

# Glen Osmond Road, Hutt Road and Park 17 Improvements

Tom McCready  
Director City Services

# Background

Throughout the concept design's development, several options were explored to balance traditional stormwater management methods with additional environmental and social benefits whilst providing long-term preservation of the avenue of significant trees lining Glen Osmond Road.

These options considered the functional requirement of conveying stormwater in minor and major storm events, in addition to improving the roadside safety of motorists and pedestrians and minimising the upfront and ongoing capital and operational costs. Some of the options considered included;

1. Diversion of stormwater into sedimentation/detention basins within the surrounding Park Lands.
2. renewal of the existing stormwater channels with either hard or soft infrastructure.
3. relocation of the channel into new hard infrastructure culvert/pipe beneath Glen Osmond Road away from existing trees, and a combination of all options.

Following detailed analysis, the optimal option was determined to be the conversion of the existing dilapidated open channel into an underground culvert system.

# Flood Map Park 17



Figure 1: Flood map of Park 17 and surround areas in 20% AEP storm event (current condition)

# Review

- The option for diverting stormwater into vegetated sedimentation and/or detention basins involved creating a series of basins to mitigate and improve low flows, and the installation of a box culvert (1200mm x 600mm) within the existing channel alignment to manage major flow events.
- This option was deemed to be an unpreferred option, as it still required the installation of a box culvert, albeit smaller, and substantial additional civil and landscaping works to convey the flows. Further, the following reasons were also contributing factors:
- The capacity of the basins is only suitable for low flow, and the majority of the flow will still need to be conveyed along the channel into the downstream creek by culvert, effectively doubling the work compared with the preferred option
- Required removal of approximately 65 trees of low retention value, to construct the basins and associated infrastructure. Note that, it is proposed for replacement planting to occur in endorsed locations and riparian planting would be included in the basins.
- Based on stormwater design guidelines and best practices, only a small portion of the stormwater flow can be diverted to the basins for treatment through sedimentation and detention, for improved water quality. Increasing the capacity of the basins is limited by proximity to significant character trees within the park area.
- The basins require a significantly greater maintenance effort and cost to ensure the volumetric and treatment capacity remains appropriate throughout the asset design life.

# Review Continued

- Requires raising the proposed shared use path along Hutt Road higher in order to ensure any overspill is contained within the Park Lands. The elevated path would require greater amounts of fill to be placed within the root zone of established trees along Hutt Road, which is undesirable from tree health perspective.
- A greater risk profile as the basin design relies heavily on the swale and channel's hydraulic performance to convey the larger amount of stormwater flow from the Unley catchment. The associated risk of drainage failure for an open channel is greater due to the need for frequent maintenance, potential gradual reduction of swale cross-sectional area due to tree growth and risk of inundation to Glen Osmond Road and Hutt Road.
- The deeper swale/ channel design will incur the need for safety fencing or barrier to mitigate the risk of falling either from the adjacent access footpath and shared use path (Ponder Avenue), and Glen Osmond Road. Installing fencing is contrary to the policy to make the Park Lands more accessible.
- Not a preferred location within the Park Lands to construct water bodies which would attract wildlife and visitors surrounded by heavy traffic corridors. Furthermore, the APLMS 2015-2025 identifies this park for low passive use with potential for sculpture as a city gateway, providing only a basic level of amenity.
- Higher capital and operational cost of more than double the recommended option.

# Summary

- Due to the reasons outlined above, the option to divert stormwater into basins was considered less optimal, and the recommendation is to replace the existing open channel with a culvert to continue to provide reliable stormwater management services, while addressing the ongoing erosion risk to the historic avenue of trees.