A guide to new water mains and services on new Self-lay development sites
This Guide is intended as a support document for Developer site managers and Self-lay Providers ("SLP") relative to the Southern Water ("SW") Self-lay Policy (Supplementary document) for the delivery of self-lay mains and services pursuant to Section 51 of the Water Act.

This Guide does not replace the Southern Water Self-lay Policy so users of this Guide need to also refer to the Policy document to ensure that required standards and specifications are adhered too. This is particularly important in ensuring that new mains and services are correctly constructed with compliant materials as otherwise a delay in commissioning work may occur, and mains and services may not be adopted by SW until a compliant installation has been satisfactory delivered.

A separate Guide is provided by SW to support Developer Site Managers involved in the installation of new mains and services that are requisitioned under Section 41 and Section 45 of the Water Act.

### Health and Safety

**Construction Design and Management (CDM) Regulations 2015**

Under the CDM Regulations 2015, the Developer has client responsibilities for the new mains and services construction on its site, these include:

- Notifying SW in writing (or else the SLP if appointed and named in the Self-lay Agreement with SW) of all contractors and sub-contractors (each of whom shall be accredited under the Water Industry Registration Scheme).
- Select and appoint a competent CDM co-ordinator where the works are notifiable under the Regulations.
- Select and appoint a competent Principal Contractor
- Verify the sufficiency of the construction phase plan prior to commencement
- Verify that suitable welfare facilities are in place prior to commencement
- Exchange of all relevant Health and Safety Information amongst all parties involved on the site

### Water mains – site preparation and commencement of work (mains)

**Key Points**

1. Prior to any work starting: A pre-start commencement meeting must be held between Southern Water, the SLP, and the Developer. The Self-lay Agreement between the Developer, the SLP, SW, and any others, must have been completed and also that any SW required Pre-commencement payments and provision of accreditation documentation for the SLP / Contractor to be employed have been provided SW.

2. Ensure that the proposed design for the installation of mains and services for the site has been approved by SW and that it is the latest version; and that all requirements for adoptable highway (a suitable footpath, verge, or service strip) have been accommodated.

3. Note that an easement will be required by SW to accommodate any mains or services that are installed in land not forming part of the highway or adoptable service strips.

4. Check and confirm with SW the extent of what work is to be completed by the SLP as “contestable work” and what is to be completed by SW as “non-contestable” work which may also impact on the programme and delivery of an SW source supply from SW’s existing water mains network to the point of connection with site specific mains.

5. Check that all required notices have been served on landowners and the Highway Authority and that no restrictions apply that may affect a work programme.

6. If no kerb line is installed to delineate the line of proposed roads and footways ensure that a suitable line for the main is clear and free of obstructions with the back edge of the footpath or service strips clearly marked.

7. The positioning of all proposed meter chamber (boundary boxes is confirmed relative in particular to required materials if these are to be sited where there is a potential for vehicular traffic.

8. Confirmation of ground conditions (contaminated and/or non-contaminated) and check that proposed materials to be installed by the SLP comply with the SW Specification (see SW Schedule of Permissible Materials – published on Website in Self-lay section).

9. As water mains are installed at a greater depth than for other Utilities ensure that the water main is installed first.

10. It is important to ensure that the water mains and services and the other Utilities pipework or cables are installed compliant with NJUG (Street Works UK) Guidelines on the Positioning and colour coding of...
Underground Utilities apparatus – issue 8: 29th Oct 2013 or any later version.

11. Ensure that road crossing ducts you install for service pipes are positioned to suit the approved design drawing (typically at 90° to the Plot to be served) and are at a depth to suit the depth of service pipework.

12. SW will not adopt mains or services that fail to comply with its Self-lay Policy (the above NUUG Guidelines are a required specification by SW in the installation of mains and services).

13. Ensure that any pipes or cables installed after the water main does not compromise the ability to connect as service afterwards and/or will prevent SW future access for maintenance, repair or connections. Typically a minimum 300mm clearance is required around a water main to make any connection. If other Utilities apparatus will so compromise SW access requirements due to site specific constraints ensure that you contact SW so that a practicable solution or else a diversion of mains pipework may be necessary, as may be agreed.

14. Ensure that fire hydrants and all other street furniture is accessible and free from obstructions and that the operating valve spindle is central in the chamber.

