



AVONBANK PROJECT

SURFACE WATER

EXISTING CONDITIONS STUDY

FACTSHEET NO. 7

KEY FINDINGS

As part of the Avonbank Environment Effects Statement (EES) Process, WIM Resource Pty Ltd (WIM) undertook a Surface Water Study, which investigated the existing surface water conditions of the Avonbank Project area. WIM engaged Water Technology to complete the study.

The key findings were:

- ◆ The Avonbank Project area is generally not affected by flooding (inundation) from the Wimmera River, Two Mile Creek, Yarriambiack Creek, or the Darlot or Dooen Swamp.
- ◆ The topography of the project area indicates flow from Avonbank would most likely not enter the Darlot Swamp.
- ◆ There are no designated waterways that flow through the project area.
- ◆ The project area was shown to have several overland flow paths with small to moderate catchment areas. These flow paths contributed water in either a south westerly or north easterly direction.

STUDY METHOD

Water Technology undertook a review of existing flood information for the Wimmera River, Two Mile Creek, and Yarriambiack Creek.

Water Technology also developed a localised catchment model outlining design modelling of the 1:100, 1:20, and 1:10 year flood events for existing conditions using a combination Rainfall on Grid (RoG) approach. From the model they will be able to complete a full Hazard and Flood Risk Assessment

SURFACE WATER STUDY

WIM undertook baseline studies to understand the regional surface water setting, the project scale surface water setting, surface water effects on the Wimmera River, Darlot and Dooen swamps, and other metrics including surface water quality.

WIM engaged a professional surface water team from Water Technology to conduct the works.

DETAILED SUMMARY – SURFACE WATER FEATURES

Designated Waterways

The designated waterways are limited to Yarriambiack Creek, Two Mile Creek, and Wimmera River.

- ◆ Figure 1 below shows there are no designated waterways in the Avonbank Project area (shown in pink) or mining footprint (yellow).
- ◆ Only two small sections of Two Mile Creek and Dooen Swamp intersect with the south east corner and south west corner of the Retention Licence (RL) area (red) respectively. Neither the project areas or mining footprint impact these areas.

