

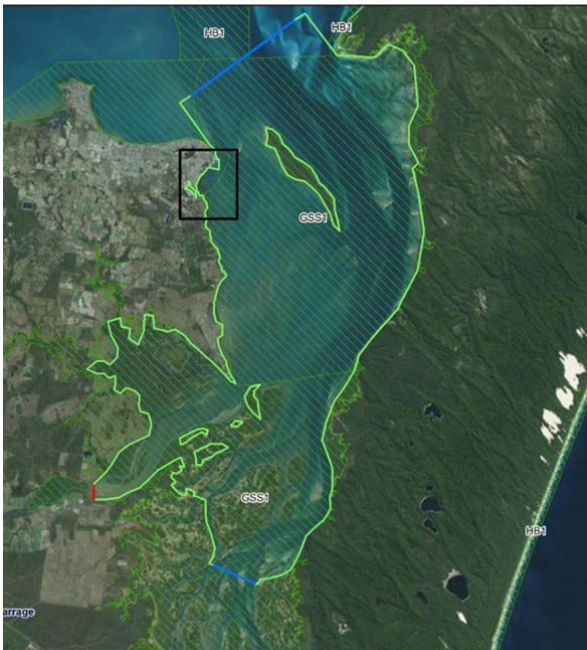
Phase 1 - Site Selection Study

SCOPE:

Assessment of the Hervey Bay sewerage and effluent management systems to identify a preferred site for augmentation to cater for the expected increase in connections.

KEY ACTIVITIES:

- Development of an effluent reuse scheme water balance model.
- Targeted agronomic assessment within existing and future irrigation fields to determine field sustainability.
- Development of soil water and soil nutrient models for all Wide Bay Water (WBW) irrigation sites.
- Documentation of the effluent reuse and discharge assessment.
- Development of a hydrodynamic model of Pulgul Creek and a portion of the Great Sandy Straits adjacent to the mouth of Pulgul Creek.



DETAILS:

A Multiple Criteria Assessment (MCA) process was used to assess six (6) combinations of wastewater treatment and effluent management options:

1. Nikenbah STP trickling filter upgrade with expanded irrigation.
2. Nikenbah STP duplication with expanded irrigation.
3. Pulgul STP external nitrification upgrade with outfall and expanded irrigation.
4. Pulgul STP external nitrification upgrade with outfall.
5. Pulgul STP membranes upgrade with outfall and expanded irrigation.
6. Pulgul STP membranes upgrade with outfall.

The option analysis included internal stakeholders and technical experts to assess each option against technical risk, asset resilience and longevity, environment, community, social, safety and value for money.

FINDINGS:

The technical investigation of options has identified the Pulgul STP upgrade with an expansion to the effluent reuse area and augmentation of the outfall as the preferred option.

The treated water outfall discharge point will also be required to be relocated given the limitations of the current location and opportunity to provide improved environmental outcomes over the current system.

The preferred option was developed further to produce a preliminary concept level design, including Process Flow Diagram (PFD), equipment list and $\pm 30\%$ level cost estimate of \$38.55m.

The preferred option will

- ***Apply best practice treatment technology,***
- ***Improve the environmental outcome of the existing discharge, and***
- ***Continue to expand the regions renowned effluent reuse scheme.***

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