Land Development Manual
We acknowledge and respect the land’s Traditional Owners

Central Highlands Water acknowledges the traditional owners/peoples of the region we work in, including the Dja Dja Wurrung, Wadawurrung, Wurundjeri, Martang and Wotjobaluk, Jaadwa, Jadawadjali, Wergaia and Jupagulk peoples.

We pay our respect to the elders of these communities past and present, acknowledging that they have been custodians of land and water for many centuries and that their continuing culture and contribution is important to the life of the region.

Acknowledgement of Industry

We would like to recognise the support and feedback from the industry in the development and design of this manual. Central Highlands Water is committed to working with the industry to ensure clarity, consistency and support.

Health and Safety a Priority

CHW has an absolute commitment to the health & safety of our staff, extended resources, stakeholders, customers and the community. We believe that all injuries and occupational illnesses, including mental health, are preventable and we are committed to a goal of zero harm.

CHW expects all staff, industry members and partners to demonstrate that they embrace the concept of safe work practices and a safe working environment by working in a healthy and safe manner.

Note

It is important to note that this manual will be updated by Central Highlands Water at any time without notice. Please refer to the Central Highlands Water website for the latest version www.chw.net.au

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GLOSSARY
1.0 The Purpose of this Manual

This Land Development Manual outlines the approval process for connecting to Central Highland Water’s (CHW) water and sewerage services. Bear in mind that it only provides general advice for standard subdivisions. If your development is based on a non-standard subdivision you should contact CHW for specific advice on the water and sewerage requirements.

Please don’t treat this manual as technical, engineering or legal advice. If you are developing land that needs reticulated water and/or sewerage services from CHW, you should get your own technical, engineering and legal advice.

This manual should be read together with these documents, in order of priority:

1. Central Highlands Water’s pricing schedule
2. Notice of Agreement
3. Water Services Association of Australia (WSAA) Melbourne Retail Water Agencies (MRWA) standards and codes
4. Council planning schemes
5. Central Highlands Water’s development servicing plans (where available)
6. Central Highlands Water’s Integrated water management plans (where available)

1.1 Who should read it?

This manual is for engineering consultants, contractors, surveyors, developers, landowners, councils, other government authorities and CHW personnel involved in land development within CHW’s service area (see map below).
CHW wants to move towards a more collaborative approach in its involvement with land development projects – one that incorporates all project stakeholders.

To that end, developers must nominate a development consultant.

The nominated development consultant must be an accredited engineering consultant who is qualified and experienced in designing and managing mains water and sewerage extension projects. The development consultant is the main point of contact and must receive all communications about the development, including those sent to and by other stakeholders.

1.2 Water Corporation Powers

Victorian water corporations (Authorities) have a wide range of powers under the Water Act 1989 (Vic). As an Authority, these powers give Central Highlands Water the right to place conditions on planning applications and subdivision plans, to enter into agreements and contracts, acquire land and easements, enter properties and carry out works related to sewerage systems and water supplies.

Any development requiring new or improved works must comply with the Water Act as follows:

**Section 145:**

1. A person must not, without an Authority's consent, cause or permit—
   a. any works to be connected to the works of the Authority; or
   b. the alteration or removal of any works that are connected to the works of the Authority; or
   c. anything to be discharged into the works of the Authority.

2. An application for the Authority's consent must be made in a manner determined by the Authority and must be accompanied by—
   a. any fee fixed by a determination of the Authority under subsection (3C); and
   b. any plan that the Authority requires; and
   c. any other information that the Authority requires.

3. An Authority may make a determination for or with respect to the fee to accompany an application for the Authority's consent under this section.
(1) An Authority that intends to provide services which will benefit a property may, by notice in writing, require the owner of the property to meet or contribute to the present day cost of any works that are used or will be able to be used directly or indirectly for the provision of those services, and any fireplugs attached to those works.

(2) If a proposal for the subdivision of land is referred to an Authority under the Planning and Environment Act 1987, the Authority may, by notice in writing, require the owner of the property to meet or contribute to the present day cost of any works that are used or will be able to be used directly or indirectly for the provision of services that will benefit the property, and any fireplugs attached to those works.

(3) The amount of payment required from an owner must be assessed by the Authority to be fair and reasonable, taking into account the benefit to that property relative to the benefit to other properties.

(1) An Authority that provides services to a property may, by notice in writing, require the owner of the property to contribute to the present day cost of any works referred to in section 268(1) if the use of any service for which those things are used increases, or will increase, because of development of the land or any other change, or proposed change, in the use of the land.

(2) The amount of the payment required from an owner must—
   a. be assessed by the Authority to be fair and reasonable in all the circumstances; and
   b. take into account any payment that the owner has made or is liable to make under section 268 or 270 in relation to that property.

(1) An Authority may, by notice in writing, require the owner of a property which becomes a serviced property to meet or contribute to the present day cost of any works that are used or will be able to be used directly or indirectly for the provision of services to that property.
2.0 CHW Accreditation and Pre-Qualification

To ensure consistency of working standards in the land development industry, all consultants acting on behalf of developers for land development projects must be accredited by Central Highland Water.

Central Highlands Water will publish lists of the accredited consultants. These lists will be available to developers to select suitable consultants for each project.

2.1 Application for Accreditation

To apply for accreditation, consultants will need to provide:

- proof of a management system relating to (1) quality, (2) safety and (3) environment
- an integrated management system that stipulates those three elements are acceptable
- a quality system certification (mandatory)
- a timetable for achieving safety and environmental system certification (if such certification is not available at the time of registration)
- details of the company’s structure and resources
- details of the following insurances:
  - certificate of currency
  - public liability
  - professional indemnity (consultants only)
- the details of the past three (3) water industry projects that involved the applicant
- the past three (3) audited financial reports
- the contact details of the company representative
- copies of relevant certificates, and the qualifications, training and relevant experience of each of the key personnel
- details of the company’s work history as well as for the key personnel in each of the work categories
- details of the company’s capability.

The details submitted will be held and managed by CHW.
2.2 Accreditation Maintenance and Performance Monitoring

To maintain their accreditation, each consultant must provide up-to-date records to CHW.

Central Highlands Water will also run an audit program to monitor the performance of accredited consultants, including:

- a rolling audit of management systems to ensure each accredited consultant is audited at least once during their accreditation
- the auditing of project outcomes when CHW thinks necessary
- auditing in the event of a quality, safety, or environmental incident.

The audit outcomes will be used to inform and coach accredited suppliers and may also be used to benchmark accreditation performance and status.

2.3 Pre-Qualification of Contractors

If you wish to design or do construction work on CHW assets, or you plan to maintain or survey works on CHW live sewerage and/or water assets, you need to be pre-qualified with CHW.

Pre-Qualification includes (but isn't limited to) providing CHW with this information:

- a complete list of all employees intending to work on these sites
- a list of work types your business is qualified to perform on CHW assets (e.g. high risk work involving confined space entry, trenching and shoring etc.)
- copies of employees' qualifications (e.g. red/white card, heavy vehicle licence) and safety tickets depending on the type of work to be performed, including but not limited to the following: working safely at heights, confined space, trenching and shoring confirming the types of work each individual is qualified to perform
- completed CHW corporate online induction for each employee before starting any work (you will need to provide a valid email address for staff who have not yet completed this to enable a link to the online induction to be sent to them individually)
- a list of sub-contractor employees (if any), including copies of any sub-contractor employees' qualifications and safety tickets specific to planned works
- copies of certificates of currency for relevant insurance policies for both head and sub-contractors.
2.3.1 Related and Referenced Documents

• The Contractor is responsible for compliance with all OH&S legislation and regulatory requirements, including but not limited to the following:
  • All relevant Worksafe compliance codes refer to www.worksafe.vic.gov.au,
  • All codes of practice and the Australian Standards
  • Occupational Health and Safety Act 2004 (Vic)
  • Occupational Health and Safety Regulations 2017 (Vic)
3.0 Works and Non-Works Developments

There are many steps involved in providing water and sewerage services to a new development. As every situation is different, you should call CHW's Growth and Development Team on 1800 061 514 or email technical.enquiries@chw.net.au for clarification.

Central Highlands Water can tell you if a connection is possible and what the application process is. Depending on whether water and sewerage services are currently available to the property, this will be through either the Works or Non-Works process.

3.1 Connecting Multiple Dwellings to Existing Water/Sewerage Services (Non-Works)

If the property is currently serviced by water and sewerage systems, and connections are required for multiple dwellings (typically including a subdivision), follow these 7 steps for the Non-Works process:

1. **Locate**
   To learn the location of existing mains and connections and to scope supply availability call CHW’s Property Services team on 1800 061 514 or email technical.enquiries@chw.net.au

2. **Advice**
   At this stage, the owner/developer should be getting advice from an architect or building designer and be starting the council planning application process

3. **Approval**
   Once the owner/developer have a firm building plan and any necessary permits, the owner/developer will be ready to seek connection approval by applying for a Notice of Agreement (Non-Works). The completed Notice of Agreement (NoA) will contain CHW’s conditions of connection and any approval costs

4. **Connect**
   Once CHW has provided written acceptance of the connection conditions and received any applicable fees, CHW will issue a “consent” to connect. This consent means the plumber can start work and plumbing inspections can be booked through the Victorian Building Authority (Plumbing).

