11.3 URBAN & RURAL NON-SERVICED

11.3.1 Description

Residents located in an urban non-reticulated area such as Waikino, Karangahake and Mackaytown form the urban non-serviced community.

Residents located in a rural non-reticulated area such as Patetonga, Torehape, Mangatarata, Miranda, Waitakaruru, Pipiroa, Kopurahi, Orongo, Horahia, Kaihere, Hauraki Plains, Netherton, Awaiti, Hikutaia south, Komata, Tirohia, Te Moananui, Waitekauri, Waitawheta, Waimata, Golden Valley and Waiharakeke form the rural non-serviced community.

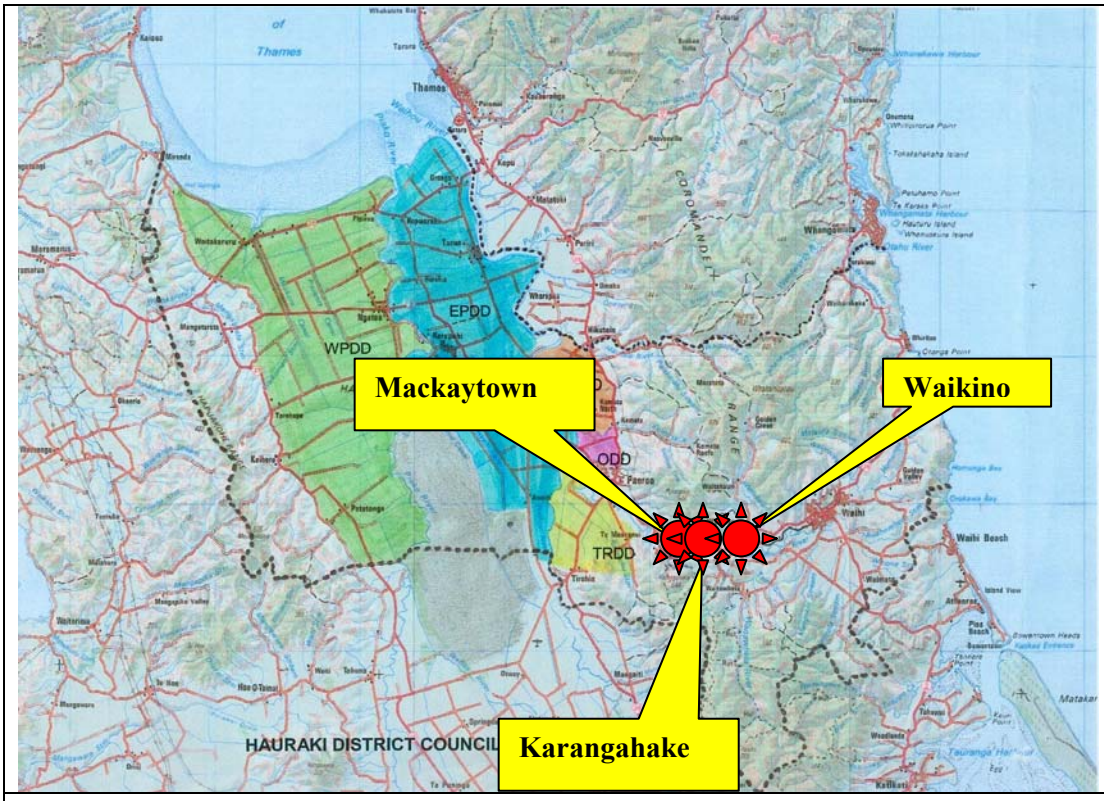
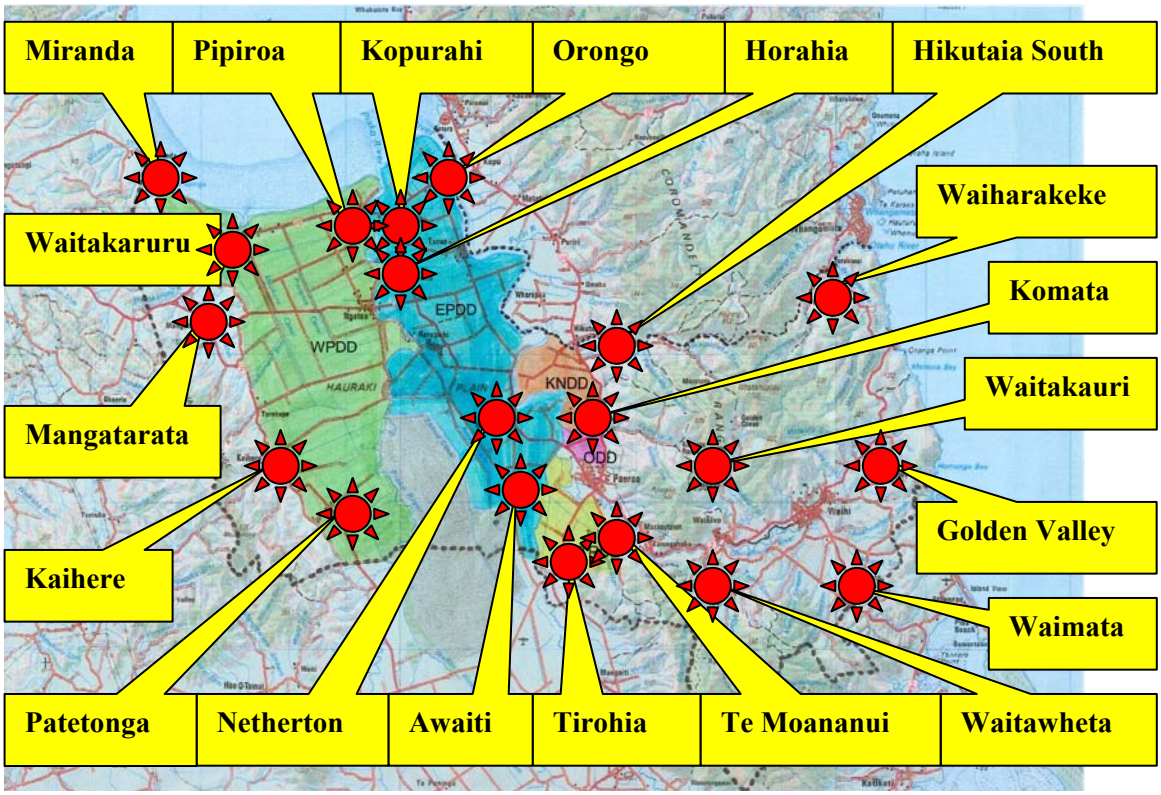


