Minutes of the Infrastructure Committee
held on Tuesday, 6 June 2023 at 6.30 pm
Council Chamber, Council Administration Centre
245 Sturt Road, Sturt

PRESENT

Councillor Ian Crossland (Chair)
Councillor Jana Mates
Councillor Amar Singh

In Attendance

Councillor Sarah Luscombe
Councillor Joseph Masika
Chief Executive Officer - Tony Harrison
General Manager City Services - Ben Keen
Chief Financial Officer - Ray Barnwell
Manager Engineering, Assets and Environment – Mat Allen
Unit Manager Engineering – Carl Lundberg
Water Resources Coordinator – Glynn Ricketts
Executive Officer to General Manager City Development - Mina Caruso

1 Open Meeting

The Chair opened the meeting at 6.30pm.

2 Kaurna Acknowledgement

We acknowledge the Kaurna people, the traditional custodians of this land and pay our respects to their elders past and present.

3 Elected Member Declaration of Interest (if any)

The Chair asked if any member wished to disclose an interest in relation to any item being considered at the meeting.

The following interests were disclosed:

- Nil

4 Confirmation of Minutes

4.1 Confirmation of Minutes of the Infrastructure Committee Meeting held on 4 April 2023

Report Reference IC230606R4.1

Moved Councillor Mates **Seconded Councillor Singh**

That the minutes of the Infrastructure Committee Meeting held on 4 April 2023 be taken as read and confirmed.

Carried Unanimously

5 Business Arising

5.1 Business Arising Statement - Action Items

Report Reference IC230606R5.1

The schedule of upcoming items was discussed, and it was noted that the Committee, at present, have no additional agenda items to raise at future meetings.

Moved Councillor Mates **Seconded Councillor Singh**

That the Infrastructure Committee:

1. Notes the business arising statement, meeting schedule and upcoming items.

Carried Unanimously

6 Confidential Items - Nil

7 Reports for Discussion

7.1 Stormwater Management

Report Reference IC230606R7.1

The Manager Engineering, Assets and Environment, Unit Manager Engineering and the Water Resources Coordinator provided the Committee with an overview of current stormwater management practises and other initiatives currently been undertaken.

A presentation was provided to the Committee which included the following agenda topics for discussion:

- Stormwater Infrastructure Assets
- Stormwater Planning
- Water Sensitive Urban Design (WSUD)
- Infill impacts and competing objectives lead by Planning Code and Developers, via the DA process
- Rainwater Tank Trial Update

The following discussion points were noted during the presentation:

- Stormwater management presents a number of challenges, including infill development and the impact of climate change.
- Over the past decade, substantial investments have been made to upgrade and improve stormwater infrastructure, which has helped mitigate the effects of flooding. Some Councils have not invested as much and have experienced more significant flooding.
- Staff provided an update on Berrima Road, Sheidow Park – stormwater upgrade project completed a year ago, due to the road topping over with stormwater annually.

  - Due to staff expertise and knowledge, they were able to design the system and coordinate the construction of a very complex site.
- Staff also provided an update on Dalkeith Avenue, Dover Gardens – stormwater upgrade project that formed part of the 22/23 capital works program. This large catchment was experiencing regular flooding of properties, the installation of a very large junction box earlier this year was an integral element of the project.

- A short video was shown (Urban Stormwater Education) that demonstrated how stormwater infrastructure manages rainfall events. This video was made in conjunction with the CoCS and the PAE Councils and has not yet been made public. It will, however, be posted on CoM's website and social media platforms next week.
  - The Committee concurred that the video was fantastic and extremely informative and are looking forward to its public release.

Stormwater Infrastructure

Asset Inventory

- The CoM have over 270km of drainage infrastructure, and nearly 7000 pits.
- The total replacement cost of these assets is $235 million (2022 valuation).
- A lot of asset data is mapped into a GIS system as well as listed in an asset register, with all information captured in the Stormwater Asset Management Plan (AMP).
  - 2 years ago, Council endorsed the Stormwater AMP. The next review will occur within the next 18 months. The AMP outlines the way we manage our stormwater assets particularly in relation to maintenance, monitoring, operations, and upgrade of infrastructure.