5. **Send Plan**
   Once the works are complete, the plumber must send CHW a plan of the “as constructed” works to show that the connection has been completed. This will be used as a future reference for what was installed.

6. **Compliance**
   When CHW are satisfied that the servicing conditions in the NoA have been met, the Statement of Compliance for the subdivision can be issued from the relevant council.

7. **Charges**
   Water and wastewater charges will be applied to each newly created dwelling or allotment. To learn more, go to [http://www.chw.net.au/](http://www.chw.net.au/)
3.2 Extending Water/Sewerage Services (Works)

If water and/or sewerage mains need extending in order to service the property/development, follow these 12 steps for the Works process:

1. **Contact** a CHW accredited engineering consultant to discuss the project. They should be able to provide estimated costs, a timeframe, and whether a council town planning permit is required. You’ll find a list of accredited consultants at the CHW website.

2. **Engage** a CHW accredited engineering consultant to be the development consultant. They will design and project manage the water/sewerage main extension. They’ll also ensure all the necessary forms and documentation are submitted to CHW.

3. **Send Plan** The developer and development consultant will need to submit an Application for Notice of Agreement (Works). They should also submit the relevant planning permit, plan of subdivision and preliminary water and/or sewerage design plans.

4. **Approval** Central Highlands Water’s Development Services team will then prepare a Notice of Agreement (NoA). This includes the applicable fees, general and servicing conditions for the project, and the Works Warranty Bond details.

5. **Sign** To proceed with the approved water or sewer extension, the developer and development consultant must sign and return the NoA acceptance form.

6. **Submit** The development consultant will then submit the final design plans along with a Design Verification form for CHW to review.

7. **Send Form** Before construction starts, the development consultant must send CHW a completed Pre-Construction Verification form with details of the nominated contractor and construction timelines.

8. **Submit** When completed, the development consultant must submit a Construction Verification form along with the as-constructed plans and other relevant documentation. Central Highlands Water will organise a time with the development consultant and contractor to inspect the new water and sewer mains. Once CHW are happy that the development works have been completed satisfactorily and CHW have received payment for the Works Warranty Bond and Developer Contribution Fees, CHW will issue an Acceptance of Works certificate (AoW).

9. **Compliance** At this point CHW will issue consent for the Statement of Compliance for the subdivision, if relevant. The date shown on the AoW certificate is when the Defects Liability Phase begins (minimum twelve [12] months).
10. Twelve (12) months after the AoW certificate has been issued, the development consultant may submit an End of Defects Liability Period Verification form. Central Highlands Water will then complete a final inspection and issue a Completion of Works certificate (CoW) if no defects are found.

11. If any design or construction faults are found during the Works Warranty Phase, the development consultant will be notified to rectify the faults.

12. One (1) year after the AoW has been issued, the balance of the Works Warranty Bond can be requested.
4.0 Other Considerations and Costs

If a development requires the extension or upgrading of water and sewerage assets, the developer must arrange and pay for the design and construction of those assets.

Developers should be aware that when considering the types of sewerage and water services for new developments, CHW will:

1. need the development to proceed in a logically sequential manner
2. consider “fit for purpose” service options
3. identify the costs and benefits to customers, the community and the risks to CHW
4. not agree to service options that impose unreasonable costs on CHW’s customers
5. work with the developer to ensure the infrastructure has sufficient capacity

Developers are responsible for:

- providing reticulation assets and the cost of connecting those assets to CHW’s infrastructure
- paying any costs brought forward when development occurs ahead of CHW’s asset development sequence.
  For more on this, refer to [http://www.chw.net.au/](http://www.chw.net.au/)

4.1 New Customer Contributions

New customer contributions (NCCs), also known as developer charges, are levied by water corporations when a new connection is made to their water, sewerage or recycled water networks. New customer contributions can be either standard or negotiated. Standard charges apply to new connections in areas where infrastructure requirements and growth rates are relatively well known. CHW’s Standard NCC charge is available at: [http://www.chw.net.au/](http://www.chw.net.au/)

In situations where Standard NCCs are not fair and reasonable or where a new connection is outside the areas designated as eligible for Standard NCCs, the NCC framework allows water businesses and developers to negotiate site-specific arrangements that reflect the NCC pricing principles.

4.1.1 New Customer Contribution charge

For residential developments (including multi-unit and dual-occupancy), NCC charges apply on a “per lot” basis. A lot is defined as an area within the development that is separately titled or is (or could be) individually metered for water.

For example, self-contained units within a retirement village will each attract an NCC charge. The amount payable for all residential developments is calculated in the same way, regardless of whether the property is being subdivided or staying on one title.

An NCC credit of one lot is granted if the original property was serviced by CHW.

4.1.2 Non-residential single-lot developments

Non-residential subdivisions are calculated in the same way as residential subdivisions (i.e. by the number of lots within the development).

However, the NCC charges for non-residential single-lot developments are calculated in a way that reflects the higher demand businesses and other organisations place on CHW's networks.

Single-lot non-residential NCC charges are based on the number of plumbing fixture units contained within the development.

The fixture unit rating for each plumbing fixture is set out in Table 6.1 of AS/NZS 3500.2.2:2003. (National Plumbing and Drainage Code).

4.1.3 New Customer Contribution charge exemptions

New Customer Contribution charges are waived for:

- lots defined on the plan of subdivision as stage lots or super lots
- land set aside for reserves, retarding basins and main road widening that does not need a water supply, alternative water supply or sewerage service at the time of subdivision
- approved dependent -living residential units (aged care flats) that are served by the existing water, alternative water and sewer connections.

If a water supply, alternative water supply or sewer connection point is requested due to development at a later date, the NCCs are paid at the prevailing rate (current interest rate).
4.2 Reimbursable Works

Central Highlands Water reimburses some costs as per the Essential Services Commission guidelines. If a developer/owner has to build an asset greater than the required reticulation size, CHW will reimburse the cost of upsizing those assets. This is called the upsizing cost.

For works to be reimbursable, they must meet the relevant design and construction standards and be completed as efficiently as possible. Specifically, the developer must:

- enter into a Notice of Agreement (NoA) for works
- construct the necessary works to meet the asset requirements specified in the NoA and CHW’s long-term strategic planning
- make sure the development consultant follows the relevant processes outlined in this manual
- actively involve CHW in the design, construction and procurement phases of the development works
- ensure the asset(s) is constructed to CHW’s standards
- satisfy CHW’s standards at the final post construction inspection.

4.3 Temporary Works

If CHW decide temporary works are needed due to a development happening ahead of available or planned infrastructure, the temporary works must be paid for in full by the owners/developers. Central Highlands Water will not share costs unless prior written agreement has been provided by CHW for specific purposes. These could include trials of emerging or innovative technology, or collaborations that will benefit the community.

Before any temporary works are installed, the owners/developers must:

- learn if adjoining landowners have any development plans, so that temporary works can be sized appropriately
- agree the details of any cost-sharing arrangements with other owners
- provide land for temporary works.
5.0 Developing Existing Services

5.1 Existing Service Realignment

If an existing water or sewerage service needs realigning due to redevelopment or changes to the subdivision of land, the landowner must pay all associated costs.

5.2 Existing Service Abandonment

If a service needs to be abandoned due to redevelopment or changes to the subdivision of land, the property owner must:

• pay all associated costs
• arrange for the service to be abandoned in line with CHW requirements.

5.3 Existing Combined Sewerage Drains

If a development’s parent lot is currently serviced by a combined drain that is not under an owners’ corporation, the combined drain cannot be used to connect additional lots. The developer must provide separate connection points. This may require a sewer extension, which will be at the developer’s expense.
6.0 Residential Developments

All the specific servicing requirements for new residential developments will be detailed in the Notice of Agreement.

6.1 Backflow Prevention – Potable Water Supply

To meet plumbing regulations and the Plumbing Code of Australia, all new connections and redevelopments must have an appropriate backflow prevention device fitted at the outlet of the main water meter.


6.2 Potable Water Reduction/Substitution

Developers must satisfy CHW that their subdivision designs incorporate the principles of water sensitive urban design (WSUD) and the integrated water management (IWM) requirements of the Ballarat City Integrated Water Management Plan (or any other relevant IWM plan). Where this involves a requirement for future owners of the lots to install and maintain rainwater tanks the owner must enter into an agreement with Central Highlands Water and Council under Sections 173 and 174 of the Planning and Environment Act 1987 to record this requirement, unless an alternative means of recording the requirement is agreed with Central Highlands Water. Central Highlands Water suggest that the developer/consultant makes an appointment with Central Highlands Water at an early stage to discuss these requirements.

6.3 Inflow and Infiltration Reduction

The usual ratio of average dry weather flow (ADWF) to peak wet weather flow (PWWF) is six (6), which is typically used for sewerage design. Developers are encouraged to reduce inflow infiltration with innovative design, planning and construction practices that enable a ratio of four (4).

