City Of Ashland Wastewater Treatment Plant

Welcome

- *The City of Ashland's Wastewater Treatment Plant is a biological process operating in conjunction with a Membrane filtration system . During the Winter months, December 1st through April 30, wastewater is discharged directly into Ashland Creek from the secondary treatment process. In the Summer months from May 1st to November 30th, when our Phosphorous discharge limits are more restrictive, the secondary effluent is pumped through a membrane filtration process. This filtration process removes additional Phosphorous prior to discharge to Ashland Creek. Ashland's tertiary wastewater treatment process removes greater than 99% of the carbonaceous biochemical oxygen demand (CBOD) and total suspended solids (TSS). Total Phosphorus is typically below 0.05 mg/l with Ammonia averaging 0.25 mg/l. Excess solids that are generated in the treatment process are dewatered using an centrifuge and transported to Dry Creek Landfill located in White City, Oregon, for disposal.*

Meet the Staff

- ***Ken Moser***
  - ***Chief Operator***

Gerard Payne
-Operator

Ed Bomberger
-Operator

Terry Birch
-Operator

Karen Wheat
-Utility

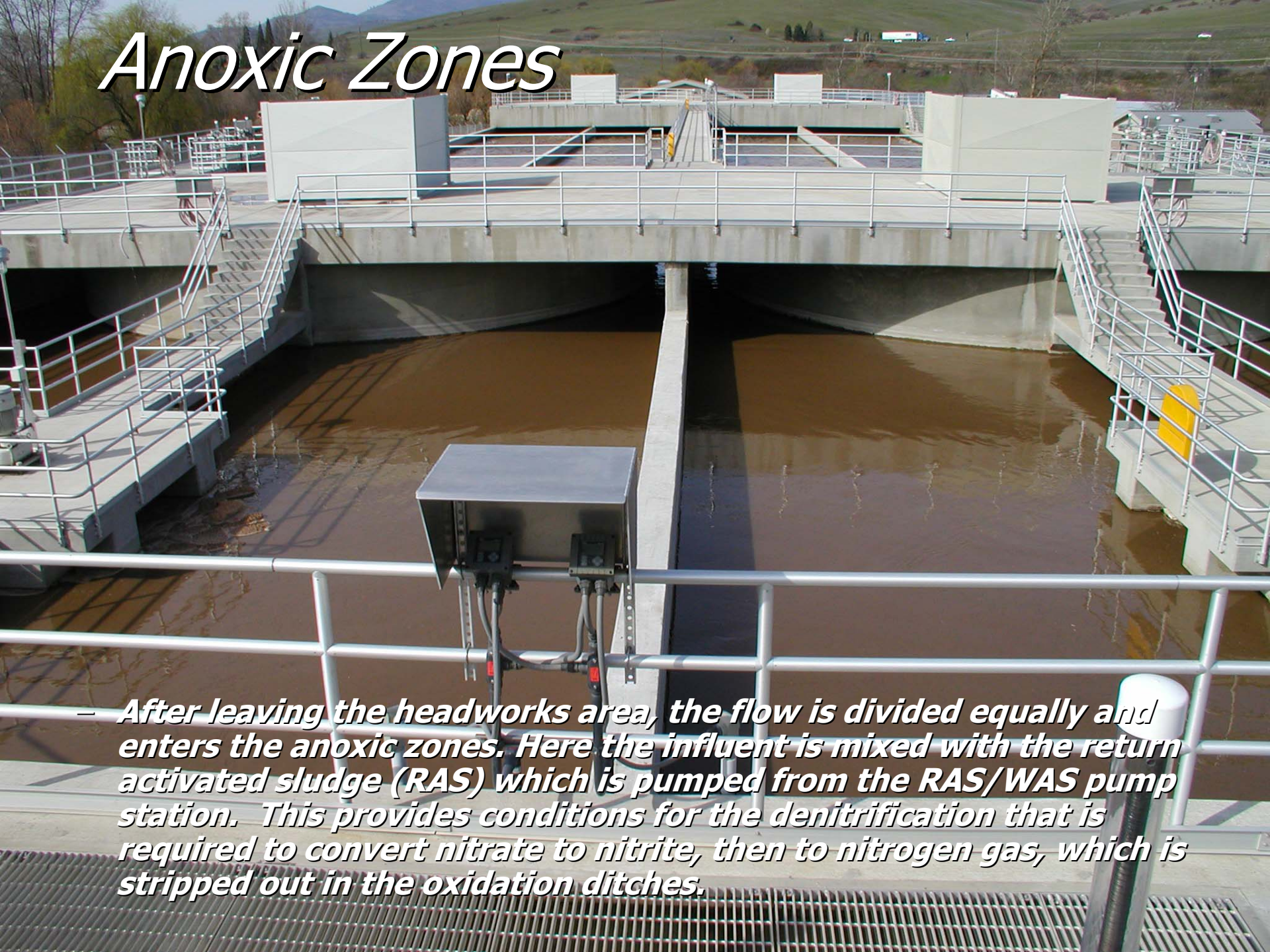
Major Process Components

- Headworks
- Anoxic Zones
