

9

Supporting programmes

Many actions are important in ensuring water safety, but do not affect water quality directly, supporting programmes (Table 9.1) fall into this category.

Supporting programmes are activities that ensure the operating environment, the equipment used and the people themselves do not become an additional source of potential hazards to the drinking-water supply.

They incorporate the principles of good process control that underpin the water safety plan. Codes of good operating, management and hygienic practices are essential elements of supporting programmes. These are often captured within standard operating procedures

(SOPs) or system operating rules.

They can include, but are not limited to;

- hygienic working practices documented in maintenance SOPs;
- training and competence of personnel involved in water supply;
- tools for managing the action of staff, such as quality assurance systems;
- securing stakeholder commitment, at all levels, to the provision of safe water;
- education of communities whose activities may influence water quality;
- calibration of monitoring equipment; and
- record keeping.

Supporting programmes could specifically involve:

- Controlling access of people into treatment plants, catchments and reservoirs, and implementation of the appropriate security measures to prevent transfer of hazards from people when they do enter source water;

- Development of verification protocols for the use of chemicals and materials used in water supply, for instance to ensure use of suppliers that participate in international quality assurance programmes;
- Use of designated equipment for attending to incidents such as mains bursts. For example, equipment should be designated for potable water work only and not for sewage work; and
- Training and educational programmes for personnel involved in activities that could influence water safety. Training should be implemented as part of induction programmes and frequently updated.

Table 9.1: Examples of supporting programmes

Issue	Importance	Actions to be taken
Water supplier and/or resource protection agency have input into land-use and abstraction control in catchment	Source and resource protection are essential first steps in the delivery of safe water. Water suppliers and other key stakeholders should be able to influence land-use decisions to protect water sources	Development of water source protection plans. National groundwater and surface water management plans
Specifications for materials and chemicals used in water supplies	The control of chemical hazards derived from materials and chemicals used in water production is usually best achieved through product specification	Develop materials and chemicals specifications. Require certification of quality by a laboratory holding ISO/IEC17025 accreditation
Training of operation and maintenance staff	Poor operational practice may lead to large-scale contamination and increased public health risks	Training programmes and ongoing supervision systems in place
Hygiene code of practice for work on the system developed and made available to all staff	Staff unaware of, and do not follow, satisfactory hygiene practices	Ensure hygiene code is clear and easy to follow, and copies kept in every vehicle used by operational teams who should be trained in their use
Training and hygiene education in communities	Poor hygiene practices increase risks within the home and may also affect environmental hygiene and cause contamination of supplies	Develop participatory awareness-raising and education programmes
Groundwater mapping, assessment of vulnerability and definition of protection zones	Location and vulnerability of groundwater reserves not known	Develop hydrogeological maps and a national or regional groundwater management plan

Supporting programmes will consist almost entirely of items that water suppliers and handlers will ordinarily have in place as part of their normal operation. For most, the implementation of supporting programmes will involve:

- collation of existing operational and management practices;
- initial, and thereafter, periodic review and updating to continually improve practices;

- promotion of good practices to encourage their use; and
- audit of practices to check that they are being used, including taking corrective actions in case of non-conformance.

Comparison of one set of supporting programmes with those of others, through peer review, benchmarking and personnel or document exchange, can stimulate ideas for improved practice.

9.1 MELBOURNE WATER CASE STUDY – SUPPORTING PROGRAMMES

Supporting programmes make up a major part of Melbourne Water’s water safety plan, as illustrated in Table 9.2.

Table 9.2: Melbourne Water supporting programmes

Supporting programme	Document reference	MW Contact
Melbourne Water Policies		
Risk Management Policy	MW Intranet – Policies	Corporate Secretary & Legal Counsel
Public Health Policy	MW Intranet – Policies	Group Manager Research & Technology
Water Supply Catchment Policy	MW Intranet – Policies	Catchments & Waterways
Contract Management		
Bulk Water Supply Agreements	MW Intranet – Operations	Operations
Capital delivery (design briefs, contract specs, commissioning, handover)	Registered files	Manager Treatment Capital Delivery
Chemical supply contracts (including security measures and quality compliance)	Registered files	Business Services and Operations
Operating and Maintenance Procedures		
Standard Operating Procedures (SOPs) for Water Treatment	MW Intranet – Operations – Standard Operating Procedures	Team Leader Water Supply Operations
Catchment management plans and procedures	Refer to the Source Water Specifications	Catchments & Waterways
Raw material control and vendor assurance program	MW Intranet and supply contract files	Section Leader North West Water Operations
Controls and Standard Operating Procedures for transfer/distribution	MW Intranet Water Transfer	Operations
	Bulk Water Entitlement Operating Rules	Operations
	Annual System Operating Plan	Team Leader Water Supply Operations
Reservoir inspection/security procedures	MW Intranet Operations - SOPs	Operations
	MW Intranet Water Operations - SOPs	Operations
	MW Intranet –Operations – SOPs – Water – Emergency Events	Operations Area Leaders