Condition

- Most of the stormwater infrastructure was constructed in the late 1950s and 60s.
- The estimated useful life of this infrastructure is 100 years before replacement is expected.
  - A large-scale renewal program is expected to take place in the next couple of decades.
  - At present, data is collected based on age profiles, which poses a risk. For optimal results, cameras (CCTV) will be deployed in pipes to collect data based on actual condition. This process (CCTV program) is currently being developed and will be included in the next stormwater AMP.

Operations

- Acquisition/Creation spend – $2.9M each year on building brand new infrastructure.
- Operational spend – $620k each year on street sweeping and pit cleaning.
- Monitoring spend – $80k each year (see above). Cameras being deployed in pipes to collect data based on actual infrastructure condition.
- Maintenance spend – $350k each year on pit lids and pipe maintenance program.
- Renewal spend – $ are not available. This reiterates the importance to include condition assessment in the monitoring program in order to foresee failing assets and knowing that renewal funds are available to renew those assets before they fail.

Questions/discussion from the Committee included:

Councillor Crossland queried where the new stormwater infrastructure would be constructed, noting that the $3M annual acquisitions and creations budget did not include renewal costs.

- Stormwater Management Plans (SMPs) provide the basis for stormwater investment. There are 4 major catchments across the city, and the SMPs highlight recommendations for the construction of new and additional infrastructure. (*As the presentation continues, additional information will be provided*)
- Additionally, there is a drainage matrix with approximately $25M in scheduled works, staff are currently working through the prioritised program.

- Other than at Hallett Cove, all infrastructure feeds into other Councils. If their pipes are not maintained and become blocked, where does the water go and who would get flooded?
    - Staff have carried out an extensive plan modelling west of the Sturt River and CoM are fortunate to experience minor flooding only. However, at the CoHB the flooding is far more severe, and properties will continue to be flooded until the infrastructure is upgraded. The SMP has identified those sites that require upgrading; CoHB has begun design work in some locations but have yet to obtain funding for construction.
    - Even if CoHB does not improve their stormwater infrastructure, modelling indicates that CoM residents will not be impacted. There may be a localised effect, but not as a result of stormwater backing up in a pipe.

- During the winter months, the volume of falling leaves on the street increases, the Committee queried if the street sweeper's service would be increased during the winter season.
    - According to EPA Stormwater Quality guidelines streets should be swept every 6 to 8 weeks. Council delivers this level of service and staff believe that no additional resources to this service are needed at this time, as long as the level of service meets the guidelines.

- The Committee raised the 'tree planting project' currently underway, which will increase leaf litter. Has the tree planting been factored into future SMPs and have the right types of trees been chosen to avoid future problems?
    - Tree selection is being done to make them more climate resilient. Leaf debris must be properly monitored, especially service levels and timeframes.

The Water Resources Coordinator updated the Committee on recent observations, including driveway flooding due to improper driveway construction and tidal flooding issue in other Council areas.

Stormwater Planning and Management

Management Plans

- There are 4 separate stormwater catchments in Marion, these are:
    1. Hallett Cove Creeks Catchment (this plan was endorsed by Council in 2015 – cost $8.33M)
    2. Coastal Catchments (this plan was endorsed by Council in 2015 – cost $8.973M)
    3. Sturt River Catchment - East of the Sturt River (this plan is currently in draft however nearing completion – forecasting cost~$120M)
    4. Field River (not started)

- Councils are responsible for holistically managing stormwater across Adelaide and it is a legal requirement (Stormwater Management Act) to produce SMPs.
    - Key objectives of Council SMPs include mitigating flood risks, identifying opportunities to improve water quality, ecology, biodiversity and investigating the potential of stormwater harvesting and re-use.
    - In addition, SMPs consider the existing and future scenarios influenced by variables such as climate change and urban infill.

- The CoM has two endorsed SMPs gazetted, the Hallett Cove Catchment and the Coastal Catchment shared with the CoHB.
    - Most of the recommendations within these plans are in process or are completed.

- It was noted that staff meet monthly with CoHB to specifically discuss stormwater management and the investment needed. Next financial year, the Coastal Catchments SMP will be reviewed.

- The Sturt River Catchment SMP with the Cities of Mitcham, Unley and West Torrens is nearing completion for the catchment East of the Sturt River.

