

GOULBURN VALLEY WATER PRODUCT MANUAL



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ABSTRACT

Goulburn Valley Water has developed a product manual as a resource for use by staff, consultants and contractors. It provides an easy to use tool to aid in the design and upgrading of assets and to provide for increased cost saving through common procurement and operator familiarity with equipment and setups. It also serves as a tool to help the transfer of knowledge from lessons learnt and to accelerate the process for designing and building of new assets.

KEYWORDS

Product, Manual, Preferred, Equipment, List, Design, Guidelines

1.0 INTRODUCTION

The Goulburn Valley Water (GVW) Product Manual is a group of documents intended to provide a description of commonly used materials, instrumentation, mechanical and electrical equipment that are to be used for future maintenance, repair and construction of GVW's water supply and sewerage assets.

The aim is to create a product list and design guidelines that are user friendly and provide a standard reference for all designers, constructors and operators. It will continue the standardisation of asset infrastructure throughout the GVW region that will reduce the quantity and range of spares required to be stocked and promote interchange of plant and equipment as required.

1.1 Components

The GVW Product Manual comprises three sections:

- **Preferred Equipment List** – An internal GVW document available to GVW staff, engaged consultants and to assist tenderers during tender preparation for selected projects.
- **Products Catalogue** – A combination of the City West Water (CWW) Products Catalogue (3 off) and the GVW corresponding supplements (2 off). Available for general public use via GVW Web Page, CWW Web Page (CWW documents only) and internally via GVW Intranet.
- **Design Guidelines** – A series of documents that describe GVW's requirements for the design and construction of new assets. The documents are not intended to be a technical specification, and are to be updated and revised as modifications and improvements are identified. All documents are available internally via the GVW Intranet with selected documents available for general public use via GVW Web Page.

The Product Manual must be read in conjunction with the following documents:

- Water Supply Code of Australia, MRWA Edition,
- GVW Supplement to the Water Code;
- Sewerage Code of Australia, MRWA Edition,
- GVW Supplement to the Sewerage Code; and
- Pressure Sewer Code of Australia.

2.0 DISCUSSION

2.1 Background

After an incident at a water treatment plant, where parts for a critical component could not be sourced locally or from other GVW treatment facilities, it was decided GVW required a level of consistency across its facilities to enable easier sourcing of critical components in emergency situations and to enable a better level of operator cross training between facilities and within GVW districts.

The preferred equipment list grew out of the need identified in the above mentioned incident. It was started from interrogating the asset database to identify commonly used equipment and develop a primary and secondary selection for individual asset types from a list of over 5000 individual items. It is still a work in progress as it is further refined.

GVW had been working on its Product Catalogue and supplements for some time and these had been well received within the local construction industry.

The design guidelines grew out of a need for a better level of consistency across new projects and to help learn from past experience while constructing and operating new projects.

A Product Advisory Team (PAT) was formed to oversee the ongoing development and management of the Product Manual. PAT also approves any further upgrades, revisions and additions as necessary

2.2 Product Advisory Team

The PAT is an internal advisory team who oversee the management of the Product Manual and to help facilitate future revisions, entries and additions as necessary.

The PAT is made up of nine representatives from Operations, Asset Performance, Asset Project Delivery, Operations IT, Procurement, Records and Planning, Sustainability and Environment. The PAT meet every three months to ensure the Product Manual is kept up to date and requests are processed.

2.3 Legal

In 2009 formal approval was received from CWW for GVW to refer and link to the CWW Product Catalogue.

After some internal discussions on the legal implications of the Product Manual in relation to the Trade Practises Act (TPA) and the Victorian Government Purchasing Board (VCPB) requirements, GVW sought legal advice. The advice indicated that the Product Manual is a valuable document that offered potential efficiencies for GVW and is highly unlikely to breach the anti-competitive prohibitions of the TPA.

The legal advice provided a series of recommendations to improve the documents and processes to satisfy the provisions of the TPA and VCPB, which were adopted. Some of these were to remove the term 'justifications' from our documents, include a process for the addition and trialling of new products and enable requests to be lodged for addition of new products by staff, suppliers and consultants.

In 2009 GVW's internal financial auditors included a review of the Product Manual within the scope of an audit which identified it as a valuable document to GVW. They supported the retention and ongoing development of the Product Manual and recommended additions to the Preferred Equipment List to improve ordering efficiency.

2.4 Rollout

Presentations have been given to the Technical Services Managers and District Managers regarding the Product Manual which has kept management informed about the development, review and benefits of the Product Manual. Articles have also been written in GVW's internal staff newsletter about the Product Manual.

A series of presentations have been delivered to each operational team within GVW. This will be followed up when GVW's procurement team start rolling out a new process for procurement of items. The Product Manual will be re-introduced with an emphasis on how it all links in to provide a better outcome for the Operations teams.

2.5 Product Selection

Items are selected for inclusion in the Product Manual based on history, service life, life cycle cost, compatibility to existing assets, availability, environmental, maintenance and standardisation. Alternative suppliers, brands or products not in the product manual may be selected for a specific project once a full engineering assessment is conducted and approved by the project team.

To request inclusion in the Product Manual, manufactures, suppliers, consultants and contractors are requested to complete the 'Supplier Request for Inclusion in the Product Manual' form.

For requests to modify a product and/or listing a 'Document Improvement Request' form is available.

