The Australasian Biosolids Partnership and Public Perceptions

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Abstract: The Australian water industry recognized the need for the public, along with the managers of biosolids, to be better educated about the benefits and risks, along with management of these risks, for biosolids in Australia. Public perceptions and their influence on biosolids management were considered the most significant issue. After several years of discussions a national Biosolids Steering Group was established to develop a model for Australia and New Zealand. The result is the Australasian Biosolids Partnership (ABP). This paper reports on the drivers for the ABP, the differences to the NBP and SORP and the key components of the partnership. The approach to ownership and funding to ensure sustainable operation of the partnership are also discussed. The potential for wider application is explored. The paper also reports on the process in developing the ABP and gaining water industry buy-in.

Keywords: communication, public engagement, consultation, perceptions

INTRODUCTION

The common perception is that Australia has lots of land and therefore land application of biosolids will not be an issue. This is a myth. As with other developed countries throughout the world, Australian cities and townships have major challenges with management of biosolids. Forget the science with biosolids management – the biggest issue facing the Australian water industry is not the science; it is public perceptions and how the industry manages these perceptions.

By way of example, the USA had been “cruising” comfortably for several years based on US EPA’s Part 503 (40 CFR Part 503), which was promulgated in 1993. The shift in public acceptance of land application of biosolids, the roles governing its application and the credibility of US EPA with respect to biosolids management resulted in the formation of the National Biosolids Partnership (NBP). A key focus of the NBP has been development and application of an accredited Environmental Management System (EMS) to give confidence to the public of the quality controls on processing and management of biosolids.

In the United Kingdom (UK) there was a parliamentary inquiry into land application of biosolids in 1998. The food industry (led by retailers) and landowners became concerned and commenced discussions with the water industry. The UK water industry consulted openly and widely with a range of stakeholders, including the food industry and landowners, to develop the agreement “The Safe Sludge Matrix” to give surety in land application of biosolids.

The Sustainable Organic Residuals Partnership (SORP) was established in the United Kingdom as the Environment Agency was concerned that the Safe Sludge Matrix alone would not provide the security required for long term biosolids management. The key function of SORP is to promote the sustainable use of organic resources on land.

These two international biosolids partnerships were seen by the Australian water industry as confirming the need for the public, along with the managers of biosolids, to be better educated about the benefits and risks, along with management of these risks, for biosolids in Australia. Public perceptions and their influence on biosolids management were considered the most significant issue. These two partnerships were the genesis of developing the Australasian Biosolids Partnership(ABP).
STRUCTURE OF THE AUSTRALIAN WATER INDUSTRY

It is important to understand the structure of the Australian water industry to put the establishment of the ABP into context. Australia consists of six states and two territories as set out in Figure 1.

![Figure 1: States and Territories of Australia (source www.street-directory.com.au)](image)

Australia is a federation established in 1901 by the then six British colonies in Australia uniting under a single constitution. As may be expected, each colony (state) had established their own way of doing business, which resulted in major differences, even in simple things such as the gauge for rail lines being different in each state. Each state had, and still retains responsibility for water management (although this is being seriously challenged at present).

Each state has a different structure for water management. For example, in Western Australia, which constitutes one-third of Australia, there is one water corporation responsible for bulk and retail water services for some 2 million people. On the other hand, New South Wales (NSW) (total population 6.8 million) has one water corporation for Sydney (some 4.2 million people) and more than a hundred local government councils administering water supply for the remaining 2.6 million people in NSW, with many servicing only a few thousand people. Victoria has a single bulk supplier and three retailers servicing its 3.2 million people in Melbourne, The remaining 1.8 million people of Victoria are serviced by 13 retailers.

The key urban water industry associations in Australia are the Australian Water Association (AWA) and the Water Services Association of Australia (WSAA). AWA’s primary purpose is to provide a link between the wider water industry and the community in all aspects of sustainable water management, including biosolids. WSAA’s primary purpose is meeting the needs of its 29 major water authorities across Australasia. WSAA members serve about 15 million of the 24 million total populations in Australia and New Zealand, which represents the greater share of the community. WSAA is structured and resourced to provide a voice for these major water authorities.