6.4 Development Servicing Plans

To help developers plan ahead, CHW shares its development servicing plans (DSPs) (available at http://www.chw.net.au/). These DSPs outline CHW’s future water and sewerage infrastructure plans for Ballarat West Urban Growth Zone (BWUGZ) along with indicative timings for their completion.
7.0  Industrial and Commercial Developments

7.1  Sewerage and Water Requirements

All new industrial and commercial developments need a reticulated water supply and sewerage services.

7.2  Alternative Water

If an alternative water source is available, the developer should consult CHW on whether it should be included in the development.

7.3  Potable Water Reduction/Substitution

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7.5  Trade Waste

It’s vital that developers notify CHW as soon as possible if any prospective occupants intend to discharge trade waste into any sewers.

Never assume that CHW has agreed to accept trade waste discharge into its sewers, which are only designed to take a limited amount of non-domestic waste.

Business owners operating in the development must apply to CHW for approval to discharge trade waste, which must meet CHW’s approved acceptance criteria. All applications for trade waste will be considered according to CHW’s Trade Waste Customer Charter.

Trade waste application forms can be downloaded from CHW’s website.

CHW’s Statement of Approved Acceptance Criteria, Customer Charter and other helpful trade waste information and documents are available at CHW’s website.
7.6 Backflow Prevention

A backflow prevention device (BPD) for containment protection must be provided on the water supply connection to all industrial/commercial properties regardless of the proposed water service size. The selection, installation and testing of a BPD must be carried out by a qualified plumber and meet the following standards, regulations and acts:

- AS/NZS 3500.1:2015 Plumbing and Drainage Part 1: Water Services (and as amended)
- AS/NZS 2845 Water Supply – Backflow Prevention Devices (and as amended)
- Water (Estimation, Supply and Sewerage) Regulations 2014 (and as amended)
- Plumbing Regulations 2008 Victoria (and as amended)
- Safe Drinking Water Act 2003 (and as amended)
- Water Act 1989 (Vic) (and as amended)
- Plumbing Code of Australia 2014 (and as amended)

All BPDs must be tested annually by an accredited backflow tester at the property owner’s expense.

A copy of the test report must be sent to CHW within 14 days of the test and must include:

- Accredited tester’s name, contact phone number and licence number
- Test kit serial number and calibration date
- Property address of the BPD being tested
- Business name and type
- Contact name and phone number
- Water meter number
- Date of test
- Size of BPD
- Make, model and type of BPD
- BPD serial number
- Location of BPD (provide description – for example, connected to water meter at front boundary, off Smith Street – approximately 10m left of driveway)
- Test results (Pass/fail – pressure readings)
- Any additional comments (if required)
- Signature of licensed tester
8.0 Multi-Unit Developments

8.1 Standards

Regardless of whether they are industrial, commercial or residential, the common water supply and sewerage infrastructure for multi-unit developments must meet these standards:

- AS/NZS 3500 Acceptable Solutions, or AS/NZS 3500 Performance Requirements, with the Owners Corporation owning, operating and maintaining the works; or
- WSAA MRWA standards where CHW may, by agreement, be owning, operating and maintaining the assets.

If the standards have conflicting or contradictory requirements, consult CHW for clarity.

The developer must apply the selected standard to all services – potable water, alternative water (if applicable) and sewerage infrastructure.

If the developer constructs works that the owners’ corporation or property owner will own, operate and maintain, CHW is responsible for the level of service or quality of assets outside the parent property boundary. CHW can also offer advice on objectives and practices to meet integrated water management plans and/or development servicing scheme requirements.

The developer is responsible for using suitably qualified professionals to design and install the private internal services for water, alternative water and sewer works. For multi-unit developments, water quality, pressure and flow will be guaranteed (as per the CHW Customer Charter) only at the parent property boundary. The developer must install a bank of individual meters at the property boundary. Alternatively, a main meter can be installed at the parent property boundary and check meters installed at individual properties within the development, and also at shared facilities such as swimming pools. Once the works are complete and the meters installed, the developer must supply CHW with a record of each meter location.

In addition, developers must incorporate the requirements of fire and planning authorities. These will dictate the proximity of dwellings to hydrants and how water quality standards must be met.

8.2 Existing Multi-Unit Developments

All multi-unit developments must have CHW sewerage, water and alternative water (where applicable) services to the property boundary. The maintenance, operation and replacement of the internal plumbing is the responsibility of the owners’ corporation or the owners in common.

8.3 Retirement Villages

For retirement villages, the same design standards should be used as in notes 8.1 and 8.2.
9.0 High-Rise Developments

While CHW are only responsible for the level of service or quality of assets outside a property boundary, CHW can offer advice on meeting integrated water management plans or servicing scheme requirements for high-rise developments.

The property owner is responsible for using suitably qualified professionals to design and install the appropriate private internal services for water, alternative water and sewer works.

In providing a service to each unit, the work must:

- meet plumbing regulations
- be to the satisfaction of the Victorian Building Authority
- be to the satisfaction of the relevant fire authority for water supply
- be constructed to a standard that the owners' corporation, or property owners, will own, operate and maintain.

You’ll find a full definition of “high-rise developments” in the glossary.

9.1 Pressure and Flow

Central Highlands Water guarantees water quality and flow (as per the CHW Customer Charter) to only the ground-floor level of each development. It may not be possible to deliver the same level of service to the upper floors. Also, fire service requirements (defined by the relevant fire authority) for the development may demand a greater volume or pressure of water than is available in the water supply network.

9.2 In-Line Booster Pumps

In-line booster pumps are not permitted for use within the CHW network. If the CHW network can't provide the required pressure and flow rates, tanks and/or pumps that comply with AS/NZS 3500 can be installed within the property boundary.
9.3 Metering

Central Highlands Water prefers a bank of individual meters installed at the property boundary. Alternatively, a main meter can be installed at the parent property boundary and check meters installed at individual properties within the development, and also at shared facilities such as swimming pools. Once the works are complete and the meters installed, the developer must supply CHW with a record of each meter location.

In addition, developers must incorporate the requirements of fire and planning authorities. These will dictate the proximity of dwellings to hydrants and how water quality standards must be met.

Note: Part of a development’s infrastructure may have to be installed so that it can be used as part of the CHW network to service other nearby developments. In such cases, the property owner must install the water main, alternative water main or sewer to WSAA MRWA standards.

9.4 Private Internal Services

The owners’ corporation is responsible for the maintenance, operation, quality and replacement of the private internal services.

The supply for these services is usually provided by a single-tapping or one sewer connection point. Requests can be made to CHW for individual tapping or connection points and are assessed on a per-case basis.

9.5 Existing High-Rise Developments

High-rise developments that already have satisfactory water, alternative water and/or sewerage services do not require CHW approval.

The owners’ corporation is responsible for the maintenance, operation and replacement of the private internal services.
10.0 Boundary Sewers and Water Mains That Service Two or More Developments

Some development works may include water/alternative water or sewerage assets that are not considered shared assets but will supply or service other land. In such cases, the developer is responsible for arranging a cost-sharing agreement with the adjacent property owners.

Central Highlands Water will not enter into cost sharing arrangements unless prior written agreement has been provided by us for specific purposes. These could include trials of emerging or innovative technology, or collaborations that will benefit the community.

If an adjacent developer uses existing water/alternative water or sewerage assets, CHW may require that developer to provide written evidence that a cost-sharing agreement has been entered into with the new developer who has installed the water/alternative water or sewerage assets. This requirement will be set out in the Notice of Agreement.
11.0 Other Government Authority Works

Occasionally, other government authorities need to construct their works near CHW assets.

In some circumstances this may require the relocation of our assets.

CHW assets are protected under the Water Act 1989 (Vic) and cannot be impacted, moved or worked on without CHW’s consent.

11.1 Requirements for Roads and Railways

The Road Management Act 2004 (Vic) operates in conjunction with section 137 of the Water Act in relation to “non-road infrastructure” associated with roads.

Sections 137A, 137B and 137C of the Water Act contain special provisions relating to railway operations. These state that before carrying out any rail operations that might threaten or affect the safety of CHW’s assets, rail operators must notify CHW of their intentions.

11.2 Procedures

Central Highlands Water reserves the right to alter its assets in whatever way it sees fit.

Any works not carried out by CHW must be designed and constructed according to the land development works process using accredited consultants.
12.0 Temporary Works

During a development project, a temporary reticulated water supply and sewerage services may be needed.

CHW can allow the temporary works if:

- the development is outside the logically sequential development area
- the development cannot access CHW assets directly.

12.1 Conditions for Temporary Works

The Notice of Agreement (NoA) will state whether temporary works are needed or have to be upsized to service other developments. It will also contain a detailed description of the conditions for the temporary works. These will include but are not limited to the following:

- the developer must pay the full cost of temporary reticulation works.
- all works must be in accordance with relevant standard drawings and specifications and meet CHW’s approval
- the developer constructing the temporary works must enter into a land agreement with CHW based on the type of temporary asset required, how long it will be needed, and the access necessary for maintenance. Land agreement options include
  - setting aside the land as a reserve for CHW
  - leasing the land to CHW for a nominal amount
  - gifting the land to CHW
  - providing an easement over the land in favour of CHW.

