Florida Department of Transportation

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MEMORANDUM

To: Daniel Waters, P.E., SFWMD
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From: Brent Setchell, P.E. FDOT District One Environmental Permits Engineer

Date: April 25, 2011

Subject: Event Mean Concentration (EMC) Values for FDOT projects

This memo is intended to clarify the Florida Department of Transportation (FDOT) - District One's position on Event Mean Concentration (EMC) values used in nutrient loading calculations. Nutrient loading calculations are required by both SWFWMD and SFWMD for projects that discharge to impaired waters to demonstrate no net increase in total nitrogen (TN) and total phosphorus (TP). FDOT District 1 has recently funded several studies to sample the EMC loading concentrations from FDOT roadways and research and evaluate existing studies. The results of these studies offer the best available information with regard to highway EMC values within FDOT District 1. Therefore, these EMC results should be accepted by SFWMD and SWFWMD in reviewing nutrient loading calculations submitted by FDOT.

Several sources of highway EMC values are currently accepted by SFWMD and SWFWMD. The "Evaluation of Current Stormwater Design Criteria within the State of Florida" dated June 2007 (2007 Harper Report) was one of the most recent sources of accepted EMC data. In March 2010 the Florida Department of Environmental Protection (FDEP) published a draft of the "Stormwater Quality Applicant's Handbook" as part of the proposed Unified Statewide Stormwater Quality Rule. During the Technical Advisory Committee (TAC) meetings for the proposed rule, FDOT provided four water quality sampling studies done between 2004 and 2007 in Lee, Hendry, and Collier Counties (Johnson Engineering 2006; 2008; 2009a; 2009b). FDEP reviewed these studies and found them acceptable. The results were averaged with the EMC

values from the 2007 Harper Report and published as the EMC values in the Stormwater Quality Applicant's Handbook.

However, FDOT has further researched and evaluated the highway EMC values. Specifically the water quality sampling studies done to formulate the EMC values proposed in the 2007 Harper Report. FDOT's final report titled "Determination of Appropriate Highway EMC Values for Use within FDOT District 1" (2010 ATM Report) was prepared by Applied Technology and Management, Inc. (ATM) and supported the use of local EMC values for Basin Management Action Plans (BMAP) within the Everglades West Coast and Caloosahatchee BMAPs. Based on the results of the 2010 ATM Report, FDOT District 1 is proposing the use of the resulting EMC values for nutrient loading calculations for FDOT projects. Attached to this memorandum is a copy of the 2010 ATM Report supporting the proposed EMC values.

Conclusions

FDOT and our consultants will begin incorporating the following roadway EMC values into nutrient loading calculations as the best available information:

1. For roadway projects in Lee, Hendry, Collier and Charlotte Counties, FDOT proposes using 1.16 mg/L for TN and 0.157 mg/L for TP.
2. For roadway projects in all other FDOT District 1 counties (Polk, Manatee, Sarasota, Hardee, Desoto, Highlands, Okeechobee and Glades) FDOT proposes using 1.19 mg/L for TN and 0.155 mg/L for TP.

Highway EMC Values	**TN (mg/L)**	**TP (mg/L)**
2007 Harper Report	1.64	0.22
2010 Applicant's Handbook	1.37	0.17
2010 ATM Report (statewide)	**1.19**	**0.155**
2010 ATM Report (Lee, Charlotte, Collier, and Hendry)	**1.16**	**0.157**