



**engenium**  
 smart project delivery

## Hydrology

Hydrology entails studying movement, distribution, and management of surface water including water cycles, water resources, and environmental watershed sustainability. Civil engineers use the principles of hydrology to manage the flow of water in and around assets to mitigate the potential negative impact of flooding on assets.

### Our Expertise

Engenium's civil engineering team work within a variety of sectors, across a variety of assets. Whether they are designing surface water management solutions for extensive heavy-haul rail assets in flood prone areas (such as the Pilbara region of Western Australia), internal drainage networks around mine-site infrastructure, or developing surface water closure strategies, the civil engineering team bring a wealth of practical experience to maximise the financial value of your assets and minimise construction and operational risk.

### Our Capabilities

Engenium's civil engineering and hydrology capabilities include:

- Rainfall runoff and flood studies
- Surface water flow control
- Stormwater modelling in urban or rural areas (1D & 2D)
- Flood levee and diversion drain design around mine pits and infrastructure areas
- Flood modelling of river/creek crossings and diversions
- Surface drainage design
- Sedimentation basins
- Overburden and topsoil stockpile drainage design
- Mine water dams
- Surface water closure strategies
- Water management plans/strategies
- Mine affected water plans
- Erosion and sediment control plans
- Subsurface/underdrain modelling (subsoil drains) and controlled groundwater level estimation
- Estimation of very rare to extreme flood events to comply with ANCOLD design requirements
- Water sensitive urban design.

If you require us to take on highly specialised activities as part of a broader scope of work (for example, ground water modelling, storm surge and tidal impacts, and hydrogeology), Engenium has strategic relationships with industry specialists to effectively deliver this work in an integrated manner.

**Delivering Value. Delivering Results.**