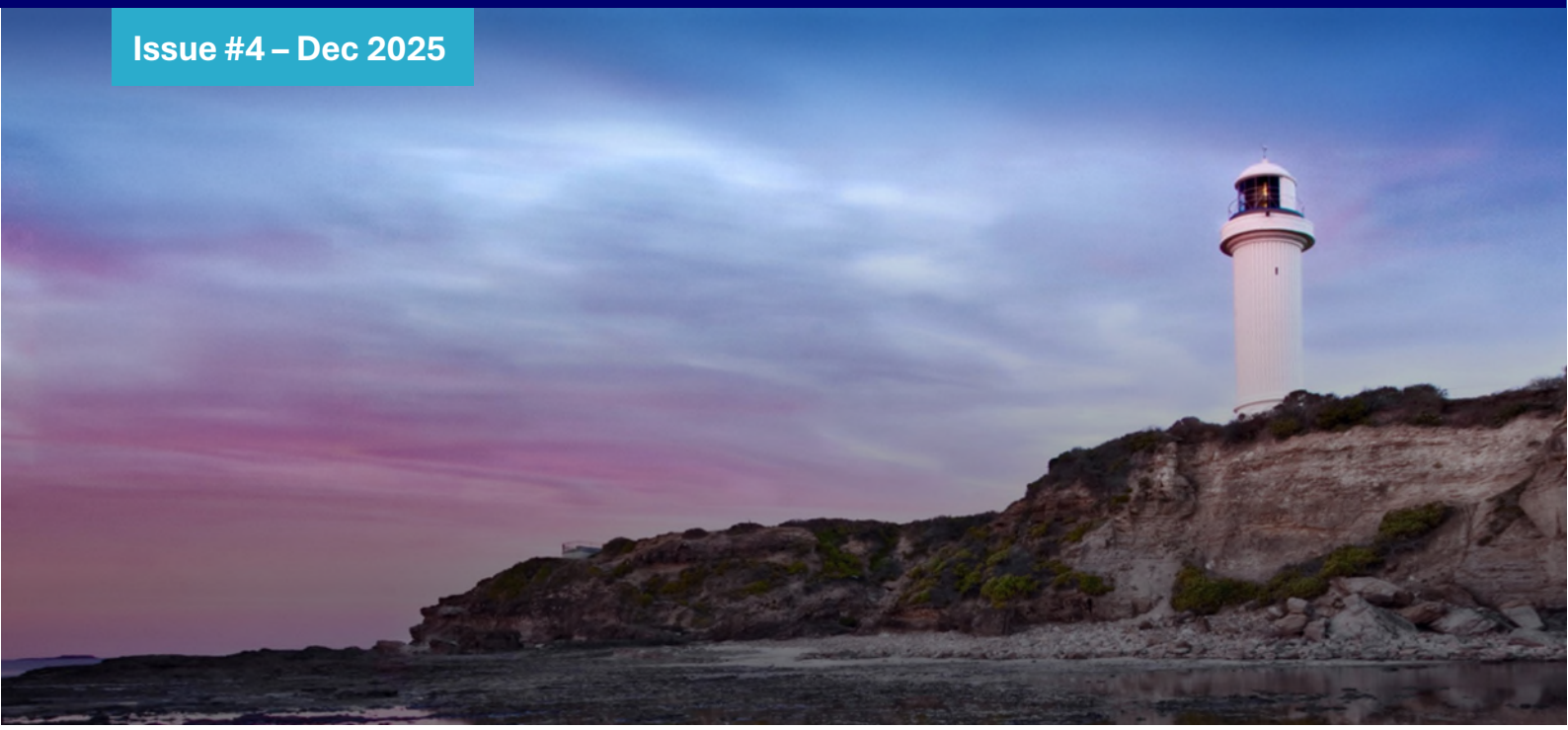
# Sydney Water Standards Newsletter

Issue #4 – Dec 2025



## Merry Christmas from our Standards Team!

This newsletter is your go-to source for updates, insights, and innovations in engineering standards at Sydney Water.

