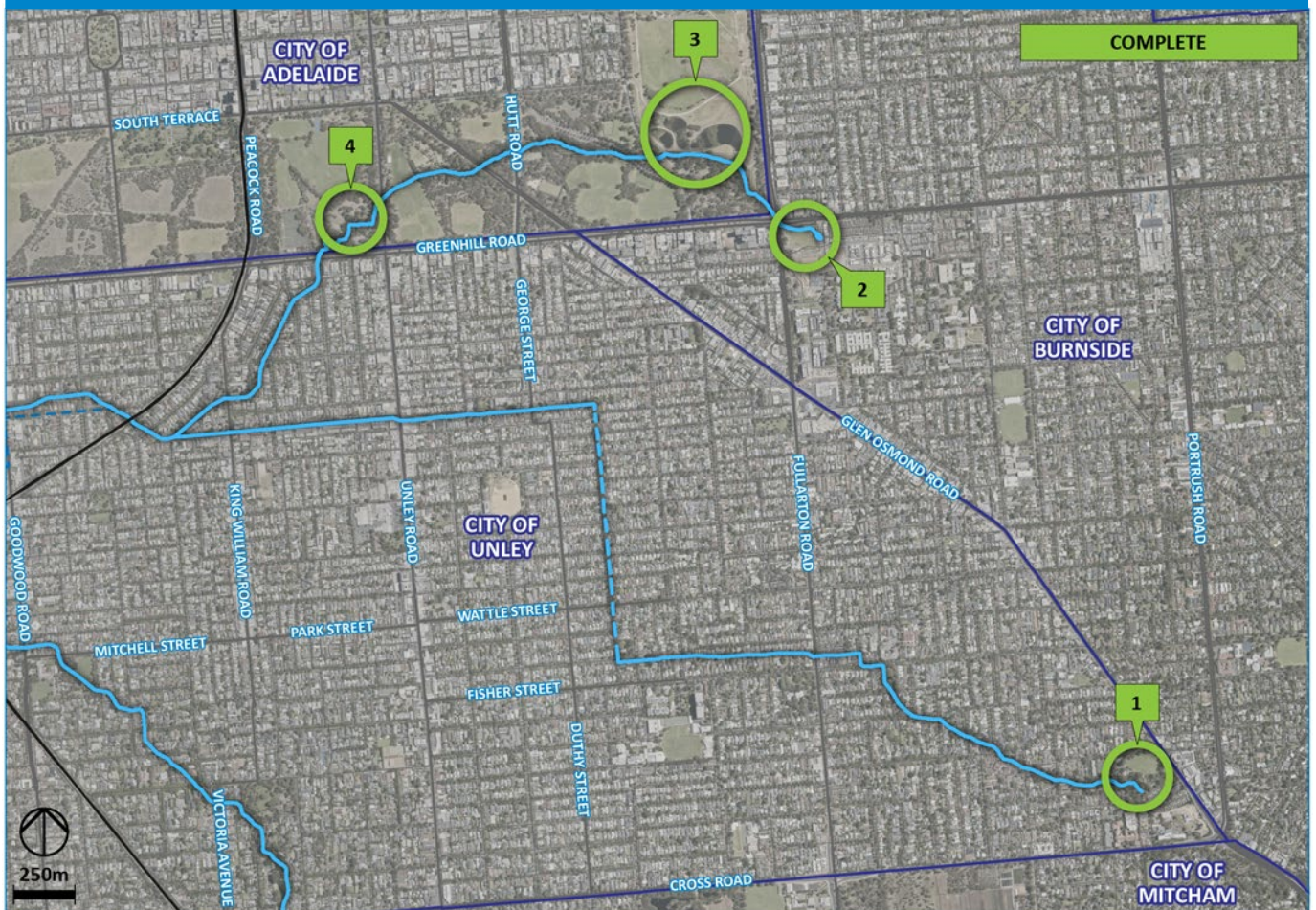
## 1

### Stage 1 - Flood Detention

Detention storages in the upper catchment that will reduce the downstream flow rates. All Stage 1 works are complete.

COMPLETE

Stage 1 Capital Works



- |   |   |
|---|---|
| <p><b>1</b> Ridge Park Flood Control Dam</p> <p><b>2</b> Glenside Detention Basin</p> | <p><b>3</b> Pakapakanthi Wetland in Victoria Park (Park 16)</p> <p><b>4</b> Kurangga Creek Works in Blue Gum Park (Park 20)</p> |
|---|---|



### **Ridge Park Flood Control Dam**

A flood control dam was constructed on Glen Osmond Creek in Ridge Park Reserve, Myrtle Bank to reduce peak stormwater flow in Glen Osmond Creek and reduce the risk of flooding in downstream areas along Glen Osmond and Keswick Creeks.

