



ENVIRONMENT PROTECTION AUTHORITY

Wastewater Code of Practice
Recommendations Report

February 2021

LIMITATIONS OF USE

This report has been prepared by MosaicLab on behalf of and for the exclusive use of the Environment Protection Authority Victoria (EPA) and the Department of Environment, Land, Water and Planning (DELWP).

The sole purpose of this report is to provide a report of the outcomes from scoping research with a range of stakeholders for the review of the Onsite Waste Management Code of Practice.

This report has been prepared in accordance with the scope of services set out by EPA and DELWP. In preparing this report, MosaicLab has relied upon the feedback provided in relation to the scope of the CoP review. EPA and DELWP can choose to share and distribute this report as they see fit.

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MosaicLab is a team of engagement practitioners and facilitators based in Victoria. We work with government agencies, community groups, industry and commercial organisations and support them to have meaningful conversations that lead to action. Our processes bring diverse people together to solve complex problems and make a positive difference to decision-making.

INTRODUCTION

BACKGROUND

EPA establishes the state-wide standards for protecting environmental and public health from onsite wastewater management through the Code of Practice for onsite wastewater management ('CoP' - EPA Publication 891.4), last published in 2016. Councils use the CoP, and other guidance materials, to set, assess and regulate the site-specific standards for onsite wastewater systems through issuing permits to 'install' and 'use' these systems.

The CoP has been written to support the onsite wastewater industry, regulators (State Government and Councils) and premise owners to design, install and/or manage sustainable sanitation and re-use systems in accordance with the Environment Protection Act 1970 and the State environment protection policies.

The CoP applies to wastewater (containing sewage) generated by a single domestic household or by multi-dwelling residential, commercial, industrial or institutional facilities. It provides guidance on:

- the selection, approval, management and maintenance of onsite wastewater management systems which treat up to 5,000 litres (L) of wastewater per day
- systems which treat up to 5,000 L/day of greywater to a quality fit for toilet flushing and cold-water supply to clothes washing machines and/or land application, and
- land capability assessment procedures and wastewater flow calculations for designing effluent recycling and disposal systems.

The CoP needs a review to reflect current science and industry best practice and also to be relevant as a key reference document under the new Environment Protection Amendment Act 2018, that is intended to apply from 1 July 2021. The last update was administrative in nature and was carried out in 2016.

The CoP will continue to be relevant as a key reference document under the new Environment Protection Amendment Act 2018 that is intended to apply from 1 July 2021, as state of knowledge.



PURPOSE OF ENGAGEMENT

The first stage of the project was to engage with key stakeholder groups to better understand the scope required for a formal review of the CoP.

The scoping review includes both:



The outcome of Stage 1 of the project is to understand stakeholders' views on the scope of the necessary updates to the various components of the CoP. The outputs will then be utilised to inform a future formal review of the CoP. This project is a joint collaboration between EPA and DELWP to deliver on action items from the implementation of State Environment Protection Policy (Waters) Implementation Plan and the 2018 Victorian Auditor-General's Office (VAGO) onsite wastewater audit recommendation 6.

The key stakeholder groups that use the CoP are as follows:

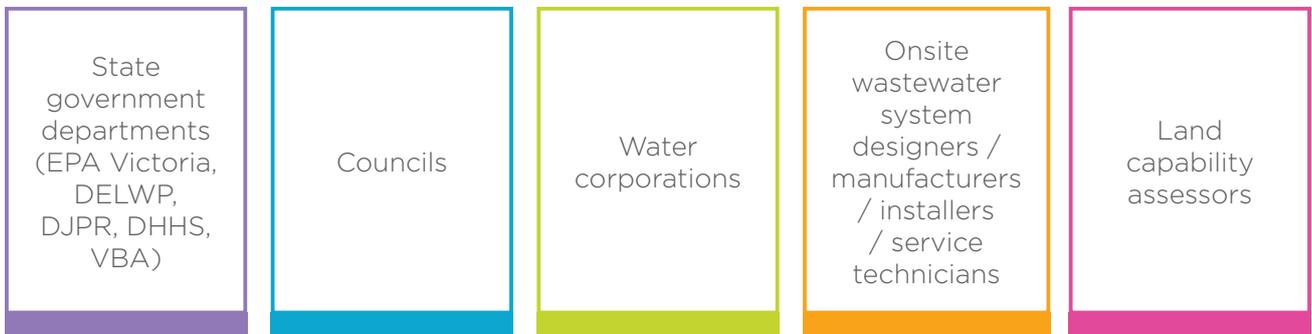
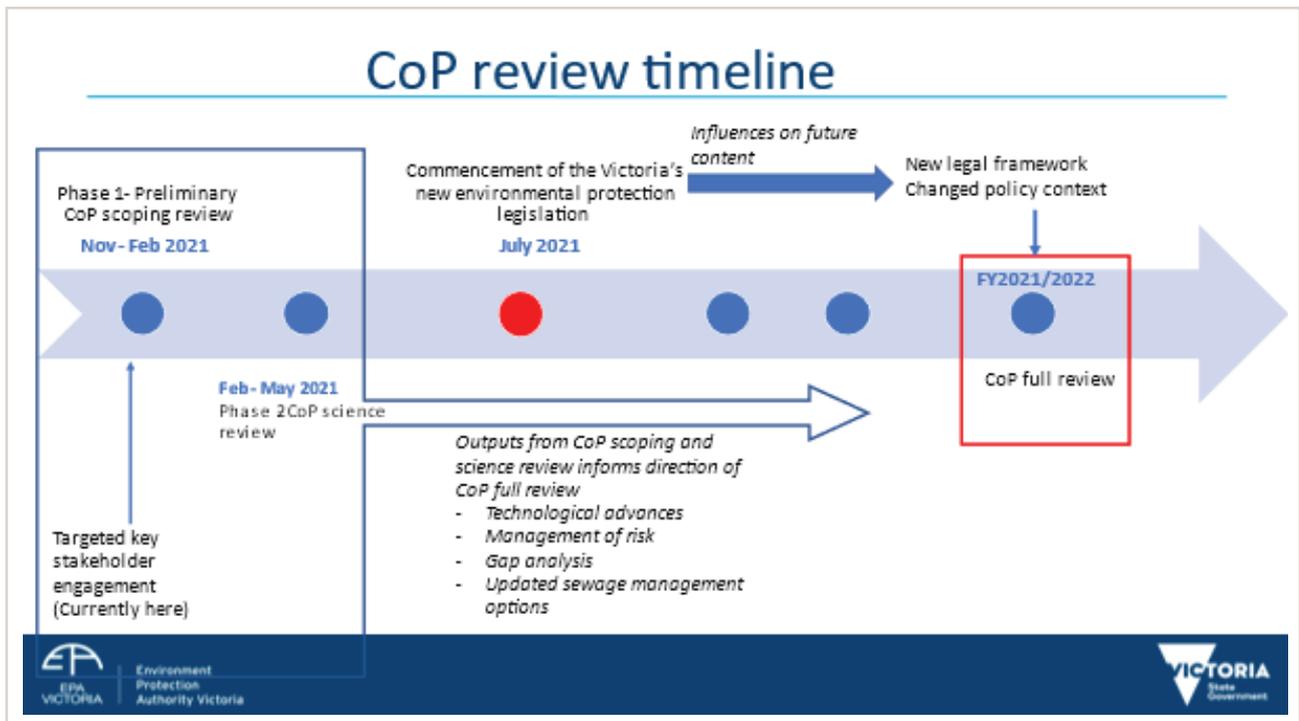


Diagram 1: CoP Review Timeline



METHODOLOGY

ENGAGEMENT METHODS

A range of different engagement methods were used to understand stakeholder sentiment across a range of questions. This engagement was led independently by MosaicLab, with representatives from EPA or DELWP present as observers to the process during the phone/online interviews.

Table 1: Engagement methods summary

Engagement method	Data Capture	Key Stakeholder Groups	Number of Participants
 Online workshop	Online collaboration tool	State Government including DJPR, DELWP, DHHS, VBA, EPA	13
 Phone/Online interviews	Verbatim interview notes	System designers/manufacturers/installers/services technicians	5
		Land Capability Assessment (LCA) practitioners	4
 Electronic Survey	Online survey tool	Councils and water corporations	16

LIMITATIONS OF THE DATA SET

A few limitations of the data set were identified:

- It was difficult to get participation in the interviews from system designers and installers. Those who participated self-identified as interacting with only small elements of the CoP so they didn't have significant amounts of input.
- Survey participants were proportionally higher in number for Councils and water corporations in comparison to other stakeholder groups. Councils are the biggest users of the CoP.
- The interview was less structured for those stakeholders (systems/ manufacturers, installers and service technicians and LCA practitioners) and many chose to talk about their experiences, rather than follow the structured questions.
- The depth of conversations was different for those engaged via workshops and interviews, and fully qualitative in nature (i.e., no demographic or other quantitative data was collected).
- Areas of the CoP less used elucidated less commentary.

RESEARCH ANALYSIS STEPS

1

Design

A roadmap of activities was designed for the project that brought together engagement around a series of questions that were consistent across all of the stakeholders. These questions were standardised to support the analysis, but there were additional questions added for the different interests and expertise of stakeholders.

These joint questions were designed to give a wide range of input across the stakeholder groups and their intent was to inform the scope of the review. Broadly, these questions were designed around eliciting an idea of where there were issues and what improvements could be suggested across the CoP review.

Predominantly the questions are qualitative in nature to support the understanding of the project team conducting a future formal review.

2

Combine, Clean and Collate

All data from the different capture tools was brought together using excel. Data was cleaned, deidentified and then rearranged for coding and analysis. Each question was ordered using a sheet for coding and then for summarising into themes. The raw data is collated and can be referenced separately for further clarity

3

Code the Qualitative Data

Qualitative data was then coded to break it down into themes. These codes were kept consistent across the data set in order to be easily comparable across the questions.

4

Analyse

Once all data had been summarised and indicative quotes presented and tidied, themes were analysed across all of the different data sets. Using the coding, data sets were easily brought together to show repetitive themes from stakeholders. Those themes most commonly mentioned are viewed in this order from most, to least mentioned in that question.

5

Interpretation

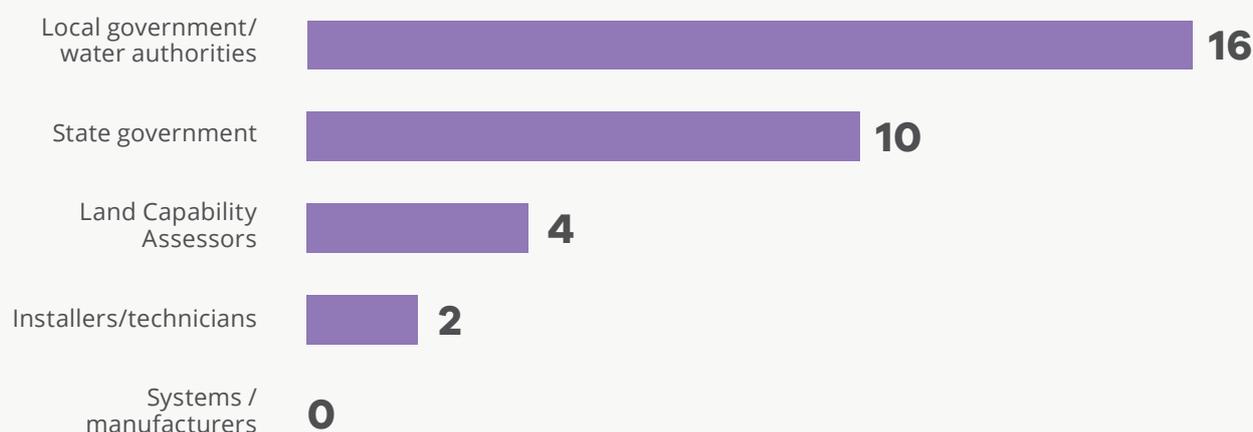
These core trends have formed the basis of a set of scope recommendations for the review. As some of the themes in the feedback require significant resource in understanding (e.g. may require scientific and technical review).

ENGAGEMENT FINDINGS

	#	Question detail	Page Numbers
Q	1	What is your main use of or experience with the Code of Practice?	9 - 10
	2	Please describe what changes need to be made to improve Chapter 1. Please include specific sections and details.	11 - 14
	3	Please describe what changes need to be made to improve Chapter 2. Please include specific sections and details.	15 - 18
	4	Please describe what changes need to be made to improve Chapter 3. Please include specific sections and details.	19 - 21
	5	Please describe what changes need to be made to improve Chapter 4. Please include specific sections and details.	22
	6	What are the most critical changes to the Code of Practice that need to occur?	23 - 26
	7	Specify areas where improved or strengthened Government policy direction is required?	27 - 29
	8	Does the Code of Practice have adequate guidance for both sewered and unsewered areas? if no, comment	30
	9	Would there be benefit in including: graph of results	31
	10	What update to the Code of Practice is required to support management of legacy systems issues? (such as eliminating flows to stormwater)	32 - 33
	11	What updates to the Code of Practice are needed to capture the impacts of climate change?	34 - 35
	12	Government alignment	36
	13	What can be done to strengthen CoP Land Capability Assessment (LCA) section of the MAV document on "Onsite domestic wastewater Land Capability Assessment Framework"?	37 - 39
	14	CoP currently references MAV's document of Victorian LCA framework (as amended). Is there value in repeating the LCA procedure in the Code of Practice or is it sufficient to link to the LCA framework or combining both documents?	40 - 41
	15	Technical aspects of the LCAs – Are there gaps in the LCAs that requires better explanation or an update to current best practice (such as clarity about testing and gypsum requirement levels)?	42
	16	Under what circumstances- should an LCA be required?	43
	17	Are the primary, secondary effluent standards and recommended rates for treated effluent in line with current science and industry best practice?	44 - 45
	18	Advice on the review	46 - 47

ENGAGEMENT FINDINGS

Q1 What is your main use or experience with the code of practice?



Local government/water authorities

Count

Predominant use as a key reference document in planning permit applications, DWMPs and assessment of LCAs.

16

'As a regulator (Local Government) it is used as a technical guide and a strategic document.'

'Issuing installation permits for onsite wastewater systems'

'The assessment of land capability assessments submitted within planning permits applications for dwelling's in potable water supply catchments'

'Using to assess onsite wastewater system applications and planning applications made to Council, also self-education purposes – I reference CoP when responding to enquiries from public and plumbers'

'Use it when assessing planning and septic applications or to give advice to owners/ plumbers, etc.'

'It is a guiding document that we use for Wastewater applications and installations'

'As a reference document when draft our DWMP.'

'Referral authority, assessing risk to water quality in drinking water supply catchments posed by development'

'Main use of CoP has been to aid in the review and assessment of planning application and associated LCA's that are required with a planning permit application.'

'I use it as the key reference guide when assessing a referred planning permit within a water catchment.'

'This document is used as the benchmark through which site-specific objectives are set. Its legal weighting is particularly useful when dealing with issues – complaints, challenges to decision made and provides Council with the necessary guidance to remain consistent in decision making in relation to domestic wastewater'

'Property and catchment LCAs to determine a capacity to contain and need for sewer service - Certification, design and maintenance of onsite treatment systems - Connection of properties in sewerred areas.'

'As a local government Environmental Health Officer for assessing septic tank applications and land capability assessments, and providing advice to property owners, plumber's and builders.'

