The HAP sets out 16 recommended actions. Of particular relevance to this study are the four actions noted in Table 17 below.

Table 17: Actions from the HAP that are relevant to mobilisation of affordable land.

| Action No. | Activity |
|---|---|
| Action 1.3: | That Dunedin City Council show leadership in enabling the development and delivery of more affordable rental housing in Dunedin. |
| Action 2.4: | That Council adopts a policy and develop tools to ensure new developments help meet Dunedin's social and affordable housing needs. |
| Action 2.5: | That Council designate a Housing Navigator/Facilitator to assist residential developers navigating the resource and building consent processes. |
| Action 3.2: | Joint procurement strategy for high quality, affordable homes. |

Notably, the MTFH proposes that the collaborative approach used by the group should be continued, and that Council, while having a central role to play in the implementation of the action plan recommendations, will not be able to deliver everything alone. This can be clearly observed in the above action items, which are dependent on a collaborative partnership between the public and private sectors to achieve the outcomes envisaged by the MTFH.

The HAP refers to Dun city Council's housing capacity forecasts, which predict that there will be a shortfall of residential development capacity over the medium- and long-term. The report recognises that the local authority has recently embarked on a plan change process, called Variation 2, to address this predicted shortfall through modifications to the provisions of the City's district plan. Such modifications could include the creation of new 'greenfield' residential zones and/or allowing increased development density within existing zones.

Another issue identified in the DHAC is the need within Dunedin City for the construction of smaller, possibly attached, units. This need is consistent with the findings of the Stocker

The MTFH has measured affordability within the City using the idea that a house is deemed affordable if the household spends less than one third of their gross household income on rent or mortgage repayments. Using the market data available, the MTFH has

**S+SNZ Proposed alternative guidance on when a road will be required**

*[The purpose of this guidance is not only to guide Council as to when it may be inappropriate to require a road, but also to provide direction around when it is acceptable for a private accessway to service more than 12 units. What we wish to avoid with this guidance is that is it only in one direction, i.e. we wish to avoid the situation (unless these is good reason) where Council decides that it is not appropriate to require a legal road, but that it is also not appropriate to allow more than 12 units to be served from a private accessway.]*

*[to be inserted after 6.11.2.7.a.Y]*

AC. In determining whether the location or design of a subdivision makes it inappropriate to require a road, Council will consider all relevant matters, including, but not limited to, whether:

X. ~~access routes to and~~ Site topography and other physical constraints that exist within ~~through~~ the subdivision area will enable minimum road design requirements to be met in a practical manner, including factors such as slope and site dimensions; or

Y. access can only be achieved by right-of-way over other property; or

Z. the proposal is related to a multi-unit development or is for a ~~unit title~~ subdivision and ongoing management of accessways over common property is provided for through a body corporate or suitable alternative management entity; or

ZA Legal constraints that might exist within the site which prevent the vesting of road, such as easements that the applicant does not have the authority to cancel.

Where proposed developments are subject to one or more of the above influencing factors, Council will not require the creation of a road. Alternatively, Council may prefer the creation of a road, but with allowances made for proposed non-compliances of particular design standards. In instances where developments are subject to one or more of the above influencing factors, and at the same time propose the creation of more than 12 units, Council will be agreeable to the use of a private accessway. For these developments, Council will have discretion in respect to the appropriate design requirements. Note, this guidance does not override Council's assessment discretion where proposed developments seek to breach the District Plan density provisions.

Secure manholes against uplift in accordance with *WWDG Part B* clause 14.4.

Where a special manhole cannot be constructed with a standard riser the lid must:

- meet the *WWDG Part B* clause 14.4 requirements for structural design, as confirmed by a Design Certificate;
- have minimum concrete strength and cover of 40 MPa and 50mm respectively;
- conform to the geometric requirements of SD 302 or SD 303, whichever is relevant.

### 5.10.7 Subsoil drains

Design subsoil drains, which are installed to control groundwater levels, in accordance with *WWDG Part B* clause 5.3.1.

Refer to manufacturer's literature for information on pipe materials, filter fabrics, bedding and filter design.

