

# **ASSET CREATION DEVELOPER PROCESS**

## **INSTRUCTIONS TO DESIGNERS - MAJOR WORKS -**

## INSTRUCTIONS TO DESIGNERS

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## 1. INTRODUCTION

These Instructions are provided for Designers engaged by a Developer/Water Servicing Coordinator to prepare designs for specified water and/or sewerage infrastructure.

The Instructions form part of Sydney Water's Asset Creation Quality Management System, and the procedures outlined herein are designed to complement internal procedures applicable to Sydney Water. An overview of the Asset Creation Developer process is contained in the Asset Creation Developer Process Overview.

Providers are responsible at all times for maintaining an accessible email address for the delivery of notices relevant to the Asset Creation Developer Process.

## 2. ROLE OF THE WATER SERVICING COORDINATOR

Development activity, which requires the creation or protection of Sydney Water's assets, may require the Developer to engage a Water Servicing Coordinator as accredited by Sydney Water to manage the design and construction of any required water and sewerage works.

The Water Servicing Coordinator will ensure that the services of a Designer with the appropriate capability as listed by Sydney Water, is engaged to carry out the design of any required water and sewerage works.

## 3. ROLE OF THE DESIGNER

The Designer's role is to carry out the design of any required water and sewerage works. The Designer must:

- (a) deal only with the Water Servicing Coordinator (single point of contact) for all matters, including Corrective Action Requests (CAR) and Pressure Sewer System designs, relating to the project and Sydney Water;
- (b) liaise with the Water Servicing Coordinator or Developer as required in the signing of the Developer Works Deed or, when required, the Novation Deed – the Developer Works Deed, Novation Deed and the related Standard Terms are available on Sydney Water's website;
- (c) ensure that the Listed Provider has met the Mandatory Criteria for Providers (Designers) and has submitted the relevant Provider Capability Checklist (Provider forms - Template 23 from Sydney Water's website) for the specified works;
- (d) ensure that a development site verification is conducted prior to the commencement of the design (date of site verification must be noted on the Design Development Checklist);
- (e) prepare an appropriate Design Development Checklist that includes responses to all fields (for the specific service type) in Sydney Water's current Design Development Checklist template (Provider form\_01);
- (f) where the works are likely to include a sewage pumping station, provide documentary evidence demonstrating that the feasibility and life cycle cost of all servicing options

- have been thoroughly assessed, and that a gravity sewer is clearly uneconomic and/or inappropriate;
- (g) prepare the design on the downloaded relevant Sydney Water geographical information in digital format (.dwg);
  - (h) design the works in accordance with current Sydney Water Standards;
  - (i) ensure appropriate Environmental Approvals are obtained and prepare environmental management documentation in accordance with the requirements of Sydney Water and all other authorities;
  - (j) prepare all relevant easement/land documentation if applicable;
  - (k) prepare, when required, a Sewerage Flow Schedule (Provider form\_02) (refer Sewerage Code of Australia (Sydney Water Edition) Clause 3.2.5);
  - (l) ensure that all design personnel have the appropriate capabilities for the project;
  - (m) ensure that the designated Designer and the person conducting the Design Verification are not the same person. The Design Verifier can be from the same company as the Designer, but must have the appropriate capabilities for the subject design category;
  - (n) liaise with the Water Servicing Coordinator/Constructor as required in the preparation of:
    - a project-specific Inspection and Test Plan (ITP) and associated Checklists
    - an Environmental Management Plan (EMP) which addresses the identified environmental impacts associated with the works, including the requirements of all relevant authorities
    - a Project Safety Plan (PSP) for construction of the works including access to water (for building purposes) prior to disinfection where applicable
    - a Flow Management Plan, where applicable.
  - (o) compile and prepare Work As Constructed (WAC) documentation;
  - (p) ensure that all on-site design activities are carried out in accordance with the Project Safety Plan and the Environmental Management Plan;
  - (q) comply with all laws and the requirements of all authorities concerning Health, Safety and the Environment (including Heritage issues);
  - (r) make available upon request by Sydney Water any documentation referred to in the Design Development Checklist;
  - (s) comply with any audit requirements Sydney Water may request;
  - (t) **advise the WSC immediately if they become aware of any connection or interference to Sydney Water's assets without prior Sydney Water approval.**

**Note:** All Design Persons associated with field activities must have Confined Space Certification in accordance with WorkCover's requirements.

