



Hells Gates



ABOUT THE PROJECT

Townsville Enterprise Limited (TEL) has brought together a consortium of leading technical specialists to determine if a viable business case exists to construct a major new dam and irrigation scheme at Hells Gates on Burdekin River. Hells Gates Irrigation Scheme would open the way for irrigated agriculture and electricity generation in the region.

The Business Case program, which is scheduled for completion in April 2022, will examine the technical aspects of the proposed project, including engineering and environmental constraints, and the economic and financial feasibility of constructing a dam

and developing the associated irrigation network in the Upper Burdekin catchment. It will also investigate the potential for pumped hydro-power north of the dam location.

The business case builds on the outcomes of a feasibility study which TEL commissioned in 2017. The feasibility study considered various options for the project including location, scale and configuration, and compared factors such as cost, technical feasibility and environmental impacts for each option. The preferred option identified in the feasibility study is being investigated through this business case process.



The Hells Gates Dam would be a major new source of water storage in the Upper Burdekin catchment.



If constructed, Hells Gates Dam would open the way for irrigated agriculture and electricity generation in North Queensland.



The Hells Gates Project is part of the long-term planning for water infrastructure for Northern Australia.



Once finalised, this Business Case will be a comprehensive assessment of the Hells Gates Project and will be the basis for a fully informed decision regarding its development.



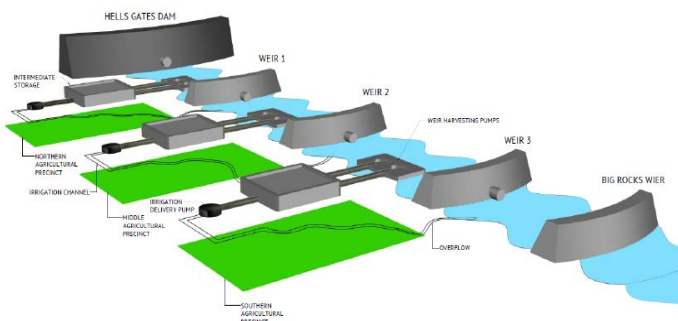
Project viability and funding for construction will be considered after delivery and assessment of the Business Case. This project is not yet funded for construction.

Developing the Business Case

The Hells Gates Dam and Irrigation scheme proposes a 2,100 GL dam in the Upper Burdekin Catchment, approximately 120 km north-west of Townsville, and 124km north of Charters Towers. The surrounding region is dominated by agriculture and natural resources.

The dam would serve as water storage for a proposed 50,000 Ha irrigation scheme situated downstream of the dam wall. The project would also include a run-of-river pumped hydro-power generator, and a solar farm.

The associated irrigation scheme comprises three irrigation districts (northern, central and southern), and will utilise water for broadscale agriculture and horticulture through a set of weirs located along the Burdekin River. The weirs, associated pipelines and pump stations would be built to provide downstream water storage for each section of the irrigation districts, with water drawn for irrigation purposes.



Irrigation Scheme Concept Drawing

The Business Case will determine if a bankable proposal exists to support a shovel ready project and seeks to:

1. Provide more certainty regarding the technical and financial viability of the Project, as well as the associated economic, environmental and social impacts and opportunities, and
2. Build a clear, evidence base to inform investment of the Project.

The Business Case will provide detailed investigation of:

- Water storage options
- Agronomy and agribusiness development, including cropping and production potential
- Channel and pipeline distribution networks (including pump stations)
- The need for supporting infrastructure such as power, rail, road and port connections
- The potential for the dam site to support a pumped hydro-power system
- The availability and accessibility of soils suitable for large scale irrigated agriculture
- Water demand to confirm the size and type of design needed for a potential dam
- Indigenous and cultural heritage interests
- Financial and social impacts, opportunities and costs
- Regional, state and national economic impacts
- Ownership and investment modeling



Technical Investigations

The Business Case seeks to provide certainty regarding the technical and financial viability of the Project, as well as the associated economic, environmental and social impacts and opportunities, through evidence based investigations including:

- Detailed economic analysis including cost benefit analysis (CBA) and Nett Present Value (NPV)
- Advanced concept design for the various project elements including:
 - the dam and associated infrastructure including hydropower, coffer dams and fish passage devices
 - irrigation infrastructure including weirs, pump stations, pipelines and diversion trenches
 - supporting facilities such as a solar farm
 - infrastructure and utility upgrades (e.g. roads, bridges, transmissions lines and substations)
- Topographic and land tenure survey/assessment
- Geotechnical / geophysical field investigations including:
 - setting up a temporary survey camp
 - establishing access tracks and drill pads
 - geotechnical drilling
 - geophysical mapping
- Environmental studies including:
 - cultural heritage surveys
 - flora/fauna surveys
 - soil surveys
 - surface water and ground water monitoring
 - noise monitoring
 - modelling of potential impacts (e.g. flooding and water quality)
- Socio-economic impact studies informed through broad stakeholder consultation
- Sustainability assessment