Commissioned in July 2015, the Ridge Park flood control dam also collects stormwater for the City of Unley’s managed aquifer recovery (MAR) scheme. Under the MAR, harvested stormwater is stored in an underground aquifer for irrigation of Unley’s parks during periods of dry weather.



*Flood Control Dam*



*Concrete swale and fencing*

### **Glenside Detention Basin**

This project involved enlargement of an existing detention basin from a capacity of 18ML to 37ML, to limit flow to the existing capacity of the culvert under the Fullarton and Greenhill Roads intersection. The detention basin, together with other works in the South Park Lands, is intended to reduce the peak stormwater flows along Park Lands Creek and further downstream. Excavation of approximately 25,000m<sup>3</sup> of material was required to form the detention basin and primary water quality treatment is provided via 3 new large gross pollutant traps.

The site accommodating the detention basin and associated stormwater infrastructure has been developed as a community reserve with playground and associated facilities.

The Glenside project works were delivered by Cedar Woods as part of their residential development and the site was opened to the public on July 2nd 2021.

### ***Pakapakanthi Wetland in Victoria Park (Park 16)***

This project involved construction of a wetland at the southern end of Victoria Park/Pakapakanthi (Park 16), adjacent Park Lands Creek. Flows from approximately 600 hectares of urban land and 100 hectares of hills face land travel down Park Lands Creek, through the Glenside site and beneath the Fullarton and Greenhill Roads intersection into the Park Lands. The wetland is of approximately 3.2 hectares in area and provides 100 million litres of flood storage. It comprises areas of permanent water, areas that become inundated with stormwater during regular flow events and a broader area that will only become inundated during more significant flow events. The system provides regional benefits of flood detention, stormwater pollutant removal, amenity and recreational enhancement, and biodiversity creation with over 120 new trees and over 100,000 new plantings, including aquatic species.

In alignment with the Stormwater Management Plan objective of beneficial reuse of stormwater, flows are now being diverted from the wetland to the ornamental lake in Murlawirrapurka/Rymill Park (Park 14). The lake has been experiencing ongoing issues with leakage and poor water quality, requiring ongoing chemical treatment to manage algal blooms. Surplus water levels are being drawn from the wetland to holding tanks adjacent the lake for use when required.



