The Pipeline

Melbourne Retail Water Agencies Information Bulletin

Issue Date – December 2020

WELCOME TO THE NEW MRWA BULLETIN

Welcome to the latest bulletin from the Melbourne Retail Water Agencies (MRWAs), which includes City West Water (CWW), South East Water (SEW) and Yarra Valley Water (YVW). This Bulletin has been established to provide you with an understanding of current issues associated with our adopted standards, design and construction issues and any changes evolving through our industry.

Topics in this edition include:

1. **MRWAs publish a revised edition of Gravity Sewerage Standards onto the Web Portal.**
2. **Implementation timeline.**
   - **Update to ALDE 12D Standard Drawing templates**
   - **Implementation support**
3. **Summary of key changes made to the updated set of MRWA Gravity Sewerage Standards.**
4. **MRWA Gravity Sewerage Standards briefing videos.**
5. **Superseded Gravity Sewerage Standards information.**
6. **MRWA Gravity Sewerage Code amendments.**
7. **Sewerage Access Covers**

MRWAs publish a revised edition of Gravity Sewerage Standards onto the Web portal

The MRWAs have now published a revised edition of Gravity Sewerage standards that can be viewed on the Standards page of the Web portal application. The revised Standards represent a significant change to existing technical requirements when compared with the previous version published in 2015.

The amendments and updated technical requirements involved performance studies undertaken on sewerage pipeline systems that were installed over a five year period. The introduction of new products, document corrections and clarification around existing technical content also contributed.

A series of consultation sessions were held with Water Agency personnel, peak industry working groups and other stakeholders along with the project road map. The feedback received resulted in over 700 topic items being incorporated into the MRWAs revised edition of Gravity Sewerage standards.

A summary of the key amendment changes has been included in this edition of the Information Bulletin.

Implementation timeline

The MRWAs revised edition of Gravity Sewerage Standards reflect changes, corrections and clarification to existing technical content.

The Gravity Sewerage Standards can be utilised straight away on new sewerage projects currently under design where suitable to do so. *(Note: This is optional, not a mandatory requirement).*

The MRWAs will be gradually phasing in the revised Gravity Sewerage standards based on the proposed Implementation date Milestones table shown below:

Implementation Date Milestones	Compliance requirement
Projects executed up to 1st April 2021	Can use either the 'superseded' standards or the revised MRWA edition Gravity Sewer Standards.
Projects executed between 1st April 2021 and 1st July 2021	Shall comply with the revised MRWA edition Gravity Sewer Standards *1, **2
Projects executed after 1st July 2021	Shall comply with the revised MRWA edition Gravity Sewer Standards

*1 - Two allowable exceptions for not using the revised MRWA edition Gravity Sewer Standards include:

- Designs completed to previous standards as part of agreements that have lapsed but been re-executed. In such cases, designs may comply with either the superseded or revised standards.
- Designs which form part of sub divisional plans have which been approved by council prior to the 1st April 2021 but then been executed with the Water Agency after this date. In such cases, the revised standards shall apply unless unpractical to do so. Designers shall include the council pre 1st April 2021 approved subdivisional plans with the design verification form and stipulate the revised standards that have not been met due to these planning constraints.

**2 - Up until 1st July 2021, in most cases where a Water Agency auditor identifies a requirement that meets the superseded Standards but not the revised edition Standards, the auditor will adopt an education and mentoring approach rather than issuing a non-conformance. Where repeat observations are communicated by the Water Agency or it is deemed that no genuine attempt has been made to conform to the revised standard requirements, the Water Agency may still issue a notice of non-conformance. (Standard NCR process applies) Note: Yarra Valley Water will allow dispensations up until 1st July 2021 for the use of mechanical inserts.

Update to the ALDE 12D Standard Drawing Templates

The Association of Land Development Engineers (ALDE) is currently reviewing and updating its 12D Standard Drawing templates to ensure that it reflects the requirements of the MRWAs revised edition of Gravity Sewerage standards. This information will be uploaded to the MRWA web portal soon. ALDE Members will be notified of the updated 12D Standard Drawing templates soon.

Implementation Support

The MRWAs intend to make the following support material and initiatives available to facilitate the roll out of the revised edition of gravity sewerage standards.