Inside, you'll find insights and innovation from deviation from standards requests and preliminary results from our recent standards improvement survey. This issue also highlights recent project insights from our reservoir renewal work as well as recent releases of new and updated standards.

We're committed to have an integrated suite of standards that are easy to use, responsive to our evolving needs, and enable innovation. Please contact us at standards@sydneywater.com.au if you have any feedback or general queries.

### Here's what's inside:

## Driving Innovation through Deviation from Standards

Deviation from standards unlock innovation to solve engineering problems while balancing risk, cost and time consequences. The deviation below may lead to changes in our standards so future projects can benefit from the time and cost savings.

### Reuse of Unsuitable Spoil on Upper South Creek Network Upgrades

**Justification and Need**

Extensive trenching works are expected across the Cosgrove Creek and the broader Upper South Creek Network area.

Geotechnical investigations indicate that a significant portion of the excavated spoil will not meet Sydney Water Civil specifications limits and is hence unsuitable for reuse as trench backfill due to its geotechnical properties.

Our standards team worked with USCN project to identify potential risks if non-compliant excavated spoil is used as trench fill. These included:

- Poor compaction at scale due to high plasticity/ low CBR of clays and difficulty in moisture conditioning.
- Potential for residual creep and settlement risk due to deep trenches up to 8m.
- Potential voids from breakdown of larger Shale particles over time.
- Risk of preferential surface erosion and flow along trench alignment due to the dispersive nature of spoil.

**Risk Mitigation**

A methodology was put together by USCN to mitigate these risk and ensure adequate long-term performance of trench fill earthworks. The adopted methodology is shown as a typical trench cross-section.

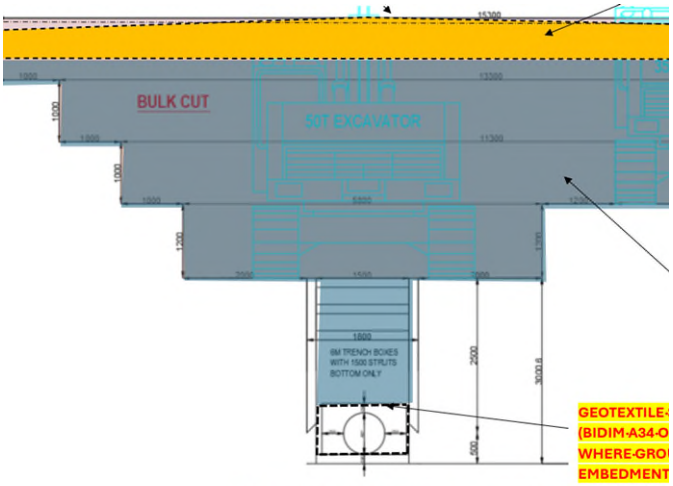
The following requirements were implemented to lower the risk of post compaction settlement and void formation within this backfilled material:

- Deviation applies to greenfield/non-trafficked areas only.
- Reduced compacted layer thickness to improve compaction quality.
- Capping of the top trench layer with 600mm of non-sodic or stabilised material across the full width.
- Mounding of the trench surface to reduce likelihood of vertical water seepage and divert flows away from the trench alignment.

**Benefits of Deviation**

Disposing of unsuitable fill off site and importing over 50,000m^3 of compliant fill was estimated to cost more than ~$1M. This disposal process would also result in over 2000 tonne of CO2-eq emissions. The deviation will therefore result in very good commercial and environmental outcomes, while mitigating the identified long-term performance risks.


**Excerpt from Program Precinct Map**




**Excerpt from Trenching Diagram**

## Standards Made Simple: What You Told Us

To make our engineering standards easier to use, more adaptive, and better enable innovation, we surveyed users and stakeholders what they need most—and you answered. This article shares preliminary insights to guide near term fixes and longer term improvements under our Human Centred Design (HCD) approach.

**Thank you - and why this matters**

Thank you to everyone who completed the survey. Your input is shaping priorities for content, update frequency and support needs. We're committed to listening and to turning feedback into practical improvements that help projects move faster, reduce RFIs and review churn, and support innovation.

