



Deviation from Standards

1. Purpose

Sydney Water requires that assets meet service requirements (including safety and environmental outcomes) for customers, operators, and maintainers at lowest whole of life cost. This is achieved (in part) through applying Sydney Water product and asset standards or having any proposed deviation approved, as outlined in Sydney Water's Asset Creation Policy.

This procedure outlines how to gain approval to deviate from Sydney Water's standards, when it is not practical to comply with the standards or an innovation is identified to benefit Sydney Water.

2. Scope

This procedure applies to all staff, contractors, and suppliers that propose to deviate from requirements nominated in Sydney Water standards.

3. Minimum requirements

A request for deviation must be submitted to the Standard Author for assessment, prior to approval by a person with appropriate delegation to accept the risk and/or cost implications on behalf of Sydney Water, in accordance with the Enterprise Risk Management Framework and Delegations Manual.

The Deviation from Standards request must be prepared and verified by the Requestor's suitably competent personnel. For deviation requests related to engineering standards, competency is determined in accordance with the Engineering Competency Standard and the personnel involved in preparing and verifying the deviation request should be listed in the Design Management Plan for the project.

The request must include the following:

- The standard(s) and specific clause(s) from which the deviation is proposed.
- Details of the proposed solution, and how it deviates from the standard(s).
- Justification of why the deviation is required and the benefit to Sydney Water.
- An options assessment demonstrating why the proposed alternative is considered the best option.
- A risk assessment demonstrating that the residual risks are acceptable (to the person with appropriate delegation of authority).
- Details of stakeholder engagement.

4. Procedure in detail

4.1 Procedure intent and context

Sydney Water recognises that it may not always be practical to comply fully with the requirements set out in its standards.

In some instances, better outcomes (e.g. safety, cost, environmental, community, etc) can be achieved through innovative alternatives, even when compliance is practical to achieve.

These situations require prior approval to deviate from Sydney Water standards. Seeking approval for a deviation after the fact (e.g. after construction) will be deemed as a non-compliance and will be recorded as such (e.g. Report Action or Non-Conformance Report). In these instances, the Deviation from Standards procedure may still be followed to document the process.

A request for deviation must be submitted to the Standard Author for assessment, prior to approval by a person with appropriate delegation of authority in line with Sydney Water's Enterprise Risk Management Framework and the Delegations Manual.

Potential deviations should be identified as early as possible during the project lifecycle. Deviation requests should be submitted as soon as practical after the proposed deviation is identified.

The Deviation from Standards procedure is intended to be used where new or upgraded assets are proposed to deviate from the requirements outlined in Sydney Water standards. It is not intended to apply to existing assets (except where the specific non-compliant component of an asset is being modified or upgraded) nor is it intended to be used to address issues with project scoping (e.g. where a renewal or upgrade project does not address an existing non-compliance). Issues with project scoping should be raised with a Sydney Water project representative separately from this process.

Sydney Water supports Deviations from Standards where they deliver a demonstrated increase in customer value, and this process plays an important role in the continuous improvement of Sydney Water standards.

4.2 Process overview

Figure 1 outlines the Deviation from Standards process. Individual activities in the process have been grouped together with references provided to the relevant sections of this document which explain the required activities in more detail.

