MULTNOMAH CHANNEL MARSH WATER CONTROL STRUCTURES

The Marsh has two large water control structures located in the north and south tidal creek connections between the wetlands and the Multnomah Channel. Together, the WCSs are used to hold seasonal flooding over the two large wetland basins at the Marsh. Short descriptions and operation instructions for each structure follow below.

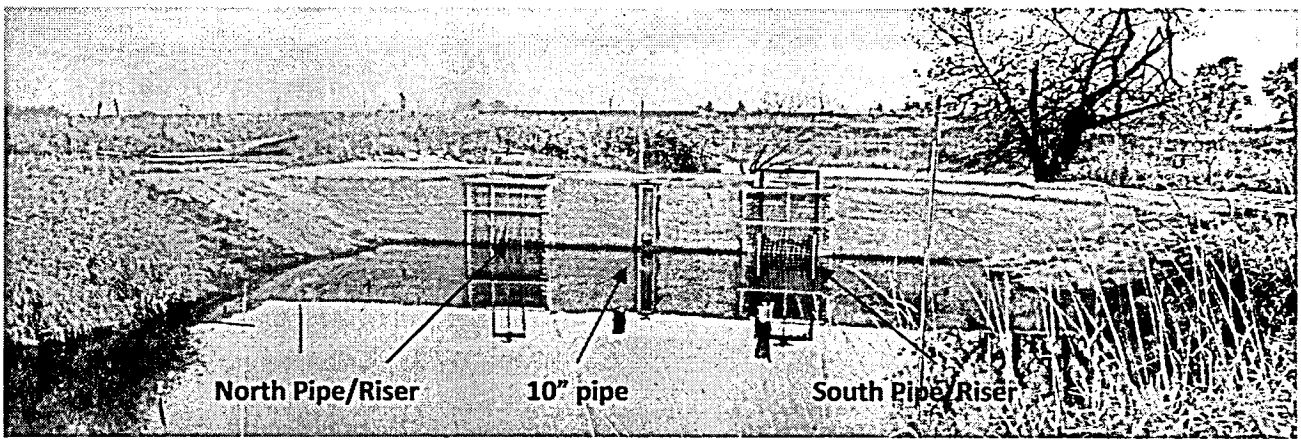
NORTH WATER CONTROL STRUCTURE

DESCRIPTION AND SPECIFICATIONS

Located near the confluence of the north tidal creek and the Multnomah Channel, this WCS has two 6' diameter pipes that allow flow of water through the WCS, each pipe is open at the eastern downstream end, and faced with a half-round riser on the western, upstream end. The risers are each equipped with slots that allow stacks of 6" x 6" x 6' stoplogs to be loaded into the upstream opening of the pipe, to control the flow of water through the structure.

The more southern of the two pipes/risers has a moderate sized reverse-tidegate installed at the base of the riser, which, when closed, allows one-way flow of water into the wetland (when water is higher on the Multnomah Channel than it is in the wetland) to facilitate filling of the wetland. The more northern of the two pipes/risers has a smaller reverse-tidegate installed for the same purpose.

Between the two pipes/risers, is a smaller full round riser (looks like a grated manhole when standing on the structure), containing a smaller set of flashboards that are stacked inside the riser. This riser is linked to a 10" pipe that passes through the structure a couple feet below the top of the structure. The 10" "undershot" pipe was installed to provide a small amount of fish passage, and is capped on the western, upstream side by a small waterman's gate connected to a very small turnwheel, which raises and lowers the gate and controls flow of water through the structure.



OPERATION

Flooding

- The North WCS is typically closed in late December or early January to capture water and flood the north wetland.
- Typically, flooding is initiated by manipulating the large turnwheel valves on the tidegate to lower the gate and totally cover the circular opening in the gate.

Dewatering

- Once the wetlands are filled, the structure is left largely unmanaged in the flooded state until late June/early July, when drawdown is initiated.
- Dewatering in July begins by opening the small gate on the 10" undershot pipe. When water has drained to the base of that pipe, the reverse tidegates are opened slightly (~8-12") to continue the slow drawdown of the pond.
- Once the water levels are the same on the Channel and wetland side of the structure, the gates are opened fully, and kept open until flood-up the following year.

SOUTH WATER CONTROL STRUCTURE

DESCRIPTION AND SPECIFICATIONS

Located on the south tidal creek, but farther upstream from the confluence than is the north WCS, the South WCS has two 8' diameter pipes that allow flow of water through the WCS. Each pipe is open at the northern, downstream end, and faced with a half-round riser on the southern, upstream end. The risers are each equipped with slots that allow stacks of 6" x 6" x 8' stoplogs to be loaded into the upstream opening of the pipe, to control the flow of water through the structure.

The more western of the two pipes/risers has a large sized reverse-tidegate installed at the base of the riser, which, when closed, allows one-way flow of water into the wetland (when water is higher on the Multnomah Channel than it is in the wetland) to facilitate filling of the wetland. The more eastern pipe/riser, has no reverse-tidegate, and is filled with stoplogs only.

East of the two pipes/risers, is a fishway made up of a sloped, baffled oval culvert. The fishway provides good egress for aquatic wildlife in the wetland, and is controlled via 3 sets of 2" x 4" flashboards and a central slot board.

OPERATION

Flooding

- The South WCS is typically closed in late December or early January to capture water and flood the north wetland.
- Typically, flooding is initiated by manipulating the large turnwheel valves on the large reverse tidegate to lower the gate and totally cover the circular opening in the gate. Boards are loaded progressively into the fishway, as the water levels increase, to allow modest spill-over of the central top flashboard.

Dewatering

- Once the wetlands are filled, the structure is left largely unmanaged in the flooded state until late June/early July, when drawdown is initiated.
- Dewatering in July begins by progressively removing flashboards in the fishway to facilitate a slow drawdown, until the water level is roughly at the bottom of the fishway riser. When water has drained to the base of that fishway riser opening, the reverse tidegate is opened slightly (~8-12") to continue the slow drawdown of the pond.
- Once the water levels are the same on the Channel and wetland side of the structure, the gates are opened fully, and kept open until flood-up the following year.