- Carousel Oxidation Ditches
- Clarifiers
- Ultra-Violet System
- RAS/WAS Pump Station
- Membrane Filtration System
- Bio-solids Handling Facilities
- Backup Power

Headworks

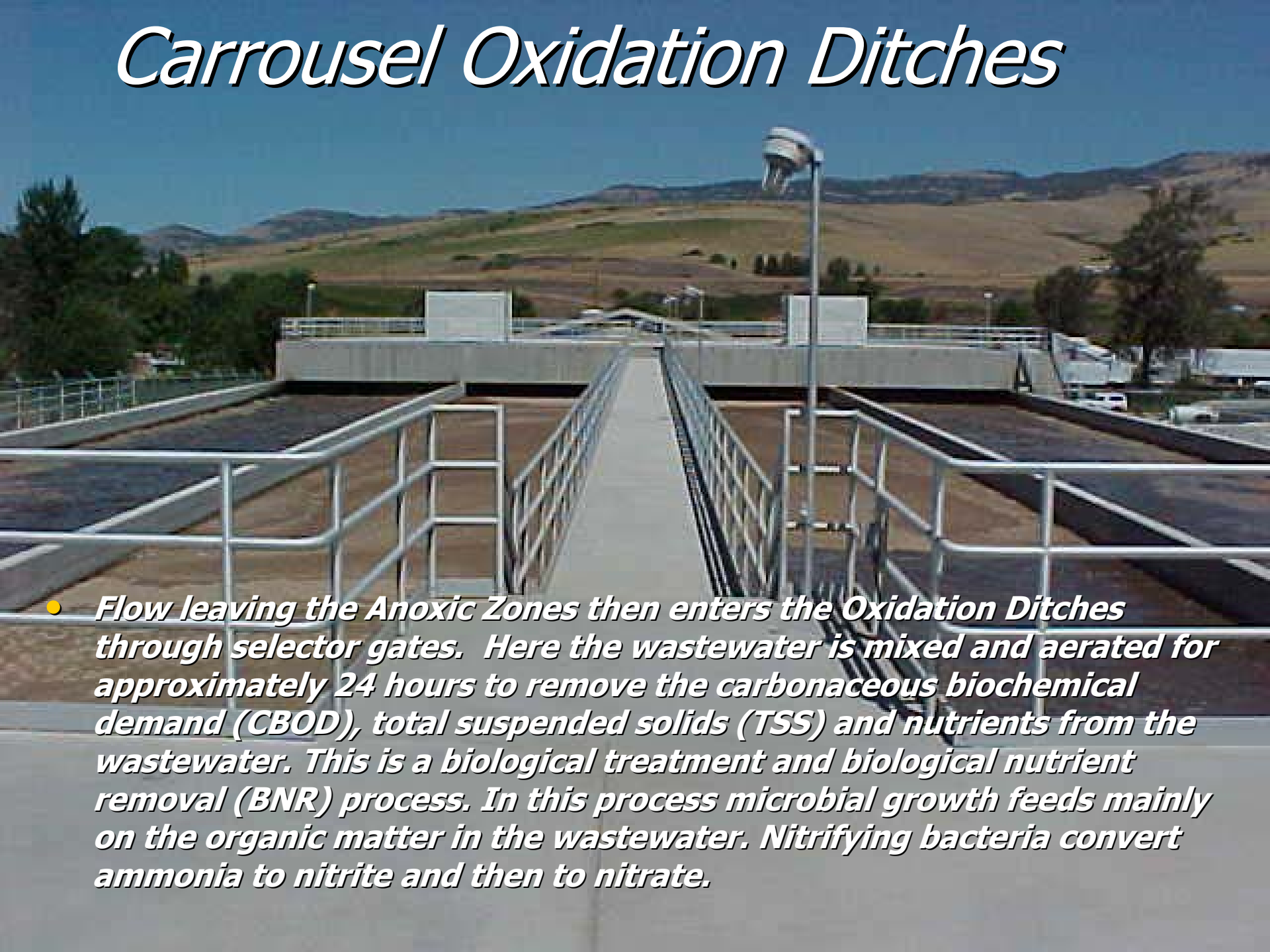
- ***The WWTP headworks is where all of the wastewater enters the plant. Flow measurement takes place here as well as grit removal, such as sand and gravel. Sticks, rags and plastics are also removed at this point. Once removed, this material is dewatered and transported to the Dry Creek Landfill for disposal in White City, Oregon. In addition operators have the ability to adjust wastewater pH with the use of caustic if needed.***

