

Tyee Lake Hydro Facility

[Topo Map](#)

The Tyee Lake Hydroelectric Project is located at the head of Bradfield Canal, approximately 40 miles southeast of Wrangell, 60 air miles northeast of Ketchikan, and 70 air miles southeast of Petersburg. Tyee Lake is a natural lake used as a storage reservoir with 15 square miles of drainage area, 52,400 acre feet of active storage, and a normal water surface elevation of 1,396.0 feet at full pool. Unlike the Swan Hydro Facility which is a dam, the Tyee project is a “lake tap” with an installed capacity of 25 MW. Water is conducted to the powerhouse through an intake from the lake into a drop shaft, through an 8,300’ long unlined power tunnel and a 1,350’ long steel penstock, which houses two generating units.

The project site is accessible only by air or boat and includes a powerhouse, substation, employee housing, warehouse, maintenance shop, incinerator building, fuel storage and dispensing area, barge dock, and airstrip, and is located along a narrow bench of land between the tidal estuary of the Bradfield River and a steep mountainside.

Approximately 70 miles of 138-kV transmission line (project is designed for 138-kV but presently operates at 69-kV) and 11 miles of submarine cable interconnect the Tyee Lake Project to the communities of Wrangell and Petersburg, and the facility is also connected to Ketchikan’s electric system through SEAPA’s Swan-Tyee Intertie with 57 miles of transmission line. Two electrical substations and a switchyard, located near Wrangell and Petersburg, are also associated with the project. The project began commercial operation in May 1984.

Tyee Hydro start points are: Tyee Lake: South Heli, South Water
Tyee Power Plant: East fixed wing, East Heli



<http://www.seapahydro.org/Hydro-Facilities.php>

Swan-Tyee Intertie



- Connects Swan Lake Hydro Facility to the Tyee Lake Hydroelectric Facility
- Clearing of the right-of-way was completed in 2008
- Structure installation, stringing of the line, and ready to energize in 2009, 14 years after the engineering began!
- Allows for greater utilization of the energy generation capability of the Tyee Facility
- Allows for better reliability throughout the entire SEAPA System by improving overall utilization and back up of hydroelectric units
- The Swan-Tyee Intertie serves as a significant component of the Southeast Alaska Electrical transmission system and provides long-term benefits in development of Southeast's substantial hydroelectric potential.

<http://www.seapahydro.org/transmission-system.php>