The Designer is also authorised to locate and/or verify the locations of Sydney Water's Assets as per the Instructions to Provide a Service Protection Report.

#### **4. DESIGN OF WORKS**

The Designer must be a Sydney Water listed Provider for design work in the relevant category and must have prepared and implemented a Project Safety Plan incorporating the Designer's on-site activities.

Sydney Water's Notice of Requirements will specify the works required. Appropriate Case Number(s) will be supplied by the Water Servicing Coordinator and must be clearly shown on all design documentation.

The Designer shall prepare a project-specific Design Development Checklist (Provider form\_01) to ensure the integrity of the Design. The designer must include responses to all fields (for the specific service type) in Sydney Water's current Design Development Checklist template.

Anchor blocks not covered by Standard Drawings will need to be individually designed and included in the design drawings.

The Office of Environment and Heritage NSW (OEH) has negotiated system-based sewer licences with Sydney Water. The sewerage system needs to comply with these licences which cover construction and operation procedures. Consultation with suitably qualified environmental personnel, if required, should be undertaken at the initial route selection stage to prevent the need for costly adjustment to "completed" designs. Appropriate Environmental Approvals and environmental management documentation must be prepared in accordance with the requirements of Sydney Water and all other authorities.

During the development of the design, the Designer will be responsible for any consultation that may be required with Councils, other servicing authorities and adjoining land owners and Developers. A copy of Sydney Water's Advice of Design Entry (Provider form\_03), with reference and contact details completed, must be issued to the owners/occupants of all properties to be entered during the design investigation process. Should entry be denied (and the form not signed by the affected property owner/ tenant), the Designer should contact the Water Servicing Coordinator immediately for advice.

Property which is not part of a development is not to be encumbered by the new sewer construction or other works without written permission being negotiated with the affected owner/tenant. The Developer or Agent will need to negotiate with the affected owner/tenant to obtain that permission. Completed and signed Permission to Enter form(s) (Provider forms 04A and 04B) must be submitted to Sydney Water. If easements are required over these works, agreement in principle to grant that easement to Sydney Water is required from the owner.

The Developer or Agent may wish to use the Letter from Developer's Agent to Affected Property Owner (Provider form\_05) to arrange a meeting to commence negotiations.

Consideration must be given to reasonable design and construction alternatives to avoid or minimise impacts on affected owners/tenants, with consideration given to the ongoing

maintenance and renewal implications for Sydney Water. Consequent to determination of design choice, negotiations using the mandatory form(s) must cover the following:

- adequate advance notification;
- construction precautions to minimise impact/inconvenience;
- temporary access arrangements provided;
- how effects of dust and noise will be minimised;
- safety and security provisions;
- safeguards to protect natural and man-made features;
- agreed restoration provisions;
- payment of compensation for the presence of a maintenance hole or main ventilator.

The affected property owner/tenant should be made aware that:

- compensation for physical damage will generally be by restoration;
- cash compensation will be made for physical damage not rectified by restoration (negotiated before acceptance of the work) and for the presence of a maintenance hole or main ventilator (generally negotiated before entry).

**Notes:**

- Compensation for the presence of a maintenance hole or main ventilator is not be an arbitrary amount, is property specific and a range from an agreed nominal amount upwards.
- Compensation for disturbance/inconvenience and the presence of the pipe is **NOT** provided for by the Act.

Finally, although not compensable under the terms of the Act, developers have the option of negotiating additional monetary consideration to avoid more expensive design (e.g. different route) or construction alternatives (e.g. concrete encasing) where reasonable alternatives are available.

Sydney Water can provide assistance if there are difficulties in finding a design alternative that is acceptable to the property owner/ tenant. Sydney Water will review the details and decide if the design meets its operating, maintenance and renewal objectives. The Designer must contact the Water Servicing Coordinator immediately for advice.

Sydney Water will only intervene as a last resort if a Developer or Agent submits evidence of reasonable negotiations failing to produce a result. The Designer must contact the Water Servicing Coordinator immediately for advice.

