1.1 Background

Opus International Consultants Ltd (Opus) was requested to review and report on the Council’s Water and Sanitary Assessment for Water, Wastewater and Stormwater. This assessment was carried out in conjunction with the updating of the Water, Wastewater and Stormwater Asset Management Plans.

The assessment of Public Toilets and Cemeteries were carried out separately by Council and included in this memo for completeness of the Water and Sanitary Assessment Review.

1.2 Legislative Background

Section 124 of the Local Government Act: “water services means water supply and wastewater services”

Section 125 of the Local Government Act: Requirement to assess water and other sanitary services
(1) A territorial authority must, from time to time, assess the provision within its district of—
   (a) water services; and
   (b) other sanitary services.

Section 126: Purpose of assessments - The purpose of an assessment under section 125 is to assess, from a public health perspective, the adequacy of water and other sanitary services available to communities within a territorial authority’s district, in light of:
   a) The health risks to communities arising from any absence of, or deficiency in, water or other sanitary services; and
   b) The quality of services currently available to communities within the district; and
   c) The current and estimated future demands for such services; and
   d) The extent to which drinking water provided by water supply services meets applicable regulatory standards; and
   e) The actual or potential consequences of stormwater and sewage discharges within the district.

1.3 History

An extensive assessment of the Water and Sanitary Services was carried out in 2004. The assessments looked at both public (urban and rural) and private issues and indicated in general that:
- Sewerage: No need for major new initiatives or fundamental changes to current practices.
• Stormwater: Planning for growth related stormwater is advanced for Hanmer Springs and underway for Amberley. Issues for Hawarden and Cheviot are yet to be addressed.
• Water: Only Waipara and Amberley were identified as having any quantity (of supply) issues and 94% of the population were located within public supply areas.
• Water quality across the district was extremely variable, often poor and prone to weather conditions.
• The water supply areas assessed as most in need of attention were Cheviot, Waipara, Greta Valley (Hurunui #1 RWS) and Motunau Beach (Hurunui #1 RWS).
• Council may need to increase its level of involvement in promoting safe water supply on private supplies.

June 2010 review
The Water and Sanitary Assessment was updated in June 2010 for water supply and wastewater networks that had undergone change i.e. growth, change of use, new or not covered by the original assessment or become subject to new legislation or notably different consent conditions.

The review indicated that:
• Some communities have sought and/or secured improvements in the quality and quantity of their water.
• Hanmer and Amberley wastewater facilities have undergone significant upgrading for discharge quality and consent compliance.
• Council remains committed to managing and maintaining public water and wastewater services.
• Future growth and renewal considerations will continue to be identified and presented in each Long Term Plan process.

1.4 September 2014 Review

Background
The 2014 Water and Sanitary Assessment Review considered water, wastewater and stormwater. The review consisted of:
• Workshop with Council’s 3Waters utility staff in September 2014 to consider significant changes that had occurred since the June 2010 review.
• Review other types of water supply and wastewater systems as shown in the 2004 assessment (other than operated by Council) by Council’s Inspectorial Staff.
• Council’s Inspectorial Staff views on individual private supplies (water and wastewater drainage) were obtained.

Outcomes of Workshop - Changes that had occurred since the June 2010 review

1. Water:
• Installation of nine new MIOX plants and the re-location of the existing MIOX plant in such a manner as to ensure bacteriological MAV compliance for all water schemes at all times. This has resulted in the lifting one of the eight currently in-place
Permanent Boil Water Notices across the district. The remaining seven will be lifted once quality assurance issues have been resolved.

- Waiau township Ultra filtration plant will be operational by mid 2015 that will meet full DWSNZ compliance.
- Council has instigated a financial strategy to meet full DWSNZ compliance (outlined in Appendix 2) in the period 2024/25 to 2026/27.
- Growth since 2010 has occurred in the southern parts of the district - south of the Waipara River. This area is supplied by the Ashley water supply, hence covered by the Asset Management Plan (AMP) and the individual water supply Water Safety Plan (WSP).
- Four water schemes have approved WSPs that are actively being implemented, five WSPs have been submitted and the remaining 11 WSPs will be submitted by June 2015.
- The Ashley water supply also provides water to the consumers in the Waimakariri District. This sanitary assessment does not consider the area outside the Hurunui District.