15. SW is not responsible for damage caused to any installed apparatus even after adoption if site development work continues there-after (this includes chambers blocked up with debris) and will, following adoption, require that unimpeded access is restored and will invoice, you, the Developer, for this damage.

16. The Developer is responsible for ensuring that any changes to the site layout/design are communicated to SW and the SLP such that associated changes to the design for mains and service installations can be assessed and accommodated.

17. In accordance with Key Point 10 above, water mains shall be constructed with a minimum cover of 750mm from the crown (top) of the main relative to the final surface level, and 690mm from the centre of the main to the roads kerb face.

18. Service pipe road crossing ducts should be installed by the developer in the positions shown on the design drawing. They should be sized appropriately and at a depth of 750mm below the finished service level and at right angles to the main. Indicative sizes are provided on the Southern Water design drawing. The position of the ducts must be clearly marked at both ends.

19. The developer and SLP will be responsible for ensuring that all chambers are installed vertically and frames and covers are at the correct level to meet the finished surface levels.

20. If SW is required undertake any work on the site following mains and/or services having been adopted the cost of such shall be recharged to the Developer and/or SLP to suit the circumstances.

Pre-commencement meeting

1. An example Agenda is published by SW on its Website but is reproduced under.

2. Provisional and/or confirmed dates for construction of work on-site and/or for any off-site reinforcement work,

3. Final “construction drawing” – being the final accepted design for the proposed mains and services locations and required road ducts (scale 1:500 unless otherwise accepted by SW),

4. traffic management and access,

5. NRSWA requirements,

6. Land entry requirements and notices,

7. Confirmation of any related mains to supply the site that require to be laid from outside of the site boundary (i.e. site specific work to connect the development to an appropriate connection point on the existing water supply distribution network) and/or any related SW reinforcement work; that needs to be completed prior to the point of connection between the self-lay main(s) and the existing SW mains network.

8. any constraints on working,

9. confirmation of SW Permissible Materials to be used,

10. construction requirements (including ducting requirements for mains and/or services),

11. access for inspection and audits of work compliance,

12. confirmation of site layout design and housing and related final detailed design proposal for installation of mains and service and compliance with SW Design Guide for SLPs,

13. Minimum requirements for lengths of mains to be installed at any separate site visit.

14. Confirmation of developers build programme with particular relevance to installation of mains and necessary valving.

15. provisions for variations to the design (change control),

16. provisions for connection of mains and/or services,

17. requirements to maintain turn-over of water on commissioned mains for water quality purposes,

18. provisions for any step-in work required by SW and procedure for SW reimbursement of incurred costs,

19. Who is to supply the meters (and any associated meter carriers) – SW or SLP; and arrangements applying.

20. Any specific SW requirements to ensure that the work is installed in accordance with this SW Self-Lay Policy.

21. Confirmation of requirements relating to Cement Mixing Silo’s. SW guidance document is included with this “site guide” as an Appendix A.

22. Confirmation of how the SLP will notify SW on a daily basis of the locations they have been working on; where work is temporarily suspended, or on-going; what work is programmed for the day of notification, and the following week. This notification is to include contact names and telephone numbers for all SLP personnel or contractor gangs.

23. The minutes of this meeting must be documented. The organisation that is to document the meeting must be agreed at the commencement of the meeting and the meeting notes must be issued to all attendees within 5 days of the date of the meeting but in any event prior to any proposed work commencement date.

24. A copy of these minutes and any subsequent meetings between SW, the developer and/or the SLP will be retained on file by SW against the records for the scheme.

25. Additionally;

a. A designated area for the storage of pipes and fittings so that delivery can be arranged

b. Available confirmation of any proposals to phase visits to complete construction of the main laying (minimum lengths of main to be installed for commissioning and connection).
c. Any other site specific information

d. All people working for SW are to be given a site induction by the Developer immediately upon arrival on site. They will also sign in and out at the site office each day they are on site.

**Work Inspection Audits**

SW will undertake (ideally in conjunction with the SLP and the Developer) routine inspection audits during the construction of the work (and in particular work associated with connection of mains) to monitor compliance with required standards and specification and to offer advice and support as required in the delivery of the work to ensure that the process through to adoption of mains and services is managed smoothly and in a compliant manner.

