GOVERNMENT OF WESTERN AUSTRALIA

Department of **Biodiversity, Conservation and Attractions**

SWAN RIVER TRUST

CORPORATE POLICY STATEMENT NO. 51

PLANNING FOR WASTEWATER MANAGEMENT AFFECTING THE SWAN CANNING DEVELOPMENT CONTROL AREA

April 2026

1. OBJECTIVE

The objective of this policy is to ensure land use, development, and other permitted works, acts and activities that comprise, include or use wastewater management systems within or affecting the Swan Canning development control area (DCA):

- prevent further water quality degradation within the DCA, and where possible, improve water quality; and
- protect and enhance the ecological health, community benefits and amenity of the DCA.

2. SCOPE

The Swan Canning river system has high ecological, social, cultural and economic values and is sensitive to contamination associated with land use and development. This policy addresses nutrients and other contaminants associated with wastewater and applies to wastewater management on land within the DCA and wastewater systems that may affect the waters of the DCA. This includes proposals at all stages of the planning process within and abutting the DCA, and proposals that are in the Swan Canning Catchment that may affect the waters of the DCA via tributaries, discharges from stormwater or shallow groundwater management infrastructure, or groundwater flows. It applies to proposals or applications that comprise, include or use wastewater management systems, such as reticulated sewerage, sewerage pump stations, on-site domestic wastewater disposal (including for single houses on single lots), and trade waste systems.

This policy is developed and published pursuant to the *Swan and Canning Rivers Management Act 2006* (SCRM Act). It will be applied by the Department of Biodiversity, Conservation and Attractions (the department) and the Swan River Trust when assessing and determining applications involving wastewater management and providing advice to other statutory decision-makers, land managers and proponents in relation to proposals for land use changes, development, works, acts and activities within, abutting or affecting the DCA.

Pursuant to section 6 of the SCRM Act, Schedule 5 authorities should perform their functions with due regard to the objectives and principles under section 5 of the SCRM Act. This policy has been developed to achieve the objectives and principles of the SCRM Act and therefore should be regarded by Schedule 5 authorities to functions including strategic planning, decision-making, and management.

In this policy, the Swan Canning river system means the catchment area of the Swan, Canning, Helena, Southern and Avon (to Moondyne Brook) rivers (map available). The DCA is defined in Schedule 3 of the SCRM Act (maps available).

All policy and guidance documents identified in this policy should be taken to refer to the most current published version.

3. CONTEXT

Wastewater comes from bathrooms, kitchens, laundries and toilets, and can include trade waste from business and industry. Reticulated sewerage is the most reliable, efficient and environmentally acceptable method of managing wastewater. Reticulated sewerage delivers wastewater to treatment plants, which are regulated to ensure that the quality of treated wastewater is suitable for release or beneficial re-use, without an unacceptable impact on the environment and with the highest regard for human health. Delivering a reticulated sewerage scheme as part of greenfield subdivision is much more cost-effective in the long-term than adding services to an established area. Providing reticulated sewerage up front avoids community expenses in the future, such as retrofitting, and the financial, environmental and social costs of mitigating nutrients and other contaminants leaching to the environment. Management programs to reduce nutrient inputs to waterways and wetlands are costly. Excessive nutrient concentrations can trigger algal blooms, low oxygen levels, fish kills and loss of biodiversity, degrading both the ecological health and community values that these systems support.

The waterways and wetlands of the Swan Canning river system are under significant pressure from high nutrient concentrations. On-site wastewater disposal systems are one of the key sources of nutrients, and predictive modelling undertaken to support the 2009 Swan Canning Water Quality Improvement Plan (SCWQIP) identified that septic tanks contribute significant amounts of both nitrogen and phosphorus. To meet objectives based on the maximum acceptable nutrient load to the waterways in the DCA, a minimum 49 per cent reduction in total nitrogen load and 46 per cent reduction in total phosphorus load are required. Achieving zero nutrient contributions from wastewater is a key recommended management measure identified in the 2009 SCWQIP.