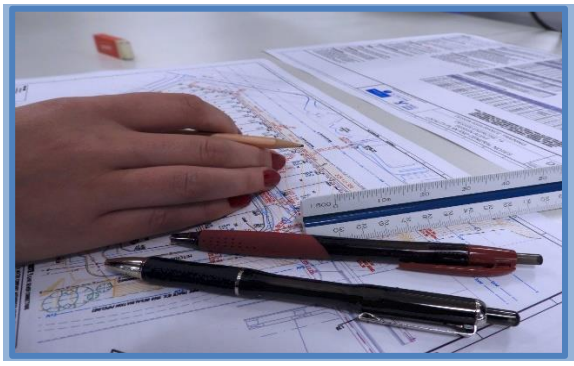
Support Material	Timing
Written Summary of Key Changes	Available now (Refer to the relevant section outlined in this information bulletin)
Pre-recorded Sewerage Standards briefing videos **These short videos will look to display, explain and provide additional information on the changes made to the standards. Links will be available on the MRWA website and emailed out to our contact lists.**	Links to view the videos are available now on the MRWA web portal (Refer to the relevant section outlined in this information bulletin)
Q&A Sessions **It is anticipated that these sessions will be conducted online with participating work teams and MRWA representatives.**	Offered from 1st April 2021 Provided by request, please contact an MRWA key contact representative to arrange an online Q&A meeting. Email addresses will be provided to respond to written questions.

Summary of key changes to the Updated MRWA Gravity Sewerage Standards

The MRWAs revised edition Gravity Sewerage Standards reflect changes, corrections and clarification to existing technical content. Additional detail to existing requirements for syphons, trenchless construction, pressure main discharge, vents and ERSs have been added. In general terms the MRWAs revised edition Gravity Sewerage Standards has resulted in:

- 24 new standards being developed and introduced.
- 18 existing standards undergoing significant amendments.
- 23 existing standards undergoing minor improvements.
- 3 existing standards that have not changed in this revision.
- 1 existing standard has been decommissioned from publication.

The updated Technical Standards include the introduction of Plastic Maintenance Hole structures and a new suite of 500 series standards. The 500 series Standards cover information pertaining to Live Sewer connection works, decommissioning of redundant assets and height adjustment to concrete Maintenance Hole structures.



The following information summarises the key changes made to individual Gravity Sewerage Standards.

000 and 100 Series Standards

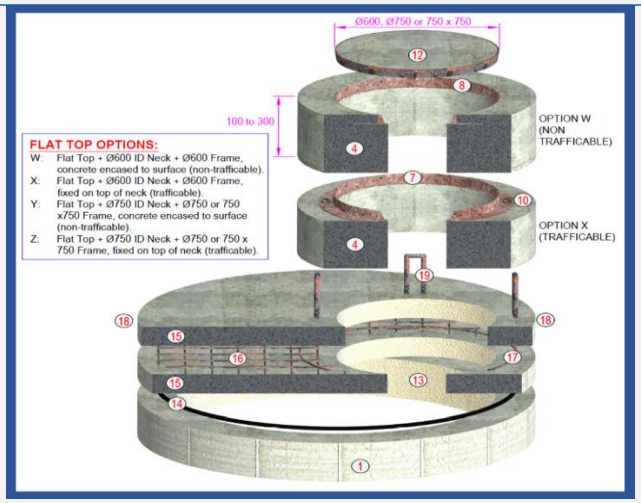
MRWA-S-000- *Overview Part 1* The index reference for the 100 and 200 series standards are shown. The table formatting and sequence of standards have changed. Reference to relevant Sewerage code clauses has been added.	**New MRWA-S-106B**- *Road Reserve Reticulation Arrangements* A greater range of typical road reserve alignment scenarios and options have been provided.
New MRWA-S-001- *Overview Part 2* The index reference for the 300, 400 and 500 series standards have been included on this new Standard.	**MRWA-S-107**- *Pipeline Details* New road crossing isometric figures have been included with this Standard.
MRWA-S-100- *Design Template_Notes, Schedules and Locality Plan* The Maintenance Hole schedule has been updated to better define acceptable construction options. A new schedule documents dispensations that have been granted for the project.	**MRWA-S-109**- *Road Reserve Dual Reticulation & Rear Lane Details* Rear lane alignment and property connection arrangements have been added. Connection ties and offsets have also been clarified in this Standard.
New MRWA-S-102- *Design Template_Integrated Plan and Long Section* A drawing template has been added for projects where an integrated Detail plan and longitudinal section for a length of sewer are best shown on the same drawing sheet.	**MRWA-S-110**- *Road Reserve Reticulation with Road Crossing Details* Updated details have been provided on the location of IO to surface fittings for DN100 Road Crossings (CWW & YVW) and short connections terminating in the Road Reserve.
MRWA-S-104A- *Property Connection Arrangements & Reticulation Grade* Junction details have been moved to MRWA-S-503 and Table 104A-B has been added to provide grade and capacity information for property service and reticulation pipes. New details are provided on flattening of controlling lines and transitioning DN150 sewers to DN225 so grades can be flattened.	**MRWA-S-111**- *Sewers for Future Development* Temporary End of Sewer arrangements have been clarified for a variety of scenarios in each Water Agency licensed area. Property connection construction staging has been revised to show the two situations required for future development.
MRWA-S-106- *Private Property Reticulation Arrangements* Private property sewerage requirements and limitations have been migrated from MRWA-S-108 to this standard. Example layouts for road reserve sewers has been moved to MRWA-S-106B and more private property servicing scenarios have been provided. The depth limit for private property sewers has been reduced from 4.0m to 3.5m. The location of mandatory Maintenance Holes within and near private property has also been specified.	**New MRWA-S-112**- *Easements and Offsets* The sewer offset requirements at the rear of private properties have been simplified. The requirements for sewers located in the side of a private property have been included in this Standard. This arrangement requires approval from the Water Agency. The sewer offset requirements for Road reserve and public open space locations have been better defined to cover a greater range of pipe alignment situations.