To assist with ongoing instrumentation choice brought about by equipment being upgraded, or no longer available, a trial selection within GVW's appropriate system can take place. The decision to trial a new product could arise from a Document Improvement Request submitted by a consultant, supplier, staff member, etc, through the PAT. It could also arise from within GVW's various teams, such as Water Treatment. If accepted for trial the new unit will be assessed after a six month trial by a selected panel with a final assessment report submitted to PAT for the final decision.

In order to better handle the request process and not inundate any particular person a separate email address with the generic 'productmanual' name has been produced and is in use to provide a central point for requests, information and correspondence.

3.0 DETAILS OF COMPONENTS

3.1 Preferred Equipment List

The Preferred Equipment List details the GVW preference for the manufacture and supply of specific individual units or items that are to be installed within the GVW asset systems or used by operations and maintenance staff.

The aim of this list is to standardise on the products utilised by GVW in the operation and maintenance of its water supply and sewerage reticulation which will provide the following benefits:

- Minimise the variety and volume required to be held as spare parts and replacement products in stock;
- Provide a reference document to simplify and allow consistent ordering of replacement parts; and
- Increase the opportunity to interchange products from one asset system to another, as required, especially in emergency or critical situations.

The Preferred Equipment List is an excel spreadsheet that is available from GVW's Intranet and is comprised of the following lists, Electrical, Dosing, Instrumentation, Pumps, Valves, WTP, WMF, General Equipment, IT Equipments and Pressure Sewer. Some of the specific items included are, level transducers, poly mixers, turbidity meters, submersible pumps, air compressors and demo saws. It also includes guidelines on selection, details of suppliers, members of the PAT, history of modifications and a Document Improvement Request form.

For each item, where practical, a primary and secondary manufacturer and supplier are provided to assist in the selection, pricing and ordering of suitable items, as required.

The Preferred Equipment List is a document that is to be referenced by GVW staff and engaged consultants for the selection of items for installation within GVW asset systems. It is not available for the general public.

The preferred equipment list is not an exclusive list and other non-listed equipment may be used when appropriate.

3.2 Product Catalogue

The Products Catalogue lists the materials and fittings acceptable for use in the construction and maintenance of GVW's water supply and sewerage reticulation systems. This also includes pressure sewer and effluent reuse (New Water) systems.

The Products Catalogue is a combination of the following documents:

1. City West Water – Products Catalogue for Pressure Pipeline Systems
2. GVW Supplement - City West Water – Products Catalogue for Pressure Pipeline Systems
3. City West Water – Products Catalogue for Non Pressure Pipeline Systems
4. GVW Supplement - City West Water – Products Catalogue for Non Pressure Pipeline Systems
5. City West Water – Pre-mixed Concrete and Quarry Products Catalogue
6. GVW – “Pressure Sewer Preferred Equipment”
7. GVW - “Products Catalogue – Document Improvement Request”

The Products Catalogues that have been prepared and maintained by City West Water (CWW) have been selected as the most suitable for reference by GVW.

Supplements have been prepared and will be maintained to customise the catalogues to reflect GVW requirements. These documents are included in the Development Construction Manual.

The advantages of utilising product catalogues from City West Water include:

- CWW use similar asset systems for gravity sewer and pressure pipelines to GVW. Therefore, the supplements prepared for both system catalogues are minor documents, as few modifications are required:
- CWW possess more resources to initially prepare and maintain the catalogues;
- Any companies wishing to have items included on the GVW products catalogue, will firstly have to satisfy CWW requirements prior to GVW being required to consider inclusion of the item.

3.3 Design Guidelines

GVW's Design Guidelines are a series of documents that describe GVW's requirements for the design and construction of new assets. The documents are not intended to be a technical specification but describe the components of the system, often using simple diagrams with plans and photos of recent example installations.

They are a recent addition (2010) to the Product Manual and are to be updated and revised as modifications and improvements are identified. Some of the current documents include:

- Building Aesthetics,
- Building Assets in Bushfire Prone Areas
- Hypo Dosing Units,
- Membrane Filtration,
- Gas Chlorination,
- Electromagnetic Flow Meters,
- Water Storage Tank (Ground); and
- Water Supply Booster Pump Station (to storage tank).

All documents are available internally via GVW's Intranet with selected documents relevant to the developer projects available for general public use via GVW's Website. They will also be provided to consultants to assist with projects as required.

4.0 CONCLUSION/LESSONS LEARNT

The Product Manual has helped GVW to achieve a high level of consistency across the Corporation. Another major advantage has been that the design process for new projects has become easier as the main components are pre defined. This is then reflected in a shorter design time and lower overall costs for the design of components or facilities.

Some of the lessons learnt from going down this process are that the PAT needs to be established early and have regular meetings with detailed minutes kept. Also being able to share and use information among water corporations and WSAA, along with using information already in the public domain via another water corporation's Product Catalogue, is of a huge importance.

Some lessons learnt from the field, were where a contractor for a major project had installed in a switchboard, components not from our Preferred Equipment List and where comparable components were listed. The contractor had been given the Preferred Equipment List at the tender stage and was advised of the changes needed. We are now more actively asking for an equipment list for review before switchboards are manufactured, to try and catch these before manufacture and installation.

We are also working with the contractor so that they will follow the lists more closely for future works.

5.0 ACKNOWLEDGEMENTS

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