



MANSFIELD SHIRE

## LAND CAPABILITY ASSESSMENT TEMPLATE

### LOW RISK SITES

Given the risk analysis undertaken by Mansfield Shire Council through the DWMP, this template provides for a simplified system design document. The aim is to streamline the application process by identifying Council's minimum standards for a LCA in a low risk area and to achieve a greater consistency in assessment standards.

Please provide as much detail and information as possible. You may present information in a different way but all components in the template must be clearly addressed.

Visit the Council's website to find the relevant risk map for the site. Contact Council's Environmental Health Unit on 5775 8555 if you need to clarify the risk rating for the site.

This template is only to be used if the site is located in an area identified in the Mansfield Shire Domestic Wastewater Management Plan as being low risk or those areas around the township of Tolmie that *are not* located in a Declared Water Supply Catchment under Schedule 5 of the Catchment and Land Protection Act 1994.

This template is not to be used for subdivision proposals for sites in low risk areas. Please use the medium risk template.

**ADDRESS:**

**CLIENT:**

**PROPOSAL:**

**PREPARED BY:**

**REPORT REFERENCE NUMBER:**

**DATE:**

# **INDEX**

- 1. SUMMARY OF FINDINGS AND RECOMMENDATIONS**
- 2. SITE AND DEVELOPMENT OVERVIEW**
- 3. LAND CAPABILITY ASSESSMENT**
  - 3.1 Soil Classification
- 4. SYSTEM DESIGN**
  - 4.1 Wastewater Generation Calculation
  - 4.2 Design Specifications
- 5. OWNER'S INFORMATION - SYSTEM MANAGEMENT AND MAINTENANCE**
- 6. ASSESSOR'S QUALIFICATIONS AND INSURANCE DETAILS**
- 7. ATTACHMENTS**

## 1. SUMMARY OF FINDINGS AND RECOMMENDATIONS

Please start with defining the purpose of the land capability assessment, that is:

- Have you been asked to identify the general classification of system type appropriate for the proposed development/subdivision (e.g. a traditional septic with trenches or an AWTs); **OR**
- Does this assessment identify and propose particular type of system and therefore provides detailed design specifications and management recommendations to support a 'permit to install' a septic system.

Provide an overview of the findings of your investigations, key challenges, your recommendations for system type, the design basis for the proposal and key management plan/soil renovation recommendations.

## 2. SITE AND DEVELOPMENT OVERVIEW

Site Address:

Lot size:

Zoning under the Mansfield Planning Scheme:

Proposal: (i.e. is it a new dwelling, dwelling extension etc.).

**Handy Hint No. 1:** Make sure you outline the overall size of dwelling, the number of bedrooms, the number of bathrooms, setbacks from property boundaries, proposed outbuildings and the location of hard surfaced areas.

Also include a description of overall general physical characteristics such as location of waterways (including ephemeral waterways), direction of surface flows, vegetation cover, location of bores and note nearby groundwater levels if available (visit the Visualising Victoria's Groundwater website at <http://maps.ubspatial.com.au/vvg.php>).

### Attachments:

- ➔ fully dimensioned and accurately scaled plan of the proposal.
- ➔ photos of the site and proposed system/disposal area location.

### 3. LAND CAPABILITY ASSESSMENT

#### 3.1 Soil Classification

*Bore samples should be to a minimum depth of 1.4 metres.*

*Identify the classification of the soil type in accordance with Table 9 of the EPA's Code of Practice (refer to page 49 using the following link*

*<http://www.epa.vic.gov.au/~media/Publications/891%203.pdf>).*

*GPS coordinates of the locations of where the samples were taken are required (there are smart phone applications that enable you to do this easily and cost effectively if you don't have surveying equipment).*

#### **Attachments:**

- ➔ *a diagram of the soil profile*
- ➔ *include colour photographs of the bore test samples.*