Other nearby developers who haven’t contributed to the temporary works and who later develop their land may be required by CHW to:

- install their own temporary works
- upsize the existing temporary works at that time
- compensate for the reduced capacity/life of the original temporary asset.

In some cases, such as improving community outcomes or reducing the assets to be managed, CHW may let others connect to temporary works as long as it doesn’t disadvantage the original developer who installed them.
13.0 Easements and Reserves

Easements must be established on the plans of subdivisions to cover any new water and/or alternative water or sewerage services that will cross private land. All easements need to comply with section 12 of the Subdivision Act 1988 (Vic) and the requirements of WSAA MRWA. If there are conflicting requirements, consult CHW for direction.

Reserves need to be established where the proposed sewer, water or alternative water service crosses land owned by another government authority.
14.0 Land Development Asset Works

14.1 What Are Land Development Asset Works?

To satisfy council’s or CHW’s conditions for a development, the developer may need to construct sewer, potable water or alternative water assets to service the new properties. These are known as asset works. Asset works may also be needed when a landowner wants to extend services to existing properties (without necessarily requiring subdivision).

Assets must be created, renewed and/or managed in ways that:

- enable CHW to supply its services sustainably
- maintain the levels and standards of service specified by the ESC in a code issued under section 4F of the Water Industry Act 1994 (Vic) or included in a pricing submission (formerly a water plan) and approved by the ESC
- minimise the assets’ whole-of-life costs
- minimise the negative social, economic or environmental effects of managing the assets.

14.2 Application for Land Development Asset Works

If asset works are needed, the developer’s development consultant must first submit the following to CHW for approval:

- an Application for Notice of Agreement form accompanied by
  - preliminary design plans
  - an application fee
  - a formal plan for subdivision (if applicable)
  - a planning permit (if applicable).

At this point CHW will prepare a Notice of Agreement (NoA) detailing the works required to develop the land. The developer must then complete and sign the NoA acceptance form.

The NoA’s requirements for the asset works may include:

- general conditions of the NoA
- servicing conditions
- any applicable fees and contributions to be paid to CHW
- Works Warranty Bond details
Who Pays for the Works?

In most cases the developer pays for all works, including temporary works. However, CHW will reimburse the developer for works they have built if:

- CHW requires the developer to build an asset larger than the development needed
- CHW requires the works to be larger than the reticulation size.

Any works that qualify for reimbursement will be detailed in the NoA.

When a development progresses ahead of CHW's asset development sequence, as published in CHW’s development servicing plans, CHW may need to charge the developer brought-forward costs. These cover the incremental financing costs of works for the time between when the developer chooses to develop and when the works were originally scheduled by CHW.

14.3 Accredited Suppliers

The developer needs to appoint a CHW-accredited development consultant to design and audit the installation of any works. Accredited consultants have the knowledge and experience to design, audit and manage the construction of assets to CHW's standards.

14.4 Phases of Asset Works

There are five (5) asset works phases:

- Design
- Pre Construction
- Construction
- Completion
  - Defects Liability
  - Works Warranty
15.0 Asset Works Design

15.1 Overview

The development consultant’s design must comply with information in the Notice of Agreement (NoA). It must also conform with the relevant codes, standards and specifications for the design and construction of water supply, alternative water and sewer mains.

Once complete, the development consultant must submit the design to CHW with the Design Verification form.

15.2 Guiding Factors

15.2.1 Notice of Agreement

The NoA sets out the responsibilities of the developer, development consultant, contractors and CHW for the design of the development works. Developers must use a development consultant whose accreditation category is applicable to the development works they are designing.

The NoA also sets out any special design conditions.

15.2.2 Standards

Designs for development works must comply with the relevant MRWA editions of the WSAA codes. Central Highlands Water supplementary standards and specifications are also acceptable.

15.2.3 Materials

Unless otherwise specified in the NoA or subsequently approved by CHW, all materials used in the development works must be approved for use by CHW. A list of CHW-approved products can be found at the MRWA web portal: www.mrwa.com.au.

Note:
- CHW’s approved products and materials are the same as City West Water’s unless otherwise stated in CHW’s supplementary standards.
- Scoria is not permitted, as scoria retains salts and bacteria that may be aggressive to some metallic pipework and fittings.
15.3 Design Solution

Central Highlands Water encourages developers and development consultants to work with CHW to create innovative solutions for the concept, design and construction of potable and alternative water supply and sewerage infrastructure assets.

Design solutions must:

- be based on sound engineering principles
- provide effective and economic alternatives over the life of the asset
- provide the best value whole-of-life option for the ongoing effective, safe and efficient performance of the system
- include any special design parameters that CHW has included in the NoA
- include an integrated water management plan
- include a watertight sewer network (less infiltration)
- include details of the business case (including risk assessment) and design specifications for trials of emerging or innovative technology and/or designs outside industry standards that CHW has agreed will benefit the community.

The development consultant is responsible for coordinating the design of any works, operations and services that involve CHW and must also certify that the ground conditions are suitable.

The development consultant’s responsibility extends to coordinating with the relevant councils, other authorities and people who may have a direct or indirect interest in the construction and location of the proposed works.

15.4 Design Drawings

The design drawings must:

- address and specify the NoA’s requirements and applicable design standards
- include any requirements that affect the construction methods
- meet WSAA MRWA requirements regarding formatting and standard drawing conventions – for details, visit www.mrwa.com.au/pages/standards
15.5 Lodging the Design

At least 10 business days before starting construction of the development works, the development consultant must lodge a Design Verification form (downloadable at CHW’s website).

The form must be accompanied by:

- the full set of design documents
- the design plans (in PDF format)
- a summary of any design dispensation requests and corresponding CHW approvals
- the consultant’s nominated representative’s signature.

The Design Verification form and/or the NoA set out any other documentation that needs lodging.

If the design of the development works changes, the development consultant must provide CHW with the up-to-date design documents at least 10 days before construction begins.

Central Highlands Water will promptly inform the development consultant if changes are likely to affect project timelines.

If, at its sole discretion, CHW decides to waive the requirement of 10 days’ notice for design changes, CHW will provide the waiver in writing.

15.6 Auditing the Design

Central Highlands Water may conduct an audit on the design to check its compliance with the requirements specified in the NoA and the relevant codes. Central Highlands Water will inform the development consultant of any observations or non-conformances that need addressing. Non-conformances will affect the development consultant’s CHW accreditation.

While the design audit is intended as a check for compliance with the relevant codes, it does not constitute CHW’s approval of the design.

Central Highlands Water reserves the right to conduct design audits at any time during the life of the development works project.
16.0 Asset Works Pre-Construction

16.1 Overview

During the Pre-Construction Phase, the development consultant must inform CHW that they intend to start construction of the assets and provide the following details:

- the start date
- the name(s) of the contractor(s)
- the expected completion time of the construction
- the responsible representative(s) on site
- the name(s) of the contractor(s) and sub-contractor(s)
- the quarry(s) material source name and location.

The contractor must supply a project management plan to the development consultant. This plan should detail how they will manage the construction risks and comply with quality requirements, occupational health and safety, and environmental rules and regulations.
16.2 Development Consultants Responsibilities

The consultant must ensure that developers engage contractors that can satisfy the following minimum requirements:

- As a minimum a certificate of compliance from the Civil Contractors Federation stating that the contractor’s Integrated Management System has been assessed and registered as meeting the requirements of the CCF Civil Construction Management Code (current), or an Audit certificate from a JAS-ANZ accredited and CCF approved auditor certifying that the Contractor’s management system(s) complies with the CCF Civil Construction Management Code (current)
- Management system documentation which addresses:
  - Occupational health and safety management
  - Environmental management
  - Quality management
  - Auditing systems
- Documented evidence of competencies in pipe laying techniques from an approved training organisation for the type of pipe being installed
- Documented evidence of relevant experience in the construction of water, sewer pipelines and associated structures including referees
- Documented evidence of the awareness of Central Highlands Water’s customer service requirements/charter in relation to the supply of water and sewerage services to its customers

16.3 Further required information

At least five (5) full working days before the contractor proposes to start constructing the development works, the development consultant must:

- provide a risk-based audit schedule detailing the minimum number and timing of audits during the construction works to confirm that the completed works comply with the design documents and CHW’s standards and specifications
- provide evidence of the relevant council’s approval of the location of the proposed water and sewerage assets.
16.4 Lodging Pre-Construction

The development consultant must lodge a signed Pre-Construction Verification form. The form must include:

- all supporting documentation
- a project management plan
- a complete set of design documents, including the design plans (in PDF format).
17.0 Asset Works Construction

17.1 Overview

The construction of assets is monitored and managed by the development consultant. The development consultant must keep CHW fully informed by providing appropriate notifications at each hold point. They must also ensure any special conditions set out in the Notice of Agreement (NoA) are met.

As many contractors specialise in a particular type of construction, the development consultant may arrange for separate water and sewer mains contractors to do the work.