**Pre and Post construction Commissioning and handover**

Prior to a new section of main being connected to a preceding section or the original source main) SW will undertake a “Pre-connection inspection audit” to assess that the work is compliant and that all commissioning and handover obligations and information incumbent on the SLP to provide to SW for a connection to occur is satisfactory.

Then, once any section of the new water main is completed SW will undertake a “Post Vesting inspection audit” to confirm that all work was completed satisfactorily and that any previously identified non-compliant work (that did not impact on the commissioning and handover) is recorded and agreement reached for rectification.

It is important to note that – No connection shall be undertaken by an SLP without prior written approval from SW and in accordance with the SW Self-lay Policy and therefore if an SLP undertakes a connection in breach of such then SW (as the Undertaker responsible for security of supply and water quality to customers in its region of supply) reserves the right to instigate appropriate legal proceedings against the SLP and/or the Developer.

**Things we will check (audit) include,**

1. Compliance with Schedule of Permissible Materials
2. Compliance with SW Self-lay Policy; to include,
   - Mains and services have been constructed correctly
   - Fittings have been installed as per the design drawing
   - Fittings are in chambers set to finish levels provided
   - Correct covers are fitted
   - Correct marker posts are installed & plated
   - Compliance with Good Industry Practice

**Site completion - final sign off**

When all permanent surfaces are fully completed, a site walk over will be required between SW, the SLP and the Developer. Any defects identified at this point will be charged to the Developer if the SLP Defects Liability Period of the Self-lay Agreement has expired and/or the cause is due to damage other than by the SLP.

The Developer must contact SW to arrange a site meeting.

**Flushing of mains – turnover of water**

It is a requirement that there is always a sufficient turnover of water on all potential dead-legs of main and/or sectional lengths and a regular flushing of these mains shall be undertaken to satisfy water quality requirements. Operation of existing SW valves shall only be by SW personnel. The cost of such flushing work is considered by SW as recoverable (until such time as the development demand is sufficient) in accordance with its published charges and a suitable flushing regime will be agreed at the pre-start meeting.

Water may however be turned over sufficiently by the SLP or developer as follows, subject to SW approval and monitoring of the agreed work, such that if turnover of water is not compliant with the need to protect water quality SW reserves the right to revert to a flushing regime:

- By, prior to any end washout on any section/phase of main, the developer installing a new service connection that can be turned over (i.e. be used for building water supply subject to acceptance by SW and account set-up as a temporary non-household service); or
- Alternatively, by means of a temporary or permanent sluice valve installed on the end of the section of main followed by an approved SW metered standpipe on a washout (but not on a hydrant).

The developer is responsible for ensuring that all required permits and agreements are in place and for identifying where water can be flushed to and for disposal of flushed water and if SW is flushing whether water is required to be de-chlorinated first.

**Service connections & communication pipes**

**Key Points**

More additional information see SW Self-lay Policy paragraph 8 on page 20 of Policy and 3.4 on page 13 covering criteria for communication pipes and positioning.

- It is the Developer’s responsibility to lay the service pipes from the building to the highway boundary of the property
- All service pipes to be installed to comply with Water Supply (Water Fittings) Regulations 1999 and Water Supply (Water Quality) Regulations 2000 (including Regulation 31). All materials to be WRAS approved for use on potable water supplies.
- Service pipes shall be installed at a minimum of 750mm (depth Max 1350).
- Ducts are to be provided for any services where the main is on the opposite side of the road to the plot to be served.
- **Contaminated Ground:** Where any part of the site is contaminated appropriate WRAS approved materials for pipe systems shall be installed e.g. barrier pipe (and SW’s specific design & construction standards are detailed in the SW Schedule of Permissible Materials).
- Service pipes are capped and labelled to show which plot they supply (particularly when multiple pipes brought out to a single location i.e. for a manifold connection).
- The pipe must be ducted where it enters the building so that the pipe can be easily retracted and replaced and sealed where it enters the building and internally to finished floor level.
- An internal stop tap must be installed prior to service connections being made.
- See SW Meter Location and Installation Guide available on SW Website under self-lay.
Services - manifold connections

If any of the service connections on site are to be made using two or six way manifolds, the service connections for all of the properties served by each manifold must be requested at the same time and they must all be ready to be connected in one visit and all pipe identified and tagged to identify plot to serve.