  - A Sturt River Flood Hazard Assessment is currently underway by the State Government to inform a Planning Code Amendment.
  - These two processes are working in collaboration, and both are informing each other.
  - It is expected that final flood hazard maps for the Sturt River will be available in late June 2023, it can then be updated and presented to contributing Councils and the SMA.

- The Field River Catchment SMP has not yet begun and is being led by the CoO.
  - Staff are collaborating with DEW to improve stormwater impacts in the Field River catchment and will continue to discuss potential timeframes with the CoO to initiate the SMP.

- There is an interface within State Government and their responsibilities and roles. The Committee queried if there is a synchronised approach to help them better understand the scope of the Councils role verses the State Governments role?
  - The roles and responsibilities of stormwater management are currently under review.
  - The incumbent Government commissioned the Stormwater Management Authority to do a review on stormwater management. The Minister has received the report approximately 3 – 4 months ago.
  - The report focuses on two major aspects: governance of the stormwater and the asset replacement model's funding source.
  - This report is not yet available but will be shortly.

- As an upstream Council, CoM do contribute to some downstream works. This is in accordance with the Stormwater Management Act.
  - There is a formula that has been endorsed and gazetted, and it is applied across Adelaide.

Staff continued to update the Committee on the Sturt River SMP.

- The project funding partner is the Stormwater Management Authority. The draft plan indicates with urban in-fill, driven by population growth and impact of climate change the Sturt River (drain) can expect 80% increase in stormwater runoff.
- SA Water and State Planning Land-Use are producing new flood mapping and Hazard Assessment profiling.
- The draft SMP in 2019 forecasted over $80M in stormwater upgrades in Marion alone, with escalation this is now over $120M (estimated).

- The Committee questioned whether the cost of the Sturt River SMPs ($120M) was already accounted for in a long-term financial plan or if it was new money.
  - The Sturt River draft SMP is not endorsed, and the requirement and investment have not yet been incorporated into the draining matrix.
  - It is anticipated that this will significantly increase the duration which the Council must invest to upgrade, based on priority.

Further questions/discussion from the Committee included:

- Assuming the draft is approved at $120M, and assuming the cost is right, what does this mean for the CoM, and how long is the expected financial term range?
  - CoM are looking at a 10-year horizon, yet this will result in a 30-year plus backlog of work.
  - The South West Drainage Scheme was provided as a similar example in terms of backlog and the need to prioritise the work accordingly.

<u>State Government Flood Map Standardisation Project</u>

- Plus (State Government Planning Authority) is in the process of creating a comprehensive, uniform set of flood maps for Adelaide.

- Once complete, the new flood hazard mapping will form part of the planning portal.
- When developers lodge applications, they will be able to assess them against the new flood hazard mapping and will be required to do to their own flood SMP.

Water Sensitive Urban Design (WSUD)

- CoM have installed over 130 Rain Gardens.
- WSUD is one approach to assist managing flood risk; WSUD does not have a direct impact on mitigating flood events, but it does divert water from the streets and use it for environmental purposes as there is a better retention detention in rain gardens.
- The majority of WSUDs are from developer contributions. A developer will install a rain garden and then hand it over to Council as part of the stormwater infrastructure. Maintenance is then the responsibility of the Council.
- A rain garden operates in harsh environments, near to roadways, with long hot dry summers, making maintenance a challenge for most councils.
    - CoM and Water Sensitive SA created a maintenance handbook to assist Councils and Developers maintain healthy vegetation in rain gardens and to meet water quality objectives.
    - A trial has been undertaken on behalf of Water Sensitive SA. Many of the maintenance guidelines were converted into electronic e-forms and sent to contractors to maintain rain gardens in accordance with manuals produced.
    - Facilities will be visited monthly to review functionality, vegetation, and debris removal. The asset's condition will be evaluated over several months, and the electronic system will be used to prioritise investment or renewal over the asset's lifespan.
    - The system has been demonstrated to other Councils to showcase how we do WSUD Asset Condition Assessments.

- The Committee queried how much stormwater are the rain gardens taking out of the system from the road and what are the costs and ongoing maintenance costs?
    - Staff reiterated that an accumulative assessment plan of stormwater removal has not yet been implemented.
    - Rain gardens are installed per subdivision and per development and the maintenance cost is approximately $35K per year.