2. Wastewater:

- Waipara, Culverden, Waiau, Gore Bay, Rotherham and Parnassus do not have community wastewater systems. Existing wastewater treatment is mostly septic tanks and not presently considered an issue. Details of investigations to date are:
  - Gore Bay and Culverden: Brief investigations for a community scheme and subsequently community indicated they did not want to proceed.
  - Waipara: Developer led proposal even though there was no obvious problem with contamination of ground water from septic tanks. The community indicated they did not want to proceed as most people had septic tanks that worked perfectly well and the few new houses had expensive new Oasis systems that the owners saw no need to replace. The proposed land development did not proceed for other reasons.
  - Collective Wastewater schemes investigated for Culverden, Waiau and Rotherham and no action was proposed for these townships at that time.

3. Stormwater:

- Individual issues for some limited properties.
- Leithfield Beach floods in 2008: Details of flooding issues and resolution is provided in the Stormwater AMP.
- Council considering creating more drainage areas in Waikari & Hawarden.

4. Population Served

The population served by Council owned and operated water, wastewater and stormwater schemes are presented in Table 1. In 2004 and 2010 the percentage served for Council owned and operated water supplies was 94% and ~ 90% respectively.

Table: Population Served by Council Owned and Operated Water Supplies, and Wastewater and Stormwater Schemes

<table>
<thead>
<tr>
<th>Service</th>
<th>Population Served (2014) - Council Schemes</th>
<th>% Served for all of the District</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Page 3
<table>
<thead>
<tr>
<th>Water</th>
<th>10,375</th>
<th>90%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wastewater</td>
<td>6,280</td>
<td>55%</td>
</tr>
<tr>
<td>Stormwater (Township)</td>
<td>6,540</td>
<td>57%</td>
</tr>
</tbody>
</table>

Note 1: This figure only includes residents within the Hurunui District. Approximately 2,500 to 3,000 residents of the Ashley Rural Water Supply are Waimakariri District Council residents.

5. Issues

- Farm Intensification and Dairy Conversion.
  - Amuri Plains - Classic intensification on plains and Waiau River area
  - Intensification is having an impact on river water quality as identified by Environment Canterbury over recent years. Council has not seen an impact on quantity except in the fact that more restrictions are put in place through new resource consents.
- Discharge of treated effluent from Council treatment plants to waterways – High degree of compliance with water quality data supplied monthly to Environment Canterbury.
- Drivers: health risks backed up by legislative requirements.

1.5 Review other types of water services

The water services (other than operated by Council) as presented in Appendix 1 were reviewed by Council’s Inspectorial Staff to ascertain if:

- Significant changes had occurred since 2004.
- Additional community water services are now in operation.

Council’s Inspectorial Staff comments were that legislative requirements govern the provision of water and wastewater disposal and provide an additional level of security:

- The Building Act 2004 provides the requirement for potable water and sanitary systems.
- Environment Canterbury has rules for effluent treatment and disposal.
- Health Act 1956: Requirement for WSP for communities supplying more than 500 people.

1.6 Council’s Inspectorial Staff views on individual private supplies (water and wastewater drainage)

Ten larger private water supply schemes were identified in the 2004 Water and Sanitary Assessment with many smaller private supplies being summarised in one separate assessment. Two of these supplies in Hanmer (both camps) have since been connected to the main public scheme. The Ashley Forest Village dwellings will be individually connected to the Ashley Rural Water Supply within the next few years due to a new sub-division in the area.

Seven additional private schemes identified in the past few years. Two of these have had issues. The first is Waipara Boys Brigade camp which had a faulty UV, however, this has since been upgraded and no issues have been known for a few years. The other issue was at
Conway Flats (at the mouth of the Conway River). This was indirectly affected by the tanker accident in July 2014 which spilled a toxic substance in the river water.

