

# Eugene Millrace: Headworks

Title bar photo: Water Wheels  
 Provided by Lane County Historical Museum

## Harnessing the Willamette

Before the rise of steam power and electricity in the 1920s, the millrace served an important economic role in Eugene for more than 70 years by providing a cheap source of energy to water-powered factories.

The concrete remnants at the entrance of the millrace were called the headworks. The headworks created an obstruction across the river, which raised the water level and redirected it into the human-made channel. The elevated level caused the water to be drawn by gravity down the millrace. Pictured below is a diagram of what remains of the headworks and accompanying structures.



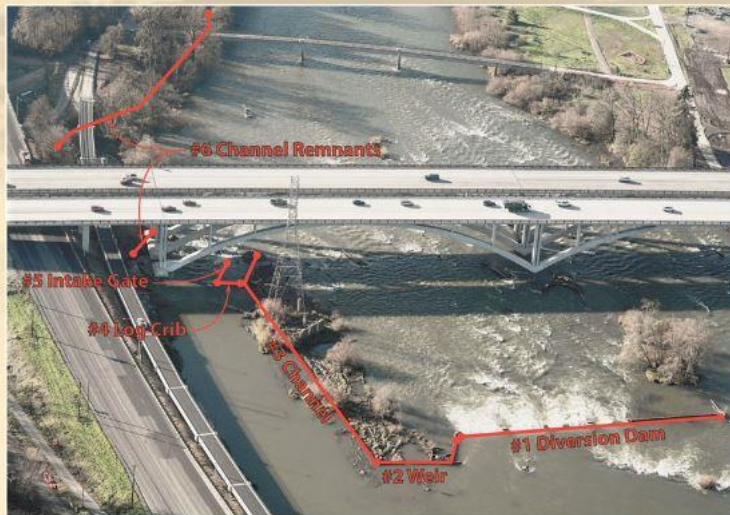
Construction of Diversion Dam.  
 Photo provided by Lane County Historical Museum



Head of Millrace (c. 1933).  
 Photo provided by Lane County Historical Museum

## The Headworks of Today

The Eugene Millrace is no longer used for industry; mechanical pumping is necessary for it to flow today. However, there are still signs of the historic gravity-fed system in existence. These artifacts are primarily seen in the Willamette River, but traces of the channel can be seen on what is now dry land. Pictured below are images of these channel remnants. Item #3 on the aerial diagram shows the approximate path of the original channel.



Aerial of Millrace and I-5 Bridge (2014). Photo provided by Oregon Department of Transportation

## How did the Headworks work?

- #1 Diversion Dam** - The diversion dam raised the water level and conducted it toward the millrace. Construction may have occurred as early as 1891.
- #2 Weir/Intake Bay** - The weir rerouted a portion of the Willamette's flow and directed it into the head of the millrace.
- #3 Channel** - These remnant concrete walls conveyed the water toward the primary channel of the millrace. Historical photographs indicate that this system created a fairly uniform 100-foot-wide channel.
- #4 Log Crib** - This section likely functioned as a removal area for log rafts. These rafts were massive bundles of lumber, lashed together with large chains, to be floated down the river. This method was used to economically transport millions of board feet of lumber down the Willamette River.
- #5 Intake Gate** - This angled concrete wall constricted water and directed its strengthened flow into the millrace channel.
- #6 Channel Remnants** - These concrete wall sections likely relate to the 1910 channel improvements. Floating debris from high floodwaters clogged the millrace intake in 1942, preventing continued flow and temporarily drying out the channel. Businesses along the millrace had converted to electricity by this time and it was left to deteriorate until the City of Eugene purchased the land in 1949.

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