



P.O. Box 1165, Fort Myers, FL 33902

239-633-7274

March 28, 2017

Mr. Daniel Sensi
Permitting Program Manager
Florida Department of Environmental Protection
South District Office
2295 Victoria Avenue, Suite 364
Fort Myers, Florida 33901

Re: Cape Coral ERP Application to permanently remove the Chiquita Lock.

Delivered by email.

RE: March 16 letter from you to the applicant, City of Cape Coral, regarding the second request for additional information on the applicant's ERP application to permanently remove the Chiquita Lock.

Mr. Sensi:

Please consider these additional comments on the City of Cape Coral's ERP application to permanently remove the Chiquita Lock. I am specifically commenting on the applicants following statement and Ms. Davis's response to it regarding the use of the freshwater canal system for TN load reduction crediting.

Applicants statement:

"There may also be opportunities to increase TN reductions within our current freshwater canal system through increased weir height for higher retention."

Ms. Davis's response:

"They claim that the wet detention methodology can be applied and change the removal rate to (up to) 42% and lead to an estimated reduction of 19,927. This seems, at first glance, to be unrealistic. However, these calculations have not been provided to us."

I would agree with Ms. Davis's comment. The freshwater canal system does to some degree function as a wet detention system. However, the system is at least 50 years old. Wet detention systems have a limited capacity for sequestering pollutants especially nitrogen. My 36 years of experience managing this system for nuisance aquatic vegetation and algae indicates to me that the system has lost most, if

not all, of its capacity to sequester nitrogen exemplified by the excessive plant growth frequently occurring and the upward trend in TN concentrations.

The Harper 2007 report on wet detention performance for removing TN indicates that normal wet detention design with at least 200 days of detention is incapable of removing the 80% removal rate presumed from earlier wet detention performance criteria unless there is a treatment train involved in the design.

I would suggest that all current evidence about TN dynamics of the Cape Coral freshwater canal system indicates that it functions more as a *source* rather than a *sink* for nitrogen due largely to suspected internal loading and that the presumptive criteria for wet detention performance with regard to nitrogen removal is inappropriate.

For the applicant to be given any credit for TN removal based on wet detention criteria, it would be necessary to evaluate the nitrogen budget of the system to accurately determine the TN removal efficiency considering the age of the system, current level of eutrophication and the upward trend in TN concentrations.

Regards,

A handwritten signature in cursive script, appearing to read "John R. Cassani".

John Cassani
Calusa Waterkeeper