Anoxic Zones



- After leaving the headworks area, the flow is divided equally and enters the anoxic zones. Here the influent is mixed with the return activated sludge (RAS) which is pumped from the RAS/WAS pump station. This provides conditions for the denitrification that is required to convert nitrate to nitrite, then to nitrogen gas, which is stripped out in the oxidation ditches.

Carrousel Oxidation Ditches



- ***Flow leaving the Anoxic Zones then enters the Oxidation Ditches through selector gates. Here the wastewater is mixed and aerated for approximately 24 hours to remove the carbonaceous biochemical demand (CBOD), total suspended solids (TSS) and nutrients from the wastewater. This is a biological treatment and biological nutrient removal (BNR) process. In this process microbial growth feeds mainly on the organic matter in the wastewater. Nitrifying bacteria convert ammonia to nitrite and then to nitrate.***

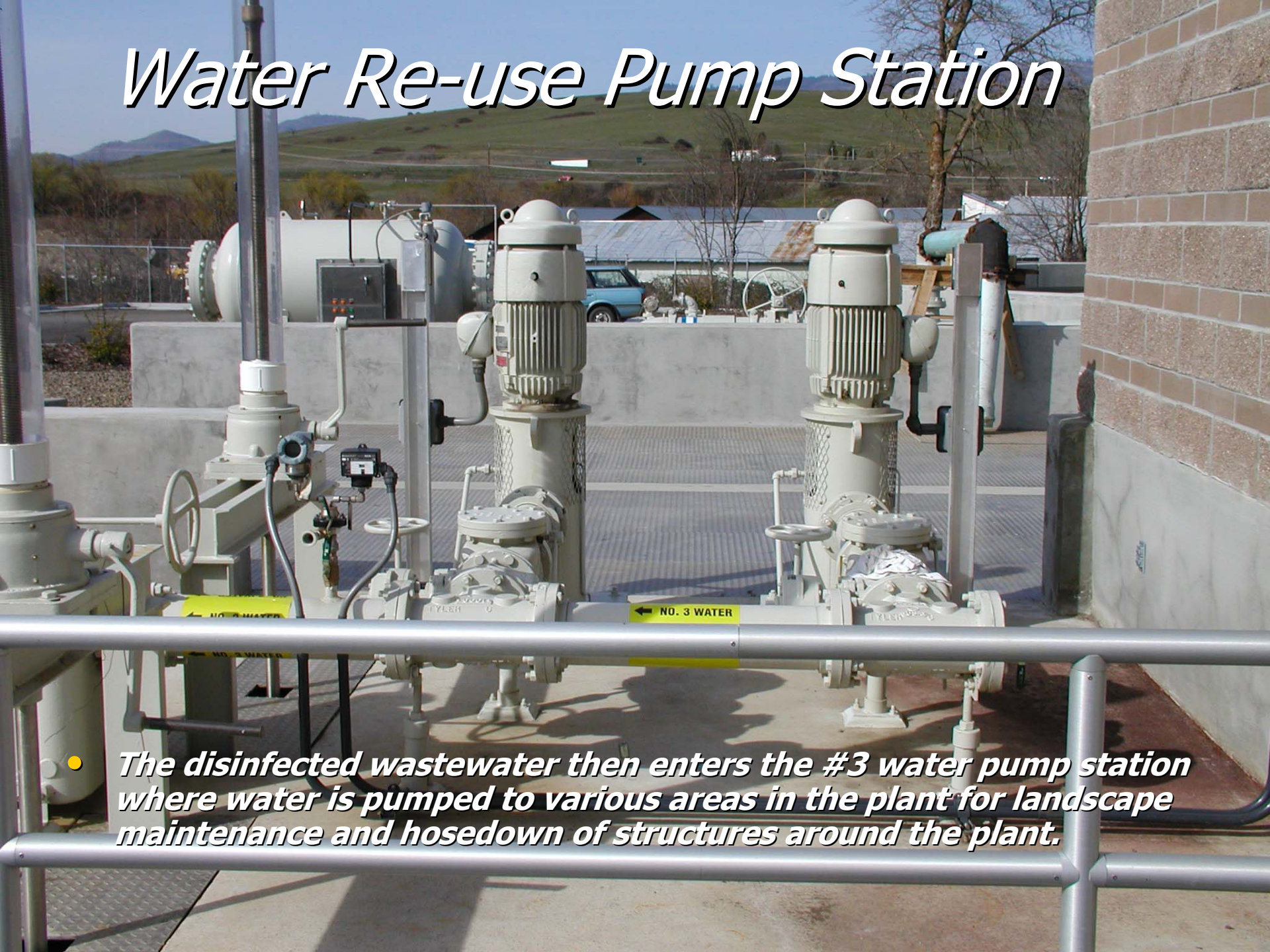
Clarifiers

- *After the wastewater leaves the oxidation ditches, it enters the three clarifiers. The clarifiers offer a quiescent area where the solids settle out and the clear water is removed . The clear water is routed through the ultra-violet system for disinfection and the solids that settle out are removed to the RAS/WAS pump station.*