'Issuing Permits to install and use onsite systems. Understanding acceptable conditions to place on permits for installation purposes of onsite waste water management. Determining the type of system first, or second to install'

State government

Count

10

Regular and varied use of the CoP from regular to not at all. Some acting as a bridge providing guidance between state government policy and those that use the code to advise plumbers and community groups. Some knew of the CoP and its importance as an instrument but are at a distance from its use.

'Operationally council environmental health units and public health concerns - wastewater being one. Today outbreak disease control. Pretty good feel from discussions but not involvement directly'

'Crossover with Local Government general awareness - not specific involvement'

'Use the Code regularly'

'DELWP- CALP ACT linkages'

'Technical content, assist councils with Code'

'Teach the Code to plumbers and provide technical advice to community/practitioners on how to apply the Code, and integrate the Code with the Standard and how it applies to local jurisdictions'

'Use the code for technical advice'

'Ties with recycled water - potentially exploring how this fits in to support councils, water corporations and the community to interpret the code'

'Important instrument in env and HH protection (not a user per se)'

Land Capability Assessors

Count

4

All LCA practitioners primarily use for doing assessments. Some have been heavily involved in the development of the current CoP. Broadly see the CoP as essential to setting the framework by which they do their assessments as well as a technical reference document.

'Been involved in the code since the very first issue. Involved since 1975 and I am now 88. Three review processes so far and reasonably familiar with the entire code.'

'See the code and the MAV standards and SEP as setting boundaries. Sets the boundaries for the work that you do (as an LCA practitioner)'

'Typically more interested in chapter 3 onwards and the index - site and soil assessor, hydraulic flow and organic loading rates for developments, setback distances to environmental features, in accordance with best practice.'

'Use it as a practitioner assessor. Based in NSW, but do some work in commercial and domestic scale systems (in Victoria). Based our training on it as one of the ref docs.'

'Base training on the 1547 AUS standard and the CoP 891.4 and also the MAV document - LCA framework. Involved with these over a long time. Wrote MAV doc and reviewed in 2014.'

'Lots of onsite disposal work in Victoria, when you get above 5000 litres. We undertake LCA's in Victoria. Tend to be contacted when people have trouble getting apps through the EPA.'

Installers/technicians

Count

2

Installations of septic systems and associated permitting processes. Two respondents.

'We are septic installers, come across the CoP with the health department'

'Installations (of septic systems) we work closely with Local Government around permits. Don't have a lot to do with the CoP apart from early engagement with the council to ensure that they know the guidelines'

Systems / manufacturers

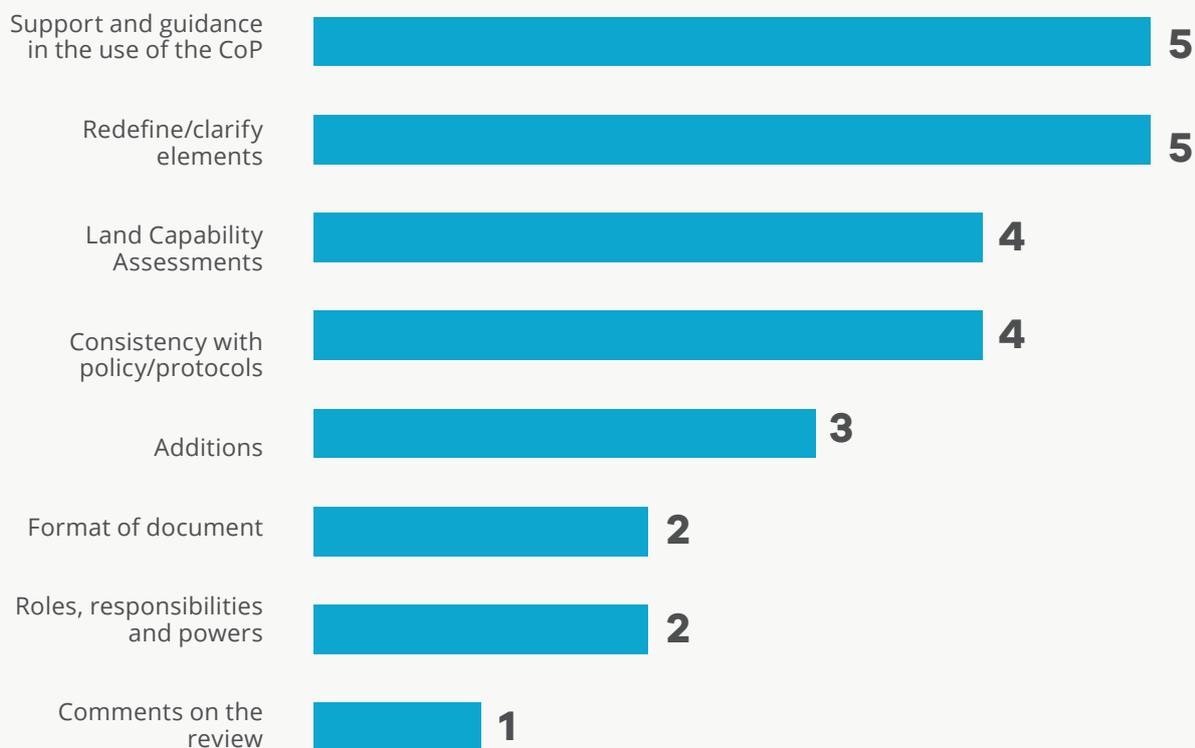
Count

0

No data

No data

Q2 Please describe what changes need to be made to improve Chapter 1.



Support and guidance in the use of the CoP

Count

5

Use of the CoP as a guide to set the quality standard of land capability assessment reports. Further guidance, templates and information requested from Local Government around the support and use of the CoP. Support in the application and assessment of permits, approval processes and LCA reporting requested as well as updates in the CoP of new EP Act and Regulations.

'Example templates for service technician reports would be beneficial'

'Section 1.6 Cumulative impacts needs to be more helpful to councils, who insist that if land within an application is capable than there are no cumulative impacts. When asked about failing on-site systems, councils will fall back on not having any information. Cumulative impacts must be assessed with council data (on failing systems) as well as the application. This may mean that even if the land is capable, it may be objected to because of failing systems in the area.'

'Section 1.8.4 Building surveyors - can you please inform EHO's what protocol we should follow when a Building Surveyor issues a building permit in a non-reticulated sewer area?'

'Section 1.9.1 Manufacturers' approval process - what process does the EPA have to update their website with the correct/current information in relation to conformance numbers? There is currently a number of treatment plants on the website that have expired conformance numbers. Would it be possible to have an alert on these systems so that the EPA could email the manufacturers three months before the Conformance number expires?'

'Section 1.9 Guidance requested on approval process for onsite systems managed by Water Authorities. For example, permit requirements.'

'Details of the new Act and Regulations (for Local Government) and advice on how to manage poor land capability assessment reports. This can be a time consuming and difficult process when at the end of the day we should be able to trust the reports we receive.'

% stakeholder comments: 100% Councils

Redefine/clarify elements

Count

Clarity on the types of OWMS systems approved for use in Victoria and the approvals and certification process. Clarity around the peak loads and reasoning.

5

'Need clarity that 5000 litres/day relates to one septic system and not the cumulative daily load on one single land title where multiple uses.'

'Further clarification required to address approval of new and emerging technologies including an endorsed testing methodology and certification process.'

'Section 1.5 please provide clarity around an intermittently generated peak load. What is acceptable 5500L/day to 7500L/day?'

'Section 1.6 Further information required on pump-outs i.e. greater clarity on the circumstances when and where they can be installed.'

'The types of OWMS will need to be outlined and clarified ie permit transfers, amendments, exemptions.'

% stakeholder comments: 100% Councils

Land Capability Assessments

Count

All participants raised concerns around the lack of qualification specifications for Land Capability Assessors and that there is inconsistency in how assessments are done. Ideas for what this could look like include accreditation, affiliation and qualifications. Concerns raised around avenues for accountability for poor quality or inaccurate work. Guidance requested also around what EHO's role in the assessment process.

4

'It would be useful for the Land Capability Assessor section to include more specifics on qualifications and memberships suitable for conducting LCAs. Councils should not be making their own criteria for this or approving assessors.'

'Changes to the code need to be reflected in any new legislation. The code currently states that 'the assessor must have suitable professional training and experience' (page 10). The new code should list the qualification that is required for a LCA assessor to be able to produce a LCA and provide their report to Council.'

'1.8.3 Acceptable Land Capability assessors qualification should be listed such as units if competencies and degrees, or members of professional member bodies and even better licenced.'

'There is nowhere to report Land Capability Assessors who undertake poor quality and inappropriate work. Land Capability Assessors who undertake inappropriate work should be penalised and not able to carry out the work. Their accreditation can be removed if they dishonour their accreditation as they are put people lives and environment at risk.'

'1.8.3 Land capability assessors - very clear and strict direction to be provided on what is expected of a LCA, if site and soil constraints have been identified they MUST include mitigation measures. We frequently receive LCA's that do not include a design of the effluent disposal area. Instead a request to engage an 'irrigation expert' to design the effluent disposal system.'

'Can the EPA include a list of appropriately qualified LCA assessors on their website? What do you suggest Councils do with subpar LCA's? Can the EPA have a program to 'assess the capability of the land capability accessor' similar to what DHHS does with food auditor?'

'Can you also provide guidance material on what EHO's need to assess when they receive a LCA - the Victorian Land Capability Assessment Framework is a good start but needs further work.'

% stakeholder comments: 100% Councils

Consistency with policy/protocols

Count

Consistency and current legislation updates required for Chapter 1

4

'Section on legal framework needs to ensure consistent application of the CoP, the EP Act, the regulations and the SEPP'

'Updates that would need to occur due to the upcoming changes in legislation.'

'Changes to the regulations will need to be reflected in this chapter.'

'Key things are that it needs to be up to date with any reviews to current policy. Some divergence between state code and Australian standard. Clarity on their differences and which takes precedence. Equally, if they are different, need justification for their differences. neither the standard or the code provides explanation, look at consistency, make determinations on the why of certain things.'

% stakeholder comments: 100% Councils

Additions

Count

Additions requested including new legal requirements, additional lists for guidance, backlog programs and water authority role and rights to enter properties.

3

'Clearly explain proposed new legal requirements'

'Section 1.8.7 - important that a list is provided when a Septic Permit to Alter is required to ensure consistencies across local government areas and to manage owner/occupiers' expectations'

'Section 1.8.8 - additional information about role of Water Corporations: Powers of Water Authorities under Water Act to enter properties and inspect septic tanks and other powers listed in Section 183'

'Delivery of backlog programs to provide sewer to existing areas where there are failing onsite systems'

'Additional material around Water Authorities managing onsite systems as part of sewerage schemes, such as STEP/ STEG.'

% stakeholder comments: 100% Councils

Format of document

Count

Calls for simplification and reduction of text, relevant examples and navigation ease

2

'This section is very wordy and could be simplified section by section, perhaps using relevant examples.'

'Difficult to read - information overload - and find answers easily'

% stakeholder comments: 100% Councils

Roles, responsibilities and powers

Count

2

Clarity around competencies of service technicians requested, and roles and responsibilities for Local Government and associated promotion of this.

'Section 1.86 Service technicians training and unit of competencies to be listed in the section. As it is, open for interpretation.'

'Need to clarify who is responsible for the CoP. It says it falls to the regulator, yet local regulators haven't caught onto that. Suggest an education process that supports this to know their responsibilities for local government. '

% stakeholder comments: 50% system designers and 50% Councils

Comments on the review

Count

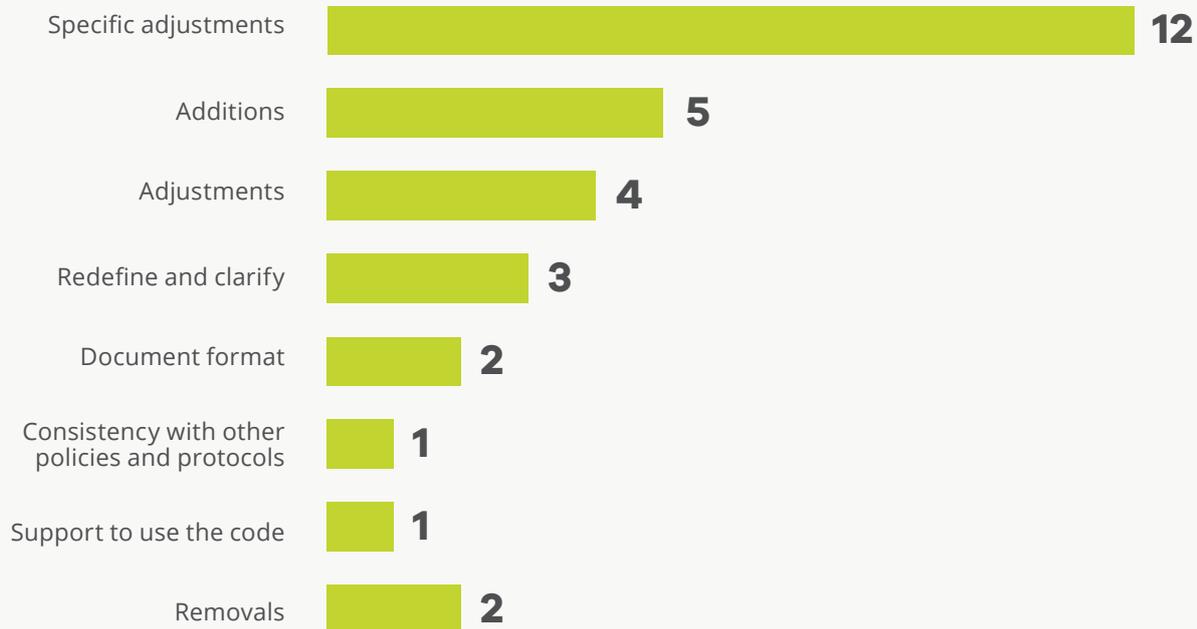
1

Bring in experts on onsite wastewater management onto the CoP consultation process. Review and contrast literature from other states and peer reviewed literature.

'Always good to get people who have a depth of expertise and check (CoP) them over, and review for new practice and incorporate changing views on other states lack of ref to peer reviewed research, needs to be challengeable.'

% stakeholder comments: 100% LCA practitioner

Q3 Please describe what changes need to be made to improve Chapter 2.



Specific adjustments

Count

12

Concerns raised around small lot sizes and rationale as the calculations are seen as at odds with the Australian Standards.

Concerns over soil types and irrigation rates and inconsistency between this standard and others in the world around irrigation.

Concerns raised over alignment of effluent water quality standards outlined in the Code with effluent water quality standards outlined in AS1547.3: 2017

'Section 2.4 there is a discrepancy where effluent dispersal is used in the heading and then in the first sentence it talks about effluent disposal'

'Table 1 dry composting and incineration toilets approved for unsewered areas. This could prove an amenity issue for small lots. Would prefer a minimum size rural lot or a rural planning zone to allow sufficient land area to dispose of compost sustainably and to protect the amenity for neighbours'

'Section 2.2 alignment with AS1547.3:2017 with an additional treatment level of Advanced Secondary (10/10/10) of all waste, not just greywater'

'Don't understand why advanced treatment systems that clean effluence to a 10/10/10 standard aren't included, they are in other states. Vic NSW border work - people trying to put in systems not recognised. Currently recognised for gray water but not black water and no discussion at all. Not matching up.'

'Section 2.2 states that subsurface irrigation is mandatory in NZ, Germany and the USA.... but in this CoP it can be done - all other jurisdictions around the world for community and environmental health, mandate using chlorine for sterilisation of water. In Australia, we use pure chlorine tablets causing more damage. Trichlors used in pools as a stabiliser, won't break down in the sun, so when you spray irrigate, you have residual chlorine. We support the fact that they should not have above irrigation, but don't support the only way you can secondary treatment is it has to be a mechanical advice.'