### 5.10.8 Pipelines in permeable ground

Where a buried pipeline is likely to encounter an underground source of water, ensure that the groundwater in the water bearing layers will not be diverted to a new exit point through the backfill. Specify backfill material with the same permeability as the surrounding ground and detail water migration barriers at any change of ground permeability.

### 5.10.9 Steep gradients

Provide adequate anchorage for the pipes, through designing thrust or anchor blocks or by utilising restrained pipe systems.

Specify water stops on all pipelines with gradients steeper than 1:3. Where 'firm mix' is used for haunching water stops are not required. *WWDG Part B* clause 14.2.3 details the design criteria to consider before installing concrete water stops, additional to those relating to permeable ground. Specify water stops constructed to comply with *CSS: Part 3* SD 347.

## 5.11 Connection to the Public System

### 5.11.1 Individual lots and developments

The connection of individual lots and developments to the public system must meet the following requirements:

- Connection must be by gravity flow via laterals to mains or waterways, or to a roadside kerb or swale or rain tanks, or (in certain situations) on-site detention tanks;

- Provide all new urban lots with individual service laterals located at least one metre from the top of the vehicle crossing cutdown;
- Each connection must be capable of serving the entire building area of the lot (unless approval is obtained from the Council to do otherwise);
- Provide stormwater connections at such depth at the boundary of urban lots that a drain is able to be extended from the connection, at grades and cover complying with the Building Act, to the farthest point on the lot;
- The minimum diameter of connections must be:
  - 100mm for residential lots.
  - 150mm for commercial/industrial lots.
  - 150mm for connections serving three or more dwellings or premises (unless otherwise approved by the Council);
- Where the public system is outside the lot to be served, extend a connection pipeline a minimum of 0.6m into the net site area of the lot;
- Connection to features such as vegetated swales, soakpits, or soakage basins is acceptable provided the system is authorised by the Ecan and adverse effects and potential nuisances are addressed;
- Seal all connections to pipelines or manholes by removable caps at the upstream end, until such time as they are required.

### 5.11.2 Connection of lateral pipelines to mains

Connections of laterals to mains must be in accordance with *CSS: Part 3*.

## 5.12 Means of Compliance

### 5.12.1 Surface water

Surface water hydrology must be in accordance with *WWDG Part B* chapter 21.

### 5.12.2 Estimation of surface water run-off – peak flow rate

Estimation of the peak flow rate for localised urban catchments must be in accordance with *WWDG Part B* (**December 2011 update**) chapters 21, 22 and Appendix 10.

For the Banks Peninsula area, a recognised alternative flood estimation method supported by good hydrological information may be presented for consideration.

### 5.12.3 Estimation of surface water run-off – volume

Estimation of the peak flow rate must be in accordance with *WWDG Part B* (**December 2011 update**) chapters 21, 22 and Appendix 10.

Do not lay junctions on sewer mains deeper than 2.5m. Where junctions could be deeper than 2.5m, or where they are shallower and in areas with difficult ground conditions, design collector sewers parallel to the sewer main as detailed in clause 6.5.7 – Collector sewers. Where collector sewers are not detailed and the depth to soffit of the main sewer is more than 2.5m, risers may be used, subject to the requirements of other services and land levels. All other junctions must be side junctions.

Form all junctions with a Y or riser junction so that the side flow enters the main at 45°, to reduce deposition of solids.

Avoid lateral connections to manholes at the top of a line where minimum gradients are involved.

### 6.12.2 Cover

Design the lateral grade and invert level to serve the lot adequately. If there could be conflict with other services, it may be necessary to lower the lateral.

The minimum level for a gully trap is calculated by starting from the soffit level of the main at the connection point. Add the minimum cover to the lateral and the elevation increase of the lateral to this soffit level. The minimum cover is set in the BIA regulations. The elevation increase over the lateral length is calculated assuming the lateral is laid at a gradient of 1 in 80 from the main to the gully trap.

Gully traps must be at least 1.0m above the soffit level of the sewer main. If the gully is lower than the crown of the road, ensure that the gully does not become an overflow for the sewer main in the event of a system blockage. Consider installing backflow prevention devices in places where this cannot be achieved.

On sewer renewal work, when a lateral is identified for renewal and runs close to trees as defined in *CSS: Part 1* clause 19.4 – Protection of Existing Trees, either reroute the lateral around the tree by repositioning the junction on the main, or use pipe bursting or similar techniques to relay the lateral in its present position. Specify jointing in accordance with *CSS: Part 3*, clause 11.1 – Laterals in Close Proximity to Trees.