Development consultants and contractors must ensure their work complies with all applicable legislative and code requirements. These include the Occupational Health and Safety Act 2004 and the relevant regulations and codes of practice as well as Commonwealth environmental legislation, Victorian environmental legislation and local government requirements.
17.2 Guiding Factors

17.2.1 Special conditions

Special conditions for the construction of development works will be set out in the NoA.

17.2.2 Standards

Development works must be constructed in accordance with the relevant MRWA editions of the WSAA codes and CHW supplementary standards and specifications.

As-constructed information must be provided in the format specified in the CHW Survey Manual, which is available at the CHW website.

17.2.3 Materials

Unless otherwise specified in the Notice of Agreement, all materials used in the construction of the development works must be approved for use by CHW. Central Highlands Water-approved products can be found at the MRWA web portal www.mrwa.com.au. The CHW supplementary manuals to the WSAA MRWA codes can be accessed at www.chw.net.au.

Note:
- CHW’s approved products and materials are the same as City West Water’s unless otherwise stated in CHW’s supplementary standards.
- Scoria is not permitted, as scoria retains salts and bacteria that may be aggressive to some metallic pipework and fittings.
- If the design is altered during construction, the development consultant must provide CHW with the latest design at least ten (10) days before construction can continue.

17.2.4 Auditing

Central Highlands Water may audit the construction works to make sure they comply with the approved design and CHW’s requirements.
17.3 Construction Hold Points

During construction, there are a number of hold points that the development consultant must inform CHW about. These include but are not limited to the following:

- Sewer mains testing (Notice of Intention to Carry out Test – Sewer form).
- Water mains testing (Notice of Intention to Carry out Test – Water form).
- Sewer connection (Connection to Live Assets form).
- Water/alternative water supply connections (Application for Plumbing Consent and Connection to Live Assets forms).

All these forms can be downloaded at [http://www.chw.net.au/](http://www.chw.net.au/).

17.4 Alteration to Existing CHW Assets

If a proposed development requires the alteration of existing CHW assets:

- the conditions associated with the work will be included in the NoA
- the work must be approved by CHW
- the owner must pay the actual cost of the work
- only CHW-authorised contractors are permitted to carry out the work as per CHW’s contractor Pre-Qualification system.
17.5 Disinfection and Water Quality Testing of Mains

Central Highlands Water is committed to hazard analysis and critical control point (HACCP) principles and requires water quality testing of newly constructed water mains.

The water quality from new drinking-water mains must be safe, clear and free from objectionable taste and odour before the mains are put into service. Non-drinking water mains must be tested to make sure the non-drinking water quality complies with CHW’s requirements before the main is accepted into service.

Development consultants and contractors must use MRWA Water Quality Compliance Specification No. 04-02-02 (mrwa.com.au/pages/standards.aspx) when:

- testing new water mains (both drinking and non-drinking water)
- disinfecting water mains before sampling and testing

Note:
- disinfection of all new water mains in the Central Highlands Water Region is required before they are placed in service
- disinfection of all new water mains must comply with Central Highlands Water’s supplementary standards and specifications.
17.5.1 Responsibilities

The development consultant or contractor must:

- arrange for disinfection directly with a suitable qualified contractor
- arrange for water quality testing directly with a laboratory accredited under the memorandum of understanding (MOU) between the National Association of Testing Authorities, Australia (NATA) and the Department of Health and Human Services
- provide all temporary pipe work and fittings needed for any disinfection works
- give CHW at least five (5) full working days' notice to arrange any necessary shutdowns
- provide CHW with the test results before CHW issues an Acceptance of Works letter.

New mains can be connected to existing mains only after water main construction and water quality tests have been completed that demonstrate compliance to CHW's satisfaction. Testing times and test results must be submitted to CHW's Development Services Team.

17.6 Work on Live Assets – Water and/or Alternative Water Connections

Contractors can connect to existing water/alternative supply mains after the mains have been isolated. This process is supervised by CHW.

The consultant must submit the Connection to Live Assets form to notify CHW of the intention to connect to its water/alternative supply water mains. This form is available at http://www.chw.net.au/.

The contractor must give five (5) full working days' notice of the proposed connection. This gives CHW enough time to inform the contractor which properties need informing about the shutdown. Contractors are responsible for delivering the shutdown notices to customers a minimum of 48 hours before the shutdown happens. The contractor must prove or provide a written declaration to CHW that all customer notifications were delivered.

CHW's connection fee covers the cost of shutting down the main, supervising the connection, and flushing and recharging the main. The connection fee does not cover tapping for individual lots.

Connection to a CHW asset is only permitted by CHW pre-qualified contractors.
17.6.1 Connection with a tapping under pressure

If specified in design drawings, water mains may be connected using a tapping under pressure. The tapping under pressure must be carried out by a CHW pre-qualified tapping contractor or by a contractor appointed by CHW. If CHW's contractor provides the tapping, they must also provide the excavation and materials.

The development consultant must submit the Connection to Live Assets form to notify CHW of the intention to connect to its water/alternative water mains via a tapping under pressure.

If CHW conducts the connection, the developer/owner will be charged for the work.

17.7 Water Shut-Off Period

Contractors must try to minimise any planned interruption to the water supply of customers. The maximum period allowed for a planned shutdown is five (5) hours.

17.8 Work on Live Assets – Sewerage Connection

Only contractors pre-qualified by CHW for works in confined spaces are permitted to connect new sewer lines to existing sewer mains and sewer structures. The development consultant must:

- only select contractors that meet these criteria
- arrange the connections, including payment for the work, with the contractor
- attend the connection.

Contractors who do live sewer connection work must follow the confined space procedure and associated works requirements of CHW (available by request).

Notification of connection to CHW's sewers must be given by submitting the Connection To Live Assets form, which can be downloaded from http://www.chw.net.au/.

Any special details and costs for connecting to larger-sized sewers will be included in the NoA. Central Highlands Water may require the development consultant to provide a written description of the construction method for the connection. CHW may also need CCTV footage of the constructed join where the new sewer is connecting to an existing main.
17.9 Hydrant Use and Cross Contamination

Contractors must have CHW’s written consent to use mains drinking water for construction purposes. The use of drinking water in construction is subject to CHW’s conditions and any water restrictions current at the time of construction.

Directly connecting to hydrants or plugs to access water is not permitted.

To learn more about hydrants, or download a permit, visit CHW’s website.

Authorised contractors who want to draw water from above- or below-ground hydrants (fire plugs) must use a water-carrying vehicle or machinery that uses a high-hazard backflow prevention device (BPD). To comply with safe drinking-water guidelines, this must include either a registered air gap (RAG) or a reduced-pressure zone device (RPZD). The RAG or RPZD must be tested annually, with the results provided to CHW on request.

17.10 Trench Backfill Requirements

Backfill and compaction of soils in excavations for the construction of water supply and sewers must comply with MRWA Specification No.04-03 (Current version). This specification also applies to fill for assets constructed using tunnels, drives, shafts, bores and other trenchless technologies. Visit mrwa.com.au/pages/standards.aspx for more details.

17.11 Working with Pipes That Have Asbestos

The CHW network has both asbestos-concrete (AC) and mild steel pipes (with an external coal tar enamel coating) that may contain asbestos.

Any contractor working on mains that may have asbestos must:

- have a licence to handle and remove asbestos
- be pre-qualified by CHW to work on asbestos water mains
- submit a safe work method statement and job safety (risk) analysis for the works to CHW at least 10 working days before starting work
- carry out works in accordance with the Occupational Health and Safety Act 2004.
17.12 Acceptance Testing

Acceptance testing is a key hold point for the completion of development works. Testing must not begin until all related civil works, including the road base, earthworks and drainage system, are constructed. This includes all external works such as water mains and outlet sewers. Water testing can only begin if valve extension spindles have been installed, and in the case of an alternative water area, the alternative water main to meter service has been installed.

17.12.1 Water supply/alternative water

Water supply/alternative water testing includes the following:

- Visual inspection of all system components following installation
- Pressure testing of all system components
- Water quality to confirm the integrity of supply to new water supply areas and disinfection (to be submitted as an attachment to the Connection to Live Assets form)
- Compaction testing of all trench backfill
- Property service connection validation (alternative water only) to confirm the source of supply – that is, drinking or alternative water
- Testing PE pipelines in accordance with the WSAA Polyethylene Pipe Line Code – WSA 01-2004-3.1

17.12.2 Sewer

Sewer testing includes the following:

- Visual inspection of all system components following installation
- Ovality (deflection) testing for all flexible pipes
- Low-pressure air testing of pipeline materials
- Vacuum testing of maintenance structures and pipelines where specified
- Inflow/infiltration testing
- Compaction testing of all trench backfill
- CCTV inspection/laser profiling with inclination report

Central Highlands Water’s acceptance-testing requirements are defined in the WSAA Water Supply and Sewerage Codes of Australia (MRWA editions) and where applicable, WSA 01-2004 Polyethylene Pipeline Code Version 3.1.

As acceptance testing is a key construction hold point, the development consultant must notify CHW at least two (2) days before acceptance testing is scheduled so CHW can attend if CHW wish.
17.13 Construction Verification Form

At the end of construction, the development consultant must lodge a Construction Verification form signed by both the development consultant’s and contractor’s nominated representatives.

