

**TAB 5**

## POINT PAPER

### INVITATION FOR PARTNERSHIP IN THE TAMPA BAY NITROGEN MANAGEMENT CONSORTIUM

January 22, 2008

**PROBLEM:** The FDEP has changed the limits of nitrogen allowable in waste water discharge. As previously discussed, the need to address the TMDL's may become a costly endeavor for most municipalities and counties in the State of Florida. Partnership in the Tampa Bay Estuary Program's Consortium for Nitrogen Management would require City Commission approval and a budget allocation.

**BACKGROUND:** The FDEP has concluded that the Tampa Bay Estuary Program's strategy for nitrogen management provides reasonable assurance that the State water quality criteria for nutrients would be met. Membership in the Consortium allows for cooperative efforts toward the continuing recovery of the Tampa Bay Estuary, for member input into the development of appropriate effluent limitation, and extends the time that the City has to come into compliance with soon-to-be-revised standards.

It is in the interest of all stakeholders to continue a collaborative approach to bay management and to avoid a potential free-for-all of administrative challenges and lawsuits, in which no one benefits and which risk derailing 25 years of progress toward the bay's recovery.

The estimated total cost of the development of an Assessment and Allocation Report that will recommend technically sound, equitable allocations is \$100,000. These costs can be shared equally among partners at a cost not to exceed \$5,000 per member payable by January 31, 2008.

As an additional benefit, partnership may allow for new grant funding opportunities.

#### **ALTERNATIVES:**

- 1 – Authorize funding to enter into Consortium
- 2 – Do not enter into Consortium

#### **RECOMMENDATION:**

Staff recommends Alternative # 1 – authorize funding to enter into consortium

**BUDGET:** Not to exceed \$5,000 from Engineering Services, # 440-538-3116

PK  
KLS  
1/14/08

Tampa Bay Estuary Program  
 100 8<sup>th</sup> Avenue SE  
 St. Petersburg, Florida 33701

**727-893-2765**

# INVOICE

INVOICE # 1004  
 DATE: JANUARY 9, 2008

**TO:**  
 City of Palmetto  
 Attn: Matt Bloome  
 600 17<sup>th</sup> Street West  
 Palmetto, FL 34221

**COMMENTS OR SPECIAL INSTRUCTIONS:**

SALESPERSON	P.O. NUMBER	REQUISITIONER	SHIPPED VIA	F.O.B. POINT	TERMS
					Due on receipt

QUANTITY	DESCRIPTION	UNIT PRICE	TOTAL
1	For support of the Tampa Bay Nitrogen Management Consortium Assessment and Allocation Report, as approved by the Consortium on December 20, 2007.	\$4,800.00	\$4,800.00
SUBTOTAL			\$4,800.00
SALES TAX			
SHIPPING & HANDLING			
TOTAL DUE			\$4,800.00

Make all checks payable to the Tampa Bay Estuary Program.  
 If you have any questions concerning this invoice, contact Misty Cladas, (727) 893-2765, [misty@tbep.org](mailto:misty@tbep.org)

**DECLARATION OF COOPERATION OF THE  
TAMPA BAY NITROGEN MANAGEMENT CONSORTIUM**

SUSTAINING THE RECOVERY OF THE TAMPA BAY ESTUARY

From the uppermost reaches of Old Tampa Bay and Hillsborough Bay to the mouth of the bay at Egmont Key, the Tampa Bay estuary is made up of a variety of habitats where fish and other wildlife find shelter and food. They range from lush underwater beds of seagrasses, to tidal marshes and mangrove swamps. Abundant and healthy habitats are critical to the health of the bay. Without them, Tampa Bay would lack the diversity of fish, birds and other wildlife that contribute to the natural wonder of the region and is essential to its economic vitality.

Environmental scientists who advise the Tampa Bay Estuary Program agree that submerged seagrass is among the most important habitats because it serves as shelter, nursery, and food source for a diverse variety of species and stabilizes the bay bottom. Restoration of seagrass habitat is the top priority goal of the Estuary Program. The key to restoring seagrass is improving and then maintaining adequate water clarity that allows light to penetrate into the shallow waters of the bay where seagrasses grow. And the key to maintaining water clarity is preventing excessive nitrogen – a nutrient necessary for plant growth – from entering the bay and stimulating the growth of microscopic algae that cloud the water and prevents light from reaching the seagrasses.

