

10.1 STORMWATER DRAINAGE

- Attachments:**
1. Drainage Technical memorandum - Confidential
 2. Ordinary Council Meeting Minutes 5 April 2022
 3. Flooding Hotspot Areas

RECOMMENDATION:

That Council **SUPPORTS** the City's approach to develop a stormwater drainage strategy over the next three (3) financial years predicated on the following –

1. Engineering Design

- 1.1 Current capital budget provision of \$425K is allocated to drainage data capture and the balance directed to minor drainage capital work upgrades throughout the City of Vincent, commencing within the Mount Hawthorn precinct;
- 1.2 Hydraulic modelling to be undertaken in 2023 – 2024 financial year (estimated cost of \$80,000 - \$160,000) to be included for Council deliberation in the 2023 -2024 Annual Budget preparations;
- 1.3 Climate Change scenario to be assessed based on the current drainage system anticipated be undertaken during the 2023 - 2024 financial year (funded through the above modelling project); and
- 1.4 Cost for drainage design and construction over a 10-year period to be prepared for Council consideration in the Long Term Financial Plan and Capital Works Program from 2024 - 2025 financial year onwards.

2. Engineering Operations

- 2.1 Current operational budget provision for 2022 - 2023 financial year of \$160,000, allocated to external contractors for cleaning out stormwater drainage systems limited to the two hundred (200) hotspot flooding areas; and
- 2.2 An increase in the Level of Service for cleaning out the stormwater drainage system using internal resources to mitigate the risk and severity of flooding (subject to the finalisation and approval of a business case) be included for Council deliberation in the 2023 - 2024 Annual Budget preparations.

PURPOSE OF REPORT:

To advise the proposed approach to delivering a stormwater drainage system strategy for the City of Vincent in response to a Council resolution at its April 2022 meeting addressing a matter arising from the Annual Meeting of Electors (**Attachment 2**).

Council requested that –

- The CEO investigates the scope and cost of a suitably qualified consultant to assess and model the capacity of the City's existing drainage network to cope with increasing major rain events and the need to assess climate mitigation;
- Includes a scope of works inclusive of cost estimates, a risk-based assessment and a program of prioritised works and recommendations over a 10-year period; and
- Provides a report back to Council by December 2022.

BACKGROUND:

The City of Vincent has historically experienced flooding issues with around two hundred (200) recorded hotspot areas that have flooded or risk the flooding of properties (see **Attachment 3**).

On 4 July 2021 Perth recorded its second wettest day of the year, with around half of that falling in a single hour, between 1pm and 2pm. More than 44mm of rain fell from 9am making it the second wettest July day in 20 years. On this day we experienced localised flooding around Lynton Street near the freeway, East Street/Menzies Reserve and William Street.

The drainage system is integrated with those under the control of other agencies including the Water Corporation and other neighbouring local governments. To effectively manage the City's stormwater drainage system, it is critical that the system is properly mapped, and condition assessed. From this foundation the City is then able to undertake modelling to assess future capacity within an environment of climate change (river level rise, frequency and intensity of storm events, etc), increased density and other factors.

The scale and nature of the project is such that it was unable to be addressed by December 2022.

DETAILS

The City has approached a consulting firm with experience in stormwater drainage system assessment and design to define a scope of works and methodology to –

- understand the performance of the existing drainage system under current and future climate scenarios, and develop solutions to improve this performance; and
- recommend an approach for developing and implementing a program of works over a 10-year period.

The attached Confidential "Drainage Technical Memorandum" provides the detailed steps to assess and model the capacity of the city's existing drainage network to cope with increasing major rain events and the process to assess climate mitigation, including –

Data collection and processing

- Mapping of 200 known drainage flooding hot spot areas which is of immediate concern within the City, together with any documentation of the incident(s).
- Continue City's current stormwater data collection program, including pit and pipe information, soakwells, sumps, and underground storage.
- Compile historical and recent topographic and feature surveys.
- Any available spatial data relating to aerial imagery, roads, buildings, or land use.
- Prepare a GIS database of the stormwater network, suitable for hydraulic modelling (and Intramaps).
- Report and engineering drawings relating to flooding and drainage investigations, upgrades, and renewals.

Hydrologic and hydraulic modelling of the drainage system

- Data collection and review, including City of Vincent supplied data described above, Water Corporation drainage data, Main Roads WA drainage data, and DWER Lidar data.
- Hydrologic and hydraulic modelling of entire existing drainage system
- Flood risk assessment of known and unknown flood risks, for the current climate and under climate change
- System improvement recommendations. Maintenance program / Minor Works / Major Works.
- Prepare concept designs for urgent projects.
- Prepare concept designs for remaining projects and risk-based prioritisation of these projects.
- Prepare construction cost estimates.
- Reporting and data handover.

Drainage system improvement delivery

- City partially or fully implement the urgent projects identified in system improvement recommendations.
- For remaining projects, the City develops a capital works program based on risk assessment priorities and other drivers such as projects with high levels of community interest, or projects that overlap with other proposed roadworks. Coordination with Main Roads WA and Water Corporation required.