200 Series Standards

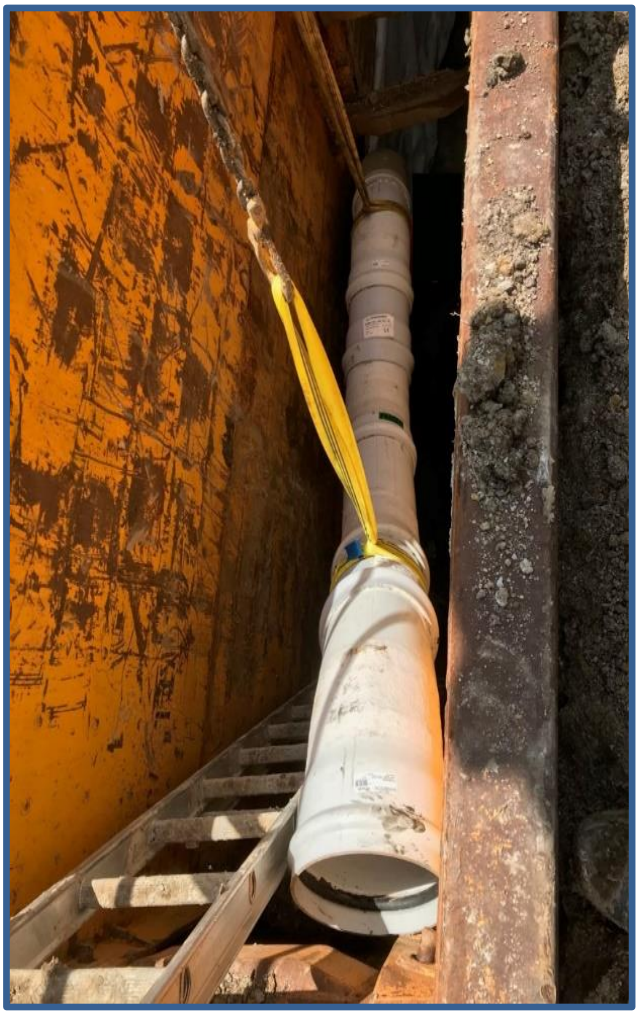
MRWA-S-207- *Major Crossings* Sewer Syphon requirements have been moved from this Standard to MRWA-S-207B. The pipe sleeve requirements for major crossings have been clarified.	**MRWA-S-208**- *Trenchless Constructed Pipelines, Design* Construction requirements have been moved to MRWA-S-208B. Maximum length of SCJ DWV has been increased to 50m.
New MRWA-S-207B- *Syphons* This Standard includes additional figures and design information for syphon pipework arrangements. This includes additional design requirements for maintenance structures located at both ends of the syphon pipework.	**New MRWA-S-209**- *Sewerage Assets around Retaining walls* The Standard now includes additional protection between a sleeper style retaining wall and the top of a property connection sewer by installing a reinforced precast concrete paver.
New MRWA-S-208B- *Trenchless Constructed Pipelines, Construction* More information has been provided on bore shaft embedment and jacking pipe to trench installed pipe connections. All trenchless constructed pipelines are now required to have acceptance testing in accordance with larger / deeper gravity sewers. Some flexibility is being introduced on ovality acceptance criteria where ovality is outside the control of the Contractor.	