On-site wastewater disposal systems servicing individual lots are generally not an appropriate alternative to reticulated sewerage for most subdivisions and developments due to the risks associated with installation, operation and maintenance. Where reticulated sewerage cannot be provided, the capacity of the site to sustain the proposed land use or development and the associated on-site wastewater disposal without resulting in a new source of nutrients and other contaminants to the river system is a fundamental consideration.

Horizontal and vertical setback distances for on-site wastewater disposal systems have historically been based on human health protection rather than environmental outcomes. Phosphorus retention depends on a soil's capacity to adsorb and store this nutrient, which is influenced by its mineral composition, pH, prior saturation, and physical properties such as texture and permeability. Over time, this retention capacity can decline, leading to the mobilisation of previously stored phosphorus. Nitrogen removal only occurs where soils or groundwater provide suitable conditions for microbial denitrification, typically requiring low oxygen levels and available organic carbon. Understanding in-situ soil characteristics and managing the density of on-site wastewater systems are therefore essential to minimise nutrient impacts from unsewered developments.

Two public drinking water source areas (PDWSAs), the Middle Helena Catchment Area and the Gnangara Underground Water Pollution Control Area, overlap with parts of the DCA. Additional water quality protection measures are required in PDWSAs. See these

documents for more information: Middle Helena Catchment Area Land Use and Water Management Strategy and Gnangara Land Use and Water Management Strategy.

This policy should be used in conjunction with the State Planning Policies adopted under the *Planning and Development Act 2005* (PD Act) as they relate to planning and development within, abutting or affecting the DCA, and assists with implementing the River Protection Strategy for Derbal Yirragan Djarlgarro (Swan Canning river system). This policy is to be applied with the department's and Swan River Trust's other Corporate Policies and Guidelines for the Swan Canning river system.

Mapping of the DCA and environmentally sensitive areas, such as wetlands, can be accessed from the Landgate Locate website.

A glossary that supports this policy is provided at Appendix 1.

4. LEGISLATION

The SCRM Act establishes a governance, regulatory, and approvals framework for the Swan Canning river system. It promotes collaboration among State and local government organisations to achieve a unified and consistent approach to land use planning decision-making.

The SCRM Act places the care, control and management of the River reserve with the Swan River Trust. The SCRM Act also empowers the department and Swan River Trust to undertake statutory functions related to the river system and DCA.

The statutory responsibilities of the department and Swan River Trust in relation to the DCA under the SCRM Act, the Swan and Canning Rivers Management Regulations 2007, and proposals subject to control under the Metropolitan Region Scheme (MRS), PD Act, and other relevant State Government legislation are further detailed in the Determination Processes document.

In relation to the PD Act, the approval of a subdivision application (including the accompanying subdivision and development water management report) by the WAPC, on the advice of the Department of Water and Environmental Regulation (DWER), does not constitute approval for construction of wastewater infrastructure in the DCA, unless the land in the DCA is owned by the applicant and forms part of the subdivision application. In that instance, wastewater infrastructure in the DCA may be approved as part of the subdivision and subject to conditions, if adequate details of the works are included in the subdivision application and the works in the DCA are undertaken before the foreshore reserve is ceded.

5. POLICY

When undertaking its functions, the department, Swan River Trust and Schedule 5 authorities, as described in the SCRM Act, are to regard the following policy statements. The wastewater guidance provided in the State Planning Policy (SPP) 2.9 Water and its associated Planning for Water Guidelines (Western Australian Planning Commission) are also to be applied. Additional policy statements are included to address issues that are specific to the Swan Canning river system and are not addressed in the SPP 2.9 Water and its associated Planning for Water Guidelines.

Reticulated sewerage

Rezoning and land use change

5.1 Within the estuary catchments of the Swan Coastal Plain part of the Swan Canning Catchment (which is equivalent to the SPP 2.9 "sensitive water resource areas"), or outside of the estuary catchments of the Swan Coastal Plain (but within the Swan Canning Catchment) and within 100 metres of waterways, significant wetlands, or surface or subsurface drainage systems that discharge to waterways or significant wetlands:

i. Make provisions to connect land rezoned for urban development and lots less than one hectare to the reticulated sewerage system.

ii. Make provisions to connect areas of land use change or intensification to reticulated sewerage, where it is available, or provide for reticulated sewerage if it has been determined that the absence of reticulated sewerage will pose an unacceptable risk to the DCA. Intensification includes subdivision of land already zoned. Potential cumulative impacts are to be considered.