The City is also reviewing the Level of Service regarding the cleaning and maintenance of the existing stormwater drainage system. Recent infrastructure mapping and data pick-up has identified significant additions to the drainage inventory. This has identified that the City needs to better respond to annual and ad-hoc drainage pit clearing to mitigate the risk of flooding from blocked infrastructure.

A business case will be prepared to assess whether a more effective approach to drainage cleaning and maintenance works can be achieved in-house with appropriate equipment and labour resources. This could be partially offset by the \$160,000pa for external contractors and the limited Level of Service that it addresses.

CONSULTATION/ADVERTISING:

The City has met and is continuing to work with;

- Mount Hawthorn Community Groups
- North Perth Community Group
- Water Corporation
- Main Roads WA
- Town of Cambridge

The City will continue to consult with these stakeholders as the stormwater drainage study progresses.

LEGAL/POLICY:

- Local Government Act 1995
- Stormwater Drainage Connections Policy

RISK MANAGEMENT IMPLICATIONS

High: It is high risk for Council to not commit to funding through the appropriate budget process for future financial years on stormwater capital works. There is also a large amount of drainage infrastructure which runs through private property, some of which is not accessible. Failure of the stormwater drainage systems within these locations or maintenance issues may result in significant damage to property.

STRATEGIC IMPLICATIONS:

This is in keeping with the City's *Strategic Community Plan 2018-2028*:

Enhanced Environment

We have minimised our impact on the environment.

Thriving Places

Our physical assets are efficiently and effectively managed and maintained.

Innovative and Accountable

Our resources and assets are planned and managed in an efficient and sustainable manner.

SUSTAINABILITY IMPLICATIONS:

This is in keeping with the following key sustainability outcomes of the *City's Sustainable Environment Strategy 2019-2024*.

Water Use Reduction/Water Quality Improvement

PUBLIC HEALTH IMPLICATIONS:

This does not contribute to any public health outcomes in the *City's Public Health Plan 2020-2025*.

FINANCIAL/BUDGET IMPLICATIONS:

Administration is currently exploring the possibility of stormwater drainage funding avenues within Main Roads WA and Water Corporation.

Current planned spend is detailed below within each financial year;

2022 - 2023 financial year – **\$425,000**

2023 - 2024 financial year – **\$80,000 - \$160,000**

2024 - 2025 onwards – subject to prioritisation arising from stormwater drainage strategy.

It is expected that this current year's budget will be fully expended and committed, however any remaining funds will be carried forward to offset the expenditure forecasted within the 2023 - 2024 financial year.

The Capital Works Program 2021/22 – 2024/25 has work provisions totalling \$310,000 within the 2023-2024 and 2024-2023 financial year under '*Gully Soak-Well and Minor Drainage Improvement Program*'. These funds can be used to deliver the prioritised projects from the stormwater drainage study, subject the normal annual budget process.

COMMENTS:

Administration has engaged GHD to assist with the detailed technical hydraulic briefs and with interim drainage designs. Data collection has already commenced and asset management information within the city's systems is currently being updated. The number of drainage pits we have recorded has significantly increased. It is expected that the length of pipes measured in kilometres will also increase as data is captured and uploaded into the city's record system.

Meetings with stakeholders has been positive with Water Corporation willing to work with the City on current drainage issues and climate change.

It is expected that a combination of increased level of service internally within the operational section of the engineering team and investment of capital expenditure will mitigate current drainage issues and reduce the number of hotspot areas. Climate change will be a more challenging concept to address and require the collaboration of many stakeholders including State and Federal Governments.

ORDINARY COUNCIL MEETING MINUTES**5 APRIL 2022**

2. A) Agree to complete Option 5 as recommended on page 11 "Option 5: Increased barrier within Beatty Park."
 3. B) Fund part of Option 5 and all works required from any recent identified savings, at a capital budget provision of \$50,000, in the 2021/22 budget.
 4. Develop a policy that clearly defines the City's responsibilities in this space and identifies when it becomes a force majeure issue.
 5. Please advise why the monies were taken out of the 2017/18 budget and who was responsible.
5. **REQUESTS that:**
1. The CEO investigates the scope and cost of a suitably qualified consultant to assess and model the capacity of the City's existing drainage network to cope with increasing major rain events and the need to assess climate mitigation;
 2. Includes a scope of works is inclusive of cost estimates, a risk-based assessment and a program of prioritised works and recommendations over a 10-year period; and
 3. Provides a report back to Council by December 2022.

CARRIED BY ABSOLUTE MAJORITY (8-0)

For: Mayor Cole, Cr Gontaszewski, Cr Alexander, Cr Castle, Cr Worner, Cr Hallett, Cr Ioppolo and Cr Wallace

Against: Nil

(Cr Loden was an apology for the Meeting.)