'Section 2.3.5 small lots – unsure why its specifically 4000 m when it doesn't need to be - other states don't have the same rule, because they recognise, 15.47 2012 standard, around soil classification and loading rates, all over Australia they use that standard, reduces residential development in rural areas. If you have an Australian standard, where have the calculations come from to stipulate in this code, that the science isnt supported or justified, not aligned.'

'Page 27 Table 3 soil types and irrigation rates. Illogical, contradictory and patently wrong. Range from 2 up to 5. Further in the standard, we are required to assess the nitrogen uptake. Only allowable vegetation is pasture grass. Rye-clover mix, is a good option with a max irrigation rate is 2.5 mm a day. Also, why do we have maximum allowable irrigation rates.'

% stakeholder comments: 100% Councils

Additions

Count

5

Note that rhizopod systems are not included in the current CoP. Reticulated sewer connection is omitted and suggested that the council should be given power to forcer connection to centralised sewers. Request for specific information on evapotranspiration pod units, their location in this chapter and their efficacy. Information requested around section 2.3.4 and salts including how to install systems that reduce the level of salts.

'There is no mention of Rhizopod systems which have been successfully installed and used within parts of Victoria that have extreme land area constraints.'

'This chapter does not include any information about towns being connected to reticulated sewer, to ensure that properties with existing wastewater systems connect to the centralised sewer system. There should be a monetary incentive for property owners to connect to the centralised system within a 10-year time frame. The Council or Water Authority should be given the power to force the property owner to connect to the centralised sewer if it hasn't been connected by a certain date (p16). Currently the only way to make a property owner to connect to sewer is if the system is failing and causing a health risk or is in a high-risk area.'

'Section 2.3.7 Pump out tanks - need specific information on Evapotranspiration pod units (do they belong in this section?) and how effective they are in comparison to other systems, how they can be utilised and where (e.g., not in very high rainfall areas) and what treatment yield in terms of quality.'

'Section 2.3.4 Salts – information to be explored and provided on how property owners, plumbers and LCA assessors etc can design and install systems that reduce the levels of salts in the effluent including how the effluent can be treated/disposal methods that ameliorate salt levels. Table 3 note 2 page 27. In relation to reducing the application rates to sodic and dispersive soils we need further information included in the future CoP on how these soils should be managed so that EHO's, plumbers, LCA assessors and homeowners have a clear and concise understanding of what is required. For example, the AS 1547:2012 states that that soils with poor permeability should be treated with Gypsum 1kg/m2 – soils are not uniform, or uniform in their lack of permeability.'

'We need to raise our expectations of LCA assessors and ensure that the CoP has a section that states that where soil samples are shown to be dispersive Class 1 & 2 (Emerson Aggregate Test) then the correct Gypsum dosing needs to be scientifically calculated (which the laboratories can easily complete) AND a management plan provided within the LCA that goes into detail about follow up dosing's of Gypsum – typically six months/yearly etc.'

'Chapter 2 table 2, recirculating evapotranspiration trench needs to be added in there. They can be used for both primary and secondary retreatment.'

% stakeholder comments: 100% Councils

Adjustments

Count

4

Clarify and refine the criteria of minimum lot sizes.

'Information more relevant to homeowners e.g. reducing wastewater would be more useful moved into a appendices or separate home owner guidance document.'

'Continue to highlight risks associated with small lot size in unsewered areas.'

'Example of the wastewater treatment compliance testing facility. No system has currently passed the advanced secondary effluent system management. 2.2.3 - none has passed under the new standard. Convert use of BOD to COD - can provide.'

'Lot sizes - minimum lot sizes, further refinement for minimum standards, conflicting rural council advice. Nothing set in place, but suggests a 4000 m lot size. Prior code, anything smaller than 1 hectare. Wondered whether this could be verified, if there is a minimum lot size. Denial of applications - esp with set backs. What is the specific cut off limit outside of rule or reg, loose limits from water authorities of 4000m rule of thumb'

'2.3.5 Small Lots must be updated and provide clear guidance. Lots less than 4000m² should be strongly rejected, the issue is not that wastewater can't be treated on small Lots, it is that the Land Application Areas cannot be protected well enough.'

% stakeholder comments: 50% LG, System designers 25% and 25% Councils

Count

3

Redefine and clarify

Clarify processes and certification methodologies for new effluent disposal and recycling systems

Require mandatory requirements for sub-surface irrigation of secondary treated effluent.

Design for attenuation of nutrient load of the effluent. Further info on setback distances and ideas and questions around what is defined as edible and therefore no contact.

Request updates on technology and review and revise guidance around wick trenches.

Require mandatory requirements for sub-surface irrigation of secondary treated effluent.

'Further clarification for design, installation, construction, maintenance and monitoring requirements of new effluent disposal and recycling systems where there is no Australian/NZ standard reference.'

'Require an endorsed testing methodology and certification process be incorporated in order to approve new technologies for effluent disposal systems'

'Section 2.2.2 make sub-surface irrigation of secondary treated effluent mandatory in Victoria except for certain scenarios/discretion of the local Council'

'Insist that septic tank systems being installed into soil categories 1 to 3a are designed to attenuate the nutrient load of the effluent - soil remediation and importation of quality topsoil to improve DIR, improvements to the treatment train and other methods to attenuate the nutrient and salt levels of the effluent etc.'

'Table 2 page 21. Further information required on setback distances required between vegetable beds and effluent disposal areas. Note 3 page 21 states treated sewage/greywater must not come into contact with the edible parts of herbs, fruit or vegetables.....what about planting edible crops such as cane fruit (raspberries etc.), tomato vines in close proximity to the effluent disposal field where the effluent is disposed subsurface? Guidance is required on an appropriate setback.'

'Updates on availability of technology...a lot of discussion around wick trenches, better understanding and clearer guidance on them required. They have been misunderstood in Victoria.'

'Alignment with other guidelines.'

% stakeholder comments: 75% Councils 25% LCA

Document format

Count

2

Difficult to find information and wordy. Suggest clearer structure.

“Specific sections to describe different types of waste treatments, diagrams, examples. Highlighting important information/requirements as it’s hard to find specific information in the current formatting/layout.”

‘A little wordy in places, rather than removing wording the paragraphs could be structured a little better to provide clarity.’

% stakeholder comments: 100% Councils

Consistency with other policies and protocols

Count

1

Issues with protocols not being followed around septic permit processes.

‘Update 2.1.3 to reflect the latest onsite and cluster technology . Onsite wastewater management systems including pump-out tanks to be installed or altered on Crown land must obtain a Septic Permit. Council regularly experience issues with DELWP contractors who chose to not undertake the Septic Permit process and do not understand the risk associated with wastewater. Therefore provide inappropriate documentation and there is a lot of back and forth. the Septic Permit process provides a framework and all parties expectations are manageable’

% stakeholder comments: 100% Councils

Support to use the code

Count

1

Indicating the need to include diagrams to support council to use code on how to construct sand filters. Council make own diagrams to suit. Inconsistent approaches to installing sand filter treatment systems.

‘Sand filters (also in appendix G). Not enough detail about how these should be constructed, a diagram would be beneficial as there is no diagram within the Australian Standards. Council has had to make up our own diagrams. There is a lot of inconsistency with installation of these treatment systems in one Council. I would expect even greater inconsistency across the state.’

% stakeholder comments: 100% Councils

Removals

Count

2

Request for both dry compost in sewerred areas and wick trenches to be removed from CoP. Remove caveat around secondary treatment effluent discharge into absorption trenches.

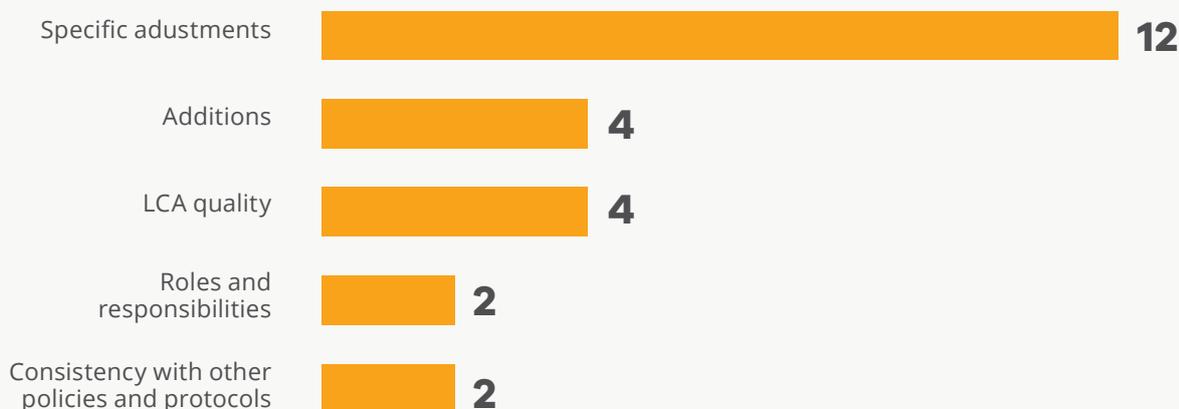
‘Dry composting toilets should be removed as an option in sewerred areas.’

‘On page 27, the requirement that Secondary Treatment effluent is not permitted to be discharged into absorption trenches should be removed. Often when a property has sufficient fall it is possible to install a Sandfilter System which can gravity feed into absorption trenches, thus removing the need for a pump and a filter which are both problematic.’

‘Remove wick trenches’

% stakeholder comments: 100% Councils

Q4 Please describe what changes need to be made to improve Chapter 3.



Specific adjustments

Count

12

Detailed feedback highlighting a diversity of typos, questions, perceived inconsistencies, requests for clarity.

'Typo at the bottom of page 39 should state 'or reduce' not 'or reduce'

'Section 3.9.1 - would be useful to provide a diagram to demonstrate angle of repose, and further detail.'

'Bores - information on how to confirm a bore has been properly decommissioned'

'Section 3.3 commercial premises explanations beefed up in particular daily wastewater flow rates and organic loading rates for different type on industries. Confusion surrounding food business daily wastewater flow rates and organic load rates, they are sometimes classified as a Restaurant or café.'

'Table 4 Public toilets and community halls and function centre wastewater a flow rates and organic loads are often disputed between Council and the Land Capability Consultant.'

'Table 4 Remove the household full water-reduction fixtures design hydraulic flow rate of 150L per person per day. From experience, Domestic Design hydraulic flow rates for water supplies should be based on at least 180 l per person per day at bear minimum. Post Septic Certificate to Use, owners remove water restrictors, replace water efficient plumbing fixtures and Council officers are not permitted into buildings due to legality restrictions. Those with rainwater, use a lot more that their allocated 150 L per person per day when water is available during winter when the land is saturated, the time septic system is underdrain. Therefore, septic systems fail because they are undersized because the full water reduction calculations are used.'

'3.5 and Table 4 need to be less complex and provide a clear example of application of flow and organic rates to ensure systems potentially generating <5000L/d are picked up.'

'3.7.2 page 38 indexing valves – we receive a lot of negative opinions from plumbers on indexing or sequencing valves. Specifically, that they gum up and cease working over time, which leads to one zone (typically one half) of an effluent disposal field receiving the full dose of effluent. Can manual valves be an option/included in the future CoP?'

'Page 27 the CoP states that secondary treated effluent to absorption trenches can have a greater negative impact but on page 38 absorption trenches/ETA beds are listed as being suitable for secondary treated effluent.'

'Secondary treated effluent should be disposed of to the biologically active part of the soil – topsoil/ A horizon/ rootzone which means it has a greater distance to travel before reaching ground water etc and will therefore have a greater level of attenuation than being disposed to a trench 450/550mm below ground level.'

'3.7.2.1 - refer to drip irrigation application method. prefer drippers - drippers have issues, they block up over time. then owner will have a bypass.'

'3.9 Unsure why the CoP is using Sydney Waters setbacks'

'Table 9 refers to the standard 15.47 2012 or go with your own, don't go with both. gone away from what they recommend together. 15.47 is quite accurate with soil classifications and loading rates. Referring then going against it with different data.'

'3.10.2 - Drip irrigation reserve, not required - chlorine based trenches, if you have to have a reserve area should be applied to all areas.'

'Section 3.10.2 - you don't need a reserve area - it needs to be reworded. Reserve is a plan b. EHO's bundled up an EPA person and said we have a whole lot of blocks and cant fit a reserve. instead of saying use a reserve if you can, they said you don't need them. should be included.'

'Table 5 - page 41 - refers to setback distances under certain conditions. In several cases, the notation doesnt correspond to the correct note. E.g. wastewater escarpment, says see note 12, if we look there, it says if land applies adjacent, should say note 11. A cutting or escarpment . Its a typo.'

'Note 15 - table 5 note 15 – not that applies to schools needs to be clarified as it applies to schools - you have to separate the irrigation area from a child's grass area... what the note really means is sports grounds is watered with pop up sprinklers. This needs to be clarified and more stringent because there's kids involved.'

% stakeholder comments: 100% Councils

Additions

Count

Additional technical information to assist in raising the quality of LCAs including gypsum, flow rates, land application systems, and procedures for estimating potential peak hydraulic loads.

4

"In the meantime, can we ensure that when sodic/dispersive soils are found that they the correct dosing requirements of gypsum are provided by the laboratory and stated in the LCA instead of the stock standard 1kg/m2 measurement that the Australian Standard contains? A management plan containing information on future dosing requirements and possible soil testing (to confirm cation exchange capacity is within parameters). Some guidance for LCA assessors on surge loads and the need for BOD attenuation.

Sections on high flow rates, high organic loadings, commercial properties need to be expanded and more guidance and examples provided. LCAs currently mostly not adequately assessing these properties'

'Section 3.7.2 there needs to be improved guidance for land application systems. We found non-containment of properties which an LCA has indicated is suitable was most often related to poor design or installation of irrigation. The CoP should include guidance in use and location of zoning, pressure management valves (DNL) on slopes, air release valves and flushing points. There should also be mention of the need to prevent significant disturbance of the soil prior to and during installation though actions such as landscaping, earthworks or compaction by construction equipment.'

'Section 3.3.3 procedures for estimating potential peak hydraulic loads (spa draining) and potential peak organic loads from commercial premises are not addressed in this Code. Please provide information on addressing peak loads. There has been a significant increase in of people starting businesses from their homes in regional areas. It would be beneficial to have guidance material to educate LCA assessors, plumbers and home/business owners that additional septic/surge tanks and/or balance tanks that timer dose wastewater to the treatment chain are necessary. LCA's that 'amoritizes' wastewater over 7 days yet the business is busiest or only operates on the weekend, no allowance has been provided for the surge load.'

'Section 3.7.1.1 page 37. The issue with a blanket statement that allows the disposal of primary treated effluent to soil absorption trenches once a LCA has been conducted and a sustainable management program is feasible; is that this is flawed. It depends on the quality of the LCA and the LCA assessor! Councils are often in a situation where they are disputing the feasibility of disposing primary treated effluent to soils with poor permeability, but the property owner argues that have a LCA and states it is ok to do so Ultimately the assessor is being engaged by the property owner and has a vested interested in ensuring customer satisfaction. Again, I go back to my earlier point, having the option or ability of the LCA to be peer reviewed by the EPA would help curtail those within this industry that may be tempted to be disingenuous. Why not make the disposal of primary treated effluent to soil categories 5b, 5c and 6 prohibited?'