Water clarity in Tampa Bay declined markedly in the 1950s, 60s, and 70s as rapid population growth led to increased discharges of partially treated sewage with large amounts of nitrogen. Algae blooms and fish kills were common and almost 50% of seagrass in the bay died off as a result of insufficient light. Unregulated dredge and fill operations contributed to the problem by further clouding the water.

The year 1979 marked a turning point in the condition of the bay when the City of Tampa upgraded the Howard F. Curren Plant at Hookers Point to advanced wastewater treatment which increased nutrient removal and sharply reduced the amount of nitrogen being discharged into the bay. Across the bay, the City of St. Petersburg pioneered the country's first large-scale reclaimed wastewater program, reclaiming water for irrigation of lawns and golf courses rather than discharging it into the bay.

The quality of bay waters responded quickly to the sharp reduction in nitrogen loading. Concentrations of chlorophyll – an indicator of the amount of algae suspended in the water – dropped dramatically in all major segments of the bay between 1982 and 1984. In Hillsborough Bay alone, the average chlorophyll concentrations fell from 37 units of chlorophyll in 1982 to 13 units in 1984. Seagrasses responded more slowly to the improving water clarity, but expanded to 25,200 acres by 1990 from a low point of 21,600 acres in 1982.

The Tampa Bay National Estuary Program (NEP) was established in 1991 to help local governments, agencies, and other stakeholders in the Tampa Bay area develop a plan to sustain the recovery of Tampa Bay. The NEP partners adopted a Comprehensive Conservation and Management Plan in December 1996 that included measurable goals for restoring seagrasses and related targets for reducing nitrogen discharges to the bay. The parties unanimously adopted a "hold the line" target on nitrogen discharges that capped the load at a level that would ensure adequate water clarity and light to sustain seagrass recovery. Local government and agency partners in the NEP reinforced their commitment to achieving the goals through an Interlocal Agreement adopted in 1998.

In August 1996, the NEP's governmental partners joined with key industries in the Tampa Bay region to create a unique public/private partnership known as the Tampa Bay Nitrogen Management Consortium for the express purpose of developing a Consortium Action Plan to meet the "hold the line" target. The original Action Plan consisted of more than 100 projects which collectively reduced or precluded nitrogen discharges to the bay by an estimated 134 tons/year between 1995 and 1999. The Action Plan, entitled *Partnership for Progress*, was the core of a larger nitrogen management strategy that included: the baywide seagrass restoration/preservation goal; chlorophyll and nitrogen reduction targets for each major bay segment; apportionment of responsibility for meeting the nitrogen reduction targets; and a process to track whether the targets were being met.

In November 2002, the Florida Department of Environmental Protection (FDEP) concluded that the Tampa Bay Estuary Program's nitrogen management strategy provided reasonable assurance that the state water quality criteria for nutrients would be met. The U.S. Environmental Protection Agency (EPA) in the meantime continues to recognize a 1998 action by FDEP that proposed a total maximum load of nitrogen that could be discharged to the bay annually and still meet state standard water quality criteria. Both FDEP's reasonable assurance determination and the total maximum nitrogen loading recognized by EPA are based on statistical modeling and data analyses done by the Estuary Program and its partners.

The remarkable recovery of the Tampa Bay ecosystem after decades of decline is unprecedented among urban estuaries worldwide. The rebound in water quality and ecological health of the bay is even more remarkable in light of the strong population growth during the recovery period. FDEP, EPA, the Consortium and other partners in the Estuary Program want to continue the success of the collaborative nitrogen management strategy spearheaded by the Estuary Program and the Consortium. At the same time the regulated members of the Consortium recognize the duties of FDEP and EPA to administer the environmental regulations for which they are responsible and that FDEP and EPA may not issue discharge permits without limitations that ensure compliance with the total maximum nitrogen load recognized by EPA.

