

## **CITY OF CORNELIA W.P.C.P. ALTERNATIVE ANALYSIS**

The City of Cornelia is always looking for ways to improve upon facility processes, efficiency, cost effectiveness, environmental protection, and a better quality of life for its citizens. The City of Cornelia takes pride in being a proactive City rather than a reactive City when it comes to the environment and its citizens. The following information will outline the City's plans for future requirements both environmentally and cost effectively at the W.P.C.P. and its impact to the citizens of Cornelia.

The City of Cornelia's W.P.C.P. has just completed upgrading the facility to better meet environmental constraints and to operate more cost effectively. The City has addressed this issue during its current upgrade project with the construction of 2.2 meter belt press and building. This City will recoup this money within the first four years and will save over \$100,000 dollars a year thereafter. The new belt press will also provide the City with enough solids removal capabilities for future growth of both the City and the W.P.C.P.

The completed upgrade project also addressed the solids removal with the addition of a second aerobic digester and upgrade of the existing digester. This will allow for future growth in the City of Cornelia with the capability of storing and digesting solids more efficiently. The digester modifications will help the W.P.C.P. to meet its new permit requirements for phosphorous as well.

The W.P.C.P. is has also constructed a chemical phosphorous removal system. The W.P.C.P. has new effluent permit limitations on phosphorous which started in August of 2009 of 1.1 mg/l. The upgrade has not only allowed the City to meet the new requirements but with the W.P.C.P. sand filters already in operation it will allow the City to remove the phosphorous down to much more stringent levels if required.

The City is currently under a second upgrade project which started June of 2010 that will add four more aeration cells to the current eight cells the W.P.C.P. has now. This project will also allow the City to improve the existing eight aeration cells oxygen efficiency by installing fine bubble diffused air in all twelve cells. The new design will also incorporate the ability to remove phosphorous biologically in the first stage of all three basins (four cells in each basin). The design will give the W.P.C.P. maximum operating ability and efficiency. The basins function independently of each other or in series (1,1,1 or 1,2 together or all 3 together) giving the W.P.C.P. a wide range of operational capabilities. The new addition of the four cells and the retrofit of the new diffusers in the existing cells will allow the W.P.C.P. to remove Nitrogen and BOD much more efficiently both operationally and cost effectively (less power to operate). This upgrade will improve the City's nitrogen and phosphorous removal by almost 40% allowing for future growth and tighter restrictions by EPD.

A Capital Improvement Plan also addresses other such issues as future expansion of primary clarification, grit removal, secondary clarification, expansion of filtration, and possibility of UV for disinfection. These plans are in place will start as necessary to allow future growth in the City of Cornelia and to stay ahead of more stringent effluent limitations.

The W.P.C.P. is currently permitted to discharge directly into the South Fork of Little Mud Creek a tributary of the Chattahoochee River Basin. The City does not see any reason now or in the future for any other discharge than direct discharge. With the demand for water in Lake Lanier and the Chattahoochee River to supply Atlanta and surrounding areas with drinking water the City does not see any reason why the GA EPD would allow us to discharge by any other means. We have approached the EPD with the option of selling some of our effluent water to landscapers and were notified immediately that was not an option because of the drought and need for that water in Atlanta.

The W.P.C.P. currently disposes of the sludge at R&B landfill in Banks County. An alternate landfill is Habersham County landfill. The City has done some pilot testing and cost effectiveness calculations by looking at composting the sludge with our leaves and brush from another department. This may be a way for us to dispose of our sludge in the future but not at present time.

The W.P.C.P. is currently working very efficiently at operating cost and at achieving environmental effluent limitations. The completed upgrade project, the upgrade project in progress in 2010, and the CIP plan the City has in place will certainly allow the W.P.C.P. to meet more stringent effluent limitations as well as future growth to service areas and population. It will also benefit the City in lowering chemical purchases (biological phosphorous removal instead of chemical), purchase of belt press (verses leasing), and new dissolved oxygen system (less power consumption replace floating aerators) resulted in cost savings. The City has also worked in conjunction with local industries and received grants for these new upgrades limiting the City to providing \$600,000 of about \$5,000,000 worth of upgrades.

The City is addressing areas of concern and implementing alternative ways to save money, operate more efficiently, prepare for future population and industrial growth, and more stringent effluent limitations. The existing plant combined with upgrades and future upgrades will more than adequately handle and provide for the above listed considerations. The City will continue to reevaluate each year the operations of the W.P.C.P. to improve efficiency, evaluate cost effectiveness, consider permit requirements, monitor environmental impact, and reduce solids loading to landfills and seek alternate means of disposal.