Government of South Australia
South Australian Arid Lands Natural Resources Management Board

WATER AFFECTING ACTIVITIES
DAMS - FACTSHEET

Are you thinking of building a new dam, deepening or enlarging an existing dam or cleaning out an on-stream dam? These are just some examples of Water Affecting Activities (WAA) that may require a permit.

This factsheet provides important information on dam development and your obligations under the *Natural Resources Management Act 2004* (the Act).

Why control dam development?
New dam development can impact on existing water users and water-dependent ecosystems, and must be managed in a way that balances these existing needs with those for potential future needs.

If there were no controls for the building of dams a number of problems could result:

- Reduced flows to downstream users
- Reduced flows or changes to the timing of flows to ecosystems that depend on a certain flow regime
- Erosion and/or sedimentation; and
- Increased salinity

Rules are needed to protect existing downstream users and to ensure the resource is shared equitably between all water users and the environment, including native vegetation and native fauna.

Permit requirements
The Act provides for the control of various activities that affect water, and this includes dams. Such activities are controlled through Water Affecting Activity (WAA) permits issued by Arid Lands NRM staff on behalf of the SA Arid Lands Natural Resources Management Board.

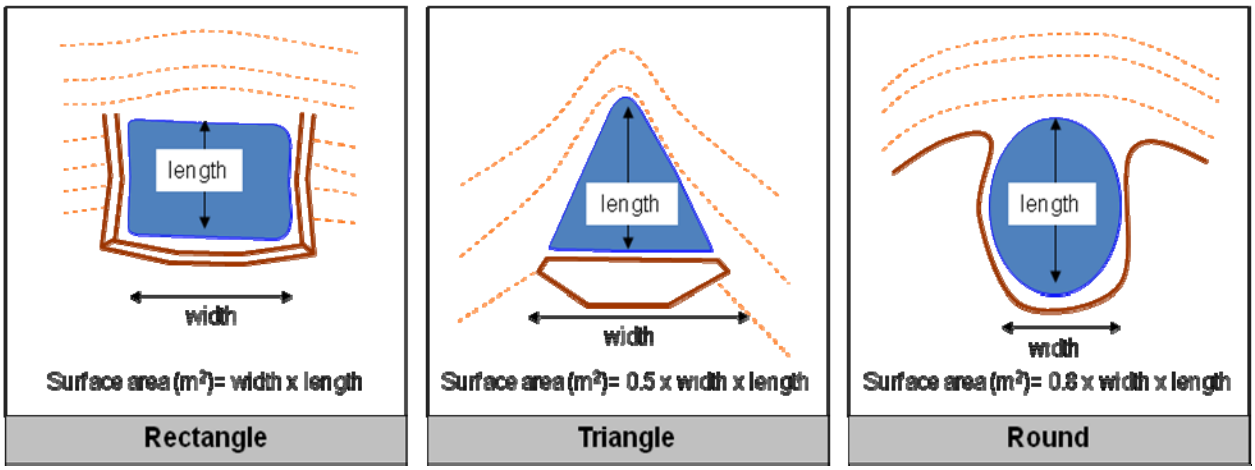
A WAA Permit is not required for the erection, construction, or enlargement of a dam under 10 megalitres, however enlarging an existing dam beyond 10 megalitres will require a permit.

Permit application forms can be downloaded from the website www.saalnrm.sa.gov.au or contact Arid Lands NRM staff at the Natural Resources Centre in Port Augusta for clarification or further information. Permit applications should be lodged, with the prescribed fee, at the Natural Resources Centre.

Please note new dams with a dam wall higher than three metres above the natural ground surface and/or a dam capacity of greater than five megalites, will require approval under the *Development Act 1993.* Approval may also be required for a new dam under the *Pastoral Land Management and Conservation Act 1989.* Please contact the relevant authority for further information.

What capacity is your dam?
In order to assist in determining if you require a permit it is important to know what capacity your dam is/will be.