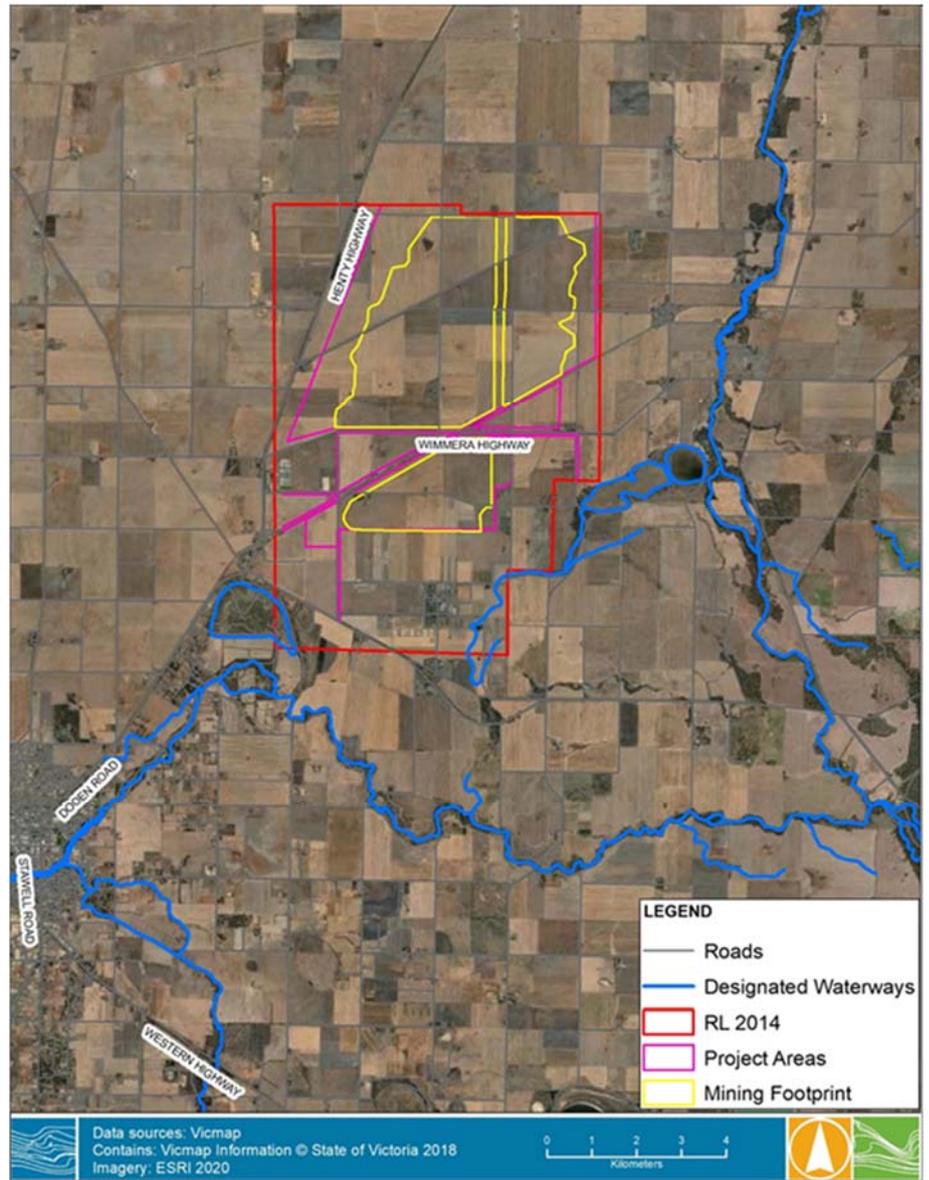


Figure 1: designated waterways in the Dooen Region

Riverine Flood Assessment

Water Technology assessed the risk of flood, into the project area.

- ◆ The January 2011 flood event in Two Mile Creek and the Wimmera River was regarded as more than a 1:100 year flood event (figure 2).
- ◆ No flooding within the project area (shown in pink) This demonstrates riverine inundation within these areas is less likely than a 1:100-year flood event.

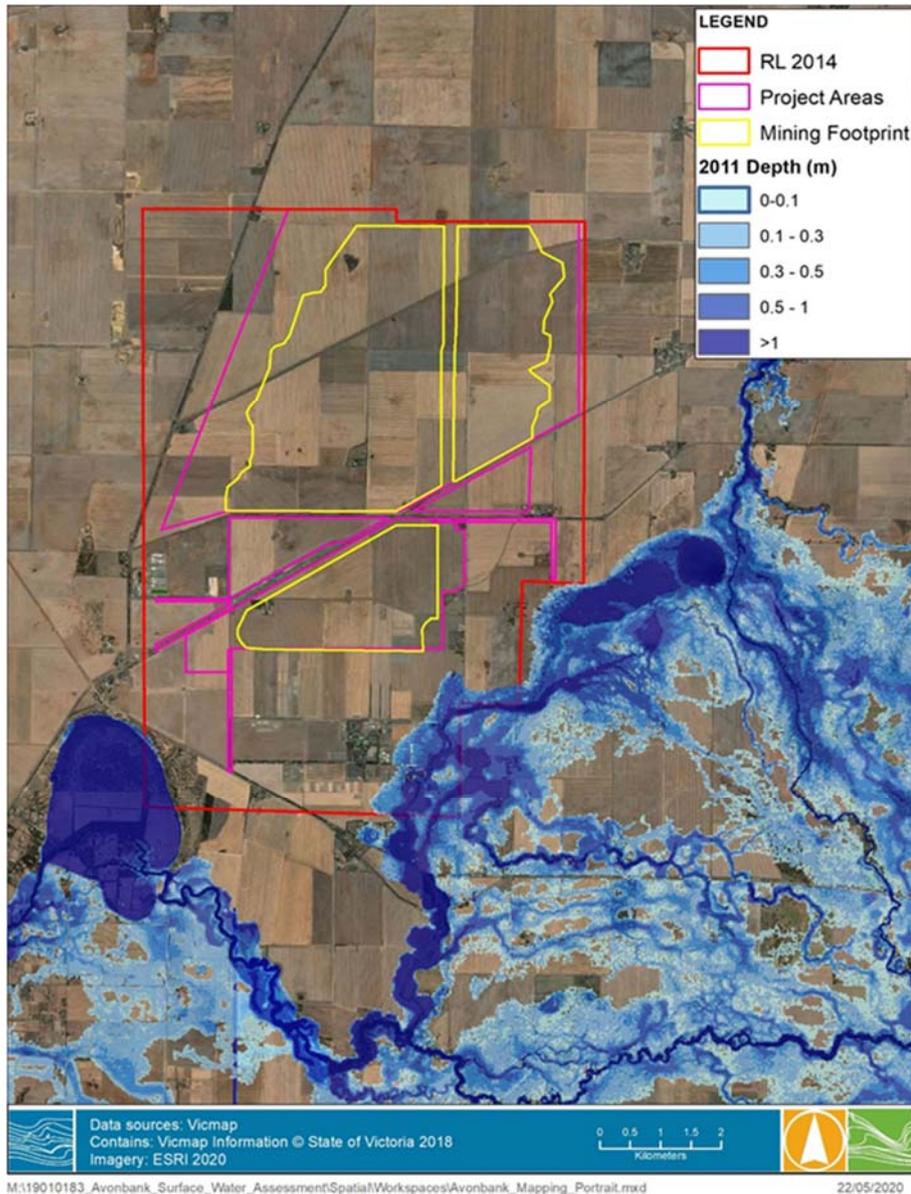


Figure 2: Riverine flooding at Avonbank for January 2011 event

Mapping and Inundation

Results show the 1: 100 year flood event does not produce major external overland flow paths through the Avonbank project area, with most inundation caused by relatively minor overland flow or a series of discontinuous depressions.