300 Series Standards

MRWA-S-300- *Maintenance Structure Selection and Placement* The maximum spacing between Maintenance Holes or between Inspection Shafts and Maintenance Holes has been reduced from 300m to 200m. The MRWAs are looking to capitalise on the advantages that Plastic MHs provide. This will enable faster assembly times and backfilling around structures to occur while providing human access to a sewer.	**New MRWA-S-300C**- *Plastic Maintenance Structure Utilisation* This Standard provides a graphical illustration of the limitations for each plastic Maintenance Structure type, (Maintenance Shafts, Maintenance Chambers and Maintenance Holes). The Standard includes new figures showing the acceptable base configurations that can be used for each Maintenance Structure type.
New MRWA-S-300B- *Maintenance Structure Base Levels* Additional requirements included facilitating the interchangeability of different types of structures during installation. Common design rules for specifying inverts at maintenance structures have been included in this Standard.	**MRWA-S-302, 303 and 304**- *Property Connections* These Standards include the provision of DN80 DWV conduits and supports, installed to surface at the end of newly constructed property connection points. This will assist the plumbing industry in locating and connecting property connections on site.

New MRWA-S-306B- *Plastic Maintenance Holes* This Standard describes the components and installation requirements for Plastic Maintenance Hole structures.	**New MRWA-S-313B**- *Maintenance Hole Top Construction, Concrete* Mastic, flat top reinforcement and dowel requirements have been updated.
MRWA-S-307- *Maintenance Hole General Design* Maintenance Hole structures have been categorised into two types: Plastic Maintenance Holes (which are mass produced with standard configurations) and Made to Order Maintenance Holes (concrete, GRP materials) which can be constructed in accordance with a Designer's bespoke design/specification. The Invert requirements of concrete Maintenance Holes have been moved to MRWA-S-300B.	**New MRWA-S-317**- *Pressure Main Discharge to Gravity System Requirements* Design options for connection of sewage pressure mains to the gravity system have been provided, with risks and suitable controls outlined. Ventilation requirements of connecting structures have been included, and pressure pipe to gravity sewer adaption information has been added.
MRWA-S-309- *MH General Construction, Concrete.* A Waterstop installation is now required at all construction joints for a concrete MH. One of the following options is permitted; PVC Waterstop, Hydrotite or Leakmaster compound.	**New MRWA-S-319**- *Pressure Main Discharge to Gravity System Examples* This standard provides a range of acceptable pressure main discharge examples based on the requirements set out in Sewer Standard MRWA-S-317.
MRWA-S-311- *Maintenance Hole Internal Drop Construction, Made to Order arrangement* This Standard includes requirements for gravity sewer and pressurised sewer internal drop arrangements within a concrete Maintenance Hole structure. Figure 311-E has been modified to show the relevant components for installing a pressurised sewer main drop pipe connection.	
MRWA-S-313- *MH Top Conversion, Made to Order. Cover Selection* Truncated Maintenance Hole options have been included with a greater variety of depth options possible due to the greater range of cover sizes available. With the inclusion of this new content, previous Truncated Top standards no longer apply. Top of concrete Maintenance Hole construction requirements have been migrated to MRWA-S-313B. A 750 round cover option has been added, and Class E covers are now required within VicRoads road pavement.	

400 Series Standards



MRWA-S-402- *Vents General*
Additional information and requirements on the placement, height and construction of vents.

New MRWA-S-402B- *Vent Construction Details*
Fabrication and installation details have been enhanced and moved from MRWA-S-402. A new figure for small Air Admittance vents added.

MRWA-S-403- *Water seal structures & Marker Posts*
Water seal fabrication has been amended to allow for a greater range of pipe types. Now require that Water seals be prefabricated in one or two pieces prior to installation. Flexible joints are also required at both ends of Water seals to ensure the correct sewer grades can be maintained. Water seals must now connect to a Maintenance Hole downstream.

MRWA-S-404- *Emergency Relief Structure Design*
A new figure has been added to provide instruction on how to calculate the ERS spill level to prevent spills in the upstream catchment. Level monitoring in ERS structures has been clarified.

MRWA-S-400- *Insertion into Live Sewers* This standard has been decommissioned, with its content now incorporated into MRWA-S-508, 510, 512 and 514 Sewer standards.	**New MRWA-S-406**- *Emergency Relief Structure Construction Details* The ERS construction details have been migrated from Standard MRWA-404 into this standard.