As-constructed/cadastral information must be supplied in a DWG, DXF or DGN format and contain associated formatting and reference files in accordance with the CHW Survey Manual. The manual can be downloaded at www.chw.net.au

All other submitted documentation, including items requested in the NoA, must be supplied in PDF format.

17.14 End of Construction Joint Inspection

After lodging the Construction Verification form, the development consultant must contact the CHW Development Services Team to arrange an end-of-construction site inspection. This inspection must be attended by CHW, the development consultant and the contractor. The developer may also attend.

17.15 Acceptance of Works

Once construction is completed, the development consultant and contractor must submit a Construction Verification form and the developer must pay the Works Warranty Bond. If the development works have been completed to CHW's satisfaction and any corrective action requests (CARs) have been addressed, CHW will issue an Acceptance of Works certificate. At this stage, and if all other requirements have been met, CHW will send the consent for a Statement of Compliance to the relevant council (when applicable).

In general, new mains can be connected to existing mains only after CHW has issued the Acceptance of Works certificate. The development consultant must submit a Connection to Live Assets form to CHW with at least five (5) business days' notice.

If there is a significant delay between water main disinfection and the Acceptance of Works certificate being issued, CHW may allow connection to existing mains prior to Acceptance of Works certificate being issued. In such cases, to prevent the deterioration of water quality, the development consultant must provide water quality & testing results and the Connection to Live Assets form to CHW within two (2) weeks of disinfection, for consideration.

In some situations (such as sewer main diversions), it may be necessary to connect a new main to an existing main before CHW can issue the Acceptance of Works certificate. If so, the development consultant must contact CHW for direction. In such cases, CHW will usually consent to the new connection if the development consultant confirms that all the test results are satisfactory.

The issuing of an Acceptance of Works certificate signals the start of the Defects Liability Phase.
18.0 The Defects Liability Phase

18.1 Overview

The Defects Liability Phase starts once CHW is satisfied with the completed development works and has issued the Acceptance of Works certificate.

18.2 Duration and Timing

The Defects Liability Phase lasts a minimum of twelve (12) months.

If the type of asset – for example, a pump station – requires a longer timeframe, CHW will specify this period in the Notice of Agreement (NoA).

For standard works, the developer has a maximum of six (6) months to complete the Defects Liability Phase.

End-of-defects-liability inspections should be carried out as soon as possible to ensure access to assets, in particular sewer access points, is available. Central Highlands Water attends the inspections and may also request the development consultant and contractor to be there.

If there are still defects and the End of Defects Liability Period Verification form is not lodged within this timeframe, CHW may use the Works Warranty Bond to complete this phase.

18.3 Auditing

Central Highlands Water may choose to audit the development works at any time during the Defects Liability Period. CHW will inform the developer, the development consultant and/or contractor of any observations and/or non-conformances that need addressing.
18.4  End of Defects Liability Period Inspection

At the end of the Defects Liability Period, CHW may inspect the works to make sure that:

- other work on the site has not damaged CHW assets
- all surface fittings are at the final surface level
- all markings to locate hydrants and water services are visible
- there are no subsidence issues.

18.5  Lodging the Verification Form

The development consultant must lodge the End of Defects Liability Period Verification form with CHW.

The form must be signed by the development consultant’s and contractor’s nominated representatives.

18.6  Completion of Works

When CHW is satisfied that any defects have been rectified and any issues have been resolved, CHW will issue a Completion of Works certificate. This signifies the end of the Works Warranty Phase.
19.0 Works Warranty

19.1 Overview

For one (1) years after CHW has issued the Acceptance of Works certificate, the development consultant and contractor are liable for any faults in the works that are the result of a design or construction deficiency. At the end of this one-year period, the developer, or the development consultant on behalf of the developer, can request the return of the Works Warranty Bond.

19.2 Payments and Responsibilities

19.2.1 Payment of the Works Warranty Bond

Before CHW issues the Acceptance of Works certificate, the developer must have paid CHW the Works Warranty Bond in the form of a Bank Cheque or Unconditional Bank Guarantee made out to Central Highlands Water. This is an amount equal to the greater of $1000 or 5 per cent of the value of the development works, as determined by CHW. A Works Warranty Bond is generally only required for works estimated in excess of $20,000.

19.2.2 Responsibilities

The responsibilities of the developer, development consultant, contractor and CHW for the development works during the Works Warranty Phase are detailed in the Notice of Agreement (NoA).

19.3 Responding to Faults

If a fault is found in the works that is deemed the result of a deficiency in design or construction, CHW will respond according to whether the fault is an emergency:

- If the fault is an emergency that needs immediate attention, CHW will repair it and recover costs from the developer, development consultant or contractor as appropriate.
- If the fault is not an emergency, CHW will notify the development consultant and contractor to remedy the fault. If the fault is not fixed in the required timeframe, CHW will do the repair and recover costs from the developer, development consultant and contractor.
19.4 Requesting the Return of the Works Warranty Bond

One (1) year after receiving the Acceptance of Works certificate, the developer or development consultant can request the return of the balance of the Works Warranty Bond.

The Request for the Return of Works Warranty Bond form is available at CHW’s website.
20.0 Reimbursements

20.1 CHW Responsibilities

Central Highlands Water funds some assets in accordance with Essential Services Commission guidelines. In general, the developer will fund the construction of reticulation infrastructure. For pipelines larger than reticulation size (150 mm water, 225 mm sewer), CHW will determine whether the cost is reimbursable.

Central Highlands Water must ensure that reimbursable works are designed and constructed in accordance with the relevant standards and as efficiently as possible.

To achieve these objectives, the developer must:
- enter into an agreement for providing the works – Notice of Agreement (NoA)
- construct the works to comply with the conditions specified in the NoA
- involve CHW actively in the design and construction procurement phases of the development works, as specified in the NoA.

20.2 Notice of Agreement

If CHW requires a developer to design and construct reimbursable works, CHW will:
- specify the asset that must be constructed in the NoA
- reimburse the developer for the agreed cost of completing these works.

By signing the Notice of Agreement Acceptance form, the developer agrees to comply with CHW’s reimbursable works and tendering processes.

20.3 Non-Reimbursable

Central Highlands Water does not reimburse owners/developers the cost of:
- any temporary works
- special works such as water tanks (for water supply), pumping stations or rising mains (for sewers) to support a satisfactory supply to a development
- works CHW deems more than necessary to provide an efficient system.
20.4 Payment

Central Highlands Water will reimburse the developer after the Acceptance of Works certificate has been issued.

20.4.1 Reimbursement amount

The reimbursement amount is not specified in the NoA. The amount is determined and agreed by the developer and CHW and then documented in correspondence from CHW.

In general, the reimbursement amount is based on the lowest conforming quotation or tender for the relevant works.

All reimbursed works must be pre-approved by CHW.
21.0 CHW-Conducted Audits

21.1 Overview

Central Highlands Water expects developers, development consultants and contractors to:

- design, construct and survey development (asset) works that comply with CHW’s requirements and standards
- make sure the asset’s design and construction complies with all applicable legislative and code requirements, including occupational, health and safety, and environment protection.

Developers, development consultants and contractors must comply with all applicable legislative and code requirements. These include (but are not limited to) the Occupational Health and Safety Act 2004 and the relevant regulations and codes of practice as well as Commonwealth environmental legislation, Victorian environmental legislation and local government requirements.

The developer, development consultant and contractor are responsible for the quality of the development works and for health and safety during their construction.

21.2 Auditing Strategy

Central Highlands Water can audit any development work and audits developers, development consultants and contractors to assess if they have complied with requirements.

Note: Audits by CHW do not replace the audits development consultants and contractors must conduct to maintain their company’s certification.

21.3 Audit Frequency

Each development works project has a minimum number of audits. Their frequency and the need for additional audits is based on CHW’s assessment of risk for each activity. This is affected by the:

- quality performance of the consultant/contractor
- design aspects required by the Notice of Agreement (NoA)
- construction aspects required by the NoA
- value of the development works, including future replacement costs
- impact of the proposed development works on current or future works
- consequences of failure
- cost and difficulty of conducting repairs.
21.4 Audit Types

Central Highlands Water may conduct a range of audits to monitor the performance of development consultants and contractors carrying out development works, as well as to verify compliance with the requirements specified in the NoA.

The types of audits include:

- Management system audit
- Design audit
- Construction audit
- Survey and as-constructed audit
- End-of-defects audit
- Inflow/Infiltration audit

21.5 Advice of Intention to Audit

Central Highlands Water will inform the development consultant when it intends to audit.

If CHW identifies health and safety-related breaches, these will be escalated through the contractor’s on-site representative, the development consultant, or WorkSafe Victoria.
21.6 Management System Audit

Central Highlands Water reserves the right to audit a development consultant’s certified management system when:

- it needs to establish confidence in a consultant
- major non-conformance has been detected
- a corrective or preventive action is outstanding and unresolved.