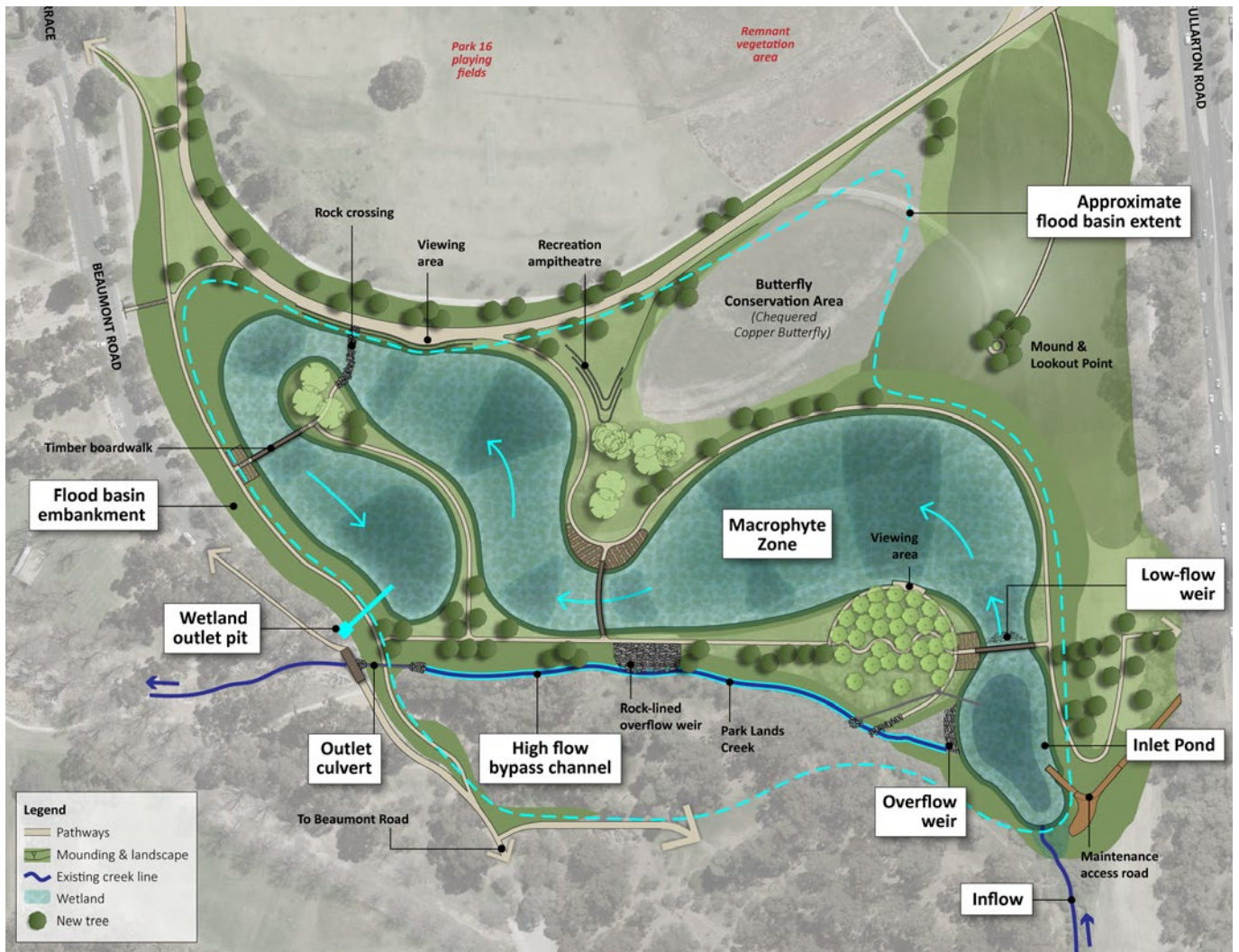
*Park 16 Wetland*



*Pedestrian Bridge*



The Pakapakanthi Wetland project was supported by funding from Green Adelaide.



**Operation of the wetland**

*Normal rain events*

- Flows enter the inlet pond from Park Lands Creek
- A low-flow weir transfers flows under a boardwalk into the shallow vegetated area of the wetland
- Flows take one to two days to reach the wetland outlet pit
- The outlet pit regulates the outflow rate and transfers water back into Park Lands Creek on the western side of the flood basin embankment

*High flow or longer duration events*

- During high flow or long duration events, water will begin to flow over the overflow weirs from the inlet pond and wetland directly into Park Lands Creek

- These higher flows will travel along the vegetated high flow bypass channel to the outlet culvert
- The outlet culvert controls flows downstream through the flood basin embankment

*Significant flood events*

- During significant flood events, the outlet culvert will choke flows and water levels will rise within the flood basin, inundating the wetland area
- The culvert regulates flows from the wetland area, therefore protecting against flooding of downstream areas
- Following the flood event, water levels will recede to permanent levels over a number of hours

### ***Kurangga Creek Works in Blue Gum Park (Park 20)***

Together with the Victoria Park/ Pakapakanthi (Park 16) wetland, the creek works in Blue Gum Park/ Kurangga (Park 20) reduce the peak stormwater flows from Park Lands Creek into downstream areas.

Works included construction of a low-level mound (typically up to 1 metre in height) and the realignment of existing creek lines in the southern section of the park. The mound is constructed to the south and west of the existing playing fields and stretches for a total distance of approximately 600 metres. Two new open drainage channels converge at a common point at the northern side of the new mound which enables controlled flows to be discharged through a culvert and under Greenhill Road. When large flows exceed the capacity of the culvert, water will build up and be contained behind the mound and temporarily inundate parts of Blue Gum Park/ Kurangga (Park 20) until it subsides.

The new works enabled the existing creeks to be backfilled to support tree health and protect Red Gums against erosion. The works integrate with existing users of this space, including TreeClimb.

The Park 20 project works were completed in September 2022.





