### Spinning Waterwheel



This massive wheel is a turbine runner it works like a waterwheel lying on its side.

> For 36 years, this turbine runner harnessed waterpower at Diablo Powerhouse. It was replaced in 1994 because of "cavitation." Water flowing with high velocity over the blades created a vacuum, sucking metal from the tiny holes you see along the spokes.

> The damage can be repaired, but only up to a point. If cavitation isn't fixed, turbine spokes can eventually break, causing millions of dollars worth of damage. Modern turbine runners are better designed to resist cavitation.

The turbine runner weighs 14,000 pounds. That's almost as much as an African elephant.

Turbine runners in Diablo Powerhouse work in this position. Water falling through the dam turned this runner, driving a generator and producing electricity for Seattle homes and businesses.

Panel #1.1.5Panel TypeB—Outdoor Small InterpFinal Size18" x 18"

# Chinook Redd

This sculpture is a life-size nest, or "redd" of the Chinook salmon.

Chinook salmon build the largest redds of all salmon, up to 10 feet wide and 20 feet long. Look for the female Chinook making a redd depression in the gravel for her eggs, the male Chinook ready to fertilize the eggs, and smaller whitefish and cutthroat trout hoping to eat stray eggs that may wash downstream.

Can you find the eggs in the cut-away section of the redd?

> This sculpture was created for Seattle City Light by sculptor Tom Jay of Chimacum, WA, in 2001.

Panel # 2.7.1 Panel Type **B**—Outdoor Small Interp 18" x 18" Final Size

## What About Fish?

Nine miles of rapids that begin behind Gorge Powerhouse serve as an effective natural fish barrier.

Even before Gorge Dam was built, few migratory fish had the energy or stamina to swim any farther up the Skagit River's steep grade.

### **FISH FIRST**

Seattle City Light's Fish First Policy puts fish ahead of power production. Operators ensure that salmon are not adversely affected by changing water levels. During spawning seasons, water flows are maintained so that young salmon can develop safely.

Pink (humpback) salmon (*Oncorhynchus gorbuscha*) in the Skagit River

Panel #4.1.7Panel TypeB—Outdoor Small InterpFinal Size18" x 18"

## Lodder Creek More than Meets the Eye



Spectacular waterfalls and plunge pools cascade behind

Take a short stroll around the falls and the garden —it still holds remnants of its former glory.

### Gorge Powerhouse.

But there's more! Ladder Creek Falls is adorned with a unique garden inspired by J.D. Ross, the "Father of Seattle City Light." In its prime in the 1930s, the garden was a highlight for visitors to the Skagit Hydroproject. It contained tropical plants and an evening light and music show.

In 2011, Seattle City Light restored the historic light show, re-illuminating the forested falls in a rainbow of colors. Every night, from dusk until midnight, visitors can enjoy a tumbling creek of alternating red, blue, purple, and white lights. The energy-efficient LED lighting system features 1,000-watt spotlights.

Panel #4.1.9Panel TypeB—Outdoor Small InterpFinal Size18" x 18"

# Skagit Stats Gonge

#### Dam (located two miles above powerhouse)

Head (height from intake to powerhouse): **380 feet** Height: 300 feet from bedrock Width: 670 feet Storage: 8,500 acre-feet Date completed: 1961

#### **Power Tunnel and Penstocks**

Number of tunnels: I Length of power tunnel: **II**,**000 feet** Diameter of power tunnel: 20.5 feet Number of penstocks: four Diameter of penstocks: Generators 21-23: 11.25 feet Generator 24: 15.50 feet

#### Powerhouse

Generator nameplate capacity: 207 megawatts Number of turbines: 4 Maximum hydraulic capacity: 8,112 cubic feet per second Year first generator installed: 1924 Year fourth generator installed: 1951

Skagit Stats Panel # Panel Type **B**—Outdoor Small Interp 18" x 18" Final Size



Panel # Panel Type Final Size

4.1.6 A2—OutdoorLargeInterp(Horizontal) 36.25" x 18"

### The powerhouse in front of you sent the first electric power from the Skagit Hydroproject to Seattle in 1924.

The rushing water underneath the powerhouse has just produced up to 170 megawatts of power, enough to light up almost 9,000 homes!

Visit Gorge Powerhouse's visitor gallery–follow signs across the pedestrian bridge.

### BRIDGING THE GAP

The bridge to your left was built in 1935 to accommodate Gorge Powerhouse service vehicles. It was once a railroad bridge that carried construction equipment and materials to the powerhouse.

The small suspension bridge to your right was originally built in 1920 to provide construction workers with access to the powerhouse site. It has been rebuilt twice, most recently in 1983. Today you can use the bridge to reach the powerhouse and Ladder Creek Falls Garden.