### 6.12.3 Common drains

Read the following notes in addition to the BIA regulations.

New sewer mains installed in private property as part of a development and that serve only that development will be private common drains, unless Council specifies through a consent condition that they must be vested. If the developer considers a sewer main in private property should be vested, request this at the time of applying for subdivision consent.

Size the private common main using discharge units as specified in *Compliance Document G13 Foul Water*.

In developments serviced by sewer mains located at the rear of the lots (typically hill developments) extend the sewer main to the boundary of the last lot.

Haunch and backfill laterals laid at the time of development, including those in rights of way, in accordance with *CSS: Part 3* SD 344.

Provide Y junctions and laterals extending clear of the right of way for all lots. All laterals must finish 0.6m inside the net site area of the lot.

## 6.13 Material Selection

Use Appendix III- Wastewater Material Selection Table as a guide when specifying materials. Specify polyethylene materials for wastewater mains installed adjacent to or that cross waterways and which may experience lateral spread under seismic loading.

### 6.13.1 Approved materials

A schedule of materials approved for use on the Council's infrastructure is on the Christchurch City Council web page at: www.ccc.govt.nz/DoingBusiness/ApprovedMaterials.

### 6.13.2 Reducing waste

When designing the development, consider ways in which waste can be reduced.

- Plan to reduce waste during demolition e.g. minimise earthworks, reuse excavated material elsewhere.
- Design to reduce waste during construction e.g. prescribe waste reduction as a condition of contract.
- Select materials and products that reduce waste by selecting materials with minimal installation wastage.
- Use materials with a high recycled content e.g. recycled concrete subbase.

See the Resource Efficiency in the Building and Related Industries (REBRI) website for guidelines on incorporating waste reduction in your project www.rebri.org.nz/.

### 6.13.3 Corrosion prevention

Corrosion can be caused by hydrogen sulphide, aggressive groundwater, saltwater attack, carbon dioxide or oxygen rich environments.

Design to minimise corrosion through:

- selecting materials which will resist corrosion;
- designing in an allowance for corrosion over the 100-year life-cycle of the asset;
- providing protective coatings;
- using the measures suggested in clause 6.13.4 - Aggressive groundwater.

network approval shall be obtained from the Council Engineer. As a general rule, the cross-sectional area of the proposed structure shall be no smaller than that of the nearest structure up or down stream.

### 5.6.7 Protection of road subgrade

The potential risk of carriageway damage from a saturated sub-base is a design issue. Early discussion with the Council is needed when the maximum level of detained water in any ponding area is higher than 200mm below any carriageway or right of way within a horizontal distance of 80 metres. Provide evidence that the road subgrade will not be compromised. Special pavement or pond design may be necessary.

### 5.6.8 Outfall water levels

The Council will provide, where available, the start water level at the point of connection to the public stormwater system or at some point downstream where design water levels are known, as a subdivision consent parameter.

When a tributary drain or a waterway flows into a much larger drain or a much larger waterway, the peak flows generally do not coincide. Check both the situation where the tributary has reached peak flow but the receiving waterway has not and where the receiving waterway is at peak flow but the tributary has passed it. Take the worst case as the design case (refer to *WWDG Part B* clause 22.5.2).

### 5.6.9 Alternative technologies

Alternative technologies will be considered on a case by case basis.

### 5.6.10 Common drains

New stormwater mains installed in private property as part of a development and that serve only that development will be private common drains, unless Council specifies through a consent condition that they must be vested. If the developer considers a stormwater main in private property should be vested, request this at the time of applying for subdivision consent.

Stormwater reticulation that is to be vested shall meet Council requirements as follows:

- minimum pipe diameter 225 mm
- end in a manhole or inspection chamber
- service 5 lots or greater in number
- Size the private common main using Christchurch City Council Waterways, Wetlands and Drainage Guide, Ko Te Anga Whakaora mö Ngä Arawai Rëpo (WWDG) (2003) Part A and B

## 5.7 WATERWAYS

Design waterways in accordance with *WWDG Part B* chapters 7 to 13 inclusive.