Table 3.3.1.1 – Plan of Hauraki District Council "URBAN NON–SERVICED" community.



11.3.2 OVERVIEW of ISSUES with ON-SITE WASTEWATER SYSTEMS

Under the Local Government Act 2002 requirements, it is necessary to assess the Environmental impacts and public health risks of continued use of on-site wastewater systems. This in turn requires assessment of the effectiveness and long-term sustainability of such systems.

In summary, the main determinants of the effectiveness on on-site wastewater systems, and their potential to cause problem-level contamination of surface and/or ground water include:

Septic Tanks
In order to maintain their treatment-efficiency, regular maintenance is required.

Soakage Fields
Soils: in strata such as clay, with poor infiltration characteristics, soakage may be inadequate with the result that effluent may pond and/or runoff.

Topography
Steeper ground poses problems for siting and operation of soakage systems; also, in wet weather, surplus effluent may runoff the site as overland flow.

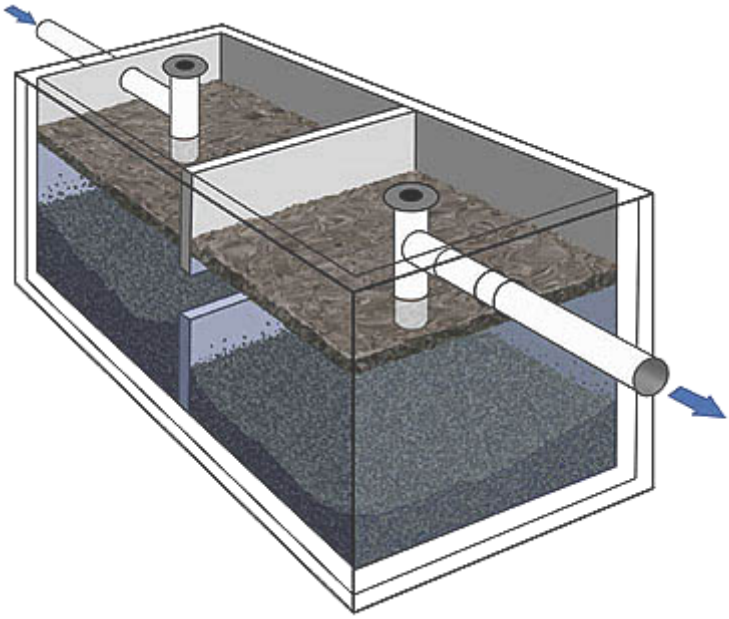
Proximity to watercourse or estuary/sea: any surplus effluent will feed to the nearest water body, potentially causing pollution (further, soakage systems adjacent to watercourses may be flooded in storms, causing polluted water to pond).

