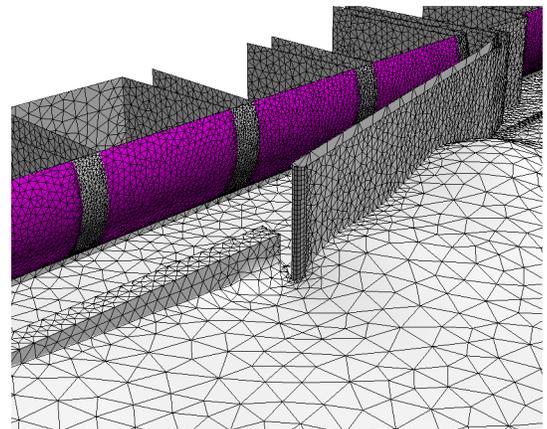
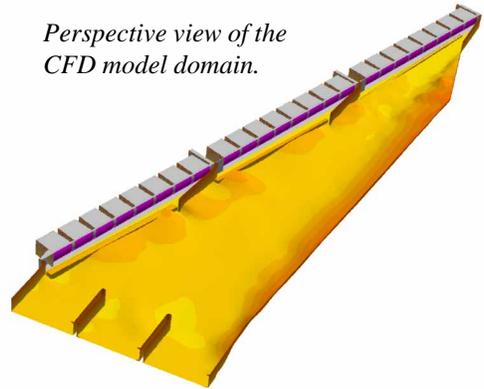


## Chandler Fish Handling Facility Yakima Basin Project, Bureau of Reclamation

The Chandler Fish Handling Facility is located about 1 mile from the head gate of the Chandler Canal near Prosser, WA. To reduce the mortality of endangered salmonids, a series of drum screens have been placed across the irrigation canal to force the fishes into a reduced volume of water that is returned to the Yakima River. PNNL's Ecology Group conducted field studies of water velocities for the US Bureau of Reclamation. The objective of the studies was to ascertain if mandated velocity criteria near the drum screens were being met. To augment these studies, PNNL Hydrology Group staff created a computational fluid dynamics (CFD) model of the Chandler Fish Handling Facility forebay and applied it to several scenarios.

Because a complete 3D description of the site geometry did not exist, PNNL Hydrology staff conducted a field survey of the facility and the sediment that had accumulated in the forebay. These data, combined with data from reports, were used to create a computational mesh in which the drum screens, fish bypasses, ecology blocks, and deposited sediment were represented. This computational mesh was used for a series of flow scenarios; some of the scenarios included the addition of a guiding wall, one simulation included the removal of a portion of an existing wall. The CFD simulations were designed to indicate the change in velocities near the drum screens for lower flow scenarios and to show the relative impact of adding or removing certain structures in the search to improve flow conditions for endangered fishes.

*Perspective view of the  
CFD model domain.*



*Detail view of CFD grid showing drum  
screens, ecology blocks, and guidewalls.*