

Basements and Underground Structures: Management of groundwater, dewatering during construction and access.



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POLICY TYPE	Organisational
POLICY OWNER	Manager Infrastructure

REVISION RECORD	Version	Revision Description
October 2019	1.0	New Policy
March 2024	2.0	<i>Change of title from previous version. Revised explanation for waterproofing of underground structures. Change of title from previous version. Revised explanation for waterproofing of underground structures. Requirement to discharge to underground drainage system and extend systems if required.</i>

1. Purpose

This Policy sets out Council's position in relation to groundwater and stormwater management associated with the construction of basements, other below-ground structures, and deep excavations within the municipality of Kingston. The Policy details Council's position on:

- a. Disposal of groundwater
- b. Waterproofing of underground structures
- c. Retaining wall drainage
- d. Investigations required for assessments and approvals
- e. The management of groundwater during construction
- f. Dewatering of excavations during construction
- g. Soil management
- h. Access and flood protection of basements
- i. Environmental protection

2. Scope

This Policy applies to the development of any land within the municipality of Kingston that involves deep excavations, or the construction of underground structures, including, but not limited to, basements, underground car parks, dwellings, tanks, swimming pools, and retaining walls.

This Policy applies whether a planning permit is required or not.

3. Governance Principles and Council Plan Alignment

3.1 Governance Principles

The Policy aligns with the following governance principles:

Principle (b) - priority is to be given to achieving the best outcomes for the municipal community, including future generations.

Principle (c) - the economic, social, and environmental sustainability of the municipal district, including mitigation and planning for climate change risks, is to be promoted-

Principle (d) - the municipal community is to be engaged in strategic planning and strategic decision making.

3.2 Council Plan Alignment

Strategic Direction: We prioritise our environment and reduce our impact on the earth.

Strategy: Protect and enhance our foreshore, marine environment, waterways, and wetlands.

Strategic Direction: Well-governed - Council will be collaborative, accountable, transparent, responsive, well-informed, and efficient.

Strategy: Focus all of our decision-making on the long-term best interests of the Kingston Community.

4. Policy Details

4.1 Disposal of Groundwater

There is a distinction between groundwater and stormwater. It should be noted that the Building Code of Australia relates specifically to stormwater, not groundwater.

The Water Act 1989 (Vic) states that the Crown has control over groundwater, and Southern Rural Water is the Responsible Authority for groundwater. The Responsible Authority for drainage (either Kingston City Council or Melbourne Water Corporation) has control over stormwater drainage.

The collection and discharge of groundwater to the drainage system may pose environmental issues, capacity challenges for the drainage network, impact nearby structures, and/or create unwanted outcomes downstream e.g., negative impacts on amenity.

Other than in accordance with this Policy, Kingston City Council, as the drainage authority, does not accept the discharge of any groundwater directly into the stormwater drainage network. Exceptions may be considered on a case-by-case basis where the Applicant can satisfy Council that no alternative options are possible and that no negative impacts will arise. Any possible exceptions will be subject to detailed investigations, including the findings of a detailed Groundwater Assessment Report (GAR), and any Council-imposed conditions e.g., conditions on flow rates, water quality,

environmental outcomes, amenity, etc.

Where these exceptions are made, groundwater must be discharged into the nearest suitable public underground drainage system at the cost of the Applicant unless otherwise determined by Council. Any new drain between the Legal Point of Discharge (LPD) and the public underground drainage system must be constructed to Council's satisfaction and the drain will be vested in Council upon completion.

No discharge of groundwater to the kerb and channel will be permitted.

4.2 Waterproofing of Underground Structures

Any underground structures, other than purpose-built infiltration systems, shall be fully waterproof, prevent any water ingress into the structure, and withstand the hydrostatic pressures of saturated soils.

4.3 Retaining Wall Drainage

On a case-by-case basis, Council may permit the drainage of retaining walls that are not part of a building structure and are above the groundwater level, to discharge to an approved LPD subject to any conditions set by Council.

If a connection to an LPD is not approved, retaining walls must be designed to withstand hydrostatic pressures and constructed using appropriate materials.

4.4 Investigations required for assessment and approvals.

All areas of Kingston have potential issues with groundwater during deep excavation and construction as the predicted water table varies between 0 and -5 meters from the natural ground level. Some areas are known to be high risk in terms of a high water table, and related issues such as a prevalence of Acid Sulfate Soils, and other contaminants.

4.4.1 Groundwater Assessment Report

Before applying for permits or approvals, applicants must conduct a site investigation to assess the local hydrology. The results of the site investigation must be presented to Council in the form of a Groundwater Assessment Report. The GAR must be prepared by a qualified and professionally registered Hydrogeologist. The contents of the GAR must be sufficient to allow for a detailed assessment of the site and must be confirmed with the relevant Council Officer before submission.

The minimum contents of the GAR will include:

- Depth to water table
- Recharge characteristics of the water table
- Presence of contaminated soils
- Presence of contaminated surface water
- Presence of contaminated groundwater
- Salinity level of groundwater
- Potential for underground structure to interact with the groundwater flow regime.
- Proximity to nearby structures and how they may be affected by the proposed works.