Subdivision and development

5.2 Connect subdivision and development to reticulated sewerage. Possible exemptions are outlined in section 5.8. Proponents should demonstrate that infrastructure and services can be provided, including identifying the need for any dewatering, which is to be managed in accordance with Corporate Policy Statement No. 50: Planning for Dewatering Affecting the Swan Canning Development Control Area. If the current sewerage network will not adequately service the development, the proponent will be responsible for upgrading the system to facilitate connection. This may involve extension of the sewerage network, a private pumping station or upgrades to increase capacity.

Pump stations

5.3 Locate pump stations outside of the DCA and foreshore areas (where there is no DCA), where site conditions and wastewater transmission requirements allow.

5.4 Include management measures in applications for pump stations to minimise the mobilisation of nutrients and other contaminants from the site to the DCA including during emergencies. The emergency storage capacity of wastewater pump stations is to be determined individually, depending on its size, location and the discharge consequences. A maintenance schedule and contingency plan may be requested to address pump station failure.

On-site domestic wastewater disposal

5.5 Undertake a site and soil evaluation in accordance with On-Site Domestic Wastewater Management (AS/NZS 1547:2012) and the SPP 2.9 and its associated Planning for Water Guidelines, including details of soil type, groundwater, proposed vegetation clearing, buffer requirements and/or earthworks, where relevant. Site evaluation procedures should identify nutrient discharge restrictions and appropriate nutrient reduction measures. The scale and nature of the evaluation should be proportionate to the level of risk associated with the proposal.

Additional soil testing and site evaluation may be required to confirm phosphorus and nitrogen attenuation capacity. This may include assessment of phosphorus

retention using both the phosphorus retention index (PRI) and the phosphorus buffer index (PBI), and measures of existing soil phosphorus (e.g. Colwell P), recognising that high PBI combined with low Colwell P indicates high phosphorus adsorption potential. Current nutrient saturation and hydraulic characteristics influencing nutrient transport should also be considered.

5.6 Consider the potential cumulative impacts of on-site wastewater disposal and avoid detrimental impacts on the water quality in the DCA. Proposals that include on-site wastewater disposal will be assessed on a case-by-case basis, recognising the water quality risks associated with their installation, operation and maintenance.

5.7 New primary treatment (septic) systems are not supported in the Swan Canning Catchment, unless the systems are located outside of the estuary catchments of the Swan Coastal Plain and are located more than 100 metres from waterways, significant wetlands or drainage systems that intersect groundwater and that discharge directly into waterways or significant wetlands. For waterways and wetlands, setbacks are to be measured from the outer edge of riparian or wetland vegetation. For constructed or non-vegetated drainage systems, setbacks are to be measured from the top of bank or edge of the defined drainage channel.

5.8 Ensure that the following requirements can be met for an exemption to connect to reticulated sewerage:

i. The site and the proposed development cannot reasonably be connected to existing or proposed reticulated sewerage schemes (advice should be sought from the sewerage service provider).

ii. The proposed on-site wastewater disposal system has been approved for use in Western Australia by the Department of Health (WA) and has been selected in response to the site and soil conditions, vulnerability of the receiving environment and nature of the proposal. A list of currently approved wastewater treatment systems is provided on the Department of Health (WA) website.

iii. On-site wastewater management will not result in degradation to the ecological health, community benefits and amenity of the DCA.

iv. The minimum lot size for residential subdivisions in the estuary catchments of the Swan Coastal Plain part of the Swan Canning Catchment is one hectare. The lot size for non-residential lots is determined on a case-by-case basis.