The Report

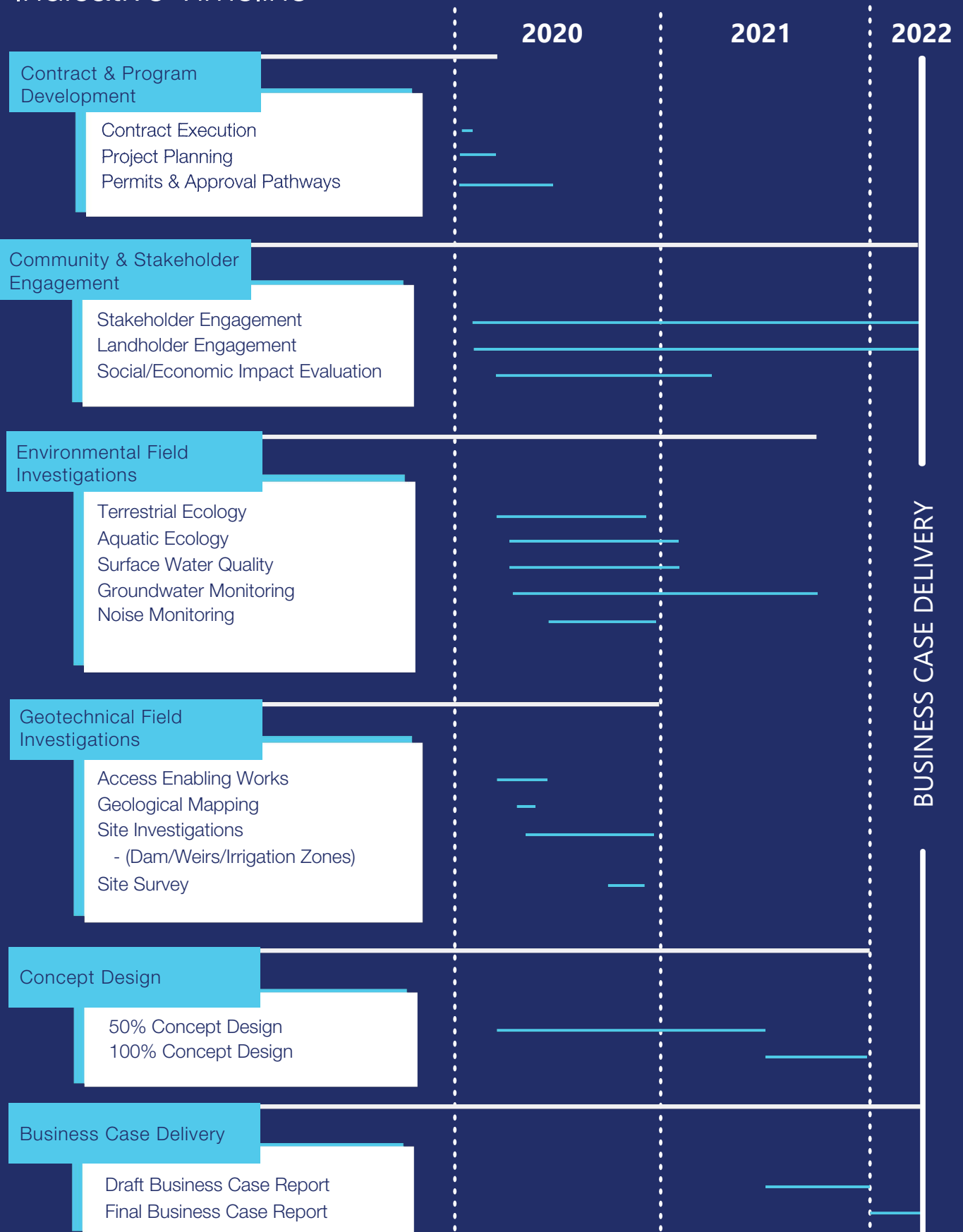
Once these studies have been completed, they will inform the Detailed Business Case Report which is due to be completed by April 2022.

This Report will be the most comprehensive report on the Project to date and will guide future, potential investment decisions.

The Report will include:

- Statement of need / project justification
- Advanced concept design for the various project elements
- Cost estimate for the project including capital costs and operating costs
- Economic analysis including market analysis and cost-benefits analysis
- Delivery model and implementation plan
- Sustainability assessment
- Environmental assessment
- Social impact and public interest evaluations
- Final recommendations regarding project viability

Indicative Timeline



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