It is in the interest of all stakeholders to continue this successful approach to bay management and avoid a potential free-for-all of administrative challenges and lawsuits in which no one benefits and which risk derailing twenty-five years of progress toward the bay's recovery.

To help ensure continued recovery of vital seagrass habitat and the successful nitrogen management strategy that makes it possible, local governments, agencies, and industry members of the Nitrogen Management Consortium declare their intent to work together over the next 18 months to provide FDEP with an updated reasonable assurance document, ensuring that state water quality criteria for nutrients will continue to be met in the bay. The partners commit further to develop an equitable allocation of responsibility for achieving nitrogen reduction targets as well as the total maximum loading of nitrogen to each major bay segment. The amount of nitrogen discharge (i.e. load) allocated to each municipal and industrial facility will take into consideration expected growth in population and/or demand for manufactured products. The Consortium partners accept that the agreed-upon allocations of nitrogen load will be the basis for future permitting of nitrogen discharges from municipal and industrial facilities.

Additional background on the history and documentation of the Tampa Bay nitrogen management strategy may be found in Exhibit "A". The commitment of Consortium members to update the reasonable assurance document is provided in greater specificity below.

**MEMBERS OF THE TAMPA BAY NITROGEN MANAGEMENT CONSORTIUM  
SPECIFICALLY DECLARE THEIR INTENT TO COOPERATE AS FOLLOWS TO ENSURE  
CONTINUING RECOVERY OF THE TAMPA BAY ESTUARY:**

Section 1: The Consortium hereby approves the 2007 Update to Reasonable Assurance Document attached as Exhibit "B" which documents reasonable progress toward bay segment-specific nutrient targets and seagrass restoration goals adopted by the Tampa Bay Estuary Program (formerly the NEP) and approved by FDEP; and

Section 2: Members of the Consortium pledge to participate in developing a 2009 Reasonable Assurance Document that includes revised allocations by major bay segment to categories of nonpoint sources of nitrogen (categorical load allocations -- LA) and to specific wastewater facilities and Municipal Separate Storm Sewer Systems (facility-specific wasteload allocations -- WLA) (Table 4 in Exhibit "B"). The cumulative total nitrogen load for all wasteload allocations (WLA) and load allocations (LA) will not exceed the assimilative capacity for a bay segment, as defined in the federally-recognized TMDL for Tampa Bay (Table 3 of Exhibit "B"). The revised allocations will be technically supported by an Assessment and Allocation Report; and

Section 3: The Consortium will submit the 2009 Reasonable Assurance Document to FDEP by July 31, 2009, which will include a request that FDEP approve continued implementation of the Tampa Bay nitrogen management strategy as reasonable assurance that potential impairment of designated uses related to nutrients in Tampa Bay are and will continue to be adequately addressed through 2012; and

Section 4: The Consortium will develop and implement a set of guiding principles in order to fairly and equitably establish wasteload allocations for affected entities, including new or expanded discharges due to growth; and it will include in the 2009 Reasonable Assurance Document a resolution signed by Consortium members accepting the revised load allocations established for Consortium members and acknowledging that the facility-specific wasteload allocations will be adopted by FDEP as Water Quality-Based Effluent Limitations; and

Section 5: The Consortium pledges to continue to identify and implement projects to achieve the cumulative nitrogen management targets for Tampa Bay; and

Section 6: FDEP will conduct an initial assessment of Reasonable Progress based on actual loads to each bay segment and will defer the evaluation of facility-specific loadings until July 2009 to allow TN load allocations to individual permitted sources and to categories of nonpoint sources to be developed and finalized for inclusion in the 2009 Reasonable Assurance Document addressing nutrient management in Tampa Bay major bay segments. Under this approach, FDEP would acknowledge that Reasonable Progress is being achieved as long as the Consortium's efforts to revise the allocations remain on schedule, pursuant to Florida Administrative Code 62-303.600; and

Section 7: The Consortium acknowledges that FDEP will use interim wasteload allocations to establish effluent limits for permits that come up for renewal before July 2009. The interim wasteload allocations will be based upon the most recent loading information available, taking into account recent growth and variability in discharge due to rainfall and other factors.