To calculate dam volume, firstly determine its shape to allow calculation of the surface area using the formulas provided below:



From NSW Department of Water and Energy, 2007, farm dams in NSW

Triangular: Surface Area = (width x length) /2
Rectangular: Surface Area = width x length
Round: Surface Area = 0.8 x width x length

Dam Capacity Calculation Guide **Dam Volume (kL) = 0.4 x Area (m^2) x depth (m)**

Following this, calculate the volume of the dam using cubic metres (m^3)
Volume (m^3) = 0.4 x Surface Area x Depth (where 0.4 is a conversion factor that takes into account the slope of the sides of the dam)

Calculate the capacity of the dam in kilolitres (kL) by dividing the volume in cubic metres (m^3) by 1000.
1000 kilolitres (kL) = 1 megalitre (ML) = 1 000 000 litres

If your dam capacity is less than 10 megalitres, then no permit is required provided all other requirements are met. However, you may still require approvals from other authorities. If you are unsure please contact Arid Lands NRM staff at the Natural Resources Centre in Port Augusta for advice or the relevant authority.

How long does it take?
Apply for your permit at least two months before you intend to undertake the activity. The exact time taken to process the application depends on the quality of the information in the application, the need for additional information or comment, nature of the activity and the time of the year.

You are encouraged to seek your permit well in advance of the time planned for dam construction. Permits are usually valid for twelve months from the date of issue.

Definitions for Dams

What is an off-stream dam?

An off-stream dam is a dam, wall or other structure that is not constructed across a watercourse or drainage path and is designed to hold/store water diverted or pumped from a watercourse, a drainage path, surface water run-off, an aquifer or from another source. Off-stream dams may capture a limited volume of surface water from the catchment above the dam.

What is an on-stream dam?

An on-stream dam is a dam, wall or other structure placed, or constructed on, in or across a watercourse or drainage path for the purpose of holding and storing the natural flow of that watercourse or the surface water flowing along that drainage.

What is a low-flow bypass?

A low-flow bypass is a structure, such as a small weir, used to direct low stream flows around dams and back to their normal course of flow. In this way, some water is retained in the stream to ensure that downstream environments, which may include fish, frogs and riparian vegetation, may receive water to survive (an environmental flow). A low-flow bypass is one of many conditions that may be included on your permit to construct a dam.

Criteria for issuing permits

All WAA applications including dams are assessed against the principles in the South Australian Arid Lands (SAAL) Regional Natural Resources Management (NRM) Plan (the Plan).

The Board sets out the policies and principles by which any application for a dam in the SAAL region will be assessed within the Plan (Part 4 –The Regulations and Policies to Help Us), available from the website www.saalnrm.sa.gov.au. Policies and principles may vary between NRM regions so please check the Plan to be clear about the principles that apply to your circumstance in the SAAL region.

Some examples of the principles which guide farm dam development may include low-flow bypasses for all on-stream dams; the constructions of off-stream dams only; and avoiding ecologically sensitive areas or areas prone to erosion and salinity.

These principles cover criteria including (but not limited to):

- Local soil conditions and salinity
- Remnant vegetation
- Aquatic ecosystems, including wetlands, mound springs and waterholes
- Dam construction and design
- The number and size of dams
- Minimum flow requirements
- Impacts on downstream users
- Habitat for threatened species; and
- Special criteria relating to on-stream dams

An Arid Lands NRM staff member may inspect the site to determine if the site of the proposed dam is ecologically sensitive or prone to erosion and salinity. For the purpose of assessing the relevant principles, a watercourse means a river, creek or other natural watercourse (whether modified or not) in

which water is contained or flows permanently or from time to time. For further definitions please refer to the Plan.

Penalties may apply
Undertaking a WAA without a permit or in breach of permit conditions is an offence under the *Natural Resources Management Act 2004*.

If you are unsure whether your proposed works will require a permit, call the Arid Lands NRM staff at the Natural Resources Centre in Port Augusta for advice before starting any works.

The SAAL NRM Board or the Department for Water may serve protection orders or criminal/civil enforcement notices for breaches of the *NRM Act 2004*. **Financial penalties or prosecution may also apply.**

Note: WAA permits do not allow for the taking of water. This is dealt with separately by the issuing of a water licence in a prescribed area. For more information in relation to water licensing please contact the Department for Water.

Need more help?
For further information including Best Practice Guidelines for Water Affecting Activities contact Arid Lands NRM staff member from the Natural Resources Centre in Port Augusta on 8648 5300.