

**UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF FLORIDA**

THE INDIAN RIVERKEEPER,)
)
 Plaintiff,)
)
 v.)
)
 FEDERAL HIGHWAY)
 ADMINISTRATION; MARY E.)
 PETERS, in her official capacity as)
 Administrator of the Federal Highway)
 Administration; JIM ST. JOHN, in his)
 official capacity as Division)
 Administrator for the Florida Division,)
 Federal Highway Administration;)
 JOSE ABREU, in his official capacity)
 as Secretary of the Florida Department)
 of Transportation; and ST. LUCIE)
 COUNTY, a political subdivision)
 of the State of Florida,)
)
)
 Defendants.)
)
 _____)

DECLARATION OF DR. PETER BARILE

I, DR. PETER BARILE, declare as follows:

1. I have a Doctor of Philosophy degree (Ph.D.) in Environmental Sciences awarded in July 2001, a Master’s Degree (M.S.) in Marine Biology awarded in June 1993, and a Bachelor’s Degree (B.S.) in Biological Sciences awarded in December 1990, all from the Florida Institute of Technology, in Melbourne, Florida. My studies as a Post Doctoral Fellow at Harbor Branch Oceanographic Institution, Ft. Pierce, FL (2002 to present), have focused on the consequences of unsustainable land management and land-based sources of pollution (resulting from agriculture runoff, and urban wastewater effluents)

on water quality and biological communities in coastal nearshore waters of east, southeast, and south Florida and the Caribbean. I have nearly 20 years experience in professional level scientific endeavors, including environmental consulting and impact assessment, with nearly 20 academic articles published in scientific peer-reviewed journals on this topic. I am a former John Knauss Marine Policy Fellow in the NOAA Sea Grant Program in Washington, D.C.

2. The armoring of the Indian River Drive Bluff between Ft. Pierce and Jensen Beach, FL will reduce the buffering capacity of the bluff from its previously vegetated state, resulting in decline of water quality in the downgradient waters of the Indian River lagoon. There are several benefits to having the bluff covered with natural and native vegetation compared to the use of subsurface armoring and subsequent cover with Bahia grass.

3. First, there is no better designed or efficient vegetative community to mitigate stormwater runoff or direct rainfall interception on to the bluff than the existing flora that has evolved at this site over the past 10 thousand years or so. This includes the more than adequate performance of this vegetative community in buffering Indian River Drive from the recent direct hits from hurricanes Frances and Jeanne this past September 2004.

4. Second, the native vegetation in these steep gradient communities play an important role in attenuating land-based nutrient pollution loads from upgradient septic tanks, as groundwater delivering these effluents moves toward the lagoon. Clearly, the attenuation and mitigation of excessive land-based sources of nutrient pollution is a

primary goal of the Indian River Lagoon Restoration programs of the St. John's River and South Florida Water Management Districts, and the US Army Corps of Engineers.

5. Third, alteration of the slope and toe of the base of the bluff will alter existing western shore lagoonal beaches. The potential loss of these beaches will result in periods of turbid and stagnant nearshore water where excessive macroalgae buildup from prevailing east and southeast winds will occur. Degradation of this biomass will subsequently lead to localized hypoxia and anoxia with resulting decrease in habitat and fisheries value. These undesirable conditions regularly occur in proximity to many armored and modified portions of the western shores of the lagoon to the north in the Melbourne area.

6. In addition to direct habitat loss from anoxic near shore waters and odors to upgradient landowners, degrading macroalgal communities subsequently exude copious quantities of inorganic nutrients that may then support harmful and toxic dinoflagellate blooms, further reducing water quality and fisheries production on larger scales in the lagoon.

7. This hastily engineered plan to secure the bluff of Indian River Drive between Ft. Pierce and Jensen Beach, FL has been executed without regard to the possibility of augmenting existing natural vegetative communities that are ultimately the most ecologically and physically sound alternative.

FURTHER I SAYETH NOT.

Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge.

Dated this ____ day of January 2005.

Peter J. Barile, PhD.