Density of Development
A large number of relatively small lots in close proximity will tend to tax the ability of the soakage fields, with any surplus effluent being concentrated by contributions from neighbouring properties en route to watercourses or the sea.
Seasonal Effects: Where winter is typically the critical case for wastewater system performance and adverse effects.

11.3.3 Methods Used To Dispose Of Sewage

Typically, the collection system is on-site disposal provided for individual dwellings via septic tank with effluent line discharge.

The Septic Tank



High ground water levels and soil composition (peat and marine estuarine mud) can be a problem in the Hauraki Plains area.

From the unconnected sewage population a sample set of 67 was randomly selected, (which allowed for 90% confidence with a 50% response rate) from this set 34 properties responded to the survey. All unserviced properties surveyed where using septic tanks as their method of sewage disposal.

It is understood that some properties utilise more sophisticated systems such as sand filters or mini aeration plants. Consents for such systems would be issued by Environment Waikato (EW).

11.3.4 Risks Attributable to the Absence of a Reticulated Sewerage Network

Possible risks include:
- Septic tank failure
- Effluent field failure

- Overloading
- Spillage
- Seepage
- Contamination of a waterway
- Lack of maintenance
- Vegetation growth over effluent field
- Trade waste entering the septic tank
- Public health

URBAN UNSERVICED	Current probability of an event occurring	Current consequence of such an event occurrence	**TOTAL current risk factor**	Future probability of an event occurring	Future consequence of such an event occurrence	**TOTAL future risk factor**	Difference between Current and future risk
Septic tank failure	4	3	12	N/A	N/A	N/A	N/A
Effluent field failure	3	3	9	N/A	N/A	N/A	N/A
Overloading	2	4	8	N/A	N/A	N/A	N/A
Spillage	3	4	12	N/A	N/A	N/A	N/A
Seepage	3	3	9	N/A	N/A	N/A	N/A
Contamination of a waterway	3	2	6	N/A	N/A	N/A	N/A
Lack of maintenance	2	4	8	N/A	N/A	N/A	N/A
Vegetation growth over effluent field	2	4	8	N/A	N/A	N/A	N/A
Trade waste entering the septic tank	2	3	6	N/A	N/A	N/A	N/A
Public health	3	3	9	N/A	N/A	N/A	N/A

RURAL UNSERVICED	Current probability of an event occurring	Current consequence of such an event occurrence	**TOTAL current risk factor**	Future probability of an event occurring	Future consequence of such an event occurrence	**TOTAL future risk factor**	Difference between Current and future risk
Septic tank failure	**2**	**3**	**6**	N/A	N/A	N/A	N/A
Effluent field failure	**2**	**3**	**6**	N/A	N/A	N/A	N/A
Overloading	**3**	**3**	**9**	N/A	N/A	N/A	N/A
Spillage	**3**	**3**	**9**	N/A	N/A	N/A	N/A
Seepage	**2**	**3**	**6**	N/A	N/A	N/A	N/A
Contamination of a waterway	**2**	**2**	**4**	N/A	N/A	N/A	N/A
Lack of maintenance	**2**	**3**	**6**	N/A	N/A	N/A	N/A

RURAL UNSERVICED	Current probability of an event occurring	Current consequence of such an event occurrence	TOTAL current risk factor	Future probability of an event occurring	Future consequence of such an event occurrence	TOTAL future risk factor	Difference between Current and future risk
Vegetation growth over effluent field	**3**	**4**	**12**				
Trade waste entering the septic tank	**3**	**3**	**9**				
Public health	**2**	**3**	**6**				

COMMUNITY	Current probability of an event occurring	Current consequence of such an event occurrence	TOTAL current risk factor	Future probability of an event occurring	Future consequence of such an event occurrence	TOTAL future risk factor	Difference between Current and future risk
Urban and Rural non serviced	**2.55**	**3.15**	**8.0**	N/A	N/A	N/A	N/A