% stakeholder comments: 100% Councils

LCA quality

Count

4

Concerns around inconsistency of LCA report quality raised. Expand and enhance detail for what has to happen in an LCA due to low knowledge base of practitioners. Formal accreditation required for practitioners. A large majority of practitioners have a low knowledge base. Concern that the code shouldn't be the only source of expertise and knowledge, that needs to be in the skillset of the practitioner.

'Section 3.6 – LCA assessors should have a formal accreditation to provide some regulation of the area to ensure the assessments meet the required standards. This also provides some recourse or feedback where poor quality LCA's are submitted.'

'Section 3.6 - expand and enhance, what you have to do in an LCA. A large majority of practitioners have a low knowledge base. Need expertise for septic systems, rather than footings for example. Septics are not covered by the building code, if it was, then would be much more restrictive.'

'LCA practitioners are cowboys. The code does set boundaries and limits but shouldn't be the only expertise, doesn't provide you with the expertise that you need.'

'Section 3.6 emphasise the disparity in the standard of LCA's that Councils' receive. It is rare to receive a LCA that contains all of the expected information and covers its original remit. Moving forward I would like to see a panel of LCA assessors be kept on the EPA website so that Councils can refer customers to this list. Or even have LCA assessors submit copies of their LCA's to the EPA for peer review. In the event that Councils receive a poor/substandard LCA I would like the option of sending it to the EPA for a peer-review and subsequent follow up.'

% stakeholder comments: 75% Councils 25% LCA

Roles and responsibilities

Count

2

CoP seen as important in setting LCA requirements so that that council doesn't set its own requirements. Request for mandatory LCA's for busy commercial premises. New or altered onsite wastewater management systems, land capability reports and risk assessment reports asserted to be the role of the LCA not Council.

'Need to keep the section on LCA requirements, for Council to refer to instead of setting own requirements.'

'Council mustn't design the new or altered onsite wastewater management system or prepare land capability report and risk assessment report, this is the responsibility of the Land Capability Assessor. Land Capability Assessment requirements require to be visually appealing to assist Land capability consultants, plumbers, owners, and occupiers understand what is required.'

% stakeholder comments: 100% Councils

Consistency with other policies and protocols

Count

2

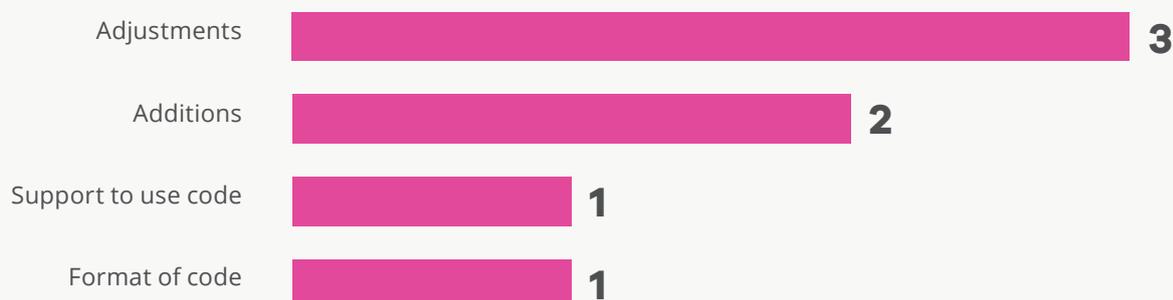
EPA 500 publication incorporated and reviewed. ASNZ alignment reviewed.

'EPA publication 500 should be incorporated and reviewed with the Code. Examples of various settings and their actual recorded loadings would be useful.'

'Descriptions of disposal methods are useful, but must be consistent with the ASNZ standards. Diagrams and perhaps photos of each would be useful, as not all plumbers access the standards. Not all ASNZ standard approved options are listed within the code - creates confusion - e.g. reln drain.'

% stakeholder comments: 100% Councils

Q5 Please describe what changes need to be made to improve Chapter 4.



Adjustments

Count

Concerns raised around health risks of Council controlling disposal of composted material as well as questions relating to scenarios in the CoP.

3

'The requirement of how to dispose of mature composted material in the garden is problematic. It is not practical for Council to control of when and how people dispose of this material and as such this poses a risk to public health.'

'We rarely come accross situations where land owners in sewerred areas want separate composting toilets. Most Councils would generally seek a better outcome and require the owner to connect all waste to sewer.'

% stakeholder comments: Councils

Additions

Count

Code should encourage connection to sewer where possible and not be cost prohibitive.

2

'Ensure the code refer to and encourage the connection to sewer where available is best practice'

'Mechanisms to enforce connection to sewer when available that isn't cost inhibitive to homeowner'

% stakeholder comments: Councils

Support to use code

Count

Guidance requested to encourage properties to connect to reticulated sewer including examples on how to size a greywater system.

1

'Some guidance/examples on how to size a greywater system/disposal area would be helpful and a very clear flow chart/process of how to get properties in sewerred areas but still on septic tank systems connected to reticulated sewer.'

% stakeholder comments: Councils

Format of code

Count

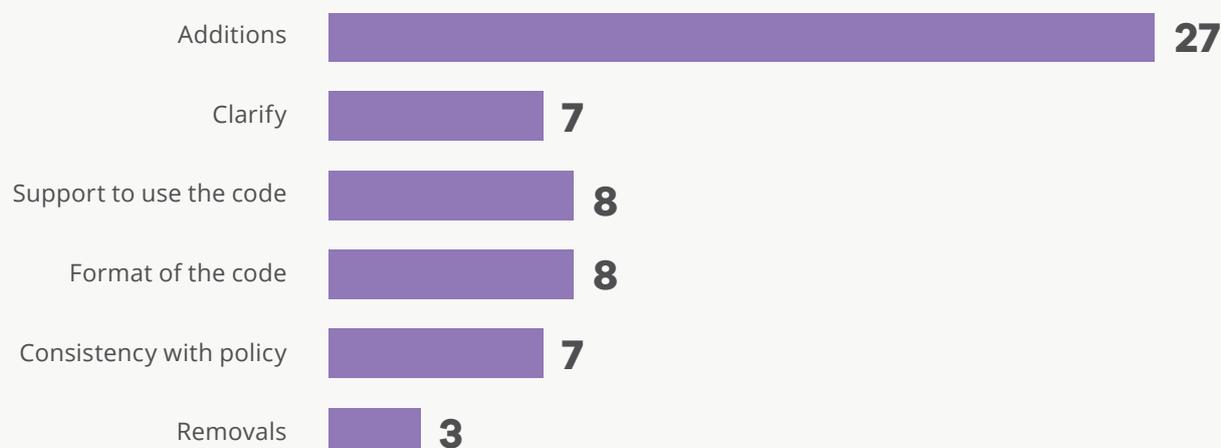
Diagrams requested

1

'More diagrams, if anything'

% stakeholder comments: Councils

Q6 What are the most critical changes to the Code of Practice that need to occur?



Additions

Count

Guidance, advice and clarifications required around various technology types, processes and permitting issues.

27

'Additional guidance for irrigation systems'

'Advice on wastewater quality requirements (Primary, secondary, Advanced secondary) and testing regimes.'

'Advice on what systems are suitable for what conditions'

'Advice, guidance on ETA pods'

'Council Septic Tank Permit process should be at Ch1 - clearer description of Planning Permit before any discussion of septic permit.'

'Disposal methods - guidance material on sizing Wisconsin mounds, reed beds – if still applicable and Rhizopods – again, if applicable/allowed in Victoria. Some data to show that Wick trenches actually work as prescribed. Technical information on the effective lifespan/shelf-life of a septic tank and sandfilter.'

'Exploring tertiary level treatment for wastewater and alternatives to sand for filter media. Sandfilters – make it mandatory to line the base of the sandfilter in EVERY soil type. Further information on recirculating sandfilters – pro's/cons.'

'Guidance on dealing with legacy systems'

'Guidance on Water Balance requirements (consider high rainfall water catchments)'

'Historic septic tank systems – guidance on how to deal/manage these systems. Maybe a permit renewal process whereby the property owner needs to renew their certificate to use every five years which would allow Councils to inspect and manage legacy systems on a case by case basis.'

'Improved commentary and guidance for the 'availability' of sewer, lot size and Zone of land (this is important because some Zones are silent on OWM as they assume sewer is available).'

'Include more troubleshooting type information on failing systems – e.g. irrigation, sand filters, AWTS'

'Increase the Commercial (less than 5000L) onsite wastewater management designs, operation and maintenance'

'More detailed examples for calculating sizing of effluent fields for commercial premises'

'More detailed sand filter design requirements with diagrams'

'More info and examples of commercial system design'

'More information on sand filters since they are not covered in the ASNZ std, diagrams also relevant'
'More information on system servicing (AWTS) and what steps Councils can take to ensure that systems are routinely serviced (especially those in rural areas where service technicians are in short supply or do not visit)'

'More stringent assessment criteria for LCA assessors with the ability to have poor quality LCA's peer reviewed by the EPA. On determining that the soil in an effluent disposal area contains dispersive soils the LCA's MUST contain the scientifically calculated volume of gypsum required to attenuate the soils rather than the obligatory 1kg/m² AND must contain information on future gypsum dosing intervals and potential soil testing'

'Notice and Order templates'

'Permit conditions on maintenance contracts / agreements for on-going reliability of systems'

'Permit secondary treated wastewater to be discharged into absorption trenches'

'Process for approving new technologies including endorsed testing methodology and certification process'

'Separate chapters for different types of systems and disposal/treatment methods'

'Setback distance changes (Chapter 3, table 5).'

should they be included - include detail for design, installation, construction, maintenance and monitoring requirements of Recirculating Evapotranspiration systems

'Standard Permit conditions for Councils to use on their Permits'

'Stronger support for forced connections'

'Subsurface irrigation dripper line concerns'

'Updating links'

'Use and promotion of alternative methods of disinfection rather than just chlorine with its potential by-product of trihalomethanes. If the purpose of the EPA is to protect the environment and public health from onsite wastewater management then this is something that needs considerable attention'

'Clear logic maps of processes from assessment to approvals'

Climate change (incorporation)

'Guidance on effluent disposal doesn't allow flexibility'

'It's not clear on using pump out systems, when and where its allowed'

'Lack adequate information for commercial properties - context for applying daily limits is not included (some facilities produce extra wastewater)'

'Need to add some guidance/procedure for the system to prove their performance (fit-for-purpose) if they are not covered by AS'

'Need to cover the small system below 1200 LPD, as new AS1546.3 2017 (Australian standard for secondary system only covers 1200-5000 LPD systems

new CoP should give more clarifications/definitions on the items related to sizes/distances'

'No information about tank size that is required - intended use / number of rooms not linked appropriately'

% stakeholder comments: 60% Councils and approx 40% State Government

Clarify

Count

7

Clear descriptions around small lots, connection to sewer requirement, owner responsibilities, setbacks, identification of high-risk sites. Technology clarification and guidance, sand filters. Additional clear reference material around technology and approval processes for treatment systems.

'Clear delineation of availability (or not) for small lots' *'Clearer description of Owner responsibility'*

'Clearer explanation of why setback dist are important and the application of SBD'

'Clearly define Land capability consultants and wastewater technicians' qualifications and accreditation'

'Onsite wastewater treatment systems certification methods need to be explained in more detail'

'Precise description when a Septic Permit to Alter is required to ensure the consistent approach being applied by all Council's'

'Sand filters - more guidance and diagram required (Chapter 2 and appendix G).'

'The CoP needs to recognise that some site where the risk is too high for any onsite wastewater system'

'The CoP should support the identification of high-risk site. Where likely failure of treatment, containment and/or disposal needs to identify where development is not appropriate'

'Update and clarify table 4 Minimum daily wastewater flow rates and organics rates to remove disagreements between consultants and regulators'

'Update references material and include the latest technology and information'

'Approval process for treatment systems are not clear'

'Aspiration for where we want to be in future for ODWM vs what is acceptable today'

'Connection to sewer requirement isn't clear'

% stakeholder comments: Councils + LCA practitioner

Support to use the code

Count

8

Templates, qualifications, consistency, communications support, standard permit conditions, training.

'As a minimum standard, LCA assessors to be fully qualified and licensed and comply with MAV template'

'Clearer and more specific guidelines/checklists/requirements for officers within local government to refer to'

'Constant head test for LCAs'

'Guidance material for new/inexperienced EHO's on what measures should be provided by the assessor in a LCA that has identified moderate or major site or soil constraints. Information/diagrams on what a septic tank system (balance tank & timer dosing) should look like for a premises/dwelling generating > 2000L/day. Guidance on addressing peak loads from businesses'

'Permit and Certificate to Use Templates promote consistency among Councils application of Code'

'Standard fact sheets in appendix that Councils can give to plumbers, home owners etc with info on design, maintenance, trouble shooting etc.'

'Standard Permit conditions for Councils to use on their Permits real time guidance to co-regulators (outside the written word)'

'Where there is a discretion of power (eg to assess risk) then need to ensure adequate training'

% stakeholder comments: Councils + LCA practitioner

Format of the code

Count

8

Document is unwieldy and detailed. Needs a better flow and simplification. Diagrams and illustrations will assist. Possible online publication. Segment for different users.

'Current CoP is very wordy and this makes it hard to find the answers that you need'

'Document needs to flow much better. At the moment, important information is hidden'

'I find it a very difficult document to work with. It took me years to get to know the details of this document''Include diagrams and illustrations to assist with communicating the Code'

'Inclusion of diagrams and examples'

'Simplify layout & content where possible - very complex document'

'Ability to update/amend- staged revision and update'

'Difficult to read - long paragraphs. Wordy, not written in a clear and simple manner'

'Improve structure by separating 'requirements' from guidance possibly two documents: CoP, guidance to the CoP'

'Long process to update the Code, as it is an incorporated doc in the SEPP (so it doesn't occur often)'

'Make the structure of CoP suitable for online publication such as provide links for details'

'Unwieldy - large doc and hard to find a particular detail (not segmented for different users)'

% stakeholder comments: 50% Councils , 50% State Government

Consistency with policy

Count

Consistency with ASNZ standards and state standards. If different, this needs to be justified.

LCA needs to be consistent with other guidance and address duplication with MAV framework.

7

'Consistency with ASNZ standards'

'Land Capability Assessment needs to be consistent with other guidance'

'Needs to incorporate more technical diagrams like earlier versions of the Code or South Australian Code, e.g. with clear designs of trench/ distribution installations on slopes, installations of weirs, etc.)'