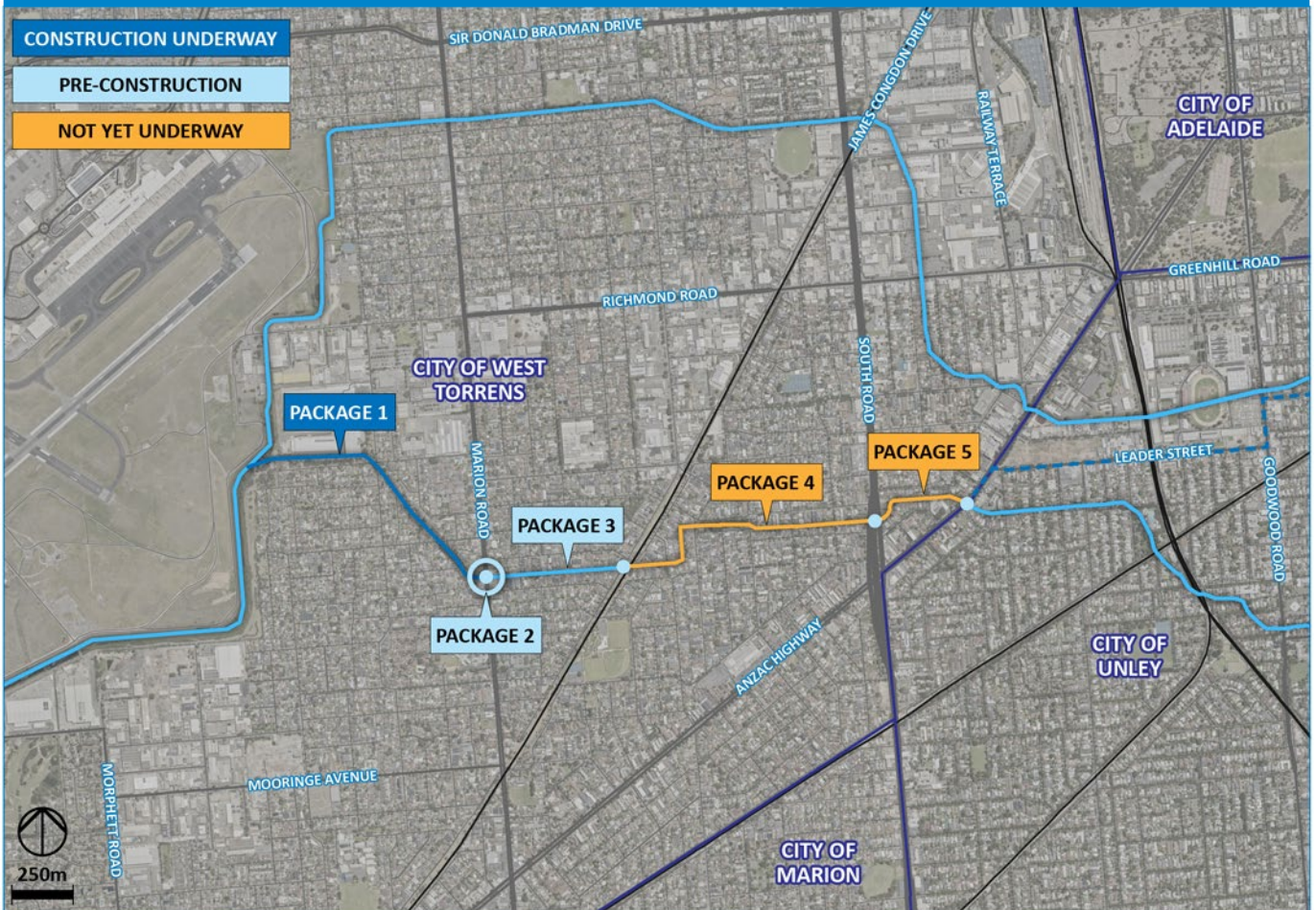
# 2

## Stage 2 - Lower Brown Hill Creek Upgrades

Upgrading the flow capacity of Lower Brown Hill Creek so that it can receive the diverted flows from Keswick Creek. The Upgrades are being delivered in 5 work packages with Packages 1-3 underway.

IN PROGRESS

### Stage 2 Capital Works



#### WORK PACKAGES

- |                                  |                                   |                               |
|----------------------------------|-----------------------------------|-------------------------------|
| 1 Watson Avenue to Marion Road   | 3 Marion Road to Birdwood Terrace | 5 South Road to Anzac Highway |
| 2 Marion Road Bridge Replacement | 4 Birdwood Terrace to South Road  |                               |

### Lower Brown Hill Creek Upgrades

Lower Brown Hill Creek comprises a 3.3 kilometre-long section of channel extending from the south-eastern corner of Adelaide Airport at the downstream end to a crossing point at Anzac Highway at the upstream end. The channel is primarily situated within City of West Torrens owned drainage corridor, except for a small portion that runs within privately owned land. The upgrades involve doubling the flow capacity through replacement of the existing open channel with a new 6-6.8 metre-wide by 1.8 metre-high rectangular shaped concrete channel, and equivalent sized road crossings.