v. The land has the capacity to treat and dispose of all wastewater and contain associated buffers within the property boundary, and the proposed on-site wastewater system is:

a) located above the highest groundwater level at the discharge point by at least 1.5 metres in sand, 1 metre in gravels and 0.6 metres in loams and clay soils, and at least 2 metres for sites located in public drinking water source areas. Where site and soil evaluation identifies high-risk soil categories (e.g. porous regolith, heavy clays, or soils with low nutrient attenuation capacity), greater setback distances or additional testing to confirm suitability may be required (see Section 5.5);

b) set back a minimum of 100 metres from waterways or significant wetlands and not within a waterway foreshore area or wetland buffer. The setback is to be measured from the outer edge of riparian or wetland vegetation. The department may consider reduced setbacks for existing lots on a case-

by-case basis, where the setback is to be maximised within the lot to the extent practicable and secondary treatment systems with nutrient removal are used;

c) set back a minimum of 100 metres from drainage systems that intersect groundwater and discharge directly into waterways or significant wetlands. The department may consider reduced setbacks for existing lots on a case-by-case basis, where the setback is to be maximised within the lot to the extent practicable and secondary treatment systems with nutrient removal are used;

d) located outside any area subject to inundation and/or flooding in a 10 per cent AEP rainfall event; and

e) sites located within the 5 per cent annual exceedance probability (AEP) flood contour, as defined by DWER flood mapping or a local catchment model, are considered high constraint areas under On-Site Domestic Wastewater Management (AS/NZS 1547:2012; see Table R2). While installation of on-site wastewater systems is not prohibited in these areas, proponents must demonstrate that the system design appropriately addresses flood risk and complies with setback and performance requirements.

vi. In the Swan Canning Catchment, secondary treatment systems with nutrient removal are to be used:

a) in the estuary catchments of the Swan Coastal Plain, particularly where lots less than 1 hectare are proposed, or systems are located on soils that have low capacity to retain nutrients;

b) outside of the estuary catchments of the Swan Coastal Plain, where setbacks of less than 100 metres from waterways, significant wetlands, or drainage systems that intersect groundwater and discharge directly into waterways or significant wetlands are proposed;

c) for domestic on-site wastewater systems that include a wastewater land application area, the application area is to be located within soils that have been tested to have high phosphorus adsorption (P-sorption) capacity, or the application area is amended to a depth of 1 metre with soils that have high P-sorption capacity. The soils with high P-sorption capacity are not required if a secondary treatment system with nutrient removal has been approved by the Department of Health (WA) as removing total phosphorus to less than or equal to 1mg/L. See Guidance on Site-and-soil Evaluation for On-site Wastewater Management (Department of Health (WA)) and its associated Template for Site and Soil Evaluation Report for information on P-sorption capacity. Where amended soils or fill media are proposed for wastewater irrigation or disposal areas in environmentally sensitive locations, media specifications consistent with the Adoption Guidelines for Stormwater Biofiltration Systems (Monash University, 2015) Appendix C, Table 1 or equivalent, may be required to ensure adequate nutrient retention and hydraulic performance; and

d) with appropriate vegetation to be planted within the wastewater land application areas to assist with nutrient uptake and removal. A mix of plant species and growth forms that can tolerate wetting and drying cycles is recommended. Species selection and placement should consider high nutrient removal capacity, suitability to the local climate and soil conditions, and density, growth type and root depth. Refer to Table 5 of Vegetation

Guidelines for Stormwater Biofilters in the South-West of Western Australia (Monash University, 2014) for guidance.

Domestic greywater and blackwater systems

5.9 Lot size and setback requirements for domestic on-site wastewater systems also apply to blackwater and greywater systems.

Maintenance

5.10 Detail the regulatory and compliance arrangements that will be in place to ensure the installation, operation, maintenance and monitoring requirements associated with on-site wastewater systems will be met. Systems are to be operated as recommended by the manufacturer and maintained to achieve optimum treatment performance, including nitrogen and phosphorus removal efficiency. Secondary treatment systems and alternative treatment systems require frequent maintenance (usually every three months) to ensure consistent and effective performance.