A short video was shown that demonstrated the Gross Pollutant Traps (GPTs) installed at the Glade Crescent Wetlands to catch stormwater pollution before it enters waterways. GPTs act like a filter, retaining litter but allowing water to flow through.

Questions/discussion from the Committee included:

- Councillor Crossland asked if Edwardstown's underground tree tank trials had been evaluated, and if so, how effective are they and were there any issues?
    - When the tree nets were initially installed, it was discovered that there was a lot of debris in the concrete kerb invert, and it was also obstructing the inlet of the tree net.
    - The Unit Manager Engineering modified the design and adjusted the inlet level, resulting in less debris accumulating in the water table.
    - However, it still relies heavily on street sweeping to clear away debris and guarantee its effectiveness.
- The Edwardstown trial has 100 tree inlets, as well as some controlled streets, with one side of the street having inlets and the other not. Trees have been planted on both sides.
- It will take several years to determine how successful these tree inlets are.
    - The company that created the tree inlets is also looking at doing a case study.
- Each well may take up to 200 litres, provided no debris has gotten into the well and it has to be cleaned out. The amount of sediment entering the well will determine its effectiveness.

There are 5 key development principles to management stormwater in line with the Planning and Design Code these include:

1. Reducing Post-Development Peak Flows to Pre-Development Level through DETENTION basins
2. Reduce Discharge Volumes – RETENTION basins
3. Reuse Rainwater for Water Conservation – PLUMBED RAINWATER TANKS
4. Reduce Water Pollution – FIRST FLUSH RETENTION – EPA TARGETS reduction in nitrogen and phosphates and suspended solids
5. Flood Protection – FFL 300mm above 1 in 100-year Flood Level

- For larger subdivisions and land divisions with 5 or more allotments, Deemed to Satisfy (DTS) requirements apply.
    - There are a number of stormwater requirements outlined in the (DTS) provisions in the planning and design code e.g., rainwater tanks – staff are happy that these provisions are included in the code as they were not included in the old development act.

<u>Land Development – Oaklands Green</u>

- Oaklands Green is in Oaklands Park (bound by Barry Road/Doreen Street/Bombay Street).
- The development has been granted development approval, and 485 new allotments will be allocated.
- Civil construction works has commenced.
- As part of this planning process, we collaborated with the developer, requested, and signed an infrastructure agreement, and as one of the requirements, the developer must undertake a SWP that has to meet the planning and design code.
    - They were required to have rainwater tanks but were able to negotiate that they did not need rainwater tanks in lieu of connecting to Oakland's water. As a result, the distribution network will be connected onto the site and into dwellings, primarily for toilet flushing but also for some on-site irrigation. Good offset – good outcome.

- An update on the installation of stormwater modules in a new reserve was provided.
    - The 700mm cover on top of these modules is intended to allow light vehicle traffic. The stormwater modules that function as a tank, discharge to a lesser size outlet to control the discharge, so it does not cause flooding downstream as the stormwater downstream is at capacity.
    - This land did not have any stormwater infrastructure prior to this development, therefore the fact that the developer undertook these works is a good outcome that will prevent downstream issues.

Questions/discussion from the Committee included:

- What challenges will Council face in the future, or is this something that will require ongoing maintenance for Council, and is this something that is factored in when we adopt systems like in Oaklands?
    - Whole of Life understanding requirements are that these modules last for 100 years, similar to concrete tanks, with the same cost of installation and renewal as a concrete tank.
    - In terms of accessing for maintenance, there will be some requirements. There are tank access points (on either end of the tank system) to flush out any debris, but because there is a gross pollutant trap that removes the debris, the requirement will be minimal. The gross pollutant trap will be cleaned out 4 times a year.

- If developers are developing on the boundary of two Council areas and both Councils have infrastructure, how easy is it for them to work with separate Councils that may have different processes and procedures to come up with a solution that is holistically beneficial?
    - The Seacliff development was provided as an example.
    - CoHB and CoM are working closely with the developer to initially identify holistic approaches to the development site, including traffic control, stormwater management, and landscaping.

- When design plans are released, consistency relies on planning for the entire site.
- The industry has advocated for consistent infrastructure across the state, and as a result, Institute of Public Works Engineers has design protocols, guidelines, and stand drawings.
- CoM has standard drawings on our website that make it easy for developers to understand what our requirements are.

