

Hydropower Project Highlight for Leadership – Marine Region June 18, 2021

PacWave South, an ocean energy test site proposed by Oregon State University, received its FERC license in March 2021. The site will consist of four ocean berths, which will occupy two square nautical



miles of ocean plus a significant area for separate cables installed from the site to shore approximately seven miles long. The facility will be able to test up to 20 wave energy converters in four berths, allowing different technologies to be tested at the same time, with a maximum power output of up to 20MW.

ODFW hydropower staff have engaged extensively since 2012 in the cumbersome process of identifying concerns and developing

Photo Credit: <http://pacwaveenergy.org/> June 16, 2021.

mitigation measures and monitoring plans to enable the site to responsibly provide pre-permitted testing opportunities to yet unknown device designs. Some key concerns were:

- Gray whale and other marine mammal migration
- Species attraction to new marine structure and potential community change
- Benthic habitat change
- Cable routing around Seal Rock Reef
- Entanglement of derelict fishing gear effects on fishermen and marine species
- Electro-magnetic field effects on species migration and navigation
- Lighting effects on nocturnal seabirds
- Operational underwater noise offshore
- Construction noise onshore
- Western snowy plover nesting at the cable landing site
- Horizontal directional drilling beneath sensitive freshwater habitat, the beach and nearshore
- Terrestrial habitat for bats, birds, and other onshore species

In addition to the FERC license, multiple other state and federal authorizations were required prior to construction, and almost all of them involved ODFW review and input. Construction began in June 2021 with mobilization of two drill rigs and installation of a 17-foot tall sound wall at the Driftwood Beach State Recreation Site.



One of two drill rigs set up at Driftwood with drill fluid pump pit. Photo Credit Delia Kelly ODFW, taken with permission from OSU June 9, 2021.



Beach view of 17-foot tall sound wall along north and west sides of the Driftwood parking lot. Photo credit Delia Kelly ODFW taken with permission from OSU June 9, 2021.



Drill fluid processing equipment and bore hole casings promote bore hole stability and avoid inadvertent release of drill fluid as the drill bores through unconsolidated sediment. Photo credit Delia Kelly ODFW taken with permission from OSU June 9, 2021.

OSU also assembled multiple other construction vehicles and large equipment for drill fluid processing. Construction crews have been installing conductor casings, which are large steel pipes that are installed along the bore path down through the upper layer of loosely consolidated, sandy material to the start of the deeper rock. The conductor casings help stabilize the borehole in this looser material and keep the drilling mud in the hole. The over 200 feet of 18-inch diameter conductor casing will be temporarily installed in each of the offshore bores.

Wirelines were installed across the beach to facilitate navigation of the drill under the beach followed survey protocols set up to protect nesting western snowy plovers.



Wireline installation at Driftwood beach. Cables will be installed beneath the beach between these two wirelines. Photos credit Delia Kelly ODFW taken with permission from OSU June 9, 2021.

OSU anticipates onshore construction activity at Driftwood and the onshore facility site through 2021-22 and installation of marine cables hopefully in 2022. Hydro staff will visit the construction site as appropriate, provide support to state and federal agencies with regulatory authority as needed, and remain available to weigh in on implementation of contingency and mitigation measures as needed. The facility should be operational by 2023, after which time hydro staff will participate in adaptive management and remain the point of contact for monitoring reports and implementation of mitigation as needed. All schedules are approximate and subject to change.