The Lower Brown Hill Creek capacity upgrades are divided into 5 work packages and the Board secured \$10m in Commonwealth Government funding under the Preparing Australian Communities Program to contribute toward delivery of Packages 1-3 over 3 years. The Commonwealth funding is being matched by funding from Constituent Councils and the Stormwater Management Authority.

Packages 1-3 extend for 1.7 kilometres from Adelaide Airport at the downstream end to Birdwood Terrace at the upstream end. Construction of package 1 commenced late in 2022 and works to Harvey Avenue are now being completed. Construction tenders will be awarded in September 2024 for delivery of the remainder of package 1, and the entirety of packages 2 and 3 in the dry months of 2024/25.



Channel construction through to completion

Packages 1-3 of the Lower Brown Hill Creek upgrades are being delivered with the support of funding from the Australian Government provided under the Preparing Australian Communities Program.

### Daly Street Bridge

Although Packages 4 and 5 of the Lower Brown Hill Creek upgrades have not yet commenced, the Daly Street bridge upgrade was completed in September 2021. Located in Kurralta Park within package 4, the upgrade of this bridge was delivered by City of West Torrens in conjunction with an adjoining road realignment, with funding contribution from the Commonwealth Government’s Local Roads and Community Infrastructure Program.

Previously, the bridge comprised a corrugated domed tunnel of 3.7 metres in width and 2.3 metres in height. The bridge was constructed circa 1950 and had one of the lowest capacities of all existing bridges on Brown Hill Creek. The new bridge comprises twin concrete culverts of 4.2 metres in width and 1.8 metres in height with gabion basket transitions at the upstream and downstream ends.



*Bridge Upgrade*

The Daly Street bridge upgrade was delivered with the support of funding from the Australian Government provided under the Local Roads and Community Infrastructure Program.