Ultra-Violet System

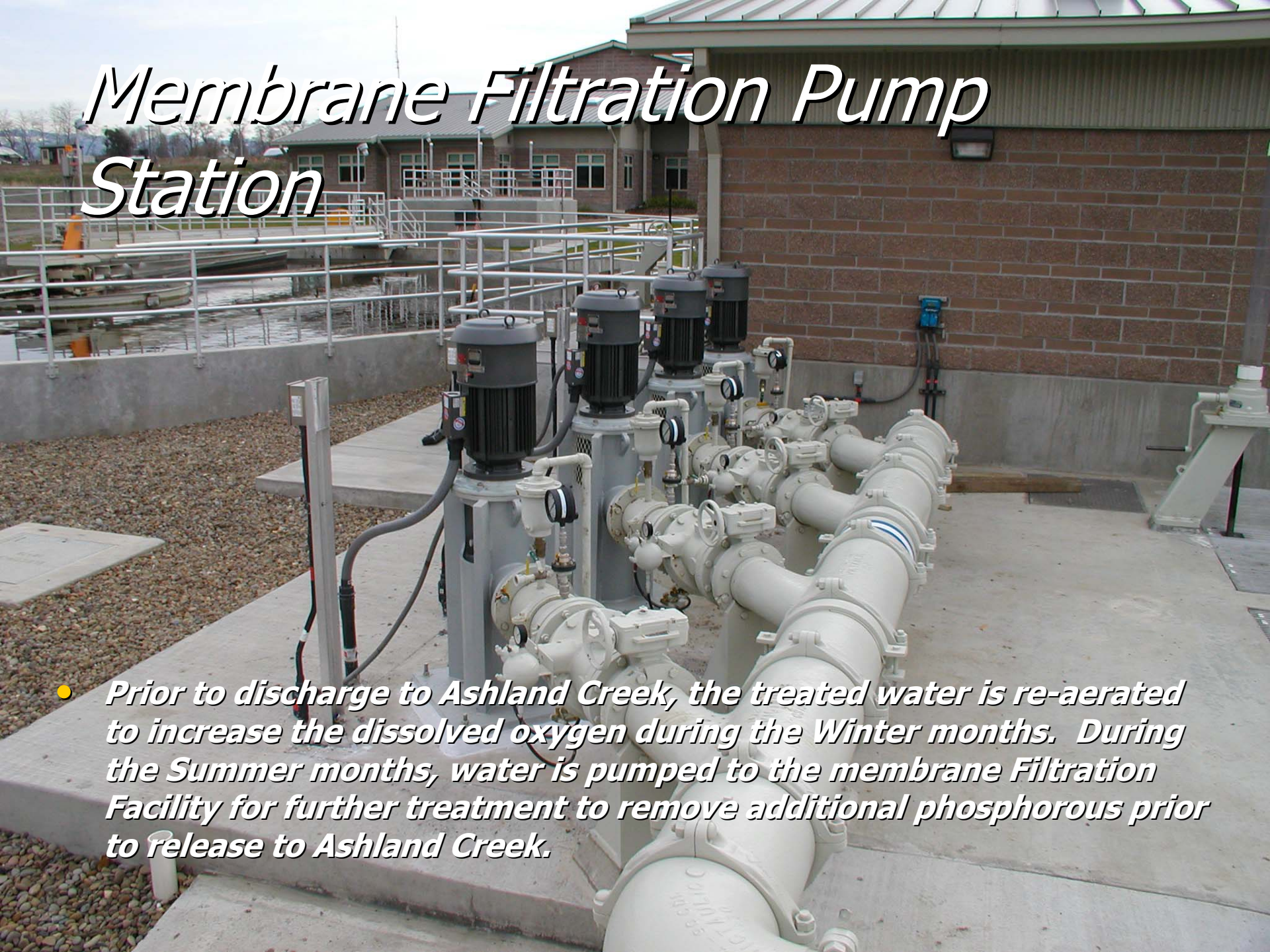
- ***The WWTP uses an ultra-violet system to disinfect the treated wastewater. There are four banks of ultra-violet (UV) bulbs in which the treated wastewater from the clarifiers passes over. Each bank of bulbs contains eight bulbs. The function of this system is to reduce the number of disease-causing organisms such as viruses, bacteria, spores, mold, yeasts, algae and certain protozoa, prior to discharging the water to Ashland Creek. This pollution free process does not add any chemicals or harmful bi-products to the water.***

Water Re-use Pump Station



- *The disinfected wastewater then enters the #3 water pump station where water is pumped to various areas in the plant for landscape maintenance and hosedown of structures around the plant.*