Central Highlands Water (or an appointed independent representative) will conduct management system audits in the consultant’s office. These audits will be focused on the following CHW requirements:

- Adherence to a quality, environment and safety policy
- Impact of construction on customers
- System and process review – for example, management reviews, contract reviews, internal audits
- Process and document control
- Inspection and test activities
- Control of non-conformances and observations
- Corrective and preventive actions
- Quality records.

21.7 Design Audit

Central Highlands Water may conduct an audit on the design to check compliance with requirements specified in the NoA and the relevant codes. CHW will inform the consultant of any observations and/or non-conformances that need to be addressed. Non-conformances will affect the consultant’s accreditation with CHW.

The design audit checks for compliance with the relevant codes, although it does not constitute CHW’s approval of the design.

Central Highlands Water reserves the right to conduct design audits at any time during the development works project.
21.8 Construction Audit

Central Highlands Water conducts field audits of the construction phase of development works. The purpose of these audits is to confirm that assets are being constructed in accordance with CHW standards. The duration and scope of these audits depends on the construction work being done at the time.

The CHW auditor will be site inducted at the start of the project, and may then arrive on site unannounced to observe the construction process.

If CHW identifies a health and safety-related breach, or breaches, on a development site owned and managed by the developer, it will be escalated through the contractor’s on-site representative, the development consultant and, if necessary, WorkSafe Victoria.

The development consultant and contractor may be asked to reschedule a test or connection so that CHW can audit the process.

21.9 Survey and As-Constructed Audit

Central Highlands Water will audit the as-constructed asset information after the development consultant has verified and submitted it to CHW.

There are two types of survey audit:

- Information presentation and format audit – to check that the format and presentation of the as-constructed asset information complies with CHW’s requirements.
- Field audit – to check the accuracy of the submitted information.

21.10 End-of-Defects Audit

Central Highlands Water will conduct field audits of the development works during and at the completion of the Defects Liability Period.
21.11 Audit Register

Central Highlands Water will maintain the details and results of all audits carried out on development consultants in a confidential register. These details are used to:

- assess a development consultant’s current quality performance
- determine whether a development consultant is having difficulty with particular aspects of the development works
- determine the aspects of the development works that should be audited
- schedule the time and date of each audit
- determine the scope of each audit
- record the results of the audit
- determine the scope and extent of any corrective action required
- prepare performance reports on accredited consultants and contractors.

Under the Water Industry Act, CHW may provide other retail water licensees with performance reports on accredited consultants.

21.12 Intensive Audits

Central Highlands Water may conduct intensive audits if it believes the development consultant’s quality systems have failed and the quality of the design, construction or survey of the development works is at risk.

If CHW believes an intensive audit of the design, construction or survey is required, the developer must pay the intensive audit fee.

Ongoing or repeated failures of the development consultant’s quality systems can result in the reclassification or suspension of their accreditation.

21.13 Related Items

For information on corrective action requests (CARs), refer to section 22.0 Corrective Action Request.
22.0 Corrective Action Requests

22.1 Overview

Central Highlands Water expects developers, development consultants and contractors to design, construct and survey development asset works in line with its requirements and standards. If a consultant performs a task that doesn't comply with the Notice of Agreement or their quality system, this is considered a non-conformance and a corrective action is required and recorded.

22.2 Types

The four (4) types of corrective actions are described in the following table:

<table>
<thead>
<tr>
<th>Corrective Action Type</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observations</td>
<td>Usually a minor problem, or the very early stages of a problem, that may not yet be considered a non-conformance.</td>
</tr>
<tr>
<td></td>
<td>The auditor will:</td>
</tr>
<tr>
<td></td>
<td>• tell the site foreman about the observations (for immediate rectification) at the time of the audit</td>
</tr>
<tr>
<td></td>
<td>• record the observations in CHW’s audit system. A repeated breach is treated as a minor or major corrective action.</td>
</tr>
<tr>
<td>Opportunity for Improvement</td>
<td>A written suggestion to help the development consultant or contractor improve their quality system and operation.</td>
</tr>
<tr>
<td>Minor Corrective Action</td>
<td>A temporary lapse or isolated error of limited impact that doesn't result in a fundamental failure of the works, but is recorded as requiring minor corrective action.</td>
</tr>
<tr>
<td></td>
<td>Timely corrective action to prevent a reoccurrence generally avoids an escalation to major corrective action.</td>
</tr>
<tr>
<td>Major Corrective Action</td>
<td>Where a major issue/error in a process, system, product or service has meant specified requirements haven't been met, or a combination of corrective actions is required to achieve the specified requirements, a major corrective action is recorded.</td>
</tr>
<tr>
<td></td>
<td>Examples of where major corrective actions will be recorded include:</td>
</tr>
<tr>
<td></td>
<td>• A blatant breach of regulations or agreement</td>
</tr>
<tr>
<td></td>
<td>• The design fails to control the catchment</td>
</tr>
<tr>
<td></td>
<td>• The grade of pipe is found to be incorrect</td>
</tr>
<tr>
<td></td>
<td>• Bedding is insufficient</td>
</tr>
<tr>
<td></td>
<td>• Numerous or repeated minor corrective actions have been recorded</td>
</tr>
</tbody>
</table>
22.3 Required Actions

If CHW issues a written corrective action request (CAR), developers, development consultants and contractors must identify the root cause of the error or variation from requirements, regardless of degree, and implement effective corrective action.

When a development consultant receives a CAR, they must record receiving it and process it in line with their quality systems. For each CAR, CHW requires:

- evidence that the corrective action has been effective
- written confirmation (including a copy of the completed CAR) of the thoroughness of the investigations and rectification
- written evidence that steps have been taken to prevent a recurrence of the issue requiring the corrective action.

Central Highlands Water reserves the right to visit the works site to review and verify the status of rectifications and/or corrective actions.

22.4 Response to Corrective Actions

Depending on the nature of the CAR, CHW may require additional inspections and/or hold points. CHW may also audit the development consultant’s quality management systems if there is evidence that the systems may be inadequate.

The scope of these audits normally only extends to aspects of the agreement where quality is in question. For example, it may only cover the works construction and project management if there is evidence that the design process isn’t functioning acceptably.

If there is evidence that the non-compliance is widespread and quality systems may be ineffective, the audit may extend to all aspects of the agreement.

Central Highlands Water may also withhold the Acceptance of Works certificate until it is satisfied that the development consultant’s quality systems are functioning adequately.
23.0 Environment

CHW relies on the natural environment to provide essential services and is committed to creating a sustainable future through the following principles (aligned to the United Nations Sustainable Development Goals (SDGs)):

- Supporting sustainable agriculture practices (SDG2),
- Providing clean water and wastewater services (SDG6),
- Delivering renewable energy and being energy efficient (SDG7),
- Enhancing Aboriginal inclusion in natural resources management (SDG10),
- Helping to create sustainable cities and communities and protecting our heritage (SDG11),
- Reducing waste generation through prevention, reduction, recycling and reuse (SDG12),
- Strengthening resilience to climate change (SDG13),
- Continuing sustainable land management practices, conserving and restoring terrestrial and freshwater ecosystems (SDG15).

The developer is responsible for compliance with all environmental legislation and regulatory requirements including but not limited to the following:

- Aboriginal Heritage Act 2006
- Catchment and Land Protection Act 1994
- Country Fire Authority Act 1958
- Dangerous Goods Act 1985
- Environment Protection Act 1970
- Environment Protection and Biodiversity Conservation Act 1999
- Flora and Fauna Guarantee Act 1988
- Heritage Act 2017
- Planning and Environment Act 1987
- Water Act 1989
- Wildlife Act 1975

Recent reforms to the Environment Protection Act 1970 introduces the concept of the General Environmental Duty requires “a person who is engaging in an activity that may give rise to risks of harm to human health or the environment from pollution or waste must minimise those risks, so far as reasonably practicable”.

The developer is encouraged to prepare a site specific Environmental Management Plan (SEMP) that conforms to the requirements of the EPA publication, Environmental Guidelines for Major Construction Sites, and considers but is not limited to the following environmental risks:

- Purchasing of products and services
- Consumption of resources
- Spread of pest plants, animals and pathogens
- Damage to native plants
- Harm or destruction of wildlife
- Spills of dangerous goods
- Erosion and sedimentation
- Noise pollution
- Air quality (dust and greenhouse gas emissions)
- Damage to heritage sites
- Discharge of chlorinated water to the environment
- Uncontrolled fire
- Damage to the bed or bank of a waterway
- Loss of threatened species
- Inappropriate management and disposal of waste

23.1 Related and Referenced Documents


24.0 Occupational Health and Safety

Developers and their agents are responsible for assessing risks and establishing and implementing effective health and safety measures for all aspects of land development works.

Central Highlands Water's staff are its most precious asset and the safety, health and wellbeing of people in our community is our highest priority. At the forefront of this commitment is our occupational health and safety (OH&S) performance, which we continually strive to improve.

Central Highlands Water seeks to provide a safe working environment for all staff, contractors engaged by CHW and visitors in order to eliminate the risk of injury. Central Highlands Water expects all contractors engaged on its behalf to demonstrate the same commitment to safety.