Decommissioning

5.11 Decommission on-site wastewater systems when a property is connected to sewer or when the existing system is upgraded, in accordance with the Health (Treatment of Sewerage and Disposal of Effluent and Liquid Waste) Regulations 1974. Any remaining wastewater in the system is to be pumped out and taken away by an approved liquid waste contractor and the system removed. Proof of decommissioning should be provided in the form of either certification from a licensed plumber or a statutory declaration from the landowner/proponent, confirming that the site has been inspected, and all on-site wastewater system components have been removed.

Sealed tank systems

5.12 Sealed tank systems are to be used for public recreational facilities located in the DCA, when connection to reticulated sewerage is not possible and the wastewater system is located less than 100 metres from the waterway.

Trade waste (industrial wastewater)

5.13 Discharge trade waste to reticulated sewerage, where possible. The discharge of trade waste to a reticulated sewerage scheme is subject to water quality and quantity criteria and approval by the sewerage service provider.

5.14 Treat and manage trade waste in accordance with the *Health Act 1911*, *Environmental Protection Act 1986*, the Environmental Protection (Unauthorised Discharges) Regulations 2004 and the Environmental Protection (Controlled Waste) Regulations 2004 if discharge to reticulated sewerage is not practicable and on-site management and disposal (including reuse/irrigation) is required. Domestic on-site wastewater systems are usually unsuitable for trade waste. See Water Quality Protection Note 51: Industrial wastewater management and disposal (DWER) and its references for more information.

5.15 For wastewater management from alcoholic beverage industries (wineries, breweries and distilleries), see Water Quality Protection Note WQPN 73: Wineries and distilleries (DWER).

5.16 Irrigation with wastewater will only be considered where it will not result in unacceptable impacts to the ecological health, community benefits and amenity of the DCA. See Water Quality Protection Note 22: Irrigation with nutrient-rich wastewater (DWER).

Swimming pool water

5.17 Backwash and pool wastewater should not be discharged to on-site wastewater systems, as pool water chemicals can kill the microorganisms that are essential for wastewater treatment. Discharge swimming pool wastewater and backwash to reticulated sewerage, where practicable and approved by the sewerage service provider. If the service provider will not accept discharge to sewer, discharge swimming pool wastewater and backwash using the methods recommended in Water Quality Protection Note 55: Swimming pools (DWER). Discharges of pool water to the drainage system could cause environmental harm and might be an offence under the *Environmental Protection Act 1986*, the *Health Act 1911*, and/or the *Local Government Act 1995*.

6. STANDARDS

There are several relevant State Government and national policies, guidelines and standards that should be applied in addition to this policy, including:

- State Planning Policy 2.9 Water and its associated Planning for Water Guidelines (Western Australian Planning Commission), which recognises that land use planning can assist in protecting, conserving, managing and enhancing the State's water resources and include detailed policy measures and guidelines for wastewater management. In addition, it acknowledges the significance of the Swan Canning river system and the need to protect and improve water quality where possible.
- Australian Standard On-site Domestic Wastewater Management (AS/NZS 1547:2012), which highlights the importance of applying local knowledge when establishing environmental and land application criteria for on-site wastewater disposal systems.
- Australian Standards for On-site Domestic Wastewater Treatment Units, Part 1: Septic tanks (AS/NZS 1546.1:2008), On-site Domestic Wastewater Treatment Units, Part 2: Waterless composting toilets (AS/NZS 1546.2:2008) and On-site Domestic Wastewater Treatment Units, Part 3: Secondary treatment systems (AS 1546.3:2017).
- Code of Practice for the Design, Manufacture, Installation and Operation of Aerobic Treatment Units (ATUs) (Department of Health (WA)) and Guidance on site-and-soil evaluation for on-site wastewater management (Department of Health (WA)).

7. POLICY IMPLEMENTATION STRATEGIES

To implement this policy, the department will:

Swan River Trust

7.1 Consult with the Swan River Trust when assessing proposals under Part 5 of the SCRM Act and preparing strategic documents and corporate policies and guidelines.

7.2 Provide advice on behalf of the Swan River Trust in accordance with delegated powers .

7.3 Keep the Swan River Trust informed of development and permitted works, acts and activities within the River reserve.

Schedule 5 authorities

7.4 Provide advice to relevant Schedule 5 authorities when consulted on planning instruments, , and the assessment of land use and development proposals and other works, acts and activities within or affecting the DCA.