*Complete Table 1.*

**Table 1 Land Capability Assessment Table**

LAND	LAND CAPABILITY RISK RATING				AMELIORATIVE MEASURES & RISK REDUCTION
	LOW	MEDIUM	HIGH	LIMITING / UNSUITABLE	
Available land for LAA	Exceeds LAA and duplicate LAA requirements	Meets LAA and duplicate LAA requirements	Meets LAA and partial duplicate LAA requirements	Insufficient LAA area	
Aspect	North, north-east or north-west	East, west or south-west	South or south-east	South - full shade	
Exposure	Full sun and / or high wind or minimal shading	Partial shade	Limited light, little wind, heavily shaded area	Perpetual shade	
Slope Form	Convex or divergent side slopes	Straight sided slopes	Concave or convergent side slopes	Locally depressed	
Slope Gradient Trenches & beds	< 5%	5 - 10%	10 - 15%	> 15%	
Slope Gradient Subsurface Irrigation	< 10%	10 - 30%	30 - 40%	> 40%	
Site drainage Run off / run on	LAA backs onto crest or ridge	Moderate likelihood	High likelihood	Cut off drain not possible	
Landslip *	Potential	Potential	Potential	Existing	
Erosion Potential	Low	Moderate	High	No practical amelioration	
Flood / inundation	Never	< 1 AEP	5%AEP	> 5% AEP	
Distance to surface waters (m)	Buffer distances exceeds all Code requirements	Buffer distances complies with all Code requirements	Buffer distances do not comply with all/some Code requirements	< 40 metres	<i>Please list the setback distances that fail to comply with Code of Practice requirements in this column</i>
Distance to groundwater bores (m)	No bores on site or within a significant distance	Buffer distances comply with the Code	Buffer distances do not comply with the Code	No suitable treatment method	
Vegetation	Plentiful / healthy vegetation	Moderate vegetation	Sparse or limited vegetation	Propagation not possible	
Depth to water table (potentiometric) (m)	> 2 m	2 - 1.5 m	1.5 m	1.5 m - Surface	
Depth to water table (seasonal parched) (m)	> 1.5 m	< 0.5 m	0.5 - 1.5 m	0.5m - Surface	
Rainfall ** (9 <sup>th</sup> decile) (mm)	< 500 mm	500 - 750 mm	750 - 1000 mm	> 1000 mm	
Pan evaporation (mean) (mm)	1250 - 1500 mm	1000 - 1250 mm	750 - 1000 mm	< 750 mm	
<b>SOIL PROFILE CHARACTERISTICS</b>					
Structure	High or moderately structured	Weakly structured	Structureless, massive or hardpan		
Fill materials	Nil or mapped good quality topsoil	Mapped variable depth and quality materials	Variable quality and / or uncontrolled filling	Uncontrolled poor quality / unsuitable filling	
<b>THICKNESS OF SOIL (M) AT THE LOCATION OF:</b>					
Trenches & beds	> 1.4 m	>1.4m	< 1.4 m	< 1.2 m	
Subsurface irrigation	> 1.5 m	1 - 1.5 m	0.75 m	< 0.75 m	
<b>PERMEABILITY</b>					
Permeability *** (limiting horizon) (m / day)	0.15 - 0.3	0.03 - 0.15 0.3 - 0.6	0.01 - 0.03 0.6 - 3.0	> 3.0 < 0.03	
Permeability **** (buffer evaluation) (m / day)	< 0.3	0.3 - 3	3 - 5	> 5	

\* Landslip assessment is based on proposed hydraulic loading, slope, profile characteristics and past/present land use  
 \*\* 9<sup>th</sup> decile monthly rainfalls  
 \*\*\* Saturated hydraulic conductivity measured in situ  
 \*\*\*\* Saturated hydraulic conductivity estimated from AS/NZS 1547:2012 and database.

## 4. SYSTEM DESIGN

### Outline:

- *how the system selection and general design parameters address the findings in Table 1;*
- *how onsite system treatment complies with EPA Code of Practice Standards; and*
- *what management strategies are in place to ensure ongoing compliance with the COP.*

*Include the design loading results as per Table 9 of the EPA Code of Practice (refer to page 49 of the document, which can be accessed by clicking on this link*

*<http://www.epa.vic.gov.au/~media/Publications/891%203.pdf>).*

### 4.1 Wastewater Generation Calculation

*Include calculations of the anticipated volumes of wastewater that are likely to be generated from the proposed development, ensuring that any rooms that could be used as a bedroom (eg a study) are included.*

**Handy Hint No. 2:** *the standard EPA design calculation of **Number of Bedrooms + 1 x 150 litres per bedroom** must be used unless you have included a rationale and detailed design to justify a reduction in wastewater volumes.*

*(Note: the 150 litres per bedroom figure is to be used due to the high rainfall rates in the Shire, the fact that around 50% of dwellings are not permanent residences and the need for systems to be designed to cope with peak daily flows).*

### 4.2 Design Specifications

*Information provided in this section should include comments about:*

- *water usage (include projected usage rates)*
- *selection of system/standard of treatment required*
- *sizing of treatment systems*
- *load balancing*
- *zoned dosing (include projected nitrogen uptake rates)*
- *design and location of disposal field (including trench length if applicable)*
- *daily application rates*
- *size of land application areas*
- *reserve areas*
- *buffer distances.*

### Attachment:

- *fully dimensioned and accurately scaled site plan showing the location of the system, irrigation areas or other form of wastewater dispersal location, cut off drains and any buffer distances.*

## 5. OWNER'S INFORMATION - SYSTEM MANAGEMENT AND MAINTENANCE

*NOTE: this section should only be used if the LCA identifies a specific type of system.*

**Handy Hint No. 3:** *This section should only be used if the LCA identifies a specific type of system. It should be written with the needs of the landowner in mind to assist them in fulfilling their obligations in terms of ongoing maintenance of the system and the site, system monitoring and service contracts. Outline the management of the land-soil unit constraints and the day-to-day operation and maintenance of the onsite wastewater system.*

*Servicing / maintenance requirements and monitoring/inspection provisions must be included.*

*You may include comments around what must be done in terms of:*

- *effluent quality treatment standards (e.g. is it 20/30 standard)*
- *land application area requirements*
- *the distribution system*
- *soil renovation (i.e. application of lime/gypsum or import of topsoil)*
- *buffer planting and management*
- *vegetation*
- *cut off drains*
- *outfall areas*
- *fencing*
- *servicing and maintenance requirements / schedules*
- *requirements around the submission of maintenance reports to Council.*

*You may also like to include comments on the potential for, and what actions landowners could take in the event of:*

- *system failure and mechanical breakdown*
- *accidents*
- *operational breakdown; and*
- *maintenance breakdown.*

## 6. ASSESSOR'S QUALIFICATIONS AND INSURANCE DETAILS

*Please outline the qualifications that enable you to prepare a land capability assessment and details of insurances.*

## 7. ATTACHMENTS