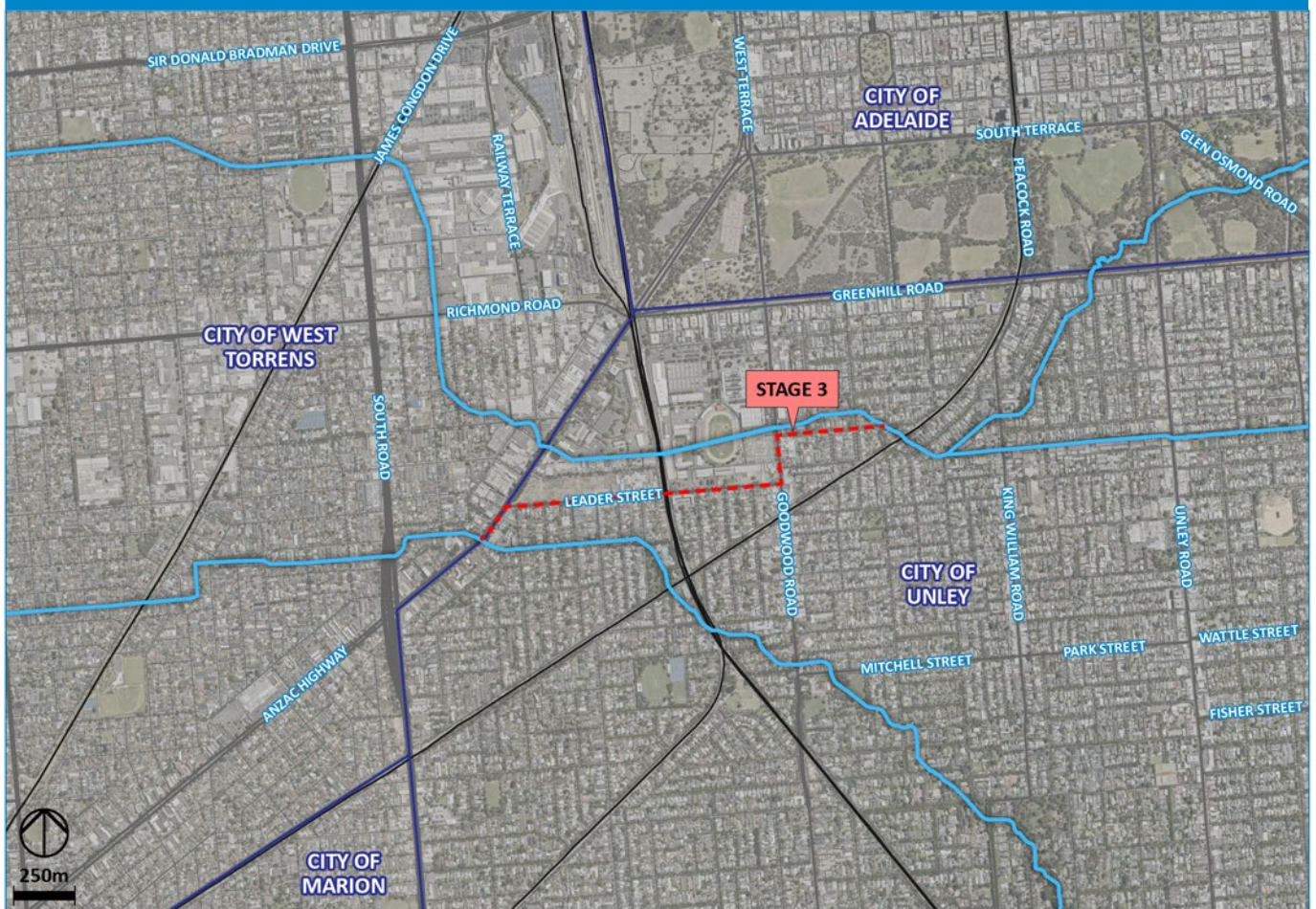
# 3

## Stage 3 - Keswick Creek Flow Diversions

The Keswick Creek Flow Diversions will divert flows from Keswick Creek to the upgraded Lower Brown Hill Creek before they can ‘break-out’ of the channel. These works are currently unfunded and on hold. The Department of Transport and Infrastructure committed to progressing the reference design plans through to detailed design stage in November 2023 and these works are ongoing, including consideration of an alternate alignment.