'Confusion about authorisation, or force of the Code under new EP legislation'

'Duplication in LCA reference docs (Code and MAV framework)'

'Need to engage with MAV on how to integrate the two docs rather than maintain two separate but interrelated references, and remove risk of confusion from duplication in future' 'Variation from Aust standards- where the Code differs needs to be explained'

% stakeholder comments: 57% State Government, 43% Councils

Removals

Count

Removals suggested disposal fields, pressure compensating sub-surface irrigation systems and Wick Trench Systems

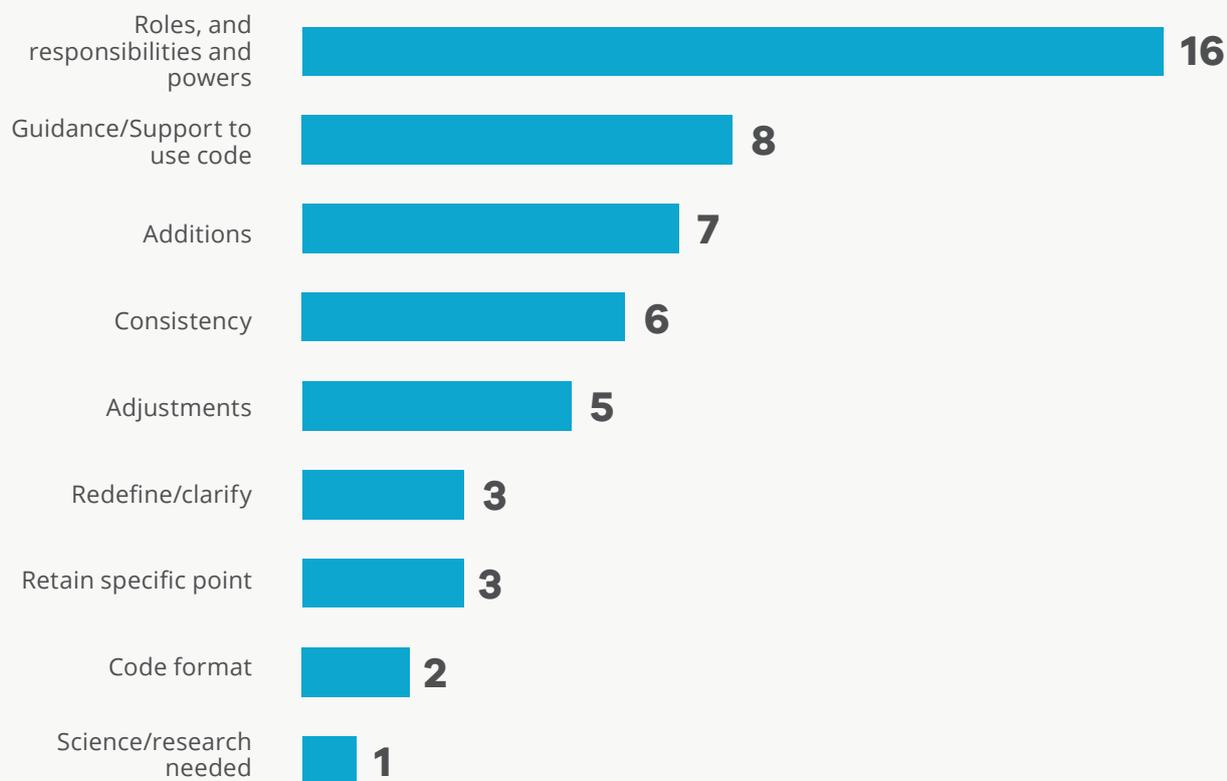
3

'Remove the requirement for pressure compensating sub-surface irrigation systems' 'Remove the statement that reserve wastewater disposal fields are not required'

'Remove Wick Trench Systems'

% stakeholder comments: 100% Councils

Q7 Specify areas where improved or strengthened Government policy direction is required?



Roles, and responsibilities and powers

Count

16

Code should be clear about the powers and responsibilities of who enforces the Code itself, as well as more particular powers of authority like conditions of entry, for example.

'Council officers are not authorised officers under the EPAct and therefore their enforcement capability is limited to the infringements'

'Powers of entry need to be strengthened; Powers on properties with no permit'

'Don't undermine the standing of the Code in VCAT - if its not in VPP, the Code needs to be specific about its authority in relation to other potential sources of 'standards' proponents may try to reference'

'No oversight of the ODWM regulator (LGAs) to make sure the Code is being implemented as intended'

'The unclear responsibilities across the shires'

% stakeholder comments: 75% State Government, 25% councils.

Guidance/Support to use code

Count

8

More guidance and support needed to enact the Code in complicated or unclear areas. Some recommended a data management system to support compliance with the code. Others mentioned an independent audit to support and encourage compliance.

'Guidance would be helpful on the owner responsibilities problematic if there are failing septic systems and there is financial hardship'

'An independent audit by the EPA of the performance of local government Domestic Wastewater Management Plans.'

'Database and management tools to record all onsite systems and send out alerts to council, land owners and relevant parties of actions to retain compliance with the code.'

'Regular training for Council officers to promote consistency and standardisation'

% stakeholder comments: 100% Councils

Additions

Count

7

Varied recommendations to make specific additions to areas of the code.

'Construction information on disposal system types should be more accessible to installers.'

'Connections to sewer (for example when a property connects to sewer and that new sewer line passes other properties that only have a septic system).'

'Currently there is no base line data sampling, the Code can include more information regarding sampling of wastewater systems.'

'A new permit (to use) should be requested when there is a change of property ownership.'

'How do we minimise the cumulative effect of domestic wastewater on the environment and public health? Answer: Improvement required on the treatment level and disposal methods of effluent – what is best practice overseas. What can we learn from their experiences?'

'Regulation of holding tanks - Plumbing regulation. Local govt. authority that regulates this.'

% stakeholder comments: All Council except 1 State Government

Consistency

Count

6

Greater standardised permit conditions requested to ensure consistency across multiple areas of the Code

'Instruct all onsite wastewater management systems including pump-out tanks installed or alter on Crown Land to go through the Septic Permit process.'

'Standardised permit conditions to create consistency among Councils and assist plumbers working across different Councils.'

'Consistency in application of code'

'Standardised permit conditions to create consistency among Councils and assist plumbers working across different Councils.'

% stakeholder comments: Mix of Councils, State Government, Service Installers/Manufacturers

Adjustments

Count

Multiple references to minor adjustments, with two specific references to adjustments in implementations of a DWMP

5

'Cost recovery options for Councils required to implement a DWMP'

'Resourcing of DWMP and connection to CoP and Owner responsibility'

% stakeholder comments: 100% Councils

Redefine/clarify

Count

Clarifications needed for particular processes including management of historic septic tank systems and assessment of catchment areas.

3

'Clarification on the process of managing historic septic tank systems. Clarification on how specific conditions listed on the permit to install a septic tank system can be enforced when this permit 'elapses/becomes null & void' after the nominated period of time as per the new regulations?'

'Can we put parameters on undertaking assessments on catchment areas?'

% stakeholder comments: All Councils except one LCA

Retain specific point

Count

References to specific points in the code that should be retained, as they are viewed as critical to the Code. There were two references specifically to the protection to water and a recognition of environmental outcomes.

3

'Critical that section 1.8.4 is retained as experiencing many Building Surveyors issuing permits without consent.'

'With the Code proposed to become a reference standard, there is concern that it will lead to poorer environmental outcomes in the long term. My preference is for the Code to retain the status that it has now'

'Overall policy is to protect groundwater supplies and surface water supplies. Should still be the same.'

% stakeholder comments: Councils and LCA

Code format

Count

Simplification of the code will make it easier to read and therefore more meaningful to use.

2

'The Code needs to be meaningful and easy to pick up and use as a handbook. 72 pages is too much, it is not going to be read.'

'Simplify the code.'

% stakeholder comments: 100% Councils

Science/research needed

Count

A request to rely on true science.

1

'Reliance on true science'

% stakeholder comments: LCA

Q8 Does the Code of Practice have adequate guidance for both sewered and unsewered areas? If no, please comment

Adjustments

8

Adjustments

Count

8

More information requested on: non sewered areas treatment level of poorly permeable soils, sand filter design. Guidance on when and what type of properties should be connected to sewer. Strengthen monitoring requirements. Clarify water corporations role in monitoring septic or onsite systems.

'Strengthen links to the monitoring requirements of septic permits and DWMPS'

'More specific information required for non sewered areas'

'We have a lot of difficulties getting properties connected to sewer that really should connect to sewer (flood prone, too small) as water authorities process are too difficult and expensive. If better government policy would be in place it would be easier for Councils to deal with these scenarios.'

'When sewer becomes available no guidance is provided.'

'Water Corps are not set up to manage or inspect Septic tanks or onsite systems. If a tank is connected to an effluent system then the tank of composting's system is considered on a plumbing fitting and there is no oversight.'

'For unsewered it is quite good, I use it, but see previous for potential changes'

'More stringent and consistent direction is required on the level of treatment in soils of poor permeability e.g. minimum secondary standard except at the express discretion of the local Council' 'Guidance on alterations of septic tank systems – what is an alteration? Further guidance on sizing greywater systems. What alternative dosing systems can be used in areas/scenarios with no electrical power float/siphon'

'Please include more technical detail on sand filter design'

% stakeholder comments: 100% Councils

Q9 Alignment of onsite wastewater risk management practices to ISO Standards *NB: Respondents were limited to Councils/Water Corporations.*



Are the primary, secondary effluent standards and recommended rates of effluent in line with current science and industry best practice?

Table 3: Are the primary, secondary effluent standards and recommended rates of effluent in line with current science and industry best practice?



Does the code of practice have adequate guidance for both sewered and unsewered areas?

Table 4: Does the Code of Practice have adequate guidance for both sewered and unsewered areas?



Q10 What update to the Code of Practice is required to support management of legacy systems issues? (such as eliminating flows to stormwater)



Support to use the code

Count
4

Guide councils to educate and regulate. Improve monitoring and reporting. Provide financial assistance. Consideration of utilising EPA’s OPLE program to assist EHOs.

‘Financial assistance in hardship, greater options for enforcement, powers of entry widened – these are broader areas that unfortunately the Code will be limited in addressing. As EHOs aren’t authorised to investigate water pollution under the EPA Act, could the EPA OPLE officers assist in this regard’

‘Improved monitoring and reporting. And timeframe and support system established (including legislative changes if needed) to ensure that old systems are brought up to standard’

‘Guidance for Councils on how to approach, educate and regulate property owners with legacy systems. Fact sheets/ letters to provide to owners with legacy systems’

‘Suggested education, compliance and enforcement process with suggestions of what tools are available to manage legacy systems polluting the environment or causing harm to human health. If possible use case studies and examples’

% stakeholder comments: 100% Councils

Roles, and responsibilities and powers

Count
4

Resource councils to manage compliance better. Auditing of conditions. Require connection to sewer if available.

‘Give Councils more powers to act on failing systems with no permits where they are discharging onto their own land but not impacting neighbours. Powers are currently due to having conditions on permits.’

‘Its more about ensuring there is adequate resourcing of councils to manage compliance

‘Every system must have a permit even if system cannot comply with 2021 standards, if no permit exists the owner is charged for permit via rates (as with footpaths), this is a starting point for getting a system up to standard.’

‘Ongoing audits as condition of permit to use.’

‘Forced connection to sewer if it is available and system has offsite discharge (split systems). Stronger language around connection to sewer if available. Ex 3.12.2, Property owners with a ‘split system’, ..., shall connect both the blackwater and greywater to the reticulated sewerage when it is available.’

% stakeholder comments: 100% Councils



Additions

Count
4

Guidance relating to these systems requested. Provide resourcing to water authorities to sewer unsewered areas. Additional information required for legacy septic issues and what is known this could include case studies, funding or support options for those who cannot afford to comply.

'Provide options. Will be difficult as many of these properties are very small. Only option may be community system. More guidance regarding these type of systems (but these are generally more than 5,000 litres per day).'

'My personal view is that the issue of legacy systems could be readily addressed if in the case of areas where there are multiple properties with such systems e.g. a township (1) adequate funding was provided to local water authorities to provide sewer to these areas; (2) funding was provided to those property owners who were genuinely unable to afford the connection fee e.g. an interest free loan scheme was set up and (3) there was actual will on the part of regulators to force connection.'

'The Code already clearly states that any premises with offsite discharge and/or a primary treatment system must connect when sewer is available. Stronger language is required in relation to split systems. So instead of saying 'should' connect, say 'must' connect. In instances where a legacy system exists on a property where the provision of a sewerage system is not financially viable e.g. the property is a small lot surrounded by large properties that can retain onsite, instead of saying things like 'it is recommended that wastewater systems are upgraded', say that they 'must be upgraded' and provide funding to enable property owners who can't genuinely afford the cost to undertake the upgrade work e.g. an interest free loan.'

;'Additional detail information is required to manage whole towns with legacy split system, where greywater diverting into the stormwater. Information on managing legacy septic systems with issues or have past their life span which do not have a septic permit or a permit cannot be located. Clearer and precise information for all parties on legacy small blocks that were created when the town was created. It would be useful if land consolidation process is explained in the Septic Code to encourage where possible small blocks are consolidated.'

'Provide specific process/guidance/case study on the use of the general environmental duty on how to manage legacy systems, including clear roles and responsibilities of all stakeholders inclusive of the EPA and information on enforcement mechanisms to facilitate the management of these systems. Explore funding options/access for those who cannot afford upgrades or replacement. Acknowledge that in some situations the best outcome may not 'comply' with the CoP but would be an improvement on what is currently occurring.'

% stakeholder comments: 100% Councils

Adjustments

Count
2

Additional statement on when upgrade may be required and trouble shooting for old system rectification.

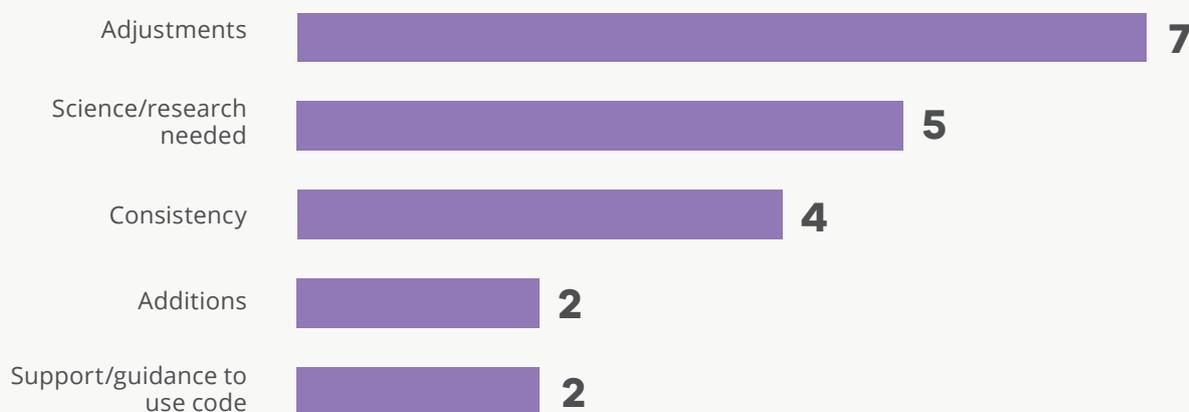
'A statement advising that wherever possible systems should be upgrade to current standards, and clarification that any works on an existing system (repair, maintenance or alteration) will require the system to upgraded to current standards wherever possible and practical and/or achievable'

'Trouble shooting section could be useful - examples for rectification of old systems, solutions for small lots with existing development.'

% stakeholder comments: 100% Councils



Q11 What updates to the Code of Practice are needed to capture the impacts of climate change? *NB: respondents are limited to only Councils/Water Corporations.*



Adjustments

Count

Some adjustments to the code are recommended to ensure all systems are able to repond to the impacts of climate change, with two references to effluent.

7

'A recommendation that all systems should have reserve wastewater disposal field.'

'Moving to new system types that are passive and are able to deal with a range of extreme weather events i.e bushfires, floods.'

'Increased frequency of storms, rain events, bush fires and rising sea levels need to take into consideration designing wastewater management systems'

'Consideration during design of the impact of more extreme wet weather events on ability to disperse treated effluent.'

'Minimum water efficiency standards to lower water and energy use.'

'Use of treated effluent in extreme situations such as fire fighting and irrigation in drought.'

'Maybe suggestions of system types that produce less emissions.'

% stakeholder comments: Councils

Science/research needed

Count

Specific research into the possible impacts of climate change is necessary to allow for appropriate adjustments of the Code. Research is also necessary to ascertain effectiveness of current systems into the future given changes.