4.4.2 Groundwater Management Plan

Depending on the results of the GAR, Council will assess whether the site is likely to experience issues associated with groundwater management. Applicants may be required to submit a Groundwater Management Plan (GMP) at the discretion of Council.

Sufficient detail must be provided in the GMP about the measures to manage groundwater

interference and to demonstrate that such measures will provide acceptable performance. The contents of the GMP must be confirmed with Council before the final submission.

4.4.3 Construction Management Plan

Items or issues originating from the GMP must be listed in the approved Construction Management Plan for the site. Any non-conformance will be subject to enforcement.

4.5 Management of groundwater during construction

Council does not permit the disposal of groundwater, associated with dewatering activities, to the stormwater drainage system at any time during construction.

It is the responsibility of the property owner to safely collect and dispose of groundwater on-site or reach an agreement with the local sewer authority for disposal.

4.6 Management of stormwater during construction

Council does not permit the disposal of stormwater, associated with dewatering activities, directly to the stormwater drainage system.

The nominated LPD is intended for post-construction use only, once the conditions of the LPD have been met, and the site is free of any potential contaminants, including sediment, or other pollutants.

To manage the disposal of stormwater during construction, including the dewatering of stormwater from deep excavations, the owner may:

- Enter into a temporary trade waste agreement with the local sewer authority for disposal.
- Apply for a Temporary Discharge Permit (TDP)

4.7 Soil Management

Stockpiling of excavated materials must be conducted according to best practice guidelines and prevent contamination of the environment from dust, runoff, and leachate.

4.8 Access and Flood Protection of Underground Areas

Access to underground areas and flood protection may have a direct impact on each other. Requirements for vehicle access to the site and gradients of access driveways are subject to Council's conditions and guidelines, which include AS/NZS 2890.1 Off Street Car Parking.

Council reserves the right to nominate an apex level for the highest point of any basement access ramps to prevent stormwater inundation of the property. The level(s) provided by Council may affect the floor levels of the proposed structures and should be considered early in the design process.

4.9 Environmental Protection

Any surface water or approved groundwater flows directed to a nominated Council location must not exceed the Environmental Protection Agency (EPA) requirements for suspended solids, turbidity, pH, and contaminants.

5. Key Stakeholders (if applicable)

- All Council Officers involved in the assessments and approval of development related applications and permits.

6. Internal and External Assessments

6.1 Risk Assessment

This policy has been assessed by the relevant department.

6.2 Delegation and Authorisation (Compliance Framework)

There are no delegated positions with responsibilities for this Policy.

6.3 Gender Impact Assessment

A Gender Impact Assessment is not required for this Policy.

6.4 Privacy Impact Assessment

A Privacy Impact Assessment is not required for this Policy.

6.5 Human Rights Charter

This policy has been reviewed against and complies with the Charter of Human Rights and Responsibilities Act 2006.

7. Roles and Responsibilities

Role	Responsibility
Council Officers	Review applications to ensure they comply with relevant laws, regulations, and policies. This involves a detailed analysis of the proposed development's impact on the environment, community, and existing infrastructure.
Applicant	It is the responsibility of the applicant to provide accurate and comprehensive information in the application. This includes detailed plans, reports, and any other documentation required by the Council

8. Related documents

8.1 Legislation

- Building Act 1993 (Vic)
- Building Code of Australia
- Building Regulations 2018 (Vic)
- Environment Protection Act 2017
- Kingston City Council Community Local Law
- Local Government Act 1989 and 2020
- Water Act 1989

8.2 Documents and Resources

- AS/NZS 2890.1 – Off Street Car Parking
- Kingston One Vision, Council Plan 2021 - 2025
- Kingston Council Civil Design Requirements for Applicants
- Kingston Integrated Water Cycle Strategy
- Kingston Construction Management Guidelines

9. Definitions

Term	Definition
Acid Sulphate Soils	Naturally occurring soils, sediments, or organic substrates that are formed under water-logged conditions where iron sulphide minerals or related oxides are present. These soils commonly occur within the City of Kingston.
Applicant	The person who has made the application, their representative, the owner of the site, or any interested party representing the application.
Aquifer	A geological structure or formation or an artificial landfill permeated or capable of being permeated permanently or intermittently with water
Flow	In relation to water, includes discharge under gravity or pumped, release, escape, percolation, seepage, and passage, and includes both surface and underground flow
Groundwater	Any water (including any matter dissolved or suspended in any such water) that: (a) Exists or occurs in or can be obtained from any geological structure or formation, any natural or artificial landfill or any soil beneath the surface of the land; and (b) Arises (or has originated) from any surface or underground flow of water (including any discharge, release, escape, percolation, seepage, or passage of such water) any water occurring in or obtained from an aquifer and includes any matter dissolved or suspended in any such water.
Stormwater	Water, resulting from precipitation, that runs off all urban surfaces such as roofs, footpaths, car parks, roads, gardens, and vegetated open space and is captured in constructed storages, or conveyed in drainage systems
Underground Structures	Underground structures refer to any constructed facilities, structures, or spaces that are partially or entirely located beneath the ground surface. This includes but is not limited to: <ul style="list-style-type: none">• Basements• Swimming pools• Retaining walls• Service pits• Tanks• Underground Parking Garages• Stormwater detention systems• Stormwater pits• Tunnels