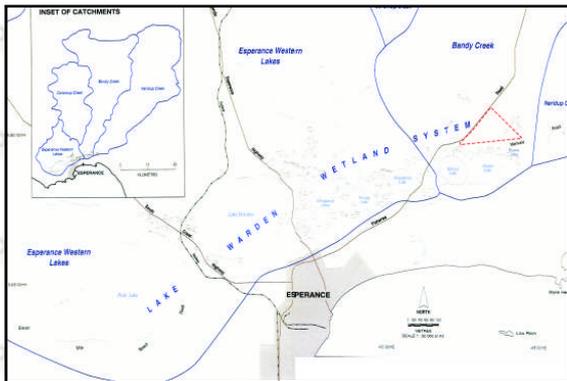


## PROJECTS

### HYDROGEOLOGY

**MYRUP FLY-IN ESTATE, ESPERANCE:** Proposed residential development adjacent to Lake Warden RAMSAR wetland



A hydrogeological & hydrological investigation was undertaken of a proposed fly-in residential estate to be constructed adjacent to the Lake Warden wetland northeast of Esperance. Lake Warden is a RAMSAR designated wetland with high ecological values. The site development incorporates effluent treatment systems with disposal via on-site irrigation

Site investigation determined the hydrogeological and soil conditions. Site soils are duplex type, comprising shallow soils overlying silty clays. The soils possess adequate infiltration capacity and depth to water to permit effluent disposal. Nutrient absorption rates in soils were estimated from the PRI and CEC of soils.

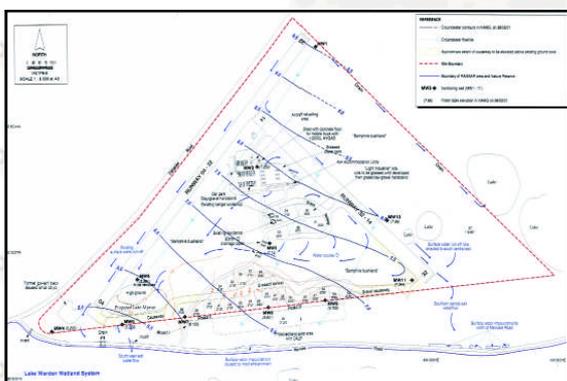


Part Orthophoto courtesy of DoLA.

Brackish to saline unconfined groundwater is present at shallow depth beneath superficial dune sands, and also unconfined to semi-confined groundwater within silty and sandy clays of the Pallinup Siltstone. Flow occurs to the southwest, discharging into Station & Mullet Lakes to the south.

Lake water is chemically similar to groundwater, although pH indicates that groundwater comprises only a minor portion. Surface water has a lower average turbidity, is oxygenated and low in nutrients.

Site run-off has been altered through the construction of roadways, however major drainage lines to the southerly wetlands are retained. Run-off volumes are estimated for various storm events.



A surface water feature is proposed at a topographic low through excavation of soils to form an engineered wetland. This will be beneficial in improving the surface water quality discharged to the Lake Warden wetland through the removal of sediments and nutrients. A monitoring network was established to determine baseline conditions prior to development.

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