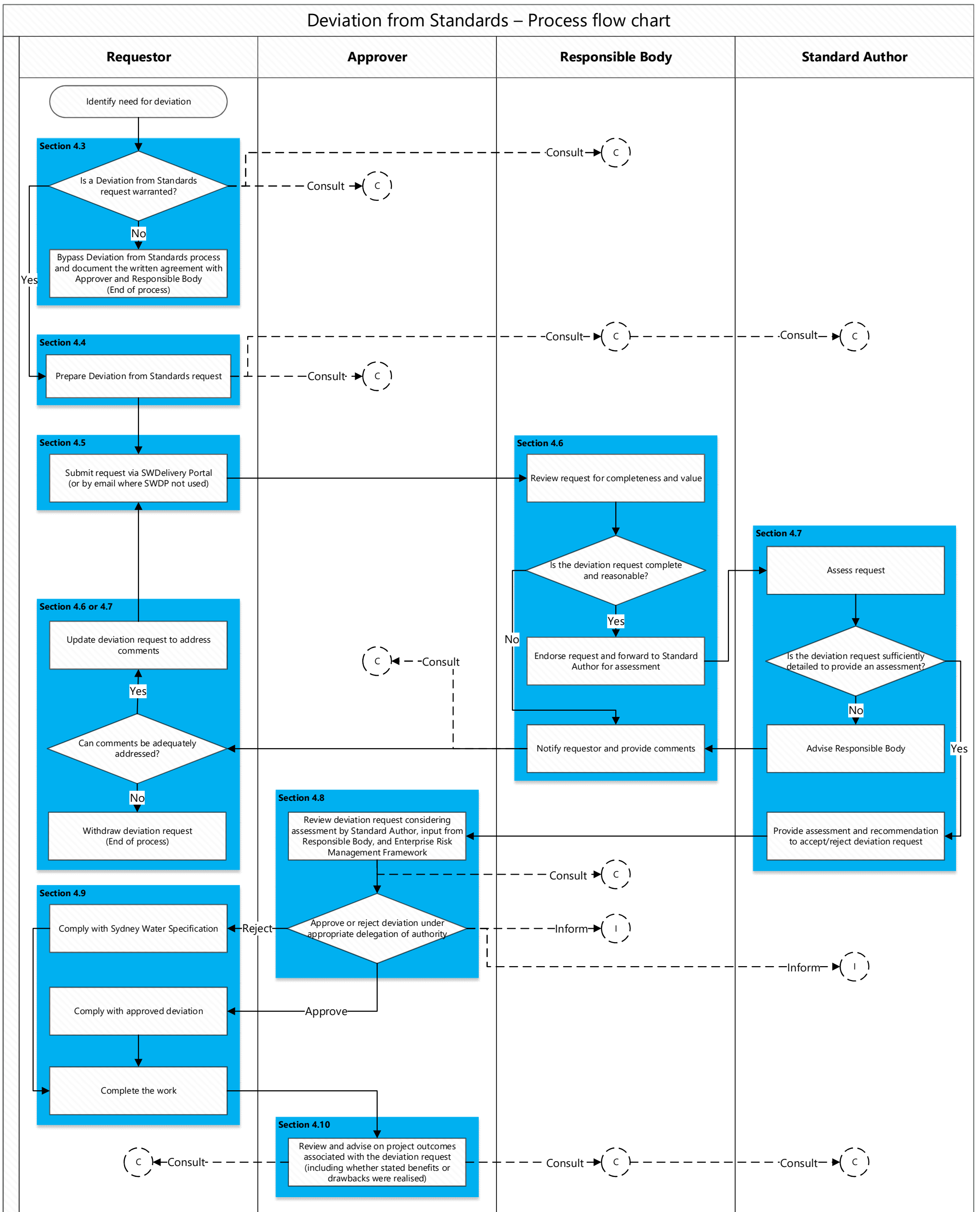


Figure 1 Process flow chart

4.3 Initial assessment of Deviation from Standards

Sydney Water recognises that the Deviation from Standards process may be overly detailed in some instances, such as where the nature of the deviation is minor and low risk. Prior to preparing a deviation request, the Requestor should consult with the Responsible Body and the Approver to determine whether the proposed deviation warrants the preparation and submission of a Deviation from Standards request. Where the Requestor, Responsible Body, and Approver all agree that a Deviation from Standards request is not warranted, the deviation can be accepted with documented written agreement between the Requestor, Responsible Body, and Approver. The Responsible Body should consult with the Standard Author if they are unsure whether a Deviation from Standards request is warranted, and should consult with impacted stakeholders regardless.

Where any party decides that the proposed deviation does warrant a Deviation from Standards request, the request must be prepared and submitted in line with the remainder of this document. In this case, the Requestor should consult with the Responsible Body and the Approver prior to (and during) the preparation the deviation request to discuss the merit of the proposed deviation and any specific concerns that should be addressed in the request. The Responsible Body may choose to consult with the Standard Author to seek further technical guidance for complex deviations.

4.4 Preparation of Deviation from Standards requests

Where the deviation request relates to a project that is listed in Sydney Water's "SWDelivery Portal" system, the request must be submitted using the "Change Log" form (found under "Submit forms" on the sidebar) in this system. When "Deviation from standards request" is selected from the drop-down list under "Change cause", additional fields will appear to input the details of the deviation. If the Requestor is unsure whether the project is listed in SWDelivery Portal, they should check with the Responsible Body.