Rainwater Tank Trial

- Council approved the Rainwater Tank Pilot project back in October last year for the Frederick Street Catchment in Glengowrie. The report outlined a trial for a rainwater tank incentive scheme to use plumbed rainwater tanks in private properties.
  - The scheme is designed to encourage residents to plumb rainwater tanks into their homes and reduce stormwater runoff into the street.
- The Frederick Street catchment includes 650 homes and does not apply to new development sites.
- The incentive scheme has not attracted the number of residents like staff had anticipated.
- A brief history and introduction to the origins of the Rainwater Tank Pilot project were presented by the Water Resources Coordinator.
- The Frederick Street catchment was chosen because University of SA had previously done a lot of modelling on the effects of urban infill, and it is a catchment used throughout Australia to illustrate the effects of increased stormwater runoff when a property is subdivided.
  - The catchment is also unique in that it drains to a trunk drain in Breakout Creek, which has a flow meter installed. The flow meter has been in place for several years and can measure rain events as well as increased water discharges caused by urban infill.
- Rather than hiring a consultant, a master's student from University of Adelaide has been engaged to assist in delivering the project due to the Uni's existing background and knowledge.
- Upgrades were made to the project's monitoring equipment (the flow meter was replaced with a new model that is 5% more accurate) and subsequent recalibration of the modelling was performed representative of the new flow meter.
- A literature review was conducted to gather insights from similar schemes in Adelaide and identify lessons learned.
- A survey was conducted within the catchment area to gauge interest in the project. While some interest was generated (30 individuals), it was not sufficient to justify the investment in a rebate scheme.
  - Further door knocking of properties was undertaken to generate more interest, the number of interested residents increased from 30 to 80 individuals.
  - Interested residents are now offered a site audit by plumbers to assess the feasibility and cost of installing and plumbing rainwater tanks for irrigation and toilet flushing.
  - This stage of the project is ongoing, quotes have been finalised and are in the process of being returned to residents.
  - It was noted that 80 individuals have expressed interest; however, this does not mean that they will sign the contract.

As a success indicator, the following matrix should be met:

- To achieve a 20% reduction in run-off, approximately 70 new tanks need to be installed. Should the target of 70 new tanks be achieved, a rebate of approximately $2,000 will be payable to each homeowner.
- However, homeowners will still need to contribute approximately $2,000 (depending on complexity) on top of the rebate.

Questions/discussion from the Committee included:

- Residents who participate in the scheme would do so primarily for environmental reasons, as the financial payback period is long term.
- The plumbing contractor offers zip pay as part of a payment plan, allowing the resident to pay in instalments over a period of 4 months.

- Why would you allow customers to choose the size of their rainwater tank as opposed to providing them with specific measurements?
    - As it is led by science and order of the resident property gives you a footprint of the house roof area. In many of these developments, there is limited space in people's backyards and those with slim line tanks face a physical size constraint.
    - The plumbing contractor has gone with measurements and assessments on a site-by-site specific basis.

- Is there a scope to have rainwater tanks installed underground?
    - The engineering framework involved is both intricate and costly. This option has been considered, but it is economically unviable.

- Councillor Luscombe believes it is worthwhile to pursue this initiative, even if the target number is not attained and what would the money be used for if the scheme did not go ahead?
    - The Water Resources Coordinator affirmed that the sponsors share Councillor Luscombe's view that 'something is better than nothing' and believes that the State Government would like the scheme to be rolled out with as much uptake as possible.
    - The duration of the trial may be extended and a report on the trial's progress will be brought back to Council in March 2024.

Any additional questions the Committee may have are to be emailed to the Manager Engineering, Assets and Environment.

Councillor Crossland thanked staff for their efforts.

Moved Councillor Mates **Seconded Councillor Singh**

That the Infrastructure Committee:

1. Notes the presentation and report.

Carried Unanimously

8 Reports for Noting - Nil

9 Workshop / Presentation Items - Nil

10 Other Business

11 Meeting Closure

The meeting was declared closed at 7.59pm.

CONFIRMED THIS 5 DAY OF SEPTEMBER 2023

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CHAIRPERSON