BIOSOLIDS IN AUSTRALIA

Currently approximately 360,000 dry tonnes of biosolids are produced annually in Australasia (see Figure 2 for state by state quantities and usage). The cost for sludge/biosolids management is typically 40 to 50 percent of total capital and operating cost for wastewater treatment. It will cost water authorities and users of water hundreds of millions of dollars in the coming years to manage biosolids (the current average cost for biosolids management is in the order of $300/dry tonne, which equates to about $100M per year. Victoria alone has a stockpile of some 1.7M dry tonnes of biosolids, which equates to about $500M to address management of this stockpile alone).
The quantity of biosolids in Australia (360,000 dry tonnes per year (dt/y)) is relatively small in comparison to the USA and the European Union (each in the order of 7.5 M dt/y). However, the cost per capita is similar.

FORMATION OF THE AUSTRALASIAN BIOSOLIDSPARTNERSHIP

The impact of public perceptions on sustainable use of biosolids has been on the Australian water industry’s agenda for several years. There has been recognition by practitioners across the country for the need to have a coordinated approach to public engagement (Gale 2004a; Gale 2004b; Gale 2005).

To help address this need, a state water industry Biosolids Communications Working Group was established in Victoria in late 2003 with the goal of developing a communications framework and toolkit for the sustainable use of biosolids (including a recommended strategic approach for water authorities to adopt). This working group then evolved into the national water industry Biosolids Community Engagement Project (BCEP) funded jointly by Water Services Association of Australia (WSAA) and the Victorian Water Industry Association (VicWater). The New Zealand water industry also participated in the BCEP, and proposes to continue to participate in the ABP.

The Steering Group of the BCEP recommended that an Australasian Biosolids Partnership (ABP) be established. Although there are similarities to the National Biosolids Partnership (NBP) in the USA and SORP in the EU, the primary focus of the ABP is an industry-wide consistent approach to public engagement.

At the time of preparation of this paper (March 2007) the ABP program is ready for implementation pending sourcing funding for the program.

THE AUSTRALASIAN BIOSOLIDSPARTNERSHIP

Components of the ABP

The two key components of the ABP are:

- Leading public engagement with biosolids management at a national level in both Australia and New Zealand.
- Supporting members of the Australasian water industry on technical components of biosolids management, including management and updating of the website and facilitating technical information transfer across the industry and to the wider community.
In meeting these components the ABP is structured to:

- Provide a comprehensive Biosolids Engagement, Consultation and Communication Toolbox for the water industry or biosolids producers to effectively undertake engagement and consultation of stakeholders who are involved in the development of sustainable uses for biosolids; and
- Communicate and promote the Biosolids Engagement, Consultation and Communication Toolbox and supportive information related to biosolids efficiently and effectively to water industries producing biosolids and seeking sustainable methods for managing biosolids, as well as any person seeking information on biosolids.

The knowledge base for the ABP is driven through the website (www.biosolids.com.au). Major components of the website include:

- Questions and answers about biosolids with the facility to submit questions;
- Glossary of terms used in association with biosolids;
- Uses of biosolids in Australia and New Zealand;
- Current biosolids news, conferences and workshops related to biosolids;
- Biosolids guidelines (links to websites) for Australia, New Zealand and other countries;
- Technical resources (i.e. associations, websites, community engagement and communication toolbox, case studies and research); and
- Contact details for state, national and international people responsible for environmental, health and agriculture components to ensure biosolids are used sustainably.

Ongoing maintenance and updating of the knowledge base is required. This will involve: keeping the public engagement, consultation and communication tool kit up-to-date; providing technical information and education programs for biosolids management in New Zealand and Australia, ensuring that these resources are easily found, relevant and easy to use. It will also necessitate communicating with a wide spectrum of stakeholders and key sectors of the community to ensure that the advantages and disadvantages of biosolids management are accurately conveyed.