Maintain fish and invertebrate passage, unless otherwise authorised by the Council or by the Canterbury Regional Council. Refer to *WWDG Part B* clauses 2.2 and 13.2.3.

# Wastewater pipes ownership and responsibility

The responsibility for maintaining and repairing wastewater pipes that carry wastewater from the house or business to the Council main is shared between the property owner and the Council.

In Christchurch there are **three types of wastewater (sewerage) systems – gravity, pressure and vacuum**. Most properties with wastewater service use the gravity system. If you are not sure which system you have you can contact us on 03 941 8999.

Expand all | Collapse all

## The Council's responsibilities

- For **all three systems**, the Council owns and is responsible for all wastewater pipes, tanks and laterals, on public land, i.e. from the front boundary of a house on a public street to the front boundary of the house on the opposite side of the street.
- All wastewater pipes on private property protected by an easement in favour of the Council are owned and will be maintained by the Council. This is usually the main, plus the connections of any laterals to the main, and the portion of lateral covered by the easement (approximately 1 metre in most cases).
- Wastewater gravity mains owned by the Council which are installed in private land or a Right of Way (ROW), with or without an easement in favour of the Council, will be maintained by the Council. This is usually the main, plus the connections of any laterals to the main, and approximately the first metre of lateral.
- Pressure wastewater tanks, pipes from the tanks, control panels and  boundary boxes, in the following situations are owned and maintained by the Council (note that the pipe from the house to the tank and the electricity to the pump is supplied by the property owner):
    - Installed on private land by SCIRT (Stronger Christchurch Infrastructure Rebuild Team) for the Council between 2011 and 2017 as part of the earthquake rebuild work.
    - Installed where at the time of development the property was in an area of wastewater constraint. These are generally in one-off places, and surrounded by properties with gravity connections.
    - Installed in larger subdivisions where the pressure wastewater was agreed as the best wastewater solution for serving the subdivision, e.g. Highsted, Upper Styx, Highfield, North Halswell, South Halswell, South East Halswell, South West Halswell and Hendersons Residential New Neighbourhood areas.

## The property owner's responsibilities

Your solicitor should have advised you of your rights and responsibilities when you purchased the property. The Certificate of Title to your land should show the ownership of the wastewater pipes and other services in your property, including those in any easement, such as a Private Lane or Private Right of Way.

Most lanes are privately owned – if you live in a lane but are unsure whether it is a private or public road, you should check the Certificate of Title to your land, which clearly marks the boundary between private land, public land and common land. You can also enquire with the Council.

Titles can be ordered through **Land Information New Zealand (LINZ)**. Their website has step by step instructions on how to do this.

### The property owner's pipe ownership and maintenance responsibilities

- Some gravity mains on private land are privately owned. They are installed within an easement, and used only by those parties named in the easement documents. They are owned by and will be maintained by the named parties at their expense and effort. These easements are usually set up and agreed upon at the time of property subdivision.
- Wastewater gravity laterals on private property that serve one property are owned and maintained by the owner of the property that they serve. If the lateral drains across another property, access to the lateral for repairs should not be withheld by the owner of the other property, but they should be approached prior to any repair.
- Wastewater laterals that serve more than one property have a shared responsibility for ownership and maintenance. The property at the start of the line owns and maintains the first section of lateral until it is joined by the next property, at which point it becomes shared between the two properties. As extra properties join they are added to the ownership and maintenance from the point at which they connect.
- Pressure wastewater, the lateral (pipe) from the house to the tank is owned and maintained by the property owner.
- Some pressure wastewater tanks and associated pipes and control panels are privately owned and maintained.  Examples of this are tanks installed by the owners for properties on the extremities of the Christchurch wastewater network for which there was no other way of servicing them, groups of properties which were on septic tanks but were since provided a pressure main in the street for the properties to connect to, houses downhill of wastewater mains so the wastewater required pumping up to the main.

# What to do if you have a blockage or your wastewater doesn’t drain away

Choose the type of system you are connected to from the list below for advice on what to do if you have a problem with your wastewater.

Expand all | Collapse all

## Gravity wastewater system

## Pressure wastewater system with Council owned tanks

## Pressure wastewater system with privately owned tanks

## Vacuum wastewater system