Should the design of the works require the creation of easements and/or provision of land, the Designer shall complete the appropriate Easement/Land Requirement Form and/or other documents in accordance with the Sydney Water Easement/Land Operational Guidelines. In cases where land is to be transferred to Sydney Water, a satisfactory Environmental Audit

shall be carried out before detailed design commences. The Designer shall initiate the audit in accordance with the Guidelines.

As connection of the new works to Sydney Water's existing sewerage systems will be carried out at the completion of construction rather than commencement, the Designer shall field verify the location and level of the existing system and provide on-line levels (i.e. surface level, invert level and depth), two metres from the point of connection to facilitate the commencement of construction.

**Notes:**

1. Under no circumstances are Designers to remove covers from Sydney Water's maintenance structures, or enter the system without a Project Safety Plan incorporating these activities, and personnel having the necessary qualifications and competencies.
2. Should it be considered a water project requires an under pressure cut-in connection rather than a standard shutdown tee and valve the details must be shown on the design plan.
3. For water main projects where a cut-in to the existing system will be at the commencement of construction, the following design plan note is required:

"At commencement of works a cut-in consisting of a flange tee and valve with blank flange must be constructed. The blank flange must not be removed until connection of the cut-in to the newly constructed water main (Standard Drawing WAT-1105)."

For extensions to an existing dead end, a restrained valve with a hydrant bend will need to be constructed at the commencement of works. Restrained stop valves will need to be constructed utilising a flanged gate valve in accordance with Standard Drawing WAT-1207. This detail necessitates the use of a length of **ductile iron pipe** anchored by a thrust block and puddle flange. The thrust block must be at an appropriate distance from the valve to ensure that there will be no disturbance to the bearing area (of the thrust block) during connection of the new works.

For water main construction projects where a cut-in to the existing system will be at the commencement of works, and water is required for building activity prior to disinfection of the new main, the design plan will need to indicate a Reduced Pressure Zone Device (RPZD) assembly using the appropriate symbology. A hydrant will be required immediately downstream of the RPZD to enable future chlorination while the RPZD is in place.

The following design note must be inserted:

"Installation of a Sydney Water approved RPZD to connect the cut-in and water main extension. The RPZD assembly must remain in place until disinfection and approval for final connection to the cut-in."

Water main construction projects scope of works includes the installation of service connection/s (drilling) and property service/s (main to meter). These works must be shown on the design, together with the relevant design note.

Where a problem, fault or nonconformance has occurred the Auditor shall issue the Provider with a Corrective Action Request. In this instance the Auditor could include a Sydney Water Officer or their representative, or any other listed Provider associated with the particular project.

The following shall be provided by the Provider to the Auditor for all Corrective Action Requests:

- Cause of problem/fault/nonconformance
- Action to rectify
- Objective evidence that the specific problem/fault/nonconformance has been rectified
- Action to prevent recurrence

Without all of the above, a Corrective Action Request will not be closed off.

On completion of design action, the Designer shall certify the Design Development Checklist.

All Corrective Action Requests raised shall be satisfactorily closed off prior to certification of the Design Development Checklist.

The Designer shall, where appropriate, ensure that the Water Servicing Coordinator receives the following:

- Provider Capability Checklist
- Design Development Checklist certified by the Designer (see Note 1 below)
- Design plan (.dwg format)
- Permission to Enter (if applicable)
- Easement/land documentation (if applicable)
- Sewerage Flow Schedule (if applicable).

**Note 1:** The Designer must ensure that any documentation referred to in the Design Development Checklist is available upon request by Sydney Water.

**Note 2:** Acceptance of the Design Package by Sydney Water will not relieve the Designer from full responsibility for mistakes or omissions therein or therefrom (including any resultant mistake or error in the works) or for any discrepancy or deviation from the Standards and Procedures.

## 5. WORKS IN PROGRESS

If variations requiring re-design are necessary during the construction of works, they shall be prepared by the Designer and documented on the Design Development Checklist for submission by the Water Servicing Coordinator to Sydney Water for agreement. Such submissions shall also include written concurrence to the variation from the owners, and/or prospective purchasers (where sale of lots is proceeding), of all affected properties. (This will greatly reduce the adverse impact of variations on prior building approvals). Sydney Water's Development Services Officer will issue a copy of the agreed variation to the Water Servicing Coordinator.