5

"Due to climate change more frequent extreme weather events such as flooding need to be discussed. As previously discussed basing water balance calculations on outdated data (30 years) does not seem logical'

'Have you engaged with scientist to find out what likley impacts are?'

'Impact of reduced water consumption to existing systems. are we overdesigning effluent disposal fields? assessment of impact to legacy systems also'

'Domestic wastewater is an untapped resource. Every effort should be made to research how this effluent could be treated to a tertiary level and when appropriately disinfected used to irrigate food crops.'

'Details as to how climate change may impact on the efficacy of onsite wastewater systems.'

% stakeholder comments: Councils

Consistency

Count
4

The Code will need to be reviewed to ensure it remains consistent with the impacts of climate change. This will be connected to further research as well.

'Code should be reviewed / monitored in line with climate changing'

'Code will need to be updated on a regular bases to be able to include changing climates and patterns (e.g. water balances). What does EPA expect?'

'Make is clear that Aerated Wastewater Management Systems require the use of electricity and some may not be suitable for solar / alternative power supply which are not consistent.'

'Extreme weather events (longer dry periods, larger rainfall events) will significantly impact the level of management required of a Land Application Area (effluent filed)'

% stakeholder comments: Councils

Additions

Count
2

Additional information is required on systems near flood inundation/coastal areas, as well as possible impacts on stormwater.

'Incorporate more info on systems near flood inundation/coastal areas. Integrated mapping tools with flood levels, rising sea levels etc.'

'Stormwater impact is missing - water balance takes into consideration the recent rainfall, not what we will likley see with climate change - need to add high, medium and low impact scenarios to each water and nutrient balance sheet'

% stakeholder comments: 100% Councils

Support/guidance to use code

Count
2

Further guidance on change to the design and use of different systems references in the Code given the potential inpacts of cliamte change.

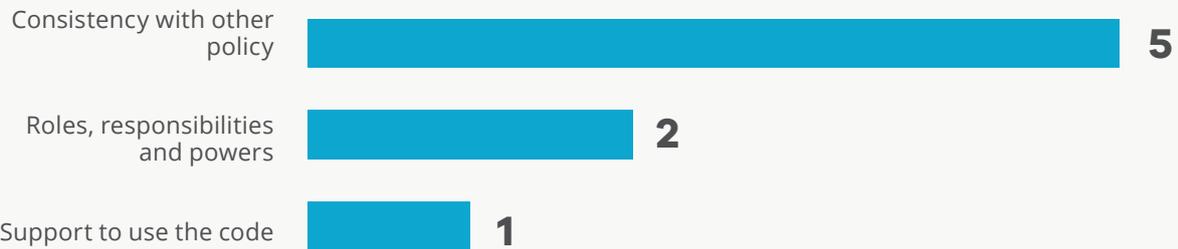
'If data currently exists on the topic, recommendations as to what adjustments should be made in the design of systems to allow for the impacts of climate change.'

'Guidance on energy use of different systems. A system like energy star ratings could be implemented to indicate to buyers how much energy they consume per 1,000 L/d or per person per day. This data is already collected as part of the Australian Standard testing process.'

% stakeholder comments: 100% Councils

Q12 What links does the CoP have to government policies and legislation and how can it better align with these?

NB: Respondents were 100% State Government



Consistency with other policy

Count
5

Links and alignment with plumbing regulations, responsibilities of plumbers and regulation of holding tanks

GED – clarification of roles and responsibilities required.

Oversight of ODWM regulation within local government and training and support

Links to Public Health Wellbeing Act

'Align to Govt policy to maximise reuse of wastewater - how can the Code encourage reuse'

'Alignment with the plumbing regulations. Installation of the treatment system is not regulated by the VBA requirement. Plumber takes 100% responsibility of the installation'

'Public Health Wellbeing Act'

'Regulation of holding tanks - Plumbing regulation. Local govt. authority that regulates this'

'Update on the legal status, with new General Environment Duty (GED) and clarification on the roles and responsibilities'

% stakeholder comments: State government

Roles, responsibilities and powers

Count
2

Clarity needed on standing of the Code in VCAT and power of enforcement of sewerage connections

'Don't undermine the standing of the Code in VCAT - if its not in VPP, the Code needs to be specific about its authority in relation to other potential sources of 'standards' proponents may try to reference'

'Need to test political appetite to enforce connection to sewerage, Water Act is enabling, but the Code does not specify to use these powers'

% stakeholder comments: State government

Support to use the code

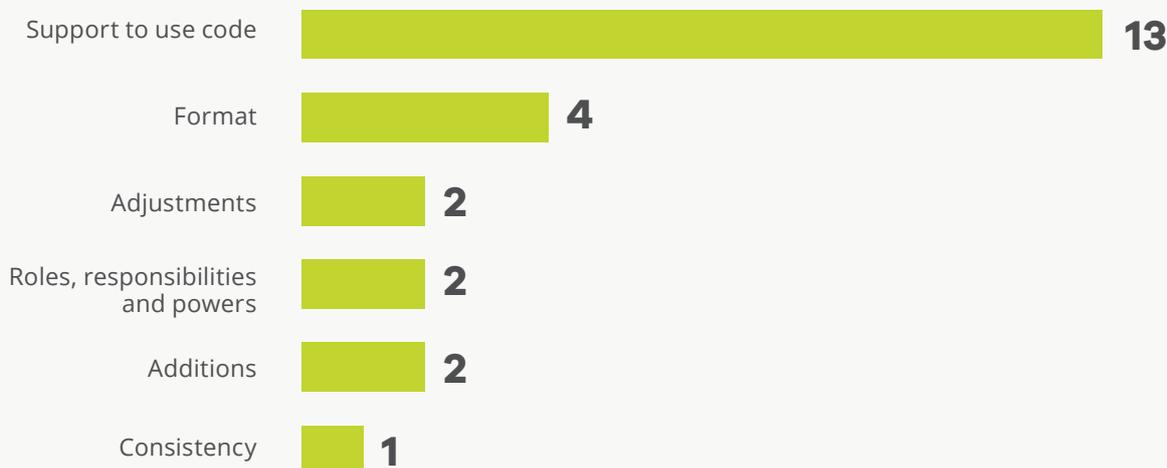
Count
1

Accreditation and criteria for LCA's

'Land Capability Assessment - criteria for LCA assessments, no accreditation system for this at the moment'

% stakeholder comments: State government

Q13 What can be done to strengthen the Land Capability Assessment (LCA) section of the Code of Practice or the MAV document on “Onsite domestic wastewater Land Capability Assessment Framework” to improve LCAs? *NB: All respondents were LCA practitioners.*



Support to use code

Count

There are some specific points to provide guidance on rainfall/ evaporation data, and completing water balance sheets. There is also a need to improve training in order to use the Code and MAV doc.

13

There are concerns about poor/inconsistent LCA Assessors. There are recommendations for further training and/or a consistent approach to assessors that ensures high quality.

'LCA procedure needs more guidance on what historical rainfall and evaporation data to use – wide variety used (i.e 10 yr, 20 yr etc) therefore water balance results vary widely.'

'Need more guidance on how to complete a water balance sheet for both EHOs and land capability assessors.'

'MAV said we need something to support officers in councils, so a doc was written to form basis. The training under cooked, had no awareness, and we were left to work out what to do with it.'

'The level of utilisation could be worked on. EPA encouraged council staff to become better trained and use it better. Training from government to private sector is not preferred, but needs to happen for its use. Maybe more amenable to using it, then bridging the gap between assessors and regulators.'

'Review the water balance calculation spreadsheet, better guidance/access to evaporation data, simplified/ consolidate soil assessment info/assessment process'

'Provide water and nutrient balance spreadsheets for assessors to check the work done for the LCA. Some proponents claim to have ""superior"" methods, we need an enforceable and clear way of checking. MAV do provide these spreadsheets, but they have protection for some cells and it is hard to determine what proponents have done to get to the outcome.'

'Should have standardised items to be included in the report.'

'Ensure that assessors are well qualified and accountable . An independent audit of LCA suppliers should be randomly audit via a licence fee to the EPA where there adherence to the standards.'

'More onus on LCA assessors. Those compiling LCA should be registered or have undertaken a certain level of training/refresher course'

'LCA assessors should have a license and have a formal accreditation, possibly from the plumbing industry.'

'I think engagement assessors would be helpful to ensure there is more consistent and adequate LCA reports are provided to Council and property owners. There some assessors also using different water balance calculations which is confusing for EHO's.'

Format

Count
4

The MAV Document is difficult to read and understand due to it's length, ambiguity and lack of clarity. It would benefit from simplification

'The MAV document is difficult for the beginners to understand – and could be revised to be more user friendly with directions for councils. Most EHOs have little to no experience of waste water and learn in the field.'

'Strengthen the wording - instead of 'may' or 'should', use the word 'must' e.g. the assessor must be an accredited member of an appropriate professional body.'

'Feedback from councils is the reports are too large if everything is undertaken from both docs. Want scaled back documents and site plans, with simple recommendations. Dont have time and cant be bothered as they are too large.'

'CoP adopt MAV document LCA format and make format mandatory of LCA with electronic blank LCA downloadable.'

Adjustments

Count
2

Recommendations to ensure appropriate gypsum requirements for dispersive soils. There is also a need to consider the accuracy of ASNZ standards around sizing effluent fields.

'It is critical to ensure that dispersive soils that are Class 1 & 2 have the gypsum requirement calculated scientifically rather than relying on the 1kg/m2 in the Australian Standard AND including a management plan that provides specific information on dosing rates of gypsum over a period of time and periodic soil testing to ensure the long term application rate of the effluent is not adversely impacting soil chemistry'

'EPA publications always refer to the ASNZ standards 1457: 2012 latest. Recommendations in ASNZ standards around sizing effluent fields. Not taking into account different soil densities, it thinks you can estimate permeability of the soil by holding lumps of soil and fingering and looking at it. Noone can tell where this data has come from. 2012 someone in CSIRO tried to relate soil permeability and structure and it shows, for one block of soil - chemistry is diverse so it needs to factor this in. The EPA manual follows this blindly, then it overlooks this diversity around permeability. Should be applied to this CoP. Outside CSIRO huge pool of soil scientists in academic world that have been doing work around this and could be integrated into this. '

Roles, responsibilities and powers

Count
2

There needs to be an appropriate system for holding LCA assessors accountable, and for some authority to set the minimum standards for qualifications.

'It should not be up to Councils to set minimum standards for LCAs, or qualifications for Assessors. It should be a consistent approach. Perhaps a system similar to the registration of 3rd party food safety auditors could be implemented. This could reduce the cost for property developers receiving low standard reports, and reduce time spent by Councils and Water Authorities assessing consistently poor quality reports.'

'Holding LCA assessors accountable for substandard LCA's. Periodic peer review of LCA's by the EPA. Councils having the ability to send a LCA to the EPA for review. Compiling a list of LCA assessors on the EPA website with a two strikes rule to those producing substandard work. Information on mitigation measures for soil and site constraints that are deemed moderate or major to be available to LCA assessors, plumbers, landowners and EHO's.'

Additions

LCA should provide alternative options for wastewater disposal, as well as additional buffers for land capacity in certain scenarios.

Count
2

'LCA should provide alternative options for wastewater disposal and not just one option. For example, if they recommend primary treatment they should also provide calculations for secondary treatment if Council or the Water Authority wish to choose the higher level of treatment for the property.'

'Where an LCA indicates that a property can contain but is close to the capacity of the land, 100% containment is unlikely. LCA process needs to consider these elements and build in some additional buffer to allow for these factors.'

Consistency

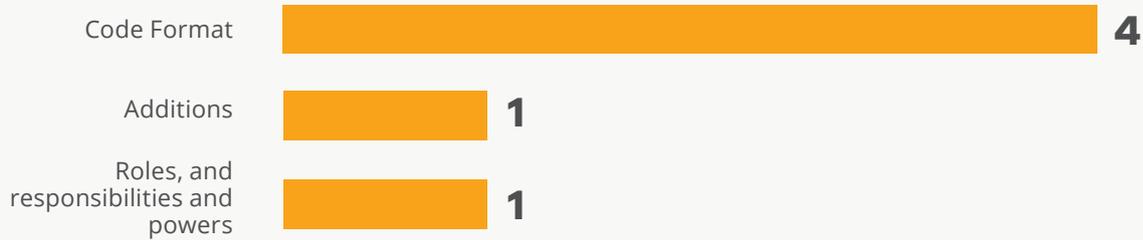
The Septic tank code (should change this to Code of Practice) should comply with MAV Land Capability Framework

Count
1

'Septic tank code requiring all land capability assessment to comply with the MAV land capability framework at a bare minimum'



Q14 CoP currently references MAV’s document of Victorian LCA framework (as amended). Is there value in repeating the LCA procedure in the Code of Practice or is it sufficient to link to the LCA framework or combining both documents?



Code Format

Count
4

Unnecessary duplication should be avoided, and there should be clarity for how to link the documents to one another

‘If the contents of the MAV doc was in the CoP, it would be more firmly established as a requirement. Not a bad thing. Doesn’t need to be unnecessary duplication. Needs to be the same, aligned. CoP - doesn’t cover the range of detail or depth on the MAV document. In that regard it is important to refer to the document and say this is where you find the detail of how to do the LCA - does need to explain how you may need to take an informed view.’

‘Go through MAV doc and work out which parts need to be covered adequately and which parts are not as important. Regulators fall back on saying do everything in the document. There should be guidance as to how to use the document.’

‘Avoid, a potted version of it, you may as well keep it separate. Already with the revision of the LCA doc 2006-2014 - its cut out a section on phosphorous. Only N20 left, and done on a whim. Any cuts need to be done using sound practice’

‘Linking to and referencing to is enough. Some support it and some don’t, don’t make the publication too big. If its incorporate into the cop, its enlarged, while its separate, just link. Don’t make it too big.’

% stakeholder comments: 100% LCA practitioner

Additions

Count
1

Table 9 needs to factor in the water balance. MAV has a description but if LCA provider uses that it includes a picture.

‘Irrigation systems depend entirely on incoming and outgoing factors. Table 9 showed a number of positions e.g. an absorption trench, according to that table you can load the system to that level. It doesn’t ask you about the water balance, e.g. it’s legal to put something that is an evapotranspiration system into an area with not much evapo, this is legal. Water balance needs to be factored in.’

‘MAV has a description of the whole procedure, if the LCA provider uses that it includes a picture.’

% stakeholder comments: 100% LCA practitioner

Count
1

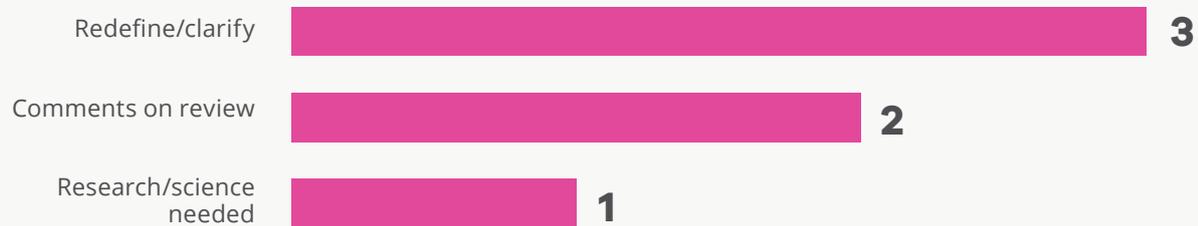
Roles, and responsibilities and powers

Greater clarity is needed over the hierarchy in power between the different documents and stakeholders.

