

NOTICE OF MOTION



To Her Worship the Mayor

Please be advised that I would like to submit a notice of motion.

Date of submission	11 November 2020
Meeting date	17 November 2020
Item title	Sump to Park Project
Name of elected member	Brian Oliver

Notice of motion

That Council requests the Chief Executive Officer to:

1. Investigate the application of Atlantis Drainage Cells, or similar technology, for converting drainage sumps into parks or accessible public open space;
2. Present a report back to Council by May 2021 of the findings in point 1, including:
 - a. the feasibility of a "Sump to Park Project" using Atlantis Drainage Cells, or similar technology;
 - b. identification of any Town-owned sumps suitable for inclusion in a "Sump to Park Project";
 - c. an indicative budget to deliver a "Sump to Park Project" for consideration in the 2021/22 Budget.

Reason

Over the past few years the Town and community have been adapting sumps for public open space and public use. From my understanding, the physical "sump" has remained in all of these sump adaptation projects.

This Notice of Motion seeks to investigate the feasibility of a Sump to Park Project, similar to the City of Vincent's Lawler Street Sump to Park Project. Some before and after pictures are provided below to highlight the transformation of their Lawler Street sump.

As part of the Council's commitment to increasing the supply of Public Open Space in the Town, this Notice of Motion is aimed at investigating the use of technology can be used to fully adapt a Town sump.

While I have referenced the City of Vincent example, I know there are many more examples of sump adaptation, of varying scales of size and cost. If this Notice of Motion is supported by my fellow Elected Members, I would hope that through part 1 of this recommendation that other sump adaptations would be explored and presented back to Council to inform our considerations, should the application of technology be deemed feasible.

The timing of a report back to Council has been done purposefully so that we consider the CEO's findings and any options presented as part of our 2021/22 Budget setting process.



Strategic alignment

Social	
Strategic outcome	Intended public value outcome or impact
S1 - A healthy community	<p>The Town's Public Open Space Strategy states:</p> <p><i>There are numerous benefits, both physical and mental, associated with well designed and implemented POS.</i></p> <p>This Notice of Motion seeks to investigate the feasibility of transforming a sump to a park, and ultimately, increase community access to well-designed and improved public open space.</p>

Economic	
Strategic outcome	Intended public value outcome or impact

Environmental	
Strategic outcome	Intended public value outcome or impact
EN6 – Appropriate, inviting and sustainable green spaces for everyone that are well maintained and managed.	<p>One of the core principles of the Town's Public Open Space Strategy is Diversity of Functions. It states:</p> <p><i>POS is a public asset and must be designed to provide functionality to a diverse population. Achieving this means that POS must have a diverse range of functions (natural/recreational/sporting). Ensuring residents have adequate access to these functions provides the best possible opportunity to ensure diversity within the POS product and its users.</i></p> <p>This Notice of Motion seeks to investigate how we can improve the use and access of a sump through the use of technology.</p>

Civic leadership	
Strategic outcome	Intended public value outcome or impact
CL3 – Well thought out and managed	This Notice of Motion seeks to ensure that appropriate

projects that are delivered successfully.	information is obtained for Council to make an informed decision about this initiative.
CL6 – Finances are managed appropriately, sustainably and transparently for the benefit of the community.	This Notice of Motion seeks to ensure that all aspects are considered, including financial implications, before making a decision on whether to proceed with this initiative.

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Background

The Town has approximately 100 drainage sumps in its locality. These sumps function as the main disposal agent for stormwater which falls on the Town other than the low lying part of Victoria Park and Burswood which outlet eventually to the River. The majority of these sumps occupy one or more standard lots which are generally held in Freehold title by the Town.

The Town has commissioned a number of drainage studies over the years to look at its drainage infrastructure and to determine problem areas with a view to improve the situation. The relevant reports are:

2005 - URS "Stormwater Management Plan, Town of Victoria Park"

2010 - Curtin Engineering "Hydrological Assessment of the Stormwater Runoff in Victoria Park Catchments"

2010 - Cardno "Assessment of Drainage Hotspots"

2011 - Cardno "Drainage Network Assessment"

The URS study among other things suggested a rationalisation of the existing drainage sumps with a view to removal and/or redevelopment. The report also found that the majority of sumps did not meet the usual design requirement of 1% AEP (Average Exceedance Probability) or the 1 in 100 year ARI (Average Recurrence Interval) The report however looked at the sumps simplistically by lumping all the sumps in a sub catchment together. IE they did not look at individual sumps.

The Curtin Engineering Study looked at the potential for flooding using a different method from URS and Cardno but in the vast majority of cases there was flooding extending out past the drainage sump lots and into surrounding land in the 1% AEP situation.

The Cardno study of 2011 looked at all the Towns drainage sumps on an individual basis using field permeability testing to help determine sump capacity. It found that no existing drainage sump achieved the 1% AEP design requirement and in fact 95 sumps out of 101 achieved less than a 100% AEP or the 1 in 1 year ARI. Therefore the takeaway from this report is that virtually all of the Town's drainage sumps are substantially under designed.

Atlantis Cells

Atlantis Cells are a modular plastic structural tank system used to construct underground water storage for various applications. They are generally used where space is limited and/or land can be utilised for an additional purpose such as open space. The Town does have several examples of these installed in its jurisdiction so does have some experience of their performance and also limitations. Some of the advantages of Atlantis cells include:

- The ability to use land above for other purposes with limitations
- Visually unobtrusive
- Lightweight
- High storage capacity
- Fast installation

Some of the disadvantages of using underground storage mediums and particularly Atlantis Cells are:

- Maintenance problems such as inability to remove suspended fines from the cells which reduce infiltration capacity.
- Cost of maintenance when required.
- Generally not able to cater for heavy vehicular traffic which may occur in road verges.
- A Gross Pollutant trap is required to capture rubbish and fines which affect the capacity of the system to infiltrate stormwater runoff. These are expensive and require regular maintenance to clean out.
- Susceptibility to the ingress of tree roots into the system which can cause capacity and maintenance problems.
- Susceptibility to failure from vehicle loadings. The Town has experienced a structural failure of an Atlantis System installed in Baillie Avenue adjacent Edward Millen Park.
- The limited lifespan of such a system which is likely to require removal, cleaning and replacement at considerable cost
- The capital cost of installation.
- Limited ability to construct infrastructure above installation. IE. no trees or structures.

With regard costs of installation. Although detailed figures are not available at this time the ball park costs of installing an Atlantis Cell system into a typical 1000m² drainage sump at a depth of 3m are approximately:

- 3,571 units of "Flo-tank Septa" at \$231/ea = \$824,901
- 1400m² Geofabric at \$1.60/ m² = \$2,240
- Gross Pollutant Trap = \$20,000
- Sand fill over the top 450m³ @\$30/m³ = \$13,500
- Installation of the above estimated at \$50,000.

Total = \$910,641