ON HOLD

### Stage 3 Capital Works



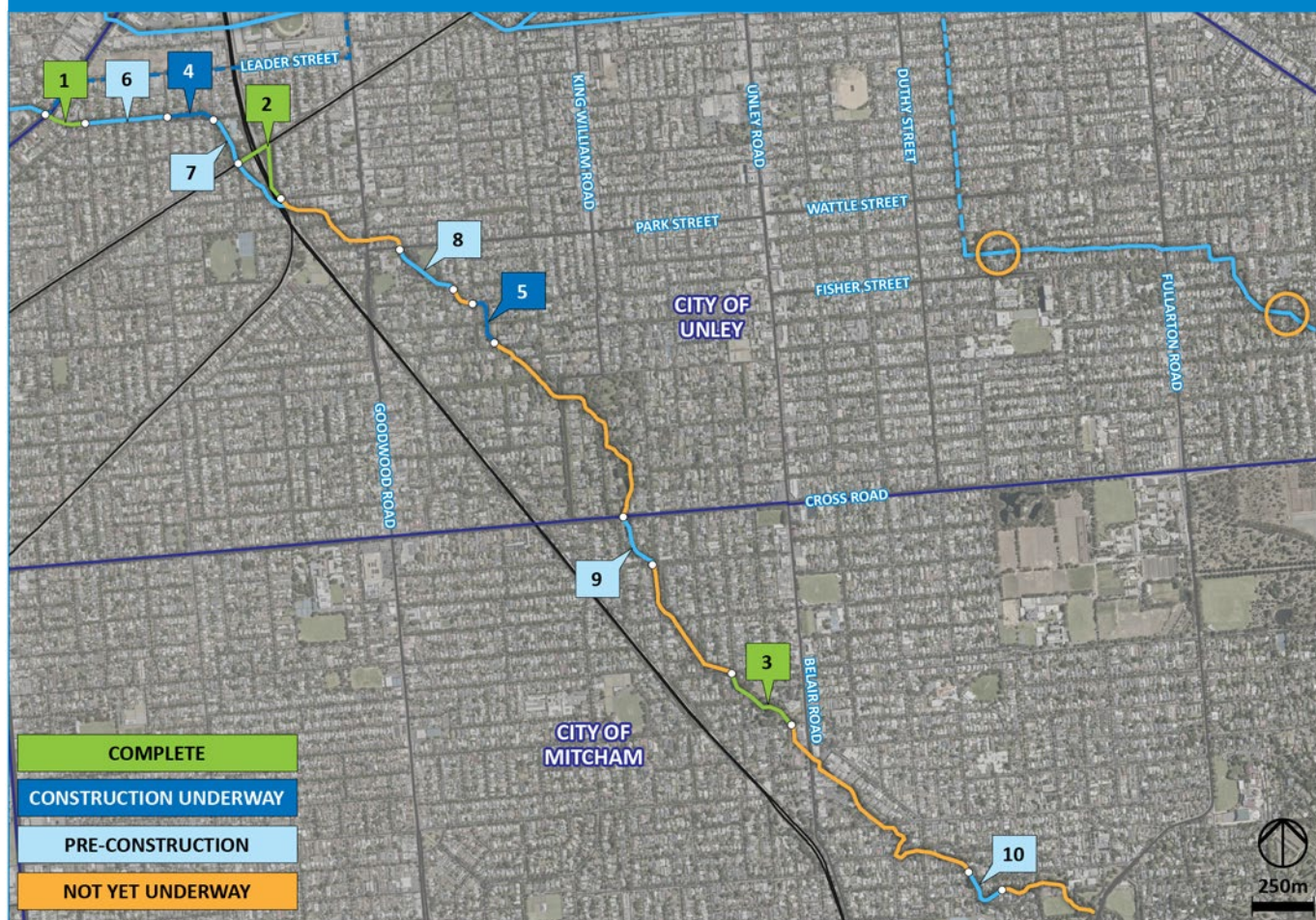
# 4

## Stage 4 - Upper Brown Hill and Glen Osmond Creek Upgrades

Upgrading the flow capacity of Upper Brown Hill Creek and Glen Osmond Creek to prevent 'break-outs' and flooding of private property. Key hot spots are being targeted to align with grant funding opportunities.

IN PROGRESS

Stage 4 Capital Works



- |   |  |
|---|--|
| 1 Everard Park- Anzac Highway to Third Avenue | 6 Forestville- Third Avenue to Leah Street |
| 2 Diversion Culvert                           | 7 Forestville Reserve                      |
| 3 Hawthorn Reserve                            | 8 Orphanage Park                           |
| 4 Forestville- Leah Street to Ethel Street    | 9 Hawthorn- Cross Road to Hampton Street   |
| 5 Millswood- Regent Street to Malcolm Street  | 10 Betty Long Gardens                      |

**Everard Park - Anzac Highway to Third Avenue**

These works are located between Anzac Highway and Third Avenue and were expedited to take advantage of access to the site that would be significantly restricted following completion of an adjoining high density residential development. The project involved replacement of an existing open concrete channel with an increased capacity underground covered culvert. Subsequent to installation of the culvert, the City of Unley extended Wilberforce Walk to Anzac Highway, with a shared use path for pedestrians and cyclists traversing the culvert.

Culvert construction works commenced in April 2020 and were completed in August 2020, at which point the site was handed over to City of Unley for the shared use path improvements to be delivered.



*Shared Use Path*



*Constructed Culvert*

**Diversion Culvert**

A section of Brown Hill Creek in Forestville was diverted by the Department of Planning, Transport and Infrastructure in 2013 as part of the Goodwood Junction Rail Upgrade project. The works, delivered in collaboration with and funded by the Brown Hill Keswick Creek Stormwater Project, involved diverting the creek into a new underground culvert constructed generally along the eastern side of the railway corridor from the southern side of Victoria Street, Goodwood to the northern side of the Glenelg tramway. The culvert discharges into the existing Brown Hill Creek within Forestville Reserve.



*Rock filled gabions*

### ***Upper Brown Hill Creek, Hawthorn Reserve***

The City of Mitcham upgraded the Hawthorn Reserve precinct in 2018/19 and the creek upgrades were expedited to coincide with this project.

The creek has been widened to ensure sufficient capacity and the banks have been laid back with native plantings in the area adjacent the Mitcham library to retain a natural setting. Stepping boulders and logs have also been installed to create an active nature play space for use when the creek is dry or not flowing. Further downstream, rock filled gabions have been installed and a floodwall has been constructed at George Street to contain creek flows.

### ***Forestville – Leah Street to Ethel Street***

These upgrades involve raising the height of the existing channel walls by 600mm and remediating the floor and walls of the existing channel. This section of channel runs within Council drainage corridor for the majority of its length with a small portion intersecting privately owned land at the eastern Ethel Street end.

Works commenced in June 2024 and are due to be completed later in 2024.



*Channel Construction*

**Millswood – Regent Street to Malcolm Street**

Works are underway to double the capacity of this section of Brown Hill Creek, from just downstream of Regent Street to Malcolm Street at the upstream end, including upgrade of the Regent Street culvert. The entirety of the creek in this location traverses through privately owned property and the project team have been engaging closely with property owners over the course of design development and during construction.

Delivering in a heavily constrained environment, the works have been designed in collaboration with property owners to meet the flow capacity requirements while being sympathetic to the natural environment and the individual and unique objectives of each owner.

