

1,300 Mile Journey: The City and Bureau of Juneau implements belt drying system to reduce risks associated with hauling dewatered biosolids and to provide multiple options for end use.

The City and Bureau of Juneau (CBJ) operates 3 wastewater treatment plants in the Southeast Alaska area that produce approximately 7,000 wet tons of dewatered biosolids each year. These solids are hauled 1,300 miles via truck, barge, and train to the Columbia Ridge landfill in Arlington, Oregon. Historically, CBJ has incinerated the biosolids generated at each plant. Since the fluidized-bed incinerator at the Juneau-Douglas WWTP was decommissioned in 2011, CBJ has been landfilling all of its dewatered biosolids. The transport of biosolids from CBJ poses multiple risks and costs. CBJ faces uncertainty over environmental regulations and acceptance by the landfills and haulers, had historical complaints of odors from neighbors near the Capital Disposal landfill in Juneau, leaking shipping containers, annual hauling costs of more than \$2,000,000, and continued exposure to fuel price volatility risks.

The Juneau area poses some unique geographical challenges that point toward a general need for more established and reliable technologies. These challenges include a relatively remote location, limited transportation options that may result in delayed shipments for equipment, an unpredictable climate, and lack of specialized support services. Considering these factors, CBJ project team members agreed to find a stable long-term biosolids disposal solution. The solution must also adhere to the EPA guidelines for established or innovative technologies.

CBJ have been operating a medium temperature Veolia belt dryer since the summer of 2019.

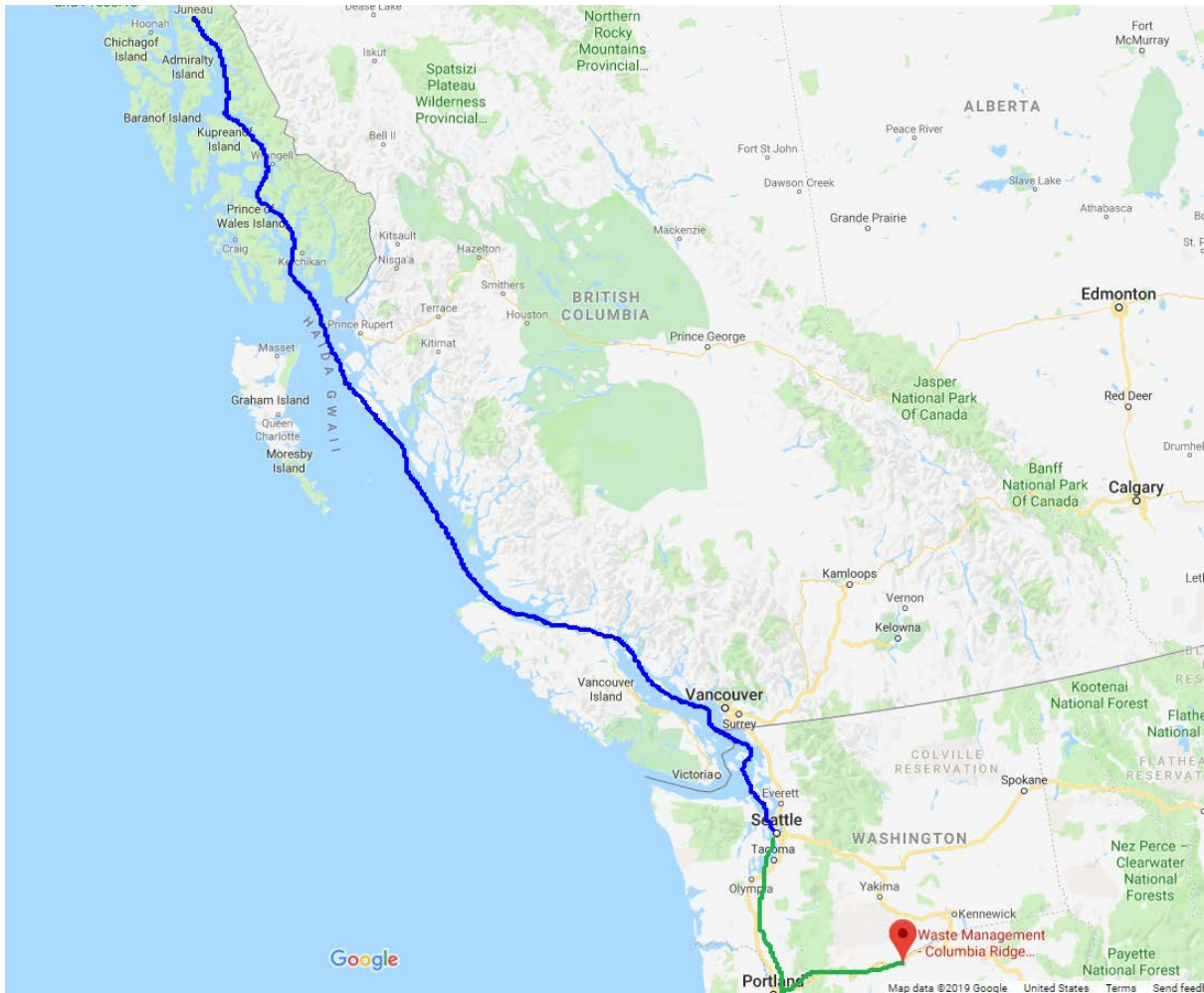
Veolia's dryer has met the four guiding principles of selecting this technology, which are the following:

- Class A pathogen reduction to create an "exceptional quality biosolid" (EQ)
- Multiple options for end use to minimize risk of disposal
- Maximize volume / weight reduction
- Established and reliable technology

The Class A EQ designation provides pathogen reduction and in turn diversifies the range of end uses. The permissible end uses can range from simple reuse as cover material at the landfill to fertilizer on community-wide sites and parks to erosion control and topsoil replacement, all of which are ultimately aimed to benefit the community. These options also offer the potential for a significantly lower cost end to end compared with shipping wet solids a significant distance to landfill them.

CBJ biosolids are well under both the EPA ceiling and EQ limits for metals. In order to be eligible for public distribution as lawn and garden fertilizer and be declared EQ, biosolids must meet additional criteria for pathogen elimination, vector attraction reduction and total solids content. The Veolia dryer will enable CBJ biosolids to meet the criteria for such public use.

The dryer is designed for 36 wet tons per day and will produce 5.5 tons of dried product. That equates to an 85% reduction in volume and weight. This reduction will have a positive impact on the community with less truck traffic, emissions, noise, and costs.



The Veolia dryer solution was chosen for its single pass design, for being a relatively established technology with numerous installations and demonstrated satisfactory reliability. Veolia has 24 installations operating worldwide since 1995, including 6 in the US (prior to Juneau) with the longest running dryer in the US operational since 2006.