**Quick stats**

- 94 responses across the lifecycle, with strongest participation from Design (74) and Construct (65) lifecycle phases.
- Top disciplines: Civil (59) and Structural (37) Engineering.
- Most valued engagement channel: direct access to SMEs for rapid clarification.
- Most requested support materials: DTCs/standard designs, worked examples, one-page checklists/FAQs, user guides, and short "intent" notes explaining the why of requirements.
- Preferred update frequency: as needed or quarterly, with clear change logs and transition rules.

**Headline insights**

- **Show me, don't tell me**. DTCs, worked examples and concise checklists are the strongest enablers of consistent application.
- **Explain the intent**. Short notes associated with debated clauses reduce ambiguity and speed decisions.
- **Make SMEs easy to reach**. Direct, timely access - with clinics and forums outranks other channels.
- **Updates with guardrails**. Agile releases work best with robust communication about what changed, why, impacts, and transition windows to protect live projects.
- **Codify the hybrid path**. A clear path to performance-based solutions through a hybrid model. A prescriptive foundation plus a defined performance pathway is strongly preferred—provided criteria are explicit and auditable.

**Top pain points**

- No quick clarification pathway.
- Overlaps/inconsistencies and ambiguous wording (including contract grade language)
- An onerous deviation (DFS) process.
- Standards scattered across multiple locations and insufficient examples

**Key risks to manage**

- Frequent update version confusion
- Change fatigue / resistance
- Misalignment with in flight projects, and Inconsistent adoption

Each to be mitigated by strong change communications, clear transition rules, and targeted briefings.

**Next steps: formalising the improvement plan**

We will now build a comprehensive plan that integrates survey outcomes and other insights. Where you opted in, we may follow up on specific items to learn more.

Please note this article only shares preliminary results and insights. A deeper breakdown and summary plan will be provided in upcoming newsletters.

**Keep shaping our standards**

Join upcoming webinars and information sessions, submit ideas for DTCs or other improvement suggestions via standards@sydneywater.com.au, and use the new feedback channel once launched.

Thank you again—your insights are already turning pain points into practical fixes.

## Reservoir Renewal Program – Streamlining Standards

Reservoirs are critical to delivering safe, reliable drinking water. Sydney Water's IPART price proposal sought $158 million over 2025–2030 for refurbishments, roof replacements, safety upgrades, and compliance works across 253 reservoirs.

**Scope of Program**

To ensure best value and cost efficiency, teams are reviewing the program's scope and costs. The Standards team is using this opportunity to refine civil and structural design requirements in key specifications, including the Sydney Water Technical Specification – Civil and Water Reservoir General Technical Specification.

Currently, 50 reservoir renewals are in progress or planned. Key focus areas include:

- Clear problem definition and investment drivers
- Design life, access, and operational constraints
- Flexibility versus mandatory standards
- Challenging design options to align with business needs and risk appetite

**Opportunities for Improvement**

One outcome will be improved condition assessments and Years to End of Service Life (YESL) definitions, which determine when assets pose significant structural or mechanical risk and require renewal. Material properties and loading assumptions are under review, and a dedicated reservoir renewal standard and a level 2 condition assessment technical guideline is being considered.

**Next Steps**

An updated Water Reservoir General Technical Specification will be released in February 2026, featuring changes to reduce deviation from standard requests and the associated time and cost impacts while maintaining safety and sustainability.

Updates to the specification include:
- Flexible use of aluminium alloys
- Reduced live load allowances
- Rationalised weld testing
- Enhanced cathodic protection

The opportunity to contribute to the reservoir renewal program review has helped up to create integrated, user-friendly standards that support innovation and deliver better time and cost outcomes for reservoir renewal projects.

**Recently Completed Reservoir in West Region**

**Workshop with Key Stakeholders**

# Recent Releases

We've outlined the key latest updates to our existing standards, along with newly introduced standards. There are links for accessing all our standards on the last page of this newsletter.

## Inlet Screen Design Guidelines (D0002514)

These new guidelines were developed to improve performance and cost outcomes for inlet screen upgrades.

