INTEROFFICE MEMORANDUM

TO: PROFESSOR CASHMAN
FROM: THOMAS PREMO
SUBJECT: ARCATA WASTEWATER TREATMENT PLANT TRIP MEMO
DATE: OCTOBER 4, 2016

Purpose

The purpose of this memorandum is to discuss what I learned on the field trip to the Arcata Wastewater Treatment Plant on September 29, 2016. I include an analysis on some of the complications with the water treatment plant marshes due to waterfowl.

Discussion

The Arcata Wastewater Treatment Plant filters wastewater using an innovative process that involves the use of several oxidation ponds, treatment wetlands, and enhancement marshes as an alternative to activated sludge systems. There are many pros and cons to both systems and although the marshes are harder to maintain and take up more space than activated sludge, they are also used as a wildlife refuge for many birds migrating along the Pacific Flyway. Today, the marshes at the wastewater treatment plant are a popular destination for joggers, cyclists, and birdwatchers that come from all over the world to see the avian species at the marsh. The marshes are home to over 327 species of birds as well as many other mammalian and reptilian species including bobcats and river otters. While the environmental benefits to this successful wildlife refuge are obvious, natural processes like enhancement wetlands require extra treatment for bird droppings and other contaminants from the animals that call the marsh home. The tertiary treatment process in the treatment plant involves the disinfected secondary effluent being put into the treatment marshes where it is cleansed by cattails, reeds, and bacteria. Afterwards it is chlorinated to kill pathogens from bird droppings and other contaminants. As a natural system, there is a lot more management involved in the treatment process. Algae and other plants grow quickly on the marshes complicating maintenance procedures on the marsh like the removal of sludge that has built up on the bottom of the marsh. The species in the marsh also add contaminants that later need to be removed. An activated sludge system is easier to manage, as these are not variables that are present in those systems.

Conclusion

The Arcata Wastewater Treatment Plant uses oxidation ponds and treatment marshes as an alternative to activated sludge systems to treat the wastewater. While these systems provide numerous benefits both environmentally and economically, the system is harder to manage, as it is a natural system. Avian species and other animals also contaminate the water in the marshes requiring additional disinfection.