500 Series Standards

New MRWA-S-500- *Live Sewer Works* This Standard provides an overview of the acceptable connection options, preferences, materials and test and inspection requirements for Live Sewer works.	**New MRWA-S-508**- *Live Sewer Concrete MH Construction* Documents options and requirements for constructing new concrete Maintenance Holes over existing sewers.
New MRWA-S-503- *Pipe Connections* This standard provides an overview of acceptable options, preferences and construction details for new connections to different types of existing host sewer pipes.	**New MRWA-S-510**- *Live Sewer Concrete MH Construction, Concrete Encased* Describes additional requirements to MRWA-S-510 that need to be undertaken when the existing sewer has concrete embedment or encasement.

New MRWA-S-506- *Existing Concrete Maintenance Holes, New Connections* Describes the options and requirements for connecting to existing concrete Maintenance Holes.	**New MRWA-S-512**- *Live Sewer Maintenance Structure Installation Examples* Illustrates other maintenance structure options which may be used to provide new connections to existing sewers.
New MRWA-S-514- *Repair of Sewers & Decommissioning of Sewer Connections* This standard includes Three options and situations of use for the repair of defective sewers or the sealing of decommissioned property connections.	**New MRWA-S-518**- *Concrete Maintenance Hole Height Adjustment, Method Selection & General Requirements* Acceptable options for the height adjustment of existing concrete Maintenance Holes are provided with limitations for each option.
New MRWA-S-516- *Decommissioning of Sewers and Structures* This Standard outlines the situations where the grouting or removal of decommissioned sewers and maintenance structures is required. Specifications for decommissioning activities are also included.	**New MRWA-S-520**- *Concrete Maintenance Hole Height Adjustment, Construction Details* This standard provides the construction requirements for each Maintenance Hole height adjustment option. Details are also included for alteration of ladders and step-irons.

Pre-recorded Gravity Sewerage Standards Briefing videos available on the MRWA web portal

The MRWAs have prepared a suite of pre-recorded briefing videos on the Gravity Sewerage Standards. These videos can be viewed from the web portal site or using the web links provided below. A separate video has been created for each series set and provides additional Design and construction information not contained in the key changes summary section of this information bulletin.

100 Series Video https://youtu.be/SJA9HZVNxXc

200 Series Video https://youtu.be/d7658twKZ58

300 Series Video https://youtu.be/-YvuGrktT9A

400 Series Video https://youtu.be/z1L2CYTszFs

500 Series Video https://youtu.be/e-i6qsZ0nw4

Superseded MRWA Gravity Sewerage Standards

The Superseded suite of Gravity Sewerage Standards will remain published on the web portal's Standards page for a limited time after the **1st July 2021**. Copies of the Superseded Sewerage Standards can be provided on request. Consult with your MRWA Key contact prior to making a request.

MRWA Gravity Sewerage Code Edition amendments

The MRWA edition of Gravity Sewerage Code of Australia Version 2.0 is in the process of being amended to reference the new Gravity Sewerage Standards. The project work will also include minor corrections, reference updates and amendments to requirement conflicts with the Technical Standards. More information will be provided in a future edition of this Information Bulletin.

Future MRWA Bulletin

The opportunity is always available for you to request future bulletin items by forwarding your suggestions to any of the MRWA key contacts listed below.

MRWA Documentation

All MRWA standards, included those described in this bulletin are available on the MRWA website at:

http://www.mrwa.com.au/Pages/Standards.aspx

Sewerage Access Covers

- The following changes to Sewerage Access Cover requirements have been documented in the MRWA Gravity Sewerage standards:
- Inspection Opening and Inspections Shaft covers shall be "top hat" covers in trafficable situations and > 230mm tall in non-trafficable situations.
- 750mm round covers are now specified as an acceptable option for larger flat top and truncated Maintenance Holes.
- A range of larger than 750mm covers are now acceptable for use with truncated Maintenance Holes to enable shorter cones to be constructed.
- Class E covers are required in VicRoads road pavement.

A review of Water Agencies Access Cover approvals listed in the MRWA Products Portal is now under way to bring conform to the requirements of the revised Sewerage standards.

At the same time, compliance of listed Access Covers to the updated Australian Standard AS 3966-2019: Access Covers and Grates will be undertaken to ensure all approved products meet this revised standard.

It is anticipated this work will be completed and the MRWA Products Portal updated prior to the revised MRWA Sewerage standards coming into effect on the 1st of April 2021.

MRWA Key Contacts

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