In instances where easements/land action is required, the Designer shall carry out surveys as required, and prepare and submit the draft documents (as specified in the Easement/Land Operational Guidelines) to the Water Servicing Coordinator.

During construction of the works, the Designer shall liaise with the Water Servicing Coordinator and Constructor to enable compilation of information for the preparation of accurate Work As Constructed plans.

## 6. COMPLETION OF WORKS

Following completion of construction, the Designer shall prepare the Work As Constructed documentation and validate the Design Development Checklist, for submission to the Water Servicing Coordinator.

The final Work As Constructed documentation shall consist of:

- Validated Design Development Checklist
- WAC plan in digital format (.dwg).

### Notes:

In instances where easements/land action is required the Designer shall compile all appropriate final documentation for the Water Servicing Coordinator.

For water main projects chainages for each property service connection/s (drilling) need to be referenced with the start of the line being chainage 00.

## 7. SUPPORTING DOCUMENTS

Documents relevant to a Designer's responsibilities or activities are:

Provider form_01	Design Development Checklist
Provider form_02	Sewerage Flow Schedule
Provider form_03	Advice of Design Entry
Provider form_04A	Permission to Enter (Owner)
Provider form_04B	Permission to Enter (Tenant)
Provider form_05	Letter from Developer's Agent to Affected Property Owner
Provider form_23	Provider Capability Checklist
Generic Asset Hazards – At Point of Connection	
Instructions to Provide a Service Protection Report	

## 8. DEFINITIONS

Authority	Any government department or other public body, including local councils, with jurisdiction over the Developer Works or assets that might be affected by the works.
Business Day	Any day other than a Saturday, Sunday or public holiday in New South Wales, and 27, 28, 29, 30 and 31 December.
Completion	The time when the WSC has provided Sydney Water with all documents needed for the Project Completion Package.

Constructor	The Listed Provider who will build the Developer Works.
Corrective Action Request (CAR)	A document that identifies a problem, fault or non-conformance and asks the recipient to rectify it.
Corrupt Conduct	Conduct as defined in the Independent Commission Against Corruption Act 1988 (NSW).
Customer Contract	A contract of the type in section 3(2) of the <i>Sydney Water Act 1994</i> , the terms of which are on Sydney Water's website.
Design	For Minor Works, the documented design servicing solution as described in the Instructions to Water Servicing Coordinators – Minor Works.  For Major Works, the design prepared by the Designer and included as part of the Design Package.
Design Package	The package described in the Instructions to Water Servicing Coordinators – Major Works.
Design Plan	The plan released by Sydney Water (as a part of the Design Package) showing works to be constructed as a requirement of an NOR.
Designer	The Listed Provider who will design, and specify classes of infrastructure for, the Developer Works.
Developer	A Person who either:  has been given an approval under Part 6, Division 9 of the <i>Sydney Water Act 1994</i> and is seeking a Section 73 Compliance Certificate, or  is seeking approval to adjust, deviate or extend an existing Sydney Water asset  on whose behalf the WSC has made an e-Developer Application.
Developer Works	The works to be performed under the Developer Works Deed, including design, construction, supervision, testing and certification. Works might relate to drinking water, recycled water, wastewater or stormwater.
Developer Works Deed	The deed for performing the Developer Works, including these Standard Terms, any other documents it refers to and any attachments.
Developer Works site	The area of land over which part or all of the Developer Works are to be constructed.