Deviations related to other projects must use the MS Word template in Attachment 3 and should be submitted via email. The submission process must follow the same approach as the SWDelivery Portal workflow (as outlined in Figure 1). The structure of the MS Word template in Attachment 3 is the same as the SWDelivery Portal form.

The following subheadings provide more detail on the information required as part of the deviation request.

4.4.1 Justification

The purpose of this section of the deviation request is to explain why Sydney Water should accept a solution which does not comply with the standard. This should include why it is not practical to comply with the standard, or why the proposed deviation provides equal or better outcomes for Sydney Water.

This involves providing information for each of the following fields:

- **Standard(s) being deviated from & relevant clause(s)** - Identify the standard(s) and clause(s) from which a deviation is requested.
- **Excerpt(s) from relevant clause(s)** – Provide an extract from the standard(s) of the specific requirements which will be deviated from.
 - Many Sydney Water standards have long clauses/sections so this is necessary to provide clarity on the exact nature of the proposed deviation.
- **Proposed deviation** – Describe the proposed alternative solution and explain how this deviates from the requirement identified above.

- **Need for and benefits of proposed deviation** – Explain why the deviation is being requested (e.g. why it is not practical to comply with the standard) and why the proposed alternative solution delivers equivalent or better outcomes for Sydney Water. Benefits should be quantified where possible, particularly where a cost or time saving is being used as justification. Where appropriate, advice should be provided on how and when the performance and outcomes of the proposed alternative solution should be assessed.

4.4.2 Options assessment

The purpose of this section of the deviation request is to demonstrate that the Requestor has identified and evaluated potential options to achieve acceptable outcomes for Sydney Water.

An options assessment must be conducted, which must include, as an absolute minimum, a comparison between the base case (a fully compliant solution) and the proposed alternative solution. The inclusion of additional options in the assessment will demonstrate that due consideration has been given to potential alternatives and strengthen the case for approval of the deviation.

The options assessment should compare the options against a range of relevant criteria as determined by the Requestor. This must include technical criteria (e.g. performance, durability, maintainability, safety) and may also include commercial criteria (e.g. cost, time).

A template for this options assessment is included as Attachment 1, but the Requestor is not obligated to use this. The options assessment should be as concise as possible, and level of detail should be commensurate to the complexity of the deviation request.

The completed options assessment (including reasoning for selection of the preferred option) must be attached to the deviation request.

4.4.3 Risk assessment

The purpose of this section of the deviation request is to demonstrate that risks associated with the proposed deviation have been assessed.

A risk assessment must be conducted to identify, assess, and control any risks that fall under the following categories:

- Risks that are reduced or exacerbated by the proposed deviation (i.e. risks that would be present if the solution was fully compliant but for which the proposed deviation results in a change to the likelihood or consequence)
- Risks that are specific to the proposed deviation (i.e. risks that would not be present if the solution was fully compliant)
- Risks that are eliminated by the proposed deviation (i.e. risks that would be present if the solution was fully compliant but for which the proposed deviation results in a complete elimination)

Examples for the three categories of risks are included in the risk assessment template in Attachment 2.

The risk assessment must be conducted in consultation with relevant stakeholders (e.g. operations and maintenance personnel).

A specific risk assessment must be conducted; it is not acceptable to simply refer to an existing project-level risk assessment. The extent of the risk assessment should be commensurate to the complexity of the deviation request.

A template for this risk assessment is included as Attachment 2, but the Requestor is not obligated to use this. If a different template is used, risk ratings must be as per the Sydney Water Enterprise Risk Matrix.

The completed risk assessment must be attached to the deviation request and the highest risk rating associated with the proposed deviation must be identified in the relevant SWDelivery Portal (or MS Word form) field. This is to ensure that risks to Sydney Water are accepted by a person with appropriate delegation of authority.

4.4.4 Stakeholder engagement

The purpose of this section of the deviation request is to demonstrate that stakeholders affected by the proposed deviation have been appropriately consulted.

It is the responsibility of the Requestor, in consultation with the Responsible Body, to identify the relevant stakeholders and consult with them as appropriate. Examples of stakeholders who may be impacted by proposed deviations include operations and maintenance, operational acceptance, reliability engineering, and procurement.

The names and roles of all stakeholders consulted must be recorded in the relevant SWDelivery Portal (or MS Word form) field. The Requestor must also attach evidence of consultation with these stakeholders, including their endorsement (or otherwise) of the proposed deviation.