They provide aspects to consider when designing and reviewing inlet screens. These guidelines focus on:

- Reducing risk of costly retrofits.
- Enhancing screenings capture and reliability, especially for MBR plants.
- Increasing reliability of wash water systems.

## Commercial Trade Wastewater Pre-Treatment Equipment Standard (D0002537)

This new standard provides manufacturers and suppliers with:

- Details on minimum requirements are now available for all suppliers to reduce time for approval of pre-treatment products.
- Clarifies product requirements to ensure consistency between applications.
- Information required for Sydney Water assessment of products for listing on our website.

## Technical Specification – HV Switchrooms (DOC0018)

Minor revisions have been made in this update, including:

- Compartmentalisation of HV switchroom when switchgear panel in one bus section exceeds certain quantity to optimise cost and improve operator safety.
- Aligned with Electrical Specification for HVAC, trenching and underfloor drainage requirements to improve standard usability.
- Aligned with Building Design Specification for civil and structural related requirements to reduce time for project delivery.

**MBR Screen with Brush Cleaning**

## Implementing new standards

**In-flight projects**

When new or updated engineering standards are published, they apply to projects commenced after the publication date. There is no requirement to apply them retrospectively.

Where changes are driven by regulation or other critical risk, they may need to be applied to inflight projects – that would be a special case with dedicated communication.

Adopting new standards early can be beneficial where they offer streamlined requirements that reduce costs or other benefits. Project managers have the discretion to apply new requirements to in-flight projects where they see benefit. In these circumstances, the Sydney Water Project Manager will issue an instruction.

Look out for communication material such as 'Standards Alerts' that will outline benefits and other implications of the new or updated standard to help you make an informed decision.

**Existing assets**

When upgrading existing assets, full compliance to current standards may not be practical or cost-effective. Instead, a value engineering and risk-based approach should be adopted to determine the optimal upgrade scope—balancing performance, cost, and risk.

Standards apply to construction of new assets and do not automatically trigger upgrades to existing assets.

# Coming Soon

The Engineering Modernisation standards team is working on new and updated standards to ensure they support you in delivery of our capital program, meeting our customer outcomes and to help achieve our commitment to achieve net carbon zero emissions.

**Standards Nearing Completion**

We are finalising the following standards, and they will be released in the Q1 2026.

- Sydney Water Technical Specification - Civil
- Sydney Water Technical Specification - Electrical
- Sydney Water Edition of the Sewage Pumping Station Code of Australia (WSA-04)
- Pressure Reducing Valve DTC Checklist
- Fibre Polymer Composite Specification
- Water Reservoir Specification

**Upcoming Standards Development**

We are commencing work on the following standards soon. If you wish to contribute to development of these standards or provide feedback at any time, please email standards@sydneywater.com.au.

- Sydney Water Edition of the Sewerage Code of Australia (WSA-02)
- Sydney Water Edition of the Water Supply Code of Australia (WSA-03)
- Substation Control and Monitoring Guidelines
- Water Pumping Station Design Specification


**Engineering Standards Development**

# Connect with us

## Accessing Sydney Water Standards

All our standards and alerts are available to our staff through our iConnect page.

For our design and delivery partners, they are available through SW Delivery Portal.

For public users, our standards are available for free through our website. Our standards that do not contain sensitive information and are available on out website. If you cannot find a standard that you need please reach out to us through our standards inbox.

Past newsletters can also be found on our website.

## Accessing WSAA Codes

WSAA publishes Codes of Practice, which include Sydney Water versions. These are available through their website.

Sydney Water has purchased access for our staff. These documents are available through the links below. Instructions for setting up an account and accessing WSAA codes is available here: Welcome to WSAA's New Website: Easy steps to set up your account

WSAA Codes
Sydney Water WSAA Codes

## Contact Us

standards@sydneywater.com.au is back!

Providing feedback on our engineering standards is key to ensuring they meet user needs and are continuously improved. We welcome constructive feedback at any time.

Please use this email address if you have any feedback or general queries. For general Sydney Water enquiries please follow this link. All project enquiries should be made through your project manager.