Overcoming the challenges with operationalising water safety planning

Drinking water legislation requires suppliers to have a water safety plan (WSP) to manage drinking water risks. Despite appropriate legislation, regulations, drinking-water standards and global and local guidance, many suppliers still struggle to adequately operationalise their WSP. This article presents lessons learned from global WSP experience.

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To ensure your WSP remains relevant and up-to-date, it's important to remember that successful water safety planning is a journey, not an event. This requires a continuous improvement philosophy being adopted throughout your organisation.

WSP principles must be embedded in day-to-day practices, and no matter where you are on your journey, keep moving forward and improving – share your experiences and learn from others.

Geographic and environmental diversity

Effective operationalisation requires consideration of geographic and environmental diversity, embedding WSPs within the organisation, and fostering an adaptation and continuous improvement mindset.

Our diverse geography presents significant challenges in operationalising WSPs. Each region faces unique challenges based on their specific environmental conditions, such as climate, topography, and water sources.

To address these challenges, WSPs must be tailored to the local context. This involves conducting customised risk assessments that consider local environmental factors and potential hazards and developing region-specific control measures.

It's important to engage local experts and community members who have a deep understanding of local conditions, water sources and potential hazards.

Engaging communities and raising awareness can be challenging, especially in smaller, isolated communities. There is often a lack of understanding of the role of community members in maintaining water safety.

Fostering community involvement by being transparent and sharing water safety issues and solutions, can help build trust and improve cooperation.

Embedding WSPs within the organisation

Embedding WSPs requires an organisational cultural shift that prioritises water safety at all levels. This begins with strong leadership commitment to and endorsement of WSPs.

The establishment of clear organisational policies can help integrate WSPs into day-to-day operations and make it part of the business.

Effective communication and collaboration across organisational business units is essential. The operations and maintenance team, and the strategy and planning team need to work closely with the water quality team. Establishing WSP teams with diverse skills and experience can help minimise operational blind spots.

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Training and capacity building helps staff understand their roles and responsibilities. Regular training and emergency drills reinforce the importance of WSPs and keeps staff updated on best practices.

Incident debriefs and root cause analysis provide an opportunity to capture knowledge, building understanding across the organisation and feeds into the continuous improvement process.

Effective WSP implementation also requires coordination and collaboration among external stakeholders. This can be complicated by differing priorities, resource limitations, and varying levels of expertise, and developing clear communication channels and protocols can help facilitate information sharing and collaboration.

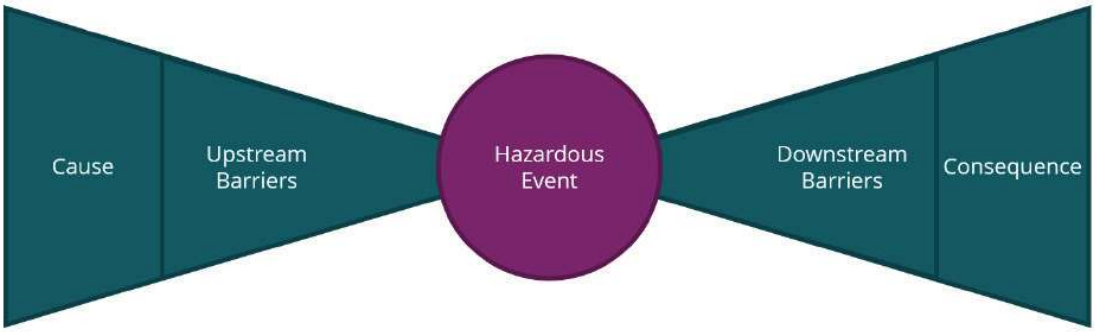
Most important is for the utility to start simple and get going with implementing its WSP. Initial implementation will be far from perfect.

We recommend following the Pareto Principle (or 80:20 rule) with incremental improvements to build familiarity and gain process momentum. Keep moving forward, step by step, every day.

To further embed this change management process and motivate staff, we recommended simple mechanisms and check-ins at various levels to ensure that 'the elephant is slowly being eaten'.

Several areas of good practice have helped embed WSP principles in several water authorities in NSW, Australia, including, for example:

- Regular check-in meetings (that provide a standing forum for



A sample bow-tie diagram for ineffective filtration, highlighting the ability to capture barriers in place, consequences of hazards and hazardous events, and improvement actions to address shortcomings.

operators to raise issues, track performance, and keep the team accountable).

- Focusing on critical control points and immediately informing the regulator if critical limits are exceeded.
- Verification monitoring by the regulator (samples are collected by the utility with analysis costs borne by the regulator, and results stored on the regulator database).
- Participation by the regulator in risk assessments.
- Creating an easy-to-use structure on SharePoint/MS Teams channel for storing relevant documents and records.
- Conducting annual incident scenario exercises to test response and readiness (with the regulator present).

Visual tools, like bow-tie diagrams, improve risk communication and understanding. These diagrams help organisations identify critical risk pathways, evaluate control effectiveness and the need for change, and communicate risk information to diverse stakeholder groups, including both technical and non-technical audiences.

Adaption and continuous improvement

Water supply systems are dynamic, and new risks can emerge. Climate change requires an adaptive planning approach and resilient infrastructure. WSPs must be flexible and responsive, and fostering a culture of adaptability and of continuous learning and improvement encourages staff to proactively identify and address risks.

Regular reviews and updates help maintain WSP effectiveness. Implementing a robust feedback loop allows organisations to learn and continuously refine their WSPs.

Embracing innovation and new technologies, for example advanced monitoring systems and data analytics, can help identify potential issues before they become critical.

Even relatively well resourced and well managed utilities are not immune to challenges and weaknesses, and extraordinary shocks and stresses can highlight vulnerabilities that might not ordinarily be considered. This highlights the need to be able to adapt to changing circumstance.

Implementing WSPs can require significant financial investment, and this can be a barrier. Seeking funding is not always achievable or sustainable, and a shift toward cost effective/low-cost, high-impact interventions that can easily be implemented and maintained is key.

Finally, countries often identify a lack of WSP enforcement as a challenge to WSP sustainability. WSP auditing provides an opportunity to strengthen WSP operationalisation, impact and sustainability.

Questions to ask yourself

- Have I developed my water safety plan?
- Do we have a solid foundation?
- Have I implemented my WSP?
- Do we have appropriate structures, processes, and systems in place?
- Was implementation achieved with inputs and assistance from other teams/all units within my organisation?
- Is my WSP embedded?
- Is the team aligned and working towards the same goal?
- Is WSP part of day-to-day activities?
- Is WSP part of top management's business DNA?
- Will WSP related tasks/activities/processes continue without my supervision/intervention?

If you answered no to any of these questions, you may face challenges with the long-term sustainability of your WSP.