'SEP 2018 seems to put the MAV above the code of practice. That seems dangerous. CoP, MAV and Australian Standards. SEP supposedly subservient to SEP, then you have the EHO's that have a lot of council power re: public health issues. Not sure who is running the show now. If I'm confused, then its concerning. EHO's can veto anything can approve anythign and noone is regulating them. It needs to be explained who is running the show.'

% stakeholder comments: 100% LCA practitioner

Q15 Technical aspects of the LCAs – Are there gaps in the LCAs that requires better explanation or an update to current best practice (such as clarity about testing and gypsum requirement levels)?



Redefine/clarify

Count
3

Clear requirements for Gypsum are needed. The current references to the Australian Standard is too ambiguous around soil types.

‘Gypsum - hit the nail on the head. Majority are sodic or magnesic, so cat 6 soils, problem soil, soils you need to put ameliorants in or it doesn’t work. to do that the EPA says put a kilo per square metre. Gypsum requirements of 4,5,6 kilos. You need to optimise the soil structure before using gypsum requirement, or a dolemite and lime requirement. All australian soils are calcium deficient. Soils that are leaky are good, add calcium. ‘

‘Referencing the australian standard, too much scope for interpetation around soil types. Just about every council, open to too much interpretation, instead of sands, soils and clays. If there’s too much interpretation, then it’s too diverse in terms of the advice. ‘

‘Clarity about testing - should be defined that this is the minimum testing required. Gypsum required, circumstances are clearly defined, so regulators need to know when that should be done, designers should be recommending that. Both parties need to know how this works. These could be picked up by having experienced people reviewing and revising the document. identifying the areas of strengthening.’

% stakeholder comments: 100% LCA practitioner

Comments on review

Count
2

Recommendations to engage Joe Whitehead and Robert (unspecified surname) to answer this question best.

‘Joe Whitehead can answer that question best. Council EHO’s.’

‘Add some pages, get Robert to contribute and something that is sensible and understandable. put a MUST stamp, and if not, don’t accept. Only adds minimal cost.’

% stakeholder comments: 100% LCA practitioner

Research/science needed

Count
1

The gaps in the current Code generally create issues with LCAs.

‘Current CoP , plenty of gaps, but not specifically related to the CoP. Issues more generally with LCA’s but not so much CoP.’

% stakeholder comments: 100% LCA practitioner



Q16 Technical aspects of the LCAs – Are there gaps in the LCAs that requires better explanation or an update to current best practice (such as clarity about testing and gypsum requirement levels)?

NB: All respondents to the question are from LCA practitioners.



Retain specific points

Count
2

For some low risk areas an LCA may not need to be required.

'CoP already covers it, potable catchments, all medium to high risk areas'

'Australian Standard takes a risk based approach, do less if risks are lower and higher if risks higher.'

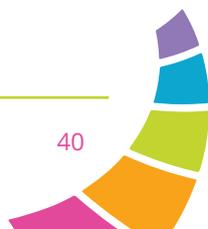
'DWMP's - lot of large rural properties, risk assessment for whole local government area, determined level required in a landscale, some was very low risk and therefore, justified that you do very little. Some check with the council to determine that. For most other sites, most smaller sites then should be an LCA.'

Redefine/clarify

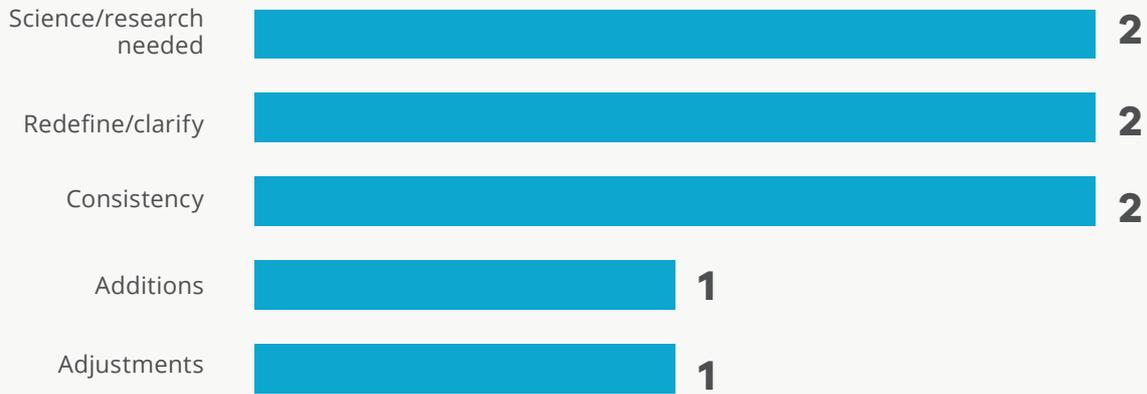
Count
1

Redefine minimum lot sizes and when they are required.

'Further definition on min lot sizes, theoretically, in an unsewered environment, a LCA should be required on every occasion. Currently a loose definition, left up to local council scrutiny. Proclaimed catchment area, LCA's are always required. Councils are determining when its required.'



Q17 Are the primary, secondary effluent standards and recommended rates for treated effluent in line with current science and industry best practice? If no, what are the factors that the Code of Practice needs to consider in reviewing the Standards? *NB: 100% respondents were councils/water authorities*



Science/research needed

Count
2

Further research should be conducted in relation to domestic wastewater treatment, disinfection and re-use, both nationally and internationally.

'Recent scientific research.'

'No they are not, why not use this opportunity to complete a thorough review of what is occurring interstate, Europe, NZ and the US in terms of domestic wastewater treatment, disinfection and re-use? If the water coming from the tap in any home in London has been through the human body a number of times why are we so reticent on even discussing the topic given we live on one of the driest continents in the world'

% stakeholder comments: Councils

Redefine/clarify

Count
2

Clarification is needed for guidance on tertiary treatment, as well as clarifying the correct method of calculation for daily wastewater flow for commercial and non domestic situations.

'Further guidance on tertiary treatment.'

'From experience domestic households produce 180L or more per person per day even with full water reduction fixtures. A food premises design hydraulic flow rated and organic material loading design rates are always disputed by consultant and Council as a restaurant and cafe daily wastewater flow rates are different. Calculating daily wastewater flow rates for commercial and non domestic situations are always difficult as consultants and Council can not agree on the design hydraulic flow rates. Many Consultants do not see the value in surge tanks.'

% stakeholder comments: Councils



Consistency

There should be a standardised approach to ensuring systems work correctly and application is consistent

Count
2

'Standardised national application'

'Who is continuously checking systems are producing 20/30/10 standard consistently?'

% stakeholder comments: Councils

Additions

There should be an alignment with AS1547.3:2017 with the addition of advanced secondary treatment for all waste, not just grey water.

Count
1

'There should be an alignment with AS1547.3:2017 with the addition of advanced secondary treatment (10/10/10) for all waste, not just grey water. With this higher level of treatment, there should be consideration to allowing limited reuse of the water for uses such as toilet flushing and firefighting. This may be limited to systems that are managed by a Water Corporation.'

% stakeholder comments: Councils

Adjustments

Inaccuracy with Table 9

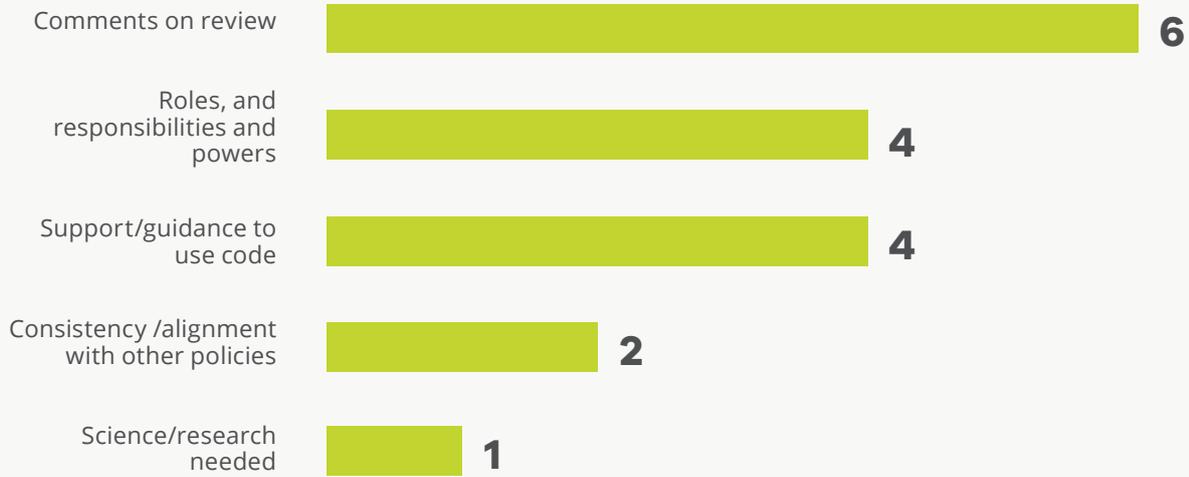
Count
1

'Do not believe that table 9 is accurate. For example not convinced that Wick & ETA trenches work in wet winters.'

% stakeholder comments: Councils



Q18 What recommendations do you have for the review process - project and engagement related NB: 100% respondents were State Government



Comments on review

Count
6

Use a transparent process to show changes over time. Implement carefully and bring the industry along with any changes. Engage council EHO's early, capture regulator needs. Research VCAT and how it interprets the CoP and test future scenarios with users

'Careful about what we promise the Code review will deliver but have a plan to show how all ideas/ are to be considered over time'

'Careful implementation will be required to ensure industry understanding of change in character of CoP'

'Engage council EHO teams early. Is the ODW Steering Committee still active?'

*'Ensure regulator (Council) needs are captured- to max env and human health outcomes
Review where the Code of Practice has been considered by VCAT - it would be good to have an insight into how the courts go about interpreting these documents'*

'Work with users to test case studies and future scenarios'

% stakeholder comments: State Government

Roles, and responsibilities and powers

Count
4

Clarification of roles and responsibilities across the CoP, including discretionary and regulatory powers and responsibilities of those in design and install processes.

'Clarification of approval process including roles of various stakeholders'

'Consider balance between discretionary powers vs regulations that are more prescriptive, ensure that training is in place if we expect people to exercise discretion effectively'

'Provide clarity about roles and responsibilities'

'Responsibility of intermediaries in design and installation process'

% stakeholder comments: State Government



Support/guidance to use code

Education, awareness and accreditation for code users. Reporting from jurisdiction on use of CoP.

Count

4

'Accreditation for LCA assessors'

'Jurisdictional reporting'

'Process for informing owners of their maintenance obligations'

'Provide more education / awareness options suitable to stakeholder'

% stakeholder comments: State Government

Consistency /alignment with other policies

Building classification alignment and minimising duplication

Count

2

'Aligning with building classifications'

'Look for opportunities to minimise duplication'

% stakeholder comments: State Government

Science/research needed

Understanding regulation

Count

1

'Understand the regulatory framework from all aspects'

% stakeholder comments: State Government

RECOMMENDATIONS

MosaicLab has written the following key recommendations for the formal CoP review from the themed summaries based on the frequency that they are mentioned by stakeholders. These themes and recommendations directly reflect stakeholder sentiment and have been selected using a robust methodology. These themes are produced as a direct summary of feedback provided by participants and should be read in that context.

Themes and recommendations for both the formal review process and the preliminary scientific review are described below. In order to retain easy navigation, further detail and direct quotes from participants can be found in the themed summary section.

THEME	RECOMMENDATION
Additions	<p><i>Review specific feedback provided by stakeholders on additions to the CoP with a focus on the following:</i></p> <ul style="list-style-type: none"> • Clear explanation of roles and responsibilities of Councils to manage onsite wastewater management systems (up to 5000L/day) and relevant roles of other entities (such as Water Corporations). • Review current and emerging technologies and their merits for inclusion. • Provide additional technical information to assist in raising the quality of LCAs including gypsum dosing rates, flow rates, land application systems, and procedures for estimating potential peak hydraulic loads. • Explore encouraging connection to sewer where possible and economical. • Address technical information gaps on treatment and disposal systems. • Provide additional clarity on setting permit conditions for onsite wastewater systems (up to 5000L/day) and conditions for the systems' maintenance. • Provide advice on dealing with legacy systems. • Provide more guidance on how treatment systems are installed and managed in commercial premises. • Provide comparative baseline data for effluent water quality standards. • Provide additional information on regulation of holding tanks and permit conditions arising from a change in ownership. • Provide guidance around small neighbouring properties looking to install a shared septic system. • Provide additional information on systems near flood inundation/coastal areas, as well as possible impacts on stormwater. • Explore providing alternative options for wastewater disposal in land capability assessments • Review the accuracy of <i>Table 9: Soil Categories and Recommended Maximum Design Loading/Irrigation Rates (DLR/DIR) for Land Application Systems in the CoP.</i>



THEME	RECOMMENDATION
Support to use CoP	<ul style="list-style-type: none"> • Work with key CoP users on how the CoP can be better structured to enable ease of use that suit their needs. • Explore accreditation of LCA assessors. • Ensure appropriate implementation of the revised CoP that includes a launch and ongoing education in its use once new CoP has been developed. • Consider developing support tools for Councils to apply the CoP consistently. For example, develop guidance material dependant on who will be using it e.g., homeowners, council officers, LCA practitioners, Environment Health Officers (EHO) and regulators.
Consistency with policy/protocols	<ul style="list-style-type: none"> • Review Chapter One, and other relevant chapters to enquire consistency with current legislation updates including to the <i>Environment Protection Amendment Act 2017</i> (as amended), including the General Environmental Duty provisions. • Align with Municipal Association of Victoria Land Capability Framework and Australian Standards. • Explore elements of Public Health and Wellbeing Act to incorporate
Roles, responsibilities and powers	<ul style="list-style-type: none"> • Review roles and responsibilities across the whole of the CoP between EPA, Councils, EHO's, Planning Permits/Septic Tank Permit Assessors, and DHHS. • Provide clarity on the role of Councils and their regulatory and enforcement powers in managing onsite wastewater. • Explore systems of accountability for LCA assessors.
Adjustments	<p>Review specific feedback provided by stakeholders on adjustments to the CoP with a focus on the following:</p> <ul style="list-style-type: none"> • Clarify and refine the criteria of minimum lot sizes for installation of onsite wastewater management systems. • Review soil types and irrigation rates and inconsistency with other standards. • Review effluent water quality standards in line with relevant Australian Standards. • Review the CoP for typos. • Investigate efficacy of setback distances outlined in the CoP. • Concerns raised around health risks of Council controlling disposal of composted material as well as questions relating to scenarios in the CoP. • Explore improvements for the implementation of the domestic wastewater management plan (DWMP). • Provide information on treatment levels of poorly permeable soils in unsewered areas. • Provide supporting information on the installation of sand filter systems. • Strengthen monitoring requirements including clarifying water corporation's role in monitoring septic or onsite systems.