One private scheme has asked Council to maintain their scheme. This was not due to quality issues. Council requested more information on the scheme assets and the intake from the river. On this request, the private scheme declined their original request.

Council’s response to private schemes in the district is that as Council becomes aware of them they will advise the local Drinking Water Assessor so that the supply can be registered under the appropriate level under the Drinking Water Standards.

1.7 Cemeteries and Public Toilets

Cemeteries
Most of the 11 public cemeteries have plenty of capacity to meet current demand. Balcairn is the most full having 15% capacity left and about 10% of plots have been filled in the last 10 years. This cemetery also has an issue of high water table which has risen in the last 5 years. This has affected grave digging during the winter months.

Public Toilets
There are 14 public toilets located within the district. These range in age from 4 to 35 years. Other than existing facilities being older the review shows that the risks to these sites (which were not significant) have not changed over the past 10 years.

1.8 Review Outcomes

The review outcome for the Water Service was a decreased risk for consumers on Council’s water schemes due to:
- Increased level of water treatment ensuring bacteriological MAV compliance for all water schemes.
- Four water schemes have approved WSPs that are actively being implemented, five WSPs have been submitted and the remaining 11 WSPs will be submitted by June 2015.

The review outcome for the Wastewater Service was the need for additional community Wastewater Schemes will be reviewed by Council on an as required basis.

The review outcome for the Stormwater Service was any additional Stormwater Services would be ascertained during the consideration and implementation of the SMP’s.

The review outcome for the Cemeteries and Public Toilets indicates there is minimal change in the risks associated with these services.
Appendix 1: The 2004 Summary of Assessment for Water Services Communities and other Serviced Facilities

A summary of 2004 Assessment of Water and Wastewater services for communities and other serviced facilities are presented below.

<table>
<thead>
<tr>
<th>Community</th>
<th>Water</th>
<th>Wastewater</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boyle Outdoor Education Centre</td>
<td>Draws water from a small mountain stream</td>
<td>Sewage is collected in septic tanks on each title and discharges to soak pits</td>
</tr>
<tr>
<td>Boyle Village</td>
<td>Individual rainwater collection</td>
<td>Sewage is collected and disposed on each site (soak-pits)</td>
</tr>
<tr>
<td>Boyle Engineers Camp</td>
<td>Private community supply - 8m deep bore adjacent to the Boyle River</td>
<td>Sewage is collected in septic tanks on each title and discharges to soak pits</td>
</tr>
<tr>
<td>Mt Lyford Village and Mt Lyford Lodge</td>
<td>Private community supply - The intake is the upper headwater of the Wandle River.</td>
<td>All private dwelling with the village and small-holdings have modern septic tank or package plant treatment devices and designed effluent disposal beds or fields</td>
</tr>
<tr>
<td>Mt Lyford Ski Area</td>
<td>Water is tankered up (approx 1000l/day) by the operators each day to service the ablation block.</td>
<td>The ablation block is serviced by a modern design 42,000 litre septic tank system and discharge is to a sand effluent bed.</td>
</tr>
<tr>
<td>Webbs Road Water Scheme (Private)</td>
<td>14 lots serviced. Water is for potable and stock use only.</td>
<td>Not shown</td>
</tr>
</tbody>
</table>