**Scheduled Upper Brown Hill Creek Upgrades**

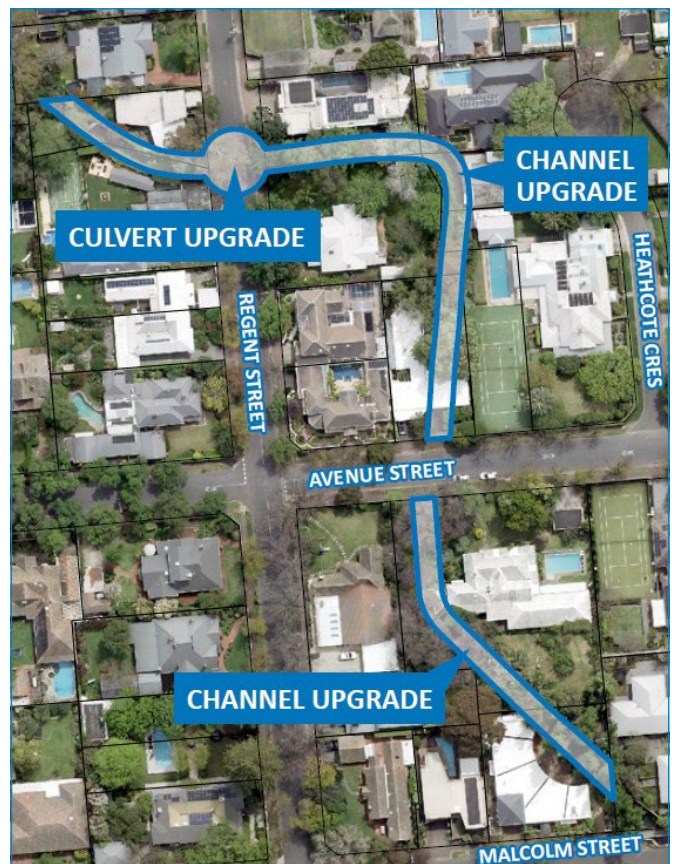
The Board has recently commenced the design process for several section of Upper Brown Hill Creek that are scheduled for construction in the 2025/26 financial year. Site investigations will commence shortly to inform the design process and better understand current conditions. These works are located across the Cities of Unley and Mitcham within privately owned property and Council-owned reserves, as follows:

- Forestville – Third Avenue to Leah Street
- Forestville Reserve
- Orphanage Park
- Hawthorn – Cross Road to Hampton Street
- Betty Long Gardens

The scheduled Upper Brown Hill Creek upgrades are being delivered with the support of funding from the Australian Government provided under the Urban Rivers and Catchments Program and the Disaster Ready Fund.



Channel Upgrade



Upgrade Plan – Millswood



## 14. Financial Snapshot

The activities of the Board are funded by the five Constituent Councils and the Stormwater Management Authority.

Operational expenditure is funded equally by the Constituent Councils.

| 2023/24 Operational Funding |     |                  |
|-----------------------------|-----|------------------|
| City of Adelaide            | 20% | \$140,000        |
| City of Burnside            | 20% | \$140,000        |
| City of Mitcham             | 20% | \$140,000        |
| City of Unley               | 20% | \$140,000        |
| City of West Torrens        | 20% | \$140,000        |
| <b>Total</b>                |     | <b>\$700,000</b> |

Capital expenditure is funded by regular contributions from Constituent Councils and the Stormwater Management Authority with additional grant funding being secured for individual work packages on an ad hoc basis.

| 2023/24 Capital Funding         |     |                          |
|---------------------------------|-----|--------------------------|
| City of Adelaide                | 8%  | \$320,000                |
| City of Burnside                | 12% | \$480,000                |
| City of Mitcham                 | 10% | \$400,000                |
| City of Unley                   | 21% | \$840,000                |
| City of West Torrens            | 49% | \$1,960,000              |
| Stormwater Management Authority |     | \$8,500,000 <sup>1</sup> |
| Commonwealth Grant Funding      |     | \$3,595,735 <sup>2</sup> |
| <b>Total</b>                    |     | <b>\$16,095,735</b>      |

<sup>1</sup> The Stormwater Management Authority funding received in 2023/24 comprised \$4.5m contribution for 2022/23 (unpaid pending approval from Public Works Committee) and \$4m contribution for 2023/24

<sup>2</sup> This grant funding comprises payments made under the Preparing Australian Communities Program and the Urban Rivers and Catchment Program.

## 15. Audited Financial Statements





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