Where a stakeholder does not endorse a proposed deviation prior to submission, this must be clearly identified. A deviation request may still proceed without the endorsement of all stakeholders, however the Approver must consider stakeholder feedback as part of their final decision.

4.4.5 Verification and sign-off by competent personnel

The purpose of this section of the deviation request is to demonstrate that the proposed deviation and supporting documentation has been through an appropriate QA process prior to submission.

The names and roles of the Designer and Verifier (who are acting for, or on behalf of, the Requestor) for the proposed deviation must be recorded in the relevant SWDelivery Portal (or MS Word form) field. The Requestor must also attach evidence that the deviation request has been signed off by the Designer and Verifier. The Designer and Verifier must meet the competency requirements outlined in Sydney Water's Engineering Competency Standard for the category (or categories) of work relevant to the deviation request.

The evidence of sign-off must include a clear statement of recommendation from the Designer and Verifier that Sydney Water should accept the proposed deviation. Refer to the MS Word template in Attachment 3 for an example of this statement and the general format of the sign-off.

4.5 Submission of Deviation from Standards requests

Once all necessary fields in the SWDelivery Portal form (or MS Word form) have been filled out, the request form must be submitted for review and assessment. The form must be submitted by the Requestor and directed to the Responsible Body for the first step in the formal review process. It is strongly recommended that the Requestor consult with the Responsible Body during the development of the deviation request to ensure that the request is complete and adequate.

4.6 Review of Deviation from Standards requests by Responsible Body

Once the form has been submitted, the Responsible Body will review the request to confirm the following:

- All form fields have been appropriately filled out and all necessary supporting documents are attached.
- The request contains sufficient detail and justification for review by the Standard Author.
- The request has sufficient technical merit for further consideration.

If the Responsible Body determines that the above criteria have been met, they will forward the workflow (or MS Word form) to the Standard Author for review and assessment. This should be accompanied by comments from the Responsible Body on specific aspects of the request (or on the request in general). The Responsible Body may have internal processes to ensure an appropriate level of review prior to forwarding to the Standard Author (e.g. Project Engineer forwarding to the Senior Project Engineer for review).

If the Responsible Body determines that the above criteria have not been met, they will return the deviation request form to the Requestor with comments on why the submission was returned. The Requestor can choose to address the comments and resubmit or close the workflow and withdraw the request.

The Responsible Body will be allocated ten working days to complete their review (regardless of whether this includes numerous reviewers, e.g. PE and SPE). This timeframe starts when the request is submitted by the Requestor and applies irrespective of whether the request is the first submission or a resubmission.

4.7 Review of Deviation from Standards requests by Standard Author

When the Responsible Body forwards a deviation request to the Standard Author, the Standard Author will conduct their own technical assessment with the aim of providing a recommendation to the project team.

The aim of the assessment is to weigh up the risk and opportunity associated with proceeding with the deviation compared to conforming with the relevant standard. Safety, regulatory compliance, functional and structural performance, reliability, and lifecycle cost will be the basis for that assessment.

If the Standard Author determines that the deviation request does not have sufficient detail to make an informed assessment, they will return the workflow (or MS Word form) to the Responsible Body with comments on why they were unable to make an assessment. This may occur when the Standard Author identifies a specific technical risk or issue that is not considered or adequately addressed in the submission. The Responsible Body will then pass these comments on to the Requestor for consideration. The Requestor can choose to address the comments and resubmit or close the workflow and withdraw the request. When a deviation request is resubmitted (i.e. after it has been through at least one review cycle), the Approver may request that the Standard Author provide a final assessment (rather than requesting further additional information), noting that in this case the Standard Author may recommend that the request be rejected due to a lack of detail or merit.

If the request is sufficiently detailed, the Standard Author will complete their assessment and provide a recommendation to the Approver. This recommendation will outline whether the Standard Author has any significant objections to the proposed deviation and may recommend that any acceptance is subject to certain conditions.

Note that if the deviation request relates to a project that has a Specialist Engineering representative for the relevant discipline (e.g. a civil SME for a civil engineering deviation), then the Responsible Body should forward the deviation to this representative for review. The Specialist Engineering representative will then

conduct the assessment in cooperation with the Standard Author. In all other circumstances, the Responsible Body must forward the deviation request to the Standard Author, who may choose to consult with, or delegate their review to, another SME.