Supporting programme	Document reference	MW Contact
Incident Management		
PERFORM (Incident and Crisis Management Plan)	Melbourne Water Program and Management Document “Prompt Emergency Response for Melbourne” MW Intranet Management Systems – Incident Management Incident Records Operations and Asset Management and Capital Delivery	Risk and Compliance Manager, Corporate Secretariat Operations & Infrastructure
Contingency Plans	MW Intranet – Management Systems - Incident Management – Contingency Plans	Operations
Emergency Event Standard Operating Procedures	MW Intranet –Operations – SOPs – Water – Emergency Events	Operations
Customer Feedback		
Defined in the Bulk Water Supply Agreement	MW Intranet – Operations - Customers	Team Leader Water Supply Operations
Monthly customer reports	Registered files	Operations
Quarterly and annual public health reports	Registered files	Research & Technology
Asset Management		
Asset Condition Assessment	State of the Assets Report	Infrastructure
Maintenance: Routine and Non-routine	Hansen database to access SMIs and work orders Mech/elec. And civil contracts Routine maintenance checklists O&M manuals	Infrastructure
Maintenance: Annual Outages Program		Team Leader Water Supply Operations
Improvement Strategies		
Drinking-water Quality Strategy	Registered files	Planning
Mornington Peninsula Strategy	Registered files	Planning
Environment and Public Health		
Environment and Public Health Management System Manual	MW Intranet – Management Systems	Research and Technology
Quality Management System for Drinking-water Quality QMS Manual	MW Intranet – Management Systems	QMS HACCP Coordinator
System Procedures: Non-conformance & Corrective and Preventative Action Procedure Management Review Procedure Internal Audit Procedure	MW Intranet – Management Systems	Research & Technology
Research & Development Program		
R&D Program	Registered files	Research & Technology
Water Quality Monitoring		

Supporting programme	Document reference	MW Contact
Water Quality Monitoring Program	Registered files	Water Supply Operations
Procedure for managing water quality monitoring	Registered files	Water Supply Operations
Compliance Reporting		
Customer report – monthly (compliance with BWSA, including exceedence reporting)	Registered file	Water Supply Operations
Internal operational reports (KPIs etc.)		
Quarterly and Annual Public Health Reports		Water Supply Operations
Fluoride reports to Department of Human Services		Water Supply Operations
Managing Directors Report		Commercial Services
Document and Records		
Document Management Procedure	MW Intranet – Policies	Commercial Services
Records Management Policy	MW Intranet – Policies	Commercial Services
Training		
Performance Improvement Policy and Procedure	MW Intranet – Policies	Human Resources
Performance Planning Policy	MW Intranet – Policies	Human Resources
Skill-based pay system for water supply operators	Personal files Operator Skills Matrices	Human Resources
HACCP Awareness Training	Registered file and computer file location	QMS HACCP Coordinator
Records	MW Training Database	Human Resources

MW – Melbourne Water; HACCP – Hazard Analysis Critical Control Point

9.2 KAMPALA CASE STUDY – SUPPORTING PROGRAMMES

NWSC have or participate in a number of supporting programmes that support the delivery of safe drinking-water. The establishment of ‘water quality control’ as a department is an important step in promoting improved water safety management. The establishment of the water safety taskforce and investment in improving monitoring points and mapping of the distribution system are essential supporting programmes for the successful implementation of the water safety plan.

Training of staff is a key supporting programme for NWSC and they continue to ensure that staff are appropriately trained and understand the importance of water safety. The distribution system in Kampala is managed by a private contractor and the water safety plan has been incorporated into arrangements with the contractor to ensure performance. More generally, NWSC are applying more generic management systems to all aspects of its work.

NWSC have also embarked on a number of activities to improve uptake of services among the population of Kampala, particularly within poor areas. This will enhance the overall reduction in water-related health risks and will provide further resources for water safety management. As part of this activity, pilot level activities are underway to provide training and tools for communities to better manage the tertiary

infrastructure, where contamination within the distribution system most commonly occurs. This approach includes provision of training in sanitary inspection and local level action, as well as developing more effective communication channels between consumers and the utility.

NWSC remain a key player in developing appropriate drinking-water standards for Uganda, the use of the water safety plan and risk assessment data feeds into the broader sector dialogue regarding levels of water safety. Other supporting programmes include participation in the Lake Victoria Environmental Management Plan, which is a multi-country effort to improve the quality of the lake. As the major source of water for several NWSC supplies, this is critical and will become more so as services are rolled out. NWSC also control the sewerage system in Kampala and are therefore responsible for implementing discharge consents on industry. As the overall rate of connection to sewerage is limited in Kampala, NWSC are embarking on the development of a sanitation master plan for the city in collaboration with other key stakeholders.