THEME	RECOMMENDATION
Redefine/clarify	<p>Review specific feedback provided by stakeholders on adjustments to the CoP with a focus on the following:</p> <ul style="list-style-type: none"> • Explore requirements for subsurface irrigation for secondary treated effluent. • Clarify the requirements of effluent disposal and recycling systems where an Australian Standard/New Zealand Standard is not available. • Provide clarity on additional buffers for land capacity in containment of wastewater onsite. • Clarify owner responsibilities in maintaining and managing onsite wastewater systems (up to 5000L/day). • Clarify setback distances of onsite wastewater management systems to property structures and the surrounding environment. • Clarity on how to identify high risk and sensitive areas within allotments and within catchments. • Explore including guidance on tertiary treatment standards.
CoP format/ written expression	<ul style="list-style-type: none"> • Review current format with the end users in mind. Consult with users to identify options for formats that will meet their needs and user test these iteratively in draft versions. • Recommend including relevant examples as a support tool for the CoP. • Ideas for improvement: better use of links and diagrams across the document, simplification and reduction of text to increase readability.
Science/research needed	<ul style="list-style-type: none"> • The CoP formal review needs to explore inclusions of new systems and technologies. • Further research is required to update the CoP to ensure it remains consistent with the impacts of climate change. • Further research should be conducted in relation to domestic wastewater treatment, disinfection and re-use, both nationally and internationally. • Science review of the CoP needs to bring stakeholders along on the journey of why particular things will be adjusted, included, or omitted. This needs to be transparent and defensible.
Comments on review	<ul style="list-style-type: none"> • Design an engagement process with diverse perspectives across state government and the expert community. Bring stakeholders along on the journey of changes and test drive options with end users.
Land Capability Assessments	<ul style="list-style-type: none"> • Focus in CoP review on lifting the consistency and credibility of LCA assessors in the field. • Explore support and guidance needed in the use of the CoP as well as possible mechanisms such accreditation, inclusion of more prescription requirements in the CoP, supporting training etc. • Explore greater quality control and standardisation of LCA format/look and feel.
Removals	<ul style="list-style-type: none"> • Review wick trench systems and assess its merits as a suitable effluent disposal systems.



APPENDIX - ENGAGEMENT FINDINGS

The following themes were found across all of the data. This table lists the themes in order of frequency and summarises the overall sentiment across that theme.

Table 2: Engagement Findings Summary

Theme name	Additions	Support to use CoP	Consistency with policy/ protocols	Roles, and responsibilities and powers	Adjustments	Detailed adjustments	Redefine/clarify	CoP format/ written expression	Science/ research needed	Comments on review	LCA's	Removals
Frequency	57	52	39	33	33	24	24	17	10	9	8	5
Summary	The most common type of feedback was requests for additions to the CoP. This includes requests for additional guidance, technical information and science, diagrams and processes across the whole document. Incorporate elements of ISO 31000 risk management principles	The second highest frequency of feedback was around measures to support the use of the CoP. This includes guidance, templates, targeted information, qualifications and accreditation of assessors, consistency, communications support, standard permit conditions and training in its correct use.	Frequently mentioned was the need for the CoP to be updated to reflect current legislation and align further with related policies and processes. This includes AS/ NZ standards, septic system permitting, building classifications	Confusion around roles and responsibilities and general powers under different pieces of legislation referenced in the CoP accountability of LCA assessors raised frequently.	Technical adjustments based on experience were raised frequently, some to adjust what was working well and some to adjust what wasn't deemed as evidence based.	Many detailed adjustments were suggested across the document. These included minor ones, such as fixing typos and broken URL's.	Questions of clarification and redefinition were common across technical information - in particular- peak loads, technology options, calculation of flow rates and lot sizes.	The CoP format was raised repeatedly as being difficult to navigate, overly complex and not visual enough.	Feedback that there are elements in the current CoP that are not science based. Suggestions for what needs to be researched were given. Specifics for review included climate change considerations. Clarification on assessment of new effluent disposal and recycling systems/ wastewater treatment plans. Review of secondary treated effluent standards, (ameliorate salt levels and BOD levels).	Feedback on how the review should be conducted and who should be involved.	Significant feedback of issues in the LCA field including inconsistency of assessments, council use of assessment and poor quality.	Requests for removals of various elements.
Priorities identified (based on the frequency and spread of feedback across stakeholder groups)	Additional information around criteria for sewage connections. Technical information gaps on treatment and disposal systems.	Guidance on utilising the CoP in assessing permit applications (Planning Permit and/or Septic Tank Permits) and LCA assessments. Logic maps of processes from assessment to approvals. Additional support in design requirements for effluent disposal methods (ETA pods, sand filters, wick trenches)	Strengthening the policy for connection to sewers. Alignment with MAV land capability frameworks and relevant Australian Standards.	Clarity on the regulatory roles and responsibilities between EPA and Councils to enforce the requirements of the CoP.	Assessment of setback distances outlined in the CoP Accuracy of Table 9 in the CoP - Soil categories and recommended maximum design loading/irrigation rates for land application systems	Inconsistencies identified around calculations on sizing, minimum daily domestic flow rates. Explore improvements to the implementation of a domestic waste management plan (DWMP).	Clarity on the effluent disposal and recycling systems where there is no Australian Standard/New Zealand Standard. Clarity and refinement on the criteria of minimum lot sizes. Clarity on the requirements for gypsum for soil remediation	Tailored guidance for specific users of the CoP (i.e. breaking down the CoP into different parts tailored to specific stakeholder groups). Increase readability in the CoP and in MAV document.	Currency of information across different sections of the CoP was flagged. Addressing the gaps within the model DWMP document and MAV's LCA document.	Review requires scientific rigour	Setting the criteria for when an LCA is required. Setting requirements on the acceptable standard of LCAs Process to hold LCA practitioners accountable. Further support and guidance in performing an LCA.	Currency of effluent dispersal options will need to be investigated.

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Summaries relating to these themes across all questions	<p>Additions requested including new legal requirements, additional lists for guidance, backlog programs and water authority role and rights to enter properties.</p> <p>Note that rhizopod systems are not included in the current CoP.</p> <p>Reticulated sewer connection is omitted and suggested that the council should be given power to forcer connection to centralised sewers.</p> <p>Request for specific information on evapotranspiration pod units, their location in this chapter and their efficacy. Information requested around section 2.3.4 and salts including how to install systems that reduce the level of salts.</p> <p>Additional information requested on gypsum, flow rates, land application systems, and procedures for estimating potential peak hydraulic loads.</p> <p>Code should encourage where possible and not cost prohibitive, connection to the sewer</p> <p>Guidance, advice and clarifications required around various technology types, processes and permitting issues.</p>	<p>Further guidance, templates and information requested from Councils around the support and use of the CoP. Support in the application and assessment of permits, approval processes and LCA reporting requested as well as updates in the CoP of new EP Act and Regulations.</p> <p>Difficult to find information and wordy. Suggest clearer structure.</p> <p>Guidance requested to encourage properties to connect to reticulated sewer</p> <p>Templates, qualifications, consistency, communications support, standard permit conditions, training.</p> <p>More guidance and support needed to enact the Code in complicated or unclear areas. Some recommended a data management system to support compliance with the code. Others mentioned an independent audit to support and encourage compliance.</p> <p>Guide councils to educate and regulate. Improve monitoring and reporting. Provide financial assistance.</p>	<p>Issues with protocols not being followed around septic permit processes.</p> <p>EPA 500 publication incorporated and reviewed. ASNZ alignment reviewed.</p> <p>Consistency with ASNZ standards and state standards. If different, this needs to be justified. LCA needs to be consistent with other guidance and address duplication with MAV framework.</p> <p>Greater standardised permit conditions requested to ensure consistency across multiple areas of the Code</p> <p>The Code will need to be reviewed to ensure it remains consistent with the impacts of climate change. This will be connected to further research as well.</p> <p>Links and alignment with plumbing regulations, responsibilities of plumbers and regulation of holding tanks GED – clarification of roles and responsibilities required.</p>	<p>Clarity around competencies of service technicians requested, and roles and responsibilities for Local Government and associated promotion of this.</p> <p>CoP seen as important in setting LCA requirements so that that council doesn't set its own requirements. Request for mandatory LCA's for busy commercial premises.</p> <p>New or altered onsite wastewater management systems, land capability reports and risk assessment reports asserted to be the role of the LCA not Council.</p> <p>Code should be clear about the powers and responsibilities of who enforces the Code itself, as well as more particular powers of authority like conditions of entry, for example.</p> <p>Resource councils to manage compliance better. Auditing of conditions. Require connection to sewer if available.</p> <p>Clarity needed on standing of the Code in VCAT and power of enforcement of sewerage connections.</p>	<p>Concerns raised around healthy risks of Council controlling disposal of composted material as well as questions relating to scenarios in the CoP.</p> <p>Multiple references to minor adjustments, with two specific references to adjustments in implementations of a DWMP</p> <p>More information requested on: non sewer areas treatment level of poorly permeable soils, sand filter design.</p> <p>Guidance on when and what type of properties should be connected. Strengthen monitoring requirements. Concerns about water corporations role in monitoring septic or onsite systems.</p> <p>Additional statement on when upgrade may be required and trouble shooting for old system rectification.</p> <p>Some adjustments to the code are recommended to ensure all systems are able to rsond to the impacts of climate change, with two references to effluent.</p>	<p>Concerns raised around small lot sizes and rationale as the calculations are seen as at odds with the Australian Standards.</p> <p>Concerns over soil types and irrigation rates and inconsistency between this standard and others in the world around irrigation.</p> <p>Detailed feedback highlighting a diversity of typos, questions, perceived inconsistencies, requests for clarity.</p> <p>Request updates on technology and review and revise guidance around wick trenches.</p> <p>Clear descriptions around small lots, connection to sewer requirement, owner responsibilities, setbacks, identification of high-risk sites.</p> <p>Technology clarification and guidance, sand filters. Additional clear reference material around technology and approval processes for treatment systems.</p>	<p>Clarity around the peak loads and reasoning.</p> <p>Clarity around emerging technologies and their implications.</p> <p>Clarify processes and certification methodologies for new effluent disposal and recycling systems.</p> <p>Require mandatory requirements for sub-surface irrigation of secondary treated effluent.</p> <p>Design for attenuation of nutrient load of the effluent.</p> <p>Further info on setback distances and ideas and questions around what is defined as edible and therefore no contact.</p> <p>Request updates on technology and review and revise guidance around wick trenches.</p> <p>Clear descriptions around small lots, connection to sewer requirement, owner responsibilities, setbacks, identification of high-risk sites.</p> <p>Technology clarification and guidance, sand filters. 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Additional clear reference material around technology and approval processes for treatment systems.</p>	<p>Calls for simplification and reduction of text, relevant examples and navigation ease</p> <p>Diagrams requested</p> <p>Document is unwieldy and detailed. Needs a better flow and simplification. Diagrams and illustrations will assist. Possible online publication. Segment for different users.</p> <p>The MAV Document is difficult to read and understand due to it's length, ambiguity and lack of clarity. It would benefit from simplification</p>	<p>A request to rely on true science.</p> <p>Specific research into the possible impacts of climate change is necessary to allow for appropriate adjustments of the Code. Research is also necessary to ascertain effectiveness of current systems into the future given changes.</p> <p>The gaps in the current Code generally create issues with LCAs.</p> <p>Further research should be conducted in relation to domestic wastewater treatment, disinfection and re-use, both nationally and internationally.</p> <p>Understanding regulation</p>	<p>Bring diverse state perspectives in to support CoP review process</p> <p>Recommendations to engage Joe Whitehead and Robert (unspecified surname) to answer this question best.</p> <p>Use a transparent process to show changes over time. Implement carefully and bring the industry along with any changes. Engage council EHO's early, capture regulator needs. Research VCAT and how it interprets the CoP and test future scenarios with users</p>	<p>All participants raised concerns around the lack of qualification specifications for Land Capability Assessors and that there is inconsistency in how assessments are done.</p> <p>Ideas for what this could look like include accreditation, affiliation and qualifications.</p> <p>Concerns raised around avenues for accountability for poor quality or inaccurate work.</p> <p>Guidance requested also around what EHO's role in the assessment process.</p> <p>Concerns around inconsistency of LCA report quality raised. Expand and enhance detail for what has to happen in an LCA due to low knowledge base of practitioners.</p> <p>Formal accreditation required for practitioners. A large majority of practitioners have a low knowledge base. Concern that the code shouldn't be the only source of expertise and knowledge, that needs to be in the skillset of the practitioner.</p>	<p>Request for both dry compost in sewer areas and wick trenches to be removed from CoP. Remove caveat around secondary treatment effluent discharge into absorption trenches.</p> <p>Removals suggested disposal fields, pressure compensating sub-surface irrigation systems and Wick Trench Systems</p> <p>Removals suggested disposal fields, pressure compensating sub-surface irrigation systems and Wick Trench Systems</p>

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<p>Summaries relating to these themes across all questions</p> <p><i>...continued</i></p>	<p>Varied recommendations to make specific additions to areas of the code.</p> <p>Guidance relating to these systems requested. Provide resourcing to water authorities to sewer unsewered areas. Additional information required for legacy septic issues and what is known this could include case studies, funding or support options for those who cannot afford to comply.</p> <p>Additional information is required on systems near flood inundation/coastal areas, as well as possible impacts on stormwater.</p> <p>LCA should provide alternative options for wastewater disposal, as well as additional buffers for land capacity in certain scenarios.</p> <p>Table 9 needs to factor in the water balance. MAV has a description but if LCA provider uses that it includes a picture.</p> <p>There should be an alignment with AS1547.3:2017 with the addition of advanced secondary treatment for all waste, not just grey water.</p>	<p>Further guidance on change to the design and use of different systems references in the Code given the potential impacts of climate change.</p> <p>Accreditation and criteria for LCA's</p> <p>There are some specific points to provide guidance on rainfall/ evaporation data, and completing water balance sheets. There is also a need to improve training in order to use the Code and MAV doc.</p> <p>There are concerns about poor/ inconsistent LCA Assessors. There are recommendations for further training and/or a consistent approach to assessors that ensures high quality."</p> <p>Unnecessary duplication should be avoided, and there should be clarity for how to link the documents to one another</p> <p>Education, awareness and accreditation for code users. Reporting from jurisdiction on use of CoP.</p>	<p>Oversight of ODWM regulation within local government and training and support Links to Public Health Wellbeing Act</p> <p>The Septic tank code should comply with MAV Land Capability Framework</p> <p>There should be a standardised approach to ensuring systems work correctly and application is consistent</p> <p>Building classification alignment and minimising duplication</p>	<p>There needs to be an appropriate system for holding LCA assessors accountable, and for some authority to set the minimum standards for qualifications.</p> <p>Greater clarity is needed over the hierarchy in power between the different documents and stakeholders.</p> <p>Clarification of roles and responsibilities across the CoP, including discretionary and regulatory powers and responsibilities of those in design and install processes.</p>	<p>Recommendations to ensure appropriate gypsum requirements for dispersive soils. There is also a need to consider the accuracy of ASNZ standards around sizing effluent fields.</p> <p>Inaccuracy with Table 9</p>		<p>Clarifications needed for particular processes including management of historic septic tank systems and assessment of catchment areas.</p> <p>Clear requirements for Gypsum are needed. The current references to the Australian Standard is too ambiguous around soil types.</p> <p>Redefine minimum lot sizes and when they are required.</p> <p>Clarification is needed for guidance on tertiary treatment, as well as clarifying the correct method of calculation for daily wastewater flow for commercial and non domestic situations.</p>					



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PLEASE NOTE: While every effort has been made to transcribe participants comments accurately a small number have not been included in this summary due to the legibility of the content. Please contact Josephine Newman at josephine@mosaiclab.com.au for any suggested additions.

This project is a joint collaboration between EPA and DELWP to deliver on action items from the implementation of State Environment Protection Policy (Waters) Implementation Plan and the 2018 Victorian Auditor-General's Office (VAGO) onsite wastewater audit recommendation 6.