Referral agencies

7.5 Ensure there is a clear understanding of the role of referral agencies, how their advice will be considered in assessing proposals and when clearing conditions of approval.

Assessment of proposals

7.6 Seek appropriate advice when assessing proposals. Advice may be sought from planning authorities, referral agencies (e.g. Department of Health (WA); DWER for prescribed premises under the *Environmental Protection Act 1986*), service providers (e.g. Water Corporation), contractors, consultants, or other stakeholders and from the department's specialist branches and regional locations. Where expertise is available from within the department, it will be utilised before seeking advice from external parties.

7.7 Ensure relevant staff, contractors and consultants have the necessary qualifications, skills and expertise when assessing planning and development proposals.

7.8 Maintain records of discussions, advice and decisions when undertaking the department's and Swan River Trust's statutory roles in accordance with the *State Records Act 2000.*

8. CUSTODIAN

Executive Director Conservation and Ecosystem Management.

9. PUBLICATION

This policy will be made available on the department's website and intranet.

10. KEY WORDS

Swan, Canning, river, development control area, wastewater, sewage, reticulated sewerage, on-site wastewater, primary treatment, secondary treatment, nutrient removal, trade waste, industrial wastewater, land use change, pump station.

11. REVIEW

Further reviews will be at the discretion of the Director General, with a review undertaken after five years from the date it is signed.

12. APPROVAL

Approved by

Stuart Smith
DIRECTOR GENERAL /
CHIEF EXECUTIVE OFFICER

Date: 29/4/26

David McFerran
CHAIR
SWAN RIVER TRUST

Date: 22 April 2026

Effective date: 29/4/26

GLOSSARY

For the purpose of this policy:

Trade waste (industrial wastewater) is any wastewater other than wastewater produced from domestic uses. It includes contaminated stormwater, cooling water, process waters, wash-down water and runoff from animal storage areas (e.g. stables and saleyards), but does not include wastewater from staff amenities or offices (such as toilets, showers and meal rooms/kitchens).

Primary treatment is the separation of suspended material from wastewater in septic tanks, primary settling chambers or other structures (including those which may be used to treat trade waste), before discharge to a land application area (e.g. leach drain) or secondary treatment system.

Reticulated sewerage is a piped network of sewers that conveys wastewater from any development or subdivision to a wastewater treatment plant managed by a sewerage service provider.

Sealed tank is a waterproof tank that has no holes in the base or the sides. There are two holes in the top of the tank – one associated with the toilet and another that connects to a device that reduces odours. The tank is pumped out when it is nearly full.

Secondary treatment involves microbiological digestion, physical settling, filtering processes and decomposition of wastewater received from a primary treatment unit that produces wastewater of secondary standard. Secondary standard wastewater has 20mg/L of biochemical oxygen demand (BOD), 30mg/L of total suspended solids (TSS) and 10cfu/100mL of *Escherichia coli*.

Secondary treatment systems with nutrient removal include extra treatment processes to reduce reported phosphorus and nitrogen concentrations to <15mg/L total nitrogen and <2mg/L total phosphorus, in accordance with Table 2.2 of Australian Standard On-site Domestic Wastewater Treatment Units, Part 3: Secondary treatment systems (AS 1546.3:2017). The Department of Health (WA) website provides a list of approved secondary treatment systems.

Significant wetlands include Ramsar wetlands and those listed in the Australian Government's Directory of Important Wetlands in Australia; wetlands categorised as Conservation Category in the Department of Biodiversity, Conservation and Attraction's Swan Coastal Plain wetlands dataset, other endorsed wetland dataset and other wetlands that have been identified for protection during the land planning process.

Wastewater (sewage) includes nightsoil, faecal matter or urine, and any waste composed wholly or in part of liquid. This may include trade waste as defined under the *Water Services Act 2012*, but does not generally include stormwater, surface water or groundwater. Wastewater contains nutrients, metals, salts, organic matter, endocrine (or hormone) disrupting chemicals, bacteria, viruses and other pathogens.