The Standard Author will be allocated ten working days to complete their review (regardless of whether this includes numerous reviewers, e.g. Specialist Engineering representative and Standard Author). This timeframe starts when the request is forwarded to the Standard Author by the Responsible Body and applies irrespective of whether the request is the first submission or a resubmission.

4.8 Approval of Deviation from Standards requests

Once the Standard Author has provided their recommendation to the Approver, the Approver should review the recommendation and consult with the Responsible Body. The Approver, who has ultimate accountability for the project, must then review the deviation request, considering the recommendation by the Standard Author, the advice from the Responsible Body, endorsement (or otherwise) from stakeholders, and their own understanding of the associated risks. Based on this information, the Approver will then approve or reject the deviation request via the SWDelivery Portal form which will automatically notify the Requestor. Where the MS Word form is used, approval or rejection will be provided via email, and both the Requestor and Approver will be responsible for ensuring that evidence of the final decision is appropriately filed for future reference.

The Approver must also notify the Responsible Body and Standard Author of their final decision. The Responsible Body must then notify affected stakeholders, including all stakeholders consulted during the development of the deviation request.

It is the responsibility of the Approver to ensure that they are acting within their delegation of authority and complying with the Enterprise Risk Management Framework and the Delegations Manual.

4.9 Implementation of Deviation from Standards

Once the Approver has made their decision, the Requestor must then complete the work in compliance with the direction of the Approver. Where the deviation is approved, the Requestor must appropriately document and pass on any requirements to be carried forward to future stages of the project (e.g. inclusion in Safety in Design documentation and risk registers, additional investigation and analysis, specific inspection and testing requirements during construction and commissioning, procurement of critical spares for non-standard equipment, operator training, etc.).

Note that approval of the deviation by Sydney Water must not be construed as relieving the Requestor of their responsibilities. Responsibility for the design, including outcomes of the deviation, remains with the Requestor.

Where a deviation is approved that relates an asset that will be listed in Maximo, the Responsible Body must ensure that the approved deviation request is attached to the relevant Maximo record.

4.10 Outcome of Deviation from Standards requests

After the work is complete (regardless of whether the deviation request was approved or not), the Approver must advise on project outcomes associated with the deviation request. This must include the following:

- Whether the proposed deviation was implemented.
- If the deviation was implemented, whether the benefits claimed in the deviation request were realised.
- If the deviation was not implemented, whether the risks claimed in the deviation request eventuated.

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- If the deviation was not implemented, whether the benefits were able to be achieved, or the risks mitigated, in any other way.
- Performance of the asset during construction, commissioning, and operation.
- Advice on any long-term performance criteria to be assessed in future (including how and when these criteria should be assessed).

The review should include consultation with the Requestor and Responsible Body. The outcomes of the review must be provided to the Standard Author for reference.

Where a Post Implementation Review (PIR) is completed for the project, the above information must be considered as part of the PIR.

4.11 Impact of deviations on Sydney Water's standards

A key output of the Deviation from Standards process is identifying potential changes to Sydney Water's standards. Data for submitted deviation requests will be retained and used by Standard Authors when undertaking regular updates of standards. This process will be managed separately from the Deviation from Standards process.

It is important to note that approval of a deviation request applies only to the specific project for which the request was submitted. Approval of a deviation request does not set a precedent that similar requests will be approved for other projects or applications. Each deviation request will be considered on its own merits based on project specific risks.

Where a proposed deviation is similar to a previously approved deviation request, the Requestor may make reference to the approved deviation, but must still provide a complete deviation request following the process outlined in this document, including an options assessment and a risk assessment specific to the new proposed application.

4.12 RACI matrix

To assist all parties in understanding their roles and responsibilities regarding this procedure, key activities are listed in the RACI matrix below. These are considered to be the minimum requirements, and additional consultation may be advisable in some cases.

| Task | Req | RB | SH | SA | App |
|---|-----|----|----|----|-----|
| Identify potential deviation from standard | R | I | | | I |
| Initial assessment of proposed deviation | R | C | | | A |
| Identify affected stakeholders | R | C | | | C |
| Undertake options assessment | R | C | C | | C |
| Select preferred option | R | I | I | | I |
| Undertake risk assessment | R | C | C | | C |
| Develop justification for proposed deviation | R | C | | | |
| Consult with stakeholders and seek endorsement | R | C | C | | I |
| Record QA sign-offs for proposed deviation | R | C | | | |
| Submit deviation request via SWDelivery Portal or MS Word form (inc. all necessary attachments) | R | I | | | I |
| Preliminary review of deviation request | I | R | | | I |