Developer Works Term	The period of 12 months, starting from the date of either: <ul style="list-style-type: none"> <li>• the Job Specific Schedule Letter (for Major Works), or</li> <li>• the NOR (for Minor Works), as modified by a Section 73 Compliance Certificate or Works Warranty Bonding Letter.</li> </ul>
Documents (including laws)	The original and any document that amends, consolidates, supplements, replaces, assigns or novates the original.
e-Developer	Sydney Water’s web-based software that WSCs can use to manage and distribute applications and related documents about Developer activity.
e-Developer Application	The initial application the WSC submits to Sydney Water in e-Developer on behalf of a Developer seeking either a Section 73 Compliance Certificate or approval to adjust, deviate or extend an existing asset.
Environmental Management Plan	A set of documents identifying environmental issues on a site and how those issues will be dealt with during construction.
Field Tester	The Listed Provider who will carry out specified classes of field testing for the Developer Works.
Intellectual Property (IP)	All copyright (including moral rights), patents, trademarks, designs, confidential information, circuit layouts, data and any other rights from intellectual activity in the industrial, scientific, literary and artistic fields recognised in domestic law anywhere in the world.
Job Specific Schedule Letter	A letter issued by Sydney Water releasing the Design Package and detailing any conditions for construction.
Key Personnel	Those staff of a Listed Provider with expertise relevant to the category for which the provider is listed on Sydney Water’s website.
Listed Provider	A party, listed on Sydney Water’s web site, to carry out particular parts of the developer works eg WSC under it’s contract with Sydney Water or a Designer, Constructor, Minor Constructor, Field Tester and Water Service Connection Driller.
Listed Provider Instructions	Instructions on Sydney Water’s web site detailing the roles and responsibilities of Listed Providers
Listed Provider Party	A listed Provider that has executed the Developer Works Deed, Novation deed or Deed Poll.
Major Works	Works in the construction categories W1, W2 W3, S1, S2 and RW, on Sydney Water’s website.
Mandatory Criteria for Providers	Information posted on Sydney Water’s web site and used by a Provider company to determine the required capabilities for the specified developer works.

Minor Works	Works in the construction category MS, on Sydney Water's website.
Notice of Requirements (NOR)	<p>Either:</p> <ul style="list-style-type: none"> <li>• the notice in Part 6, Division 9 of the <i>Sydney Water Act 1994</i>, or</li> <li>• a letter under section 44 of the <i>Sydney Water Act 1994</i> that states requirements, which must be met before Sydney Water will allow its assets to be adjusted, deviated or extended</li> </ul> <p>that Sydney Water issues to the Developer.</p>
Other Land	Land owned or occupied by a Person other than the Developer or Sydney Water, which the Developer and the Accredited Providers need entry and access to.
Private Service Line	A pipe carrying wastewater from a property to the reticulation main, owned and maintained by the property owner.
Principal Contractor	The Person defined in Part 8 of the Occupational Health and Safety Regulation 2001 (NSW) or an equivalent under federal OHS law.
Property Service (main to meter)	A pipe supplying water from the reticulation main to the consumer (meter), owned by the property owner and maintained by either Sydney Water or the owner.
Project Safety Plan	A document prepared by the Listed Provider outlining how it will manage OHS, including hazards, responsibilities, induction, training, incident management, Corrective Action Requests and inspections.
Section 73 Compliance Certificate	A certificate issued under section 73 of the <i>Sydney Water Act 1994</i> .
Standards	<p>The Building Code of Australia, Australian Standards and Codes by the Water Services Association of Australia.</p> <p>Any other documents published or adopted by Sydney Water setting out its requirements for the design, construction, manufacture and supply of works or products.</p>
Suspension Notice	A notice issued by Sydney Water to a Provider company advising the suspension of that company's eligibility to perform Developer Works.
Sydney Water	Sydney Water Corporation, ABN: 49 776 225 038.
Sydney Water Asset	Works as defined in section 3 of the <i>Sydney Water Act 1994</i> .

Technical Data	All technical know-how and information in material form, including manuals, designs, standards, specifications, reports, models, plans, drawings, calculations, software, source code and test results.
Transfer of Ownership Notice	The e-Developer document that shows the Developer Works are vested in Sydney Water.
Variation	A change to the nature or design of the Developer Works after Sydney Water has released the Design Package.
Water Service Connection Driller	The Listed Provider who will carry out specified classes of drilling for the Developer Works.
Water Servicing Coordinator (WSC)	The Listed Provider who will manage the design and construction of any water, wastewater or stormwater works and asset protection.

**9. REVISION CONTROL CHART**

Version number	Date revised	Author	Brief description of change
05	November 2012		Update Entry onto third party property instructions in section 4.
06	1 May 2013	K Bain	Re-sequencing of the chlorination and property services (main to meter) requirements.
07	21 August 2013	L Salli	Update roles in Section 3. Update requirements for Design Development Checklist throughout.
08	25 September 2013	L Salli	Update roles in Section 3. Remove requirement to attach supporting documents to the Design Development Checklist in Section 4.
09	27 August 2015	L Salli	Updated references for Environmental documentation requirements.
10	22 July 2016	B Hansard	Added reference to Pressure Sewer in clause 3 (a) only.