Requesting Service connections from SW

The SLP is able to undertake Contestable work service connections when no SW risk criteria apply; such that the connections would then be re-designated as Non-contestable work. Notwithstanding the installer, the following requires to have been completed to our satisfaction:

- All relevant SW charges have been paid in accordance with our published charges.
- Installation of plumbing for (Ref WRN20 completed)
- The service pipe from the property to the boundary is installed compliant with the required specification and the Water Regulations and the SW Self-lay Policy.
- The service pipe is clearly marked as to which property it supplies and is sealed to avoid contamination
- Area around the service connection is free from obstructions such as skips, scaffolding and building materials
- The pipe inside the building has a stop tap fitted – BS1710 brass stop tap.
- Where the service connection crosses site roads, the ends of the ducts are exposed and marked; pipe is installed in straight runs.
- The finished kerb line and levels are known.
- Boundary boxes should not be in driveways or on vehicle crossovers unless location agreed by SW and appropriate vehicular chamber /boundary box used.

Notification of proposed works must be completed and consent passed before trench is inspected.

Occupancy of new properties

The developer will be charged for any standing charges and water consumption until Southern Water is informed of the new occupant’s details.

- When notifying Southern Water of a new occupant the following information is required:
  - SW reference number (including SPID number for Non-Household connections).
  - The plot number and proposed postal address.
  - The date the plots pipe are ready for inspection/connection and occupancy
  - Confirmation of pipe size.
  - Confirmation of meter size and type.
  - Confirmation of domestic or non-domestic supply.
  - Confirmation of connection to be to an off-site main.
  - Confirmation of connection to an on-site main.
  - The date the meter was installed.
  - The meter location.
  - Occupier address and previous address if within SW region of supply
  - The meter serial number.
  - The meter reading

Post service connection damage

Any damage caused to meter boxes after they have been connected will be repaired or replaced by Southern Water and the full cost of the work will be charged to the developer.

Temporary building supplies - connection to main

All temporary standpipes and welfare facilities must comply with the Water Supply (Water Fittings) Regulations 1999. When the temporary building supply is no longer required, Southern Water must be contacted to arrange for the supply to be disconnected.

All standpipes and / or taps, that a hose may be connected to, must be fitted with a double check valve.

In some cases a permanent house connection may be used initially for building purposes.

Standpipes

In order to avoid the risk of legal proceedings please contact Supply Water Services (Aquam) who handle applications for the hire of standpipes within the Southern Water area.

Contact details

Telephone: 0844 984 2788
Email: southernwater@waterservicesltd.com

Chlorination of service pipes

Where a supply pipe is 63mm OD or greater and 15m in length or over, the developer is required to submit a ‘Bacteriological Certificate’ prior to the connection and Chlorination Certificate with the water main. This should include all internal and external pipework and fire fighting supplies.

Fire hydrants on new water mains

Temporary building Supplies shall not be installed on fire hydrants

Unauthorised use of a fire hydrant / washouts is an offence under section 174 of the Water Industry Act 1991. Interference with fire hydrants / washouts can result in:

- Contamination of the water network
- Damage to fire hydrants & washouts
- Discolouration of the water network
- Burst mains due to pressure surges
- Reduction in pressure of the water network
- Interruption to supply to surrounding properties

Designers of new water mains shall liaise with the local Fire Authority in order to install new fire hydrants where requested by the Fire Authority.

Fire hydrants are life saving devices so it is important that once the new water main is commissioned:

- Site access is made available to fire service personnel so that the new fire hydrants can be inspected and adopted by the Fire Authority
- The new fire hydrants are kept free and are not covered or obstructed as they must be accessible in the event of a fire during the construction of the development
- When constructing footpaths and other final surfaces, the correct fire hydrant cover is installed, the fire hydrant marker post is in position, and the fire hydrant cover is to finished surface level and not buried
- Fire hydrant chambers are free of debris and surfacing materials and the cover can be removed.
Appendix A

1. Southern Water will aim to guarantee the following:
   - Pressure 1.0 bar
   - Flow 9 Litres per Minute

2. Below is an example of how to achieve this zone protection

   ‘Whole-site backflow protection’ using a backflow device rated at fluid category five (FC5) installed on the supply pipe or private water main close to where it enters the site – e.g. a break tank arrangement with an air gap of the type AA, AB or AD. In such circumstances, individual outlets or processes on the site do not have to have point-of-use backflow protection.

