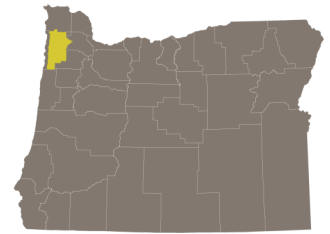




# OREGON RESILIENCE CASE STUDY

## TILLAMOOK PEOPLE'S UTILITY DISTRICT

Tillamook PUD serves about 21,000 customers in Tillamook, Clatsop, and Yamhill counties.



### Facilities Plan

Tillamook PUD hired a consulting firm to complete an Enterprise Risk Assessment to help the utility assess its current environment and identify areas of concern. With the assessment, Tillamook was also able to collect and record some of the institutional knowledge held by several 30-year employees. The lessons learned were incorporated into a 1-3 year Strategic Plan, which includes action items.

One action item is to rebuild substations and replace transformers with resiliency in mind. In addition to meeting Tillamook's unique load needs, design and construction will focus on seismic strength, as well as the ability to withstand location-specific challenges, such as wind storms and coastal salt air. The bus work for the transformers will be more flexible rather than rigid, and associated buildings with substations will have a modular design.

Tillamook PUD has already replaced one transformer, and is looking to replace four more over the next four years. Priority was given based on the current load of area transformers, as well as the condition of the transformers. For example, if a transformer shows gases collecting within the infrastructure's oil, it's an indication that there's arcing inside the transformer. The utility also takes into account future load planning and transformers that serve critical customers, such as medical and emergency response.

Tillamook's headquarters has 5.52 kW of solar on site, which can work independently from the grid to produce power after an emergency.



Tillamook PUD's headquarters has solar on site.

### Emergency Response

In summer 2018, Tillamook will conduct Applied Technology Council (ATC) 20 Post-earthquake Safety Evaluation of Buildings training, so staff can assess whether or not a building is safe to enter after an emergency. The utility invited other local entities to participate in the training. The cost is an estimated \$150,

and will likely take place at Tillamook Community College.

The Tillamook area is waterway and bridge heavy, so three service centers in the north, south, and central areas of the service territory have communications equipment installed in case staff can't get to headquarters after an emergency. Each service center has its own diesel or propane generator.

Tillamook PUD has signed on to a Regional Mutual Aid Agreement for the western region. This ensures mutual assistance could come from outside of Oregon/Washington in case of an emergency.

## Personal Preparedness

Tillamook PUD is prioritizing Incident Command System training for all of its employees. Currently, 90 percent have completed the training, and the PUD is also working on cross-training with others in the community.

The utility handed out emergency "go bags" to staff at its annual safety dinner. Bags include multi-tools, water, food, and other materials. At each safety training, staff receive an additional item to add to the bag.

## Communications

Tillamook PUD has an exhaustive list of contact information in place, depending on what services may be available after an emergency. The list includes cell phones for staff and a 24-hour dispatch line where employees can call in to gather information about emergency response. A number of dispatchers also carry radios, and fleet vehicles have GPS and radio systems.

Tillamook PUD, Tillamook County, and the Port of Tillamook jointly own, through a separate entity called Tillamook Light Wave, a fiber line that could provide communications services after an emergency.

Transpacific fiber lines come in to Pacific City from Hawaii and Japan.



## Moving Forward

Tillamook is working on creating a joint ICS exercise with Central Lincoln PUD to get employees comfortable with the system.

To boost its communications options, Tillamook PUD is considering acquiring satellite phones, which will be stored in each of the service centers.

The utility is also completing an addition on its headquarters to expand operations. It will also have a generator, and will be built to seismic standards. The project will go out to bid in 2018, with estimated completion by 2020.

## Dairy Waste Microgrid Planning

The Tillamook area is known for its dairy production, so the area is well-stocked with animal waste. Part of the PUD's three-year strategic plan is to assess how three local waste digesters could be developed into a microgrid to provide power, particularly after an emergency.

Two digesters are currently operating in the area – one is owned by a local farmer where the power is sold into the grid using BPA transmission lines, and a second is owned by a group of five farmers where the power is purchased by the PUD. A third is currently non-functioning, and owned by the Port of Tillamook. When it's back up and running, Tillamook PUD will likely purchase the power. The three digesters could produce up to 3 MW of power altogether.

Cost remains an issue, as producing power from the digesters includes costs to ship waste and operate the equipment. Tillamook PUD currently offers a "green power" program where customers can buy blocks of the power – but it is still at a margin loss for the PUD. It is reviewing possible changes to the program, and will be working with the creamery co-op to create a marketing plan to see if customers would be interested in buying in to a re-worked waste-produced power program. Tillamook is optimistic about the program – the creamery already plans to use green power to operate its new visitor center, and the local Pelican Brewery would also use it.