Section 8: To encourage voluntary efforts which further the attainment of the adopted nitrogen reduction/management goals, FDEP and the Southwest Florida Water Management District agree to exercise reasonable flexibility within the framework of their rules and regulations, including serious consideration of petitions for variances from applicants, in processing permit applications for projects implementing the Tampa Bay nitrogen management strategy. The U.S. EPA finds the Consortium's recommendations to develop preliminary and final reasonable assurance documents including nitrogen wasteload allocations for permitted facilities combined with FDEP's permitting strategy to be acceptable (Exhibit "C"); and

Section 9: Consistent with the Consortium's consensus approach, each member pledges to participate in funding the Assessment and Allocation Report to develop technically-sound, equitable allocations. The estimated total cost of \$100,000 will be shared equally among Consortium members at a cost not to exceed \$5,000 per member to be paid by January 31, 2008 or as soon thereafter as possible. To ensure the accuracy and completeness of the Assessment and Allocation Report and the Estuary Program's Action Plan Data Base, each member of the Consortium further pledges to provide the Estuary Program and the contractor responsible for preparing the Assessment and Allocation Report with information and data necessary to adequately describe the member's nitrogen reductions projects and to provide documentation supporting the estimated nitrogen reductions where additional documentation is necessary.

This Declaration shall take effect upon the last date of Execution.



**EXHIBIT "A"**

**History: Tampa Bay NEP and Nitrogen Management Consortium**

The Tampa Bay National Estuary Program (NEP) was established in 1991 to facilitate development of a clean-up and restoration plan for the 400 square-mile Tampa Bay estuary. The NEP is governed by a Policy Board (formerly the "Policy Committee") consisting of elected officials from the cities of Tampa, St. Petersburg, and Clearwater, the counties of Hillsborough, Pinellas, and Manatee, and appointees from the U.S. Environmental Protection Agency, the Florida Department of Environmental Protection, and the Southwest Florida Water Management District Governing Board. In December 1996, the NEP Policy Board of the Tampa Bay NEP unanimously adopted a Comprehensive Conservation and Management Plan (CCMP) for Tampa Bay known as *Charting the Course*. The CCMP includes measurable goals for improving water quality and restoring fish and wildlife habitats vital to the health and productivity of the bay. The NEP involved local government and agency partners together with industry, environmental groups, and other stakeholders in developing the community-based plan for bay restoration

Restoration of vital seagrass habitat was then and is still the keystone goal of the CCMP. The key to seagrass recovery is improving water clarity to allow enough light to reach the shallow bottom of the bay to stimulate natural regrowth of seagrasses. And the key to maintaining water clarity is to reduce the amount of nitrogen entering the bay. Excessive loads of nitrogen cloud bay water by stimulating the growth of microscopic algae that in turn prevent light from reaching seagrasses rooted on the bay bottom. When adopted in 1996, the original CCMP included a goal of recovering 12,350 acres of seagrass that would be reached by capping nitrogen loading to the bay at the average 1992-1994 level. "Holding the line" on nitrogen loading required additional projects that reduced or precluded an average of 17 tons/year of nitrogen loading or 85 tons/year at the end of every 5-year period. This load reduction is needed to offset the estimated increase in nitrogen load resulting from the projected population growth in the bay area.

In August 1996, local governments and agencies comprising the Tampa Bay NEP Management Committee joined with key industries in the Tampa Bay region to create a unique public/private partnership known as the Tampa Bay Nitrogen Management Consortium. The purpose of the Consortium is to cooperatively develop a plan of action (the Consortium Action Plan) to meet the 85 ton/year nitrogen reduction target for 1995-1999.

In March 1998, the local governments and non-federal agencies represented on the TBNEP Policy Board entered into an Interlocal Agreement adopting the goals and priorities of the CCMP and defining the responsibilities of the parties including the development of action plans to achieve the CCMP goals. The US Army Corps of Engineers executed a joinder to the Interlocal Agreement and the US EPA executed a separate Memorandum of Understanding setting forth their commitments to the implementation of the CCMP. Article 4.4 of the Interlocal Agreement includes a commitment from Consortium members who are also Parties to the Interlocal Agreement (the Policy Board members) to incorporate