Central Highlands Water believes that “tomorrow is our reward for working safely today”, therefore it has a commitment to zero injuries, zero tolerance for unsafe work practices and zero compromise when it comes to safety. It regards safety at work as everyone’s business.

Central Highlands Water expects developers and their agents to embrace a safety-first culture that is underpinned by the following principles:

- An aspiration of zero harm
- A belief that all injuries are preventable and that prevention is better than cure
- Making sure that no one is harmed when they are at work
- Providing an environment that encourages consultation and cooperation between management, employees, contractors and OH&S representatives
- Managers are role models in safe work practices
- Compliance with OH&S legislative requirements is mandatory
- All employees are accountable and responsible for working safely and maintaining a safe work place and following safety procedures.

24.1 Related and Referenced Documents

The developer and its agents are responsible for compliance with all OH&S legislation and regulatory requirements, including but not limited to the following:

- All relevant Worksafe compliance codes refer to www.worksafe.vic.gov.au
- All codes of practice and the Australian Standards
- Occupational Health and Safety Act 2004 (Vic)
- Occupational Health and Safety Regulations 2017 (Vic)
25.0 Glossary

Abutting a water main To have a water main abutting the property boundary

Access point A feature on a sewerage system that allows inspection of and/or access to the sewerage system.

Additional lots The number of lots in the subdivision, minus the original lot or lots connected to CHW’s assets.

ADWF Average dry weather flow

As-constructed asset information Survey information describing the type, size and location of a newly completed asset.

Asset A CHW water main, sewer pipeline or associated structure.

Audit A systematic and independent examination to determine whether quality activities and related results comply with planned arrangements, and whether these arrangements are implemented effectively and are suitable to achieve objectives.

BPD Backflow prevention device

Brought-forward costs Costs passed on the developer to cover the finance costs of funding works ahead of schedule and any related administrative costs.

BWUGZ Ballarat West Urban Growth Zone

CAR Corrective action request

CHW Central Highlands Water

Combined sewer drain A privately-owned sewer drain servicing more than one dwelling.

Connection point The intersection of a CHW sewer and a private sewerage service.

Consultant Any person or agency accredited by CHW for the design, project management, construction, survey and asset recording of water reticulation and sewerage services.

Contractor The agent engaged by the developer to construct the works.
Contributions
Charges payable by the property owner that recover the cost of providing water and sewerage infrastructure works.

Development consultant
The person or agency accredited by CHW and appointed by the developer to conduct the design, project management, construction, survey and asset recording of water reticulation and sewerage services.

Developer
The person entitled to execute a transfer of the land. The developer may be the landowner or the subdivision owner.

DHHS
Department of Health and Human Services

DSP
Development servicing plan

Dual occupancy
Two dwellings on one lot.

DXF
The abbreviation and file name extension given to graphics files that can be created in various graphics packages. It was created by Autodesk, Inc. for exchanging graphics files – the abbreviation DXF stands for drawing interchange format.

Easement
Acquired right or privilege held by a person or public authority, including CHW, to make specific use of land owned privately or by another authority.

EMP
Environmental management plan

EMS
Environmental management system

ESC
Essential Services Commission

Fire plug
A fitting on the water supply system to provide the fire department with access to the system or for flushing the water main.

Grade
The slope (or gradient) of a pipe.

HACCP
Hazard analysis and critical control point

High rise
A multi-storey commercial structure that has three (3) levels or more.

Hydrant
A fitting on the water supply system to provide the fire department with access to the system or for flushing the water main.

Intensive audit
Audits undertaken due to the unsatisfactory performance of a consultant. The performance is measured by assessing a consultant’s conformance with their quality systems.

Internal service
Water pipes or sewers owned and operated by private lot owners.
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IWM</td>
<td>Integrated water management</td>
</tr>
<tr>
<td>IWMP</td>
<td>Integrated water management plan</td>
</tr>
<tr>
<td>LIS</td>
<td>Low infiltration sewer systems</td>
</tr>
<tr>
<td>Live asset</td>
<td>An asset that is operational – that is, it is carrying water or sewage.</td>
</tr>
<tr>
<td>Lot</td>
<td>A part of land that can be sold or transferred separately.</td>
</tr>
<tr>
<td>Main (water)</td>
<td>Any pipe vested in, belonging to, or under the control of CHW that is used for conveying drinking water. It is also known as a water main.</td>
</tr>
<tr>
<td>MOU</td>
<td>Memorandum of understanding</td>
</tr>
<tr>
<td>MRWA</td>
<td>Melbourne retail water agencies</td>
</tr>
<tr>
<td>Multi-unit development</td>
<td>More than two dwellings or buildings on one lot.</td>
</tr>
<tr>
<td>NATA</td>
<td>National Association of Testing Authorities Australia</td>
</tr>
<tr>
<td>NCC</td>
<td>New Customer Contribution</td>
</tr>
<tr>
<td>NoA</td>
<td>Notice of Agreement</td>
</tr>
<tr>
<td>Non-works</td>
<td>A service that does not require the construction of reticulated water or sewer works. For example, sewer connection branches and water tappings are considered to be non-works.</td>
</tr>
<tr>
<td>Outlet sewer</td>
<td>The sewer between the boundary of a development and the existing sewer system. Also known as a connecting sewer.</td>
</tr>
<tr>
<td>Owner</td>
<td>See developer</td>
</tr>
<tr>
<td>Permanent works</td>
<td>Constructed works that will not be replaced by other works.</td>
</tr>
<tr>
<td>Planning permit</td>
<td>A permit required under the Planning and Environment Act 1987 for the use or development of land.</td>
</tr>
<tr>
<td>Potable water</td>
<td>Water that is suitable for drinking.</td>
</tr>
<tr>
<td>Private internal service</td>
<td>Privately owned water or sewer service that is connected to CHW’s network and either</td>
</tr>
<tr>
<td></td>
<td>• runs through an adjacent property</td>
</tr>
<tr>
<td></td>
<td>• or is shared between multiple lots (see also combined sewer drain)</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Property boundary</td>
<td>The line that separates properties on a plan of a subdivision.</td>
</tr>
<tr>
<td>Property service drains</td>
<td>Pipes that connect a privately-owned property’s service drains to CHW’s sewer pipes.</td>
</tr>
<tr>
<td>PWWF</td>
<td>Peak wet weather flow</td>
</tr>
<tr>
<td>RAG</td>
<td>Registered air gap</td>
</tr>
<tr>
<td>Reserve</td>
<td>Land that is set aside for public use. Reserves include general public open spaces, nature reserves, tree reserves, reserve parks, public gardens, recreation reserves, sporting reserves, and sewerage and water reserves.</td>
</tr>
<tr>
<td>Reticulated</td>
<td>Connected to a system or network of CHW pipes.</td>
</tr>
<tr>
<td>Reticulated sewerage</td>
<td>A sewer pipe, usually of a small diameter used for conveying sewage or effluent. The pipe is vested in, belongs to, or is under the control of CHW.</td>
</tr>
<tr>
<td>Reticulated water</td>
<td>A water pipe, usually of a small diameter used for conveying potable water. The pipe is vested in, belongs to, or is under the control of CHW.</td>
</tr>
<tr>
<td>RPZD</td>
<td>Reduced pressure zone device.</td>
</tr>
<tr>
<td>SEMP</td>
<td>Site environmental management plan.</td>
</tr>
<tr>
<td>Sewer</td>
<td>Any conduit that conveys sewage.</td>
</tr>
<tr>
<td>Sewerage</td>
<td>The system of sewer pipes, access chambers and structures that collect and convey sewage from individual properties to treatment plants for purification.</td>
</tr>
<tr>
<td>Sewerage system</td>
<td>All the sewers and sewerage works vested in CHW for the purpose of sewage collection and disposal.</td>
</tr>
<tr>
<td>Stage/super lot(s)</td>
<td>An area of land that will be subdivided into further lots.</td>
</tr>
<tr>
<td>Subdivision</td>
<td>The division of an area of land into two or more lots that can be sold or transferred separately.</td>
</tr>
<tr>
<td>Subsidence</td>
<td>Where the surface of an area of land sinks lower than the land surrounding it.</td>
</tr>
<tr>
<td>Survey</td>
<td>All activities associated with the establishment of a subdivision and the supply of as-constructed asset information to CHW.</td>
</tr>
<tr>
<td>Tapping</td>
<td>The connection of an internal water service to a CHW main.</td>
</tr>
</tbody>
</table>
**Temporary works**

Usually minor works that service a small area until a permanent system is constructed. These works are not part of CHW’s current strategic planning.

**Upsizing**

The installation of a water main or sewer that is larger than required in order to service other developments.

**Valve**

A fitting on a water main that controls the rate and direction of water flow. Also used to isolate water mains for repair.

**Vested in**

Ownership of the works by CHW.

**Works**

The design, construction, project management and survey of water mains, sewers and associated works. For example, filling and grading that changes the natural condition or topography of land, construction of structures, holding tanks, pump stations and buildings.

**WSAA**

Water Services Association of Australia

**WSUD**

Water sensitive urban design