**Benefits of the ABP**

Benefits from the Australasian Biosolids Partnership include:

1. Providing resources to regulators and water authorities, to make training and understanding of sustainable uses for biosolids easier and more efficient;
2. Maximising the benefits from recycling valuable nutrients and organic matter;
3. Optimising benefits from the energy value of biosolids;
4. Making sustainable management of biosolids easier by improving the general public, landscaper industry, agricultural industry and other potential users' acceptance of biosolids use in all areas where it can be demonstrated to be used safely and sustainably;
5. Making efficient use (i.e. prevent duplication and reinvention) of Federal and State resources currently used to address public questions and develop sustainable use for biosolids;
6. Helping to ensure the most appropriate use of biosolids based on a triple bottom line approach;
7. Minimising the environmental impacts from poor management of biosolids (i.e. excessive energy use for processing biosolids when it may not be required) and providing easy access to alternative management strategies;
8. Assisting water authorities with community engagement strategies and resources, thus helping staff work efficiently and minimising the anxiety involved with community engagement strategies;
9. Providing a non biased and consistent source of information;
10. Providing a source of expert knowledge across all Australian states and New Zealand;
11. Maximising impact from research by developing a database for current and proposed research and development across Australia and facilitating the sharing of this information (with relevant international research also included);
12. Providing tools and information to ensure a national standardised approach to biosolids management to allow all authorities to provide similar information in similar formats. This provides a unified approach to the beneficial use of biosolids and minimises stakeholder confusion; and
13. Protecting all water authorities and the general community from poor decisions from biosolids managers that could lead to a bad experience with biosolids, which has a detrimental impact on the biosolids management industry nationally. This could cost the industry hundreds of millions of dollars if treatment standards are raised unnecessarily.

Importance of Water Industry leading debate on Biosolids Management

It is critical for the water industry to lead public engagement on biosolids with a wide range of stakeholders and interested parties before issues develop. The level of public awareness of biosolids management in Australasia is relatively low. Now is the time to lead the debate rather than waiting until an issue arises and the water industry is on the back foot having to defend rather than lead.

The Australasian water industry is best equipped to lead this debate as it has the greatest knowledge and experience in biosolids management in Australia and New Zealand. It has also invested millions of dollars in developing a sound scientific approach to biosolids management.

As set out in Figure 3 the key premise of the ABP is that it provides a framework for individual water authority communications strategies, but not all the details or information required for the strategy. It is the responsibility of each authority to develop local specific information as required, with guidance from the framework.

**Figure 3: Biosolids Communications Hierarchy**

**Proposed Structure and Funding Mechanism for the Australasian Biosolids Partnership**

The ABP’s primary purpose is to support the water industry in informing both the industry and the wider community on appropriate biosolids management. The steering committee believes it is paramount that ultimate ownership should reside within the water industry. It follows that it is the responsibility of the Australasian water industry to provide the majority of the financial support to enable the ABP to undertake the many components of the program outlined above.
It is also important to be able to demonstrate regulator and wider government department support at both federal and state levels, and to maintain close liaison with relevant research and academic institutions whose research outcomes will be critical in establishing the technical credibility of biosolids and biosolids management approaches.

The operational structure of the ABP is outlined in 4. The ABP is operated under AWA, with day to day activity through the Strategic Advisor and Technical Officer functions and through feedback from the water industry, stakeholders and media across Australia.

**Figure 4:** Operational structure for the Australasian Biosolids Partnership

**BUSINESS AND FUNDING STRUCTURE**

Assured, long term funding support of about $150,000 per year is essential for the ABP to be effective. By way of comparison, the NBP has had secure federal funding via the USEPA, which has enabled it to meet its objectives and continue to grow. On the other hand, SORP has an admirable structure and initial establishment but has not continued its development due to a lack of secure funding.

The ABP business model is set out in Figure 5. Under this model the water industry provides the greater majority of the operational funding, with contributions from regulators and research institutions. Regulator support is important to demonstrate support of the ABP, without substantial amounts being necessary. Research institutions are net seekers of funds rather than providers, but nominal financial support is desirable to demonstrate commitment to the ABP.

Further funding is available via contributions from service providers such as consultants, equipment and process providers and biosolids contractors. This includes purchasing a page on the website where they can promote their services without having financial ownership of the ABP.
Figure 5 Business and funding structure of the ABP Business Model

CONCLUSIONS

The need for a coordinated approach by the Australasian water industry to public engagement with biosolids use is well established and demonstrated by the significant challenges that have been faced by USA and European counterparts.

The Australasian Biosolids Partnership provides the program to meet this need.

Formation of the ABP is the genesis for an ongoing program, with long term funding being the key for continuity of this service. All biosolids practitioners need to promote support for the ABP concept to ensure the valuable resource completed so far remains up-to-date and so that sustainable biosolids management, from an economic, environmental and social perspective, continues in Australia.

REFERENCES