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| Task | Req | RB | SH | SA | App |
|---|-----|----|----|----|-----|
| Formal review and assessment of deviation request | I | I | | R | I |
| Final approval or rejection of deviation request | I | C | I | I | R/A |
| Implementation of deviation (inc. any conditions of approval) | R | I | I | I | A |
| Report on deviation outcomes | C | C | C | I | R/A |

Abbreviations:

Req – Requestor

RB – Responsible Body

SH – Stakeholders

SA – Standard Author

App – Approver

R – Responsible

A – Accountable

C – Consulted

I – Informed

5. Definitions

| Term | Definition |
|---------------------|--|
| Standards | Standards include Specifications, WSAA Codes (SW Editions), Procedures, or any other documents that set out requirements for all Sydney Water projects/assets. This does not include project or program specific documents (e.g. project technical specifications). |
| Requestor | Party requesting approval to deviate from Sydney Water's Standards (typically a designer or contractor) |
| Responsible Body | Sydney Water's representative responsible for managing compliance with standards (typically a person or group conducting engineering/technical review on behalf of Sydney Water, such as a Project Engineer) |
| Standard Author | Person responsible for content of the standard. The author is typically listed in the standard. |
| Approver | Sydney Water's representative who is ultimately responsible for project decision making and has appropriate delegation of authority in line with Sydney Water's Enterprise Risk Management Framework and the Delegations Manual For projects delivered through City Growth and Development (CGD), the Approver for all deviations will be the Planning and Technical Manager. |
| Competent personnel | Personnel with appropriate qualifications, knowledge, skills and experience to carry out required tasks successfully. For engineering disciplines, competency is determined in accordance with the Engineering Competency Standard. |
| Designer | Person responsible for carrying out design work associated with the deviation for, or on behalf of, the Requestor. Refer to the Engineering Competency Standard for more information. |
| Verifier | Person responsible for verification of the technical quality of tasks carried out by the Designer for, or on behalf of, the Requestor. Refer to the Engineering Competency Standard for more information. |

6. Context

6.1 Accountabilities

Accountabilities for the implementation of this procedure are listed in Section 4.12.

The Specialist Engineering team (part of Engineering and Technical Support) is accountable for the ongoing management of this procedure.

6.2 Training and competencies

| Position | Training or competency |
|--|---|
| Requestor (Including all personnel involved in preparing Deviation from Standards requests) | Competency in application of standards to the specific elements included in the deviation request, as specified in Engineering Competency Standard Knowledge and understanding of the requirements of this procedure |
| Responsible Body | Knowledge and understanding of requirements nominated in Standards Knowledge and understanding of the requirements of this procedure |
| Standard Author | Knowledge and understanding of requirements nominated in Standards Knowledge and understanding of the requirements of this procedure |
| Approver | Knowledge and understanding of Sydney Water's Enterprise Risk Management Framework and Delegations Manual Knowledge and understanding of the requirements of this procedure |

6.3 References

| Document type | Title |
|-------------------------|---|
| Compliance obligations | N/A |
| Policies and procedures | Asset Creation Policy, Post Implementation Review Procedure |
| Other documents | Engineering Competency Standard |

6.4 Attachments

| Attachment | Title |
|------------|--|
| 1 | Options assessment template |
| 2 | Risk assessment template |
| 3 | Deviation from Standards request form (MS Word template) |

7. Ownership

| Role | Title |
|--------|--|
| Group | Asset Lifecycle |
| Owner | Manager, Engineering |
| Author | Dan Leong-Scott, Senior Civil Engineer |

7.1 Change history

| Version | Issue Date | Approved by | Brief description of change and consultation |
|---------|------------|--------------------|--|
| 1 | 15/06/2020 | Steve Keevil-Jones | New document |
| 2 | 20/02/2024 | Norbert Schaeper | Major overhaul, including: <ul style="list-style-type: none"> Changes to roles and responsibilities (including approvals) Creation of SWDelivery Portal workflow and updated template New templates for options and risk assessments Alternative pathway for minor and low risk deviations Detailed explanations, flow chart, and RACI provided for clarity |

Attachments

Refer to associated .zip file for attachments.

Attachment 1 – Options assessment template

Attachment 2 – Risk assessment template

Attachment 3 – Deviation from Standards request form (MS Word template)