

## Management, containment and reuse options for water runoff in red meat processing facilities

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### Project Description

The effective management of stormwater and runoff from commercial and industrial sites requires careful planning and design. Poorly managed stormwater can cause problems on and off site through erosion, flooding and the transportation of nutrients, sediments and chemical pollutants to waterways. At meat processing sites, stormwater runoff can be generated from roof tops, unpaved areas (holding yards) and paved areas (roads and carparks). Meat processing sites are typically decades old with facilities that have been expanded and developed over many years. Such development is coupled with changes in climate and the more frequent occurrence of 'extreme' weather events that impact on a site's capacity to effectively management runoff. This project is a review of how Australian meat processing companies are managing stormwater runoff; what technologies are available to the industry that are not commonly used and what is currently considered best practice management to minimize environmental impacts.

### Project Content

The project consisted of four segments:

- A literature review of compliance requirements for stormwater management across Australia and internationally;
- A survey of Australian meat processing facilities to gain an understanding of current management practices and issues;
- A techno-economic assessment of commercially available technologies; and
- A report on best practice approaches available for management of stormwater from meat processing sites.

## Project Outcome

A review of Australian regulations consistently highlighted the general principles of stormwater management which are to divert clean water away from sources of contamination; minimise the quantity or hazardous nature of contaminants that are in contact with the runoff; treat to render it less contaminated or hazardous; and, where practicable, collect for recycle and reuse. Australian regulations generally require this approach leaving the means in achieving these measures up to the discretion of industry. Traditionally, the approach for stormwater management has been around collecting and conveying water from one point to another, which effectively results in transferring any potential problems. Water is generally conveyed by a pipe or channel from a collection area to a discharge point (e.g. the nearest ocean, creek, river or lake). The literature review highlighted a shift in this approach, particularly with regards to water sensitive urban design. This was seen in some international and Australian regulations which are moving towards replicating natural ecosystems with a focus on hydrological balance; near-natural handling of stormwater; and measures for ecological urban drainage.

Following the literature review and site surveys, five technologies were selected that were seen to be applicable but not commonly used by the industry. The technologies selected were

- high efficiency sediment basins,
- denitrifying bioreactors,
- trafficable solids traps,
- constructed wetlands, and
- cartridge filters.

The project outcome culminated in the development of the 'Stormwater Management Framework and Good Practice Guidelines for Meat Processing Plants' (Figure below). The framework provides an overview of the sources of stormwater, management and design aspects, potential treatment technologies and opportunities for improvement.

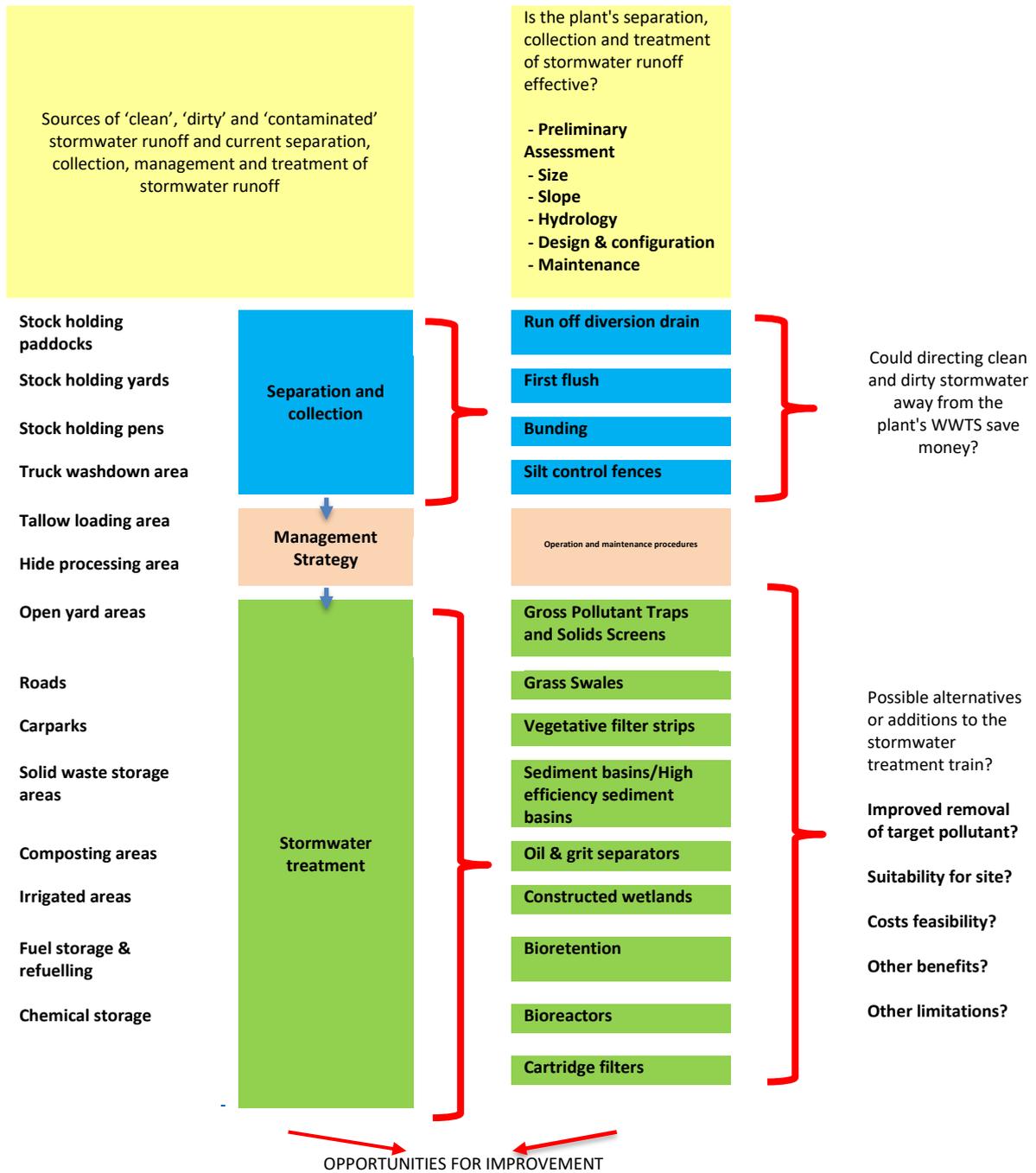


Figure 1: Framework for assessing stormwater management at meat processing plants

## Benefit for Industry

This project provides industry with additional information on technologies that are commonly used in other industries and which could be adopted by meat processors. In addition, the framework assists in the selection of management practices and technologies that will lead to best practice management of stormwater runoff.

## CONTACT DETAILS

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