The largest area of inundation occurs near the western boundary of the RL, north of Dooen Swamp.

Figure 3 has several of the key hydraulic features highlighted and numbered as follows:

- ◆ Water exits the Avonbank to the north connecting to downstream catchments
- ◆ Two drainage lines join at north of Wimmera Highway, then flows to the south and eventually exists the Avonbank RL to the west, connecting to Dooen Swamp
- ◆ A rise at the north west area of the site restricts and divides the flow into two separate drainage lines flowing to the south
- ◆ Water enters the site at the south-eastern boundary though the Two Mile Creek from Darlot Swamp and flows to the south, contributing to Wimmera River
- ◆ Water exits the site at the southern boundary through overland flow paths, connecting to Wimmera River and Dooen Swamp

NEXT STEPS

To assess the impact of the proposed project on surface water, the following next steps will be undertaken:

- ◆ Model the effects of the mine plan on the area
- ◆ Identify any impacts and risks

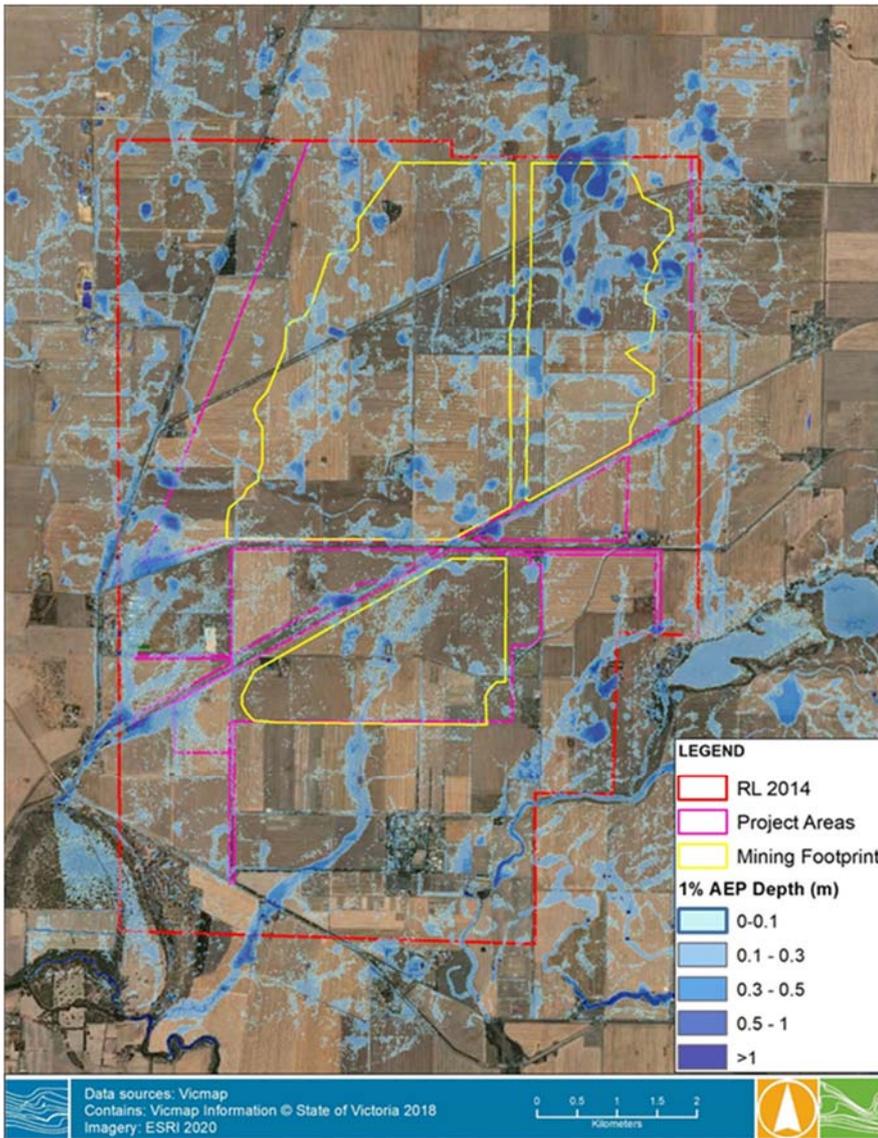


Figure 3: 1% AEP depth plot