Alternative arrangements to the above example can be discussed with SW’s Water regulations team.
3. **Mixing Silo Water Connection**

**Mortar Mixing Silos:** The risk level associated with dry mortar mixing silos is Fluid Category 4 and can be supplied by either:

- A break cistern incorporating a "AF" air gap, or a,
- cement batching plant which contains cement, additives and aggregate being mixed with water, is accepted as being in Fluid Category 4, permitting the use of an RPZ valve for its backflow protection. The valve should be tested either on relocation of the plant between building sites or at six-monthly intervals, whichever is more frequent.

**Relative to the above use of an RPZ valve: the Developer shall obtain written permission from Southern Water prior to commencement of works.**

The following requirements also apply:

- See the WRAS leaflet AIM 08-01: Type BA device – Verifiable backflow Preventer with reduced Pressure Zone (RPZ Valve) – available on the WRAS website (www.wras.co.uk/publications)
- If backflow occurred in the supply pipe, contaminated water returning from the equipment into the drinking water supplies could present a serious risk to the health and safety of not only your own company employees, but also to this company’s customers who draw water from the same mains networks into which your supply is connected.

4. **How to achieve the requirement when a direct mains water connection taken from a Hose Union Bib Tap to a cement mixing silo is not permitted.**

The correct installation is shown under:

Circular Overflow set 50mm below the water inlet to the crown of the overflow, the diameter of the circular overflow shall be not less than 50mm.

5. **General Information**

- **DETR (Department of the Environment, Transport and the Regions):** States that Non-domestic hose union taps represents a Fluid Category 5 risk, however Water Companies have been given an opportunity to risk assess the downstream risk hence the following:
  - **Area of Interest:** Backflow prevention
  - **Topic:** Fluid Category
  - **Title:** Non-domestic hose union taps and use of Fluid Category 5 categorisation
  - **Clause Reference:** Schedule 2 paragraph 15 & G15.3 of the Water Supply Water Fittings Regulations 1999.
  - **Reference Number:** B08 of the Water Supply Water Fittings Regulations 1999.
  - **Decision Date:** June 2001 (Revised February 2012)
The backflow risk classification “Fluid Category 5” should be reserved for examples of the worst backflow hazard. An indiscriminate categorisation of hazards as “Fluid Category 5” can compromise the classification system.

February 2012 revision:

Water companies take account of government guidance in their enforcement of the Water Fittings Regulations, but guidance cannot cover all circumstances. The categorisation of non-domestic hose union taps as a fitting that require fluid 5 protection is a recognition that in some non-domestic situations the fluids at risk of being present will be more serious health hazard. Water Companies do however adopt a risk based approach to their enforcement of the Water Fittings Regulations and where a risk assessment indicates that the risks associated with an individual hose union tap are less than fluid category 5 they will accept alternative approaches.

Where a hose is connected to the hose union tap you shall install at the outlet of the hose a robust hand held trigger gun under user control at all times, the trigger gun is not permitted to have a trigger locking mechanism to lock the water in the on position.

6. Road Cleaning / Sweeping

Road cleaning machines which require water must use filling points which have fluid category five backflow protection, either at the point of use or, where appropriate, by zone or whole site protection. The connection of stand pipes to hydrants on the water supplier’s public water mains does not come under the scope of the Water Fittings Regulations, but their use is subject to the consent of the Water Supplier and must be in accordance with its conditions of use.

7. Hire of metered standpipe

See page 5 in GUIDE ABOVE for contact details and note:

An approved metered standpipe to draw water from Southern Water’s existing mains water distribution network can include:

- Use by road sweper’s.
- Irrigation Landscape use.
- Use as a temporary building supply.
- General usage within a building site.

All non-approved stand pipes / hydrants are illegal and shall be confiscated by Southern Water and subsequently disposed off.

8. Site Wheel Washing

Water for domestic purposes

On construction sites water may be used for domestic purposes such as canteen use, toilet and washing facilities and laundering protective clothing.

This usage is subject to the full scope of the Water Regulations (including the use of backflow protection arrangements).