Accommodation And Hospitality Facilities

<table>
<thead>
<tr>
<th>Community</th>
<th>Water</th>
<th>Wastewater</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staging Post Camp</td>
<td>Drawn from Chilly Stream, originating in the Hawkswood Range</td>
<td>Not shown</td>
</tr>
<tr>
<td>Gore Bay and Buxton camping areas</td>
<td>Council supplied</td>
<td>Septic tank and beach gravel soakage pits</td>
</tr>
<tr>
<td>Braemar Lodge</td>
<td>Draw water from dammed springs and use filters with UV lamps.</td>
<td>Not shown</td>
</tr>
<tr>
<td>Hanmer River Camp</td>
<td>Draw water from dammed springs and use filters with UV lamps.</td>
<td>Not shown</td>
</tr>
<tr>
<td>Hanmer Springs Forest Trust Camp</td>
<td>draws water from Switchback stream</td>
<td>Not shown</td>
</tr>
<tr>
<td>The Alpine Adventure</td>
<td>Uses both public supply and private</td>
<td>Not shown</td>
</tr>
<tr>
<td>Community</td>
<td>Water</td>
<td>Wastewater</td>
</tr>
<tr>
<td>-----------</td>
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<td>------------</td>
</tr>
<tr>
<td>tourist park (Jacks Pass Road)</td>
<td>supply. The private supply draws from the upper Chatterton River,</td>
<td></td>
</tr>
<tr>
<td>The Balmoral Camping area, owned and run by Hurunui District Council</td>
<td>Provides water from a shallow bore direct to camp taps. There is no treatment or storage of water on site</td>
<td>Sewage is collected via the main ablution block into a septic tank and from these, into the gravels through a soakage drain</td>
</tr>
<tr>
<td>Waipara - Two accommodation facilities exist</td>
<td>The private supplies has a good track history for water quality, but the bore is 20m</td>
<td>Not shown</td>
</tr>
<tr>
<td>Boys Brigade camp is located on the adjacent (south) side of the Waipara River (Sure &amp; Steadfast Trust).</td>
<td>Water is drawn from a 5m deep bore adjacent to the lower terrace by the river</td>
<td>Sewage is handled by septic tank and soak-pit (5 separate devices, one per building)</td>
</tr>
</tbody>
</table>

### Schools

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>There are 18 schools within the area</td>
<td>All of these schools are supplied water from council owned and managed supplies.</td>
<td>Not shown</td>
</tr>
</tbody>
</table>

### Sports and recreational

<p>| | | |</p>
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Amuri Golf Club</td>
<td>Water is drawn from a shallow bore, fed from the Waiau River</td>
<td>Not shown</td>
</tr>
<tr>
<td>The Amuri ski field</td>
<td>Draws water from springs on the mountain</td>
<td>Not shown</td>
</tr>
</tbody>
</table>

### Private Water Supplies

<p>| | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>There are over 400 (estimated) separate properties. Council has records of water sources for newer dwellings (post 1992, when the Building Act effectively came into force)</td>
<td>The majority of water abstracted for private consumption is from hillside springs and open water-ways. Some are gravity fed but most are pumped or pump boosted from smaller water courses. Few draw from larger rivers. Few residents in this community of interest rely totally on rainwater, although a large number utilise collected rainfall from dwellings, sheds and covered areas with tank storage as part of their supply (supplemented from other sources). It must be assumed from lack of complaint or documentation, that these private supplies meet the quantity needs of consumers</td>
</tr>
</tbody>
</table>
Appendix 2: Financial Strategy for Hurunui District Council to meet full DWSNZ Compliance

The Council is strongly committed to providing safe, secure and affordable drinking water throughout all her thirteen district-wide water schemes. In 2012, with a goal to taking all practical steps to meet DWSNZ, it was calculated that to meet full drinking water standards for all our water provision schemes, the district would have to invest over $14,000,000 in capital improvements works alone. This, given our small rating base, reasonable deprivation index and a central government drive to reduce overall debt and keep rate increases to a minimum, was just too unaffordable.

Thus a two-stage strategy was adopted, so that Council remained committed to meeting DWSNZ compliance, but make some immediate improvements to the drinking water quality in the interim. Firstly, were the installation of nine new MIOX plants and the re-location of the existing MIOX plant in such a manner as to ensure bacteriological MAV compliance for all water schemes at all times, thus lifting the eight currently in-place Permanent Boil Water Notices across the district. Secondly, the approval of a district-wide rate to be struck 2015/2016 onwards (as endorsed in the LTP 2012-2022), to off-set the inflation costs of the full compliance capital installation till 2024/2025 (minor schemes); 2025/2026 (small schemes); and 2026/2027 (neighbourhood schemes). This would allow for greater future growth to carry the capital cost of $14,000,000 and a rationale that advanced technology to meet compliance will become less-expensive as time goes on.