



Woodland Park Zoo has been a cherished community asset for more than a century. It is a unique urban oasis, that has inspired generations of families from Puget Sound region. Visitors come from all over the country to observe the animals and experience the surroundings. The site encompasses 92 acres and features more than 1,000 individual animals representing nearly 300 species. The grounds are divided into climate zones, that represent habitats from around the world. Climate zones include everything from tropical rain forests to the arctic habitat of the North (courtesy Woodland Park Zoo).



NSI has partnered with Studio Hanson Roberts, an experienced Northwest based planning and design firm and longtime collaborator. NSI's role is the design of a treatment and filtration system for the Humboldt Penguin Exhibit.

The Humboldt Penguin Exhibit contains pools, a beach and a viewing area. In order to minimize the use of potable water, as well as loss of filter backwash water to the sewer system, NSI proposed the use of an onsite settling and equalization tank and constructed wetlands to provide natural recovery from the filtered water system.



The design flow is 3,000 gpd of primary filter backflush water. The proposed system will complement the 'backwash recovery system'. Backflush water from the primary filters is delivered to the wetlands system for treatment. Additional water may periodically enter the system when the pools are drained; in this case, pool draining would occur on days when the filters are not back-flushed. The wetlands are designed to accommodate 12" of storage freeboard above the gravel surface, to process, treat and retain as much of the water on the site as possible.

images from top to bottom:
 Aerial of Woodland Park Zoo
 Design development schematic (courtesy Studio Hanson Roberts)
 Penguins from the Exhibit