Membrane Filtration Pump Station

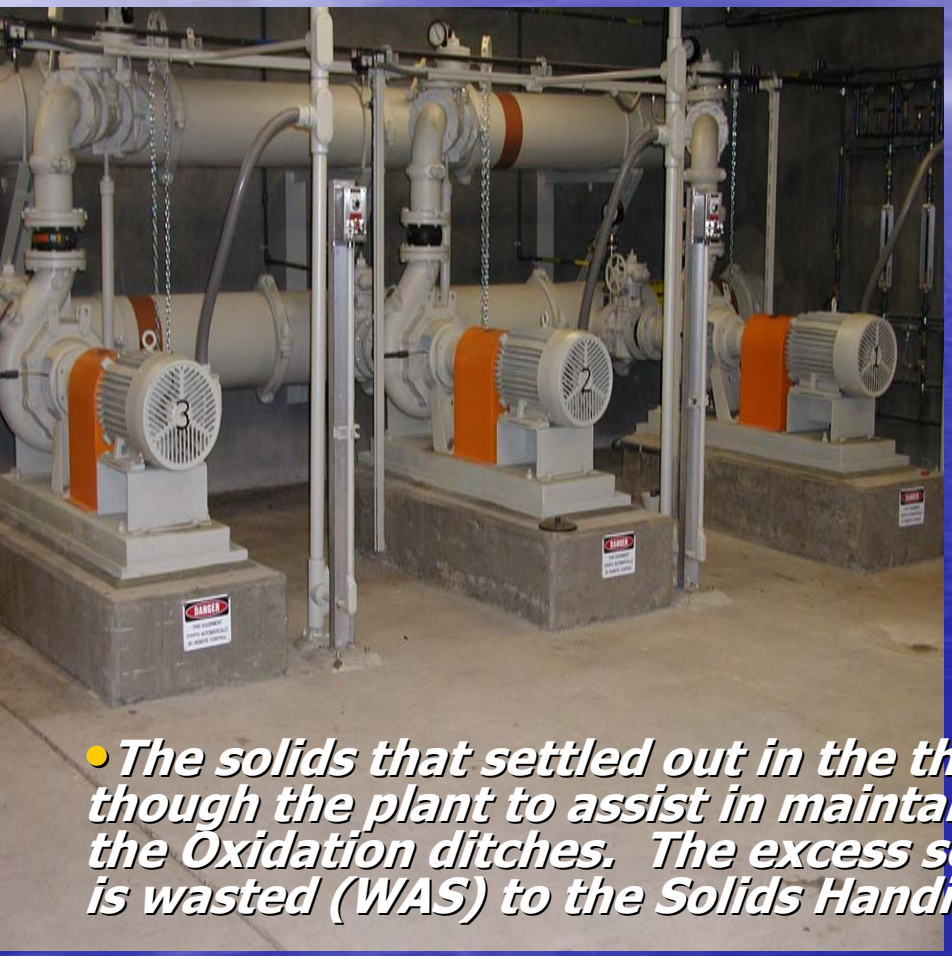


- ***Prior to discharge to Ashland Creek, the treated water is re-aerated to increase the dissolved oxygen during the Winter months. During the Summer months, water is pumped to the membrane Filtration Facility for further treatment to remove additional phosphorous prior to release to Ashland Creek.***

Membrane Filtration

- From May 1st through November 30th the secondarily treated wastewater is pumped back through the Membrane Filtration Facility. Aluminum sulfate (alum) is used in conjunction with the biological nutrient removal process to assist in precipitating out as much phosphorous as possible in the secondary clarifiers. Th water from the clarifiers is then routed through the membrane filters where the remainder of phosphorus is filtered out prior to release to Ashland Creek.

RAS/WAS Pump Station



- ***The solids that settled out in the three Clarifiers (RAS) is returned back though the plant to assist in maintaining a balance of microorganisms in the Oxidation ditches. The excess solids produced in the Oxidation Ditches is wasted (WAS) to the Solids Handing Facility for disposal.***

Lime Stabilization

- ***Solids that are no longer needed in the plant are either wasted (WAS) to the Lime Stabilization process for further treatment or wasted directly to the centrifuge. Solids are transported to the landfill via dump truck.***

Centrifuge

- ***The solids that are no longer needed within the treatment process are wasted to the centrifuge. Here the 1% solids entering the centrifuge are dewatered to form 20% solids. The dewatered solids are then transported by dump truck to Dry Creek Landfill in White City for disposal.***

Backup Power

The 100 KW generator will provide backup power to all the critical facilities within the plant area. All equipment start-up is prioritized and placed on a critical needs schedule.

Ashland Creek Outfall

- ***Treated wastewater is discharged at this point year round. During the Summer months it comes from the Membrane Filtration Facility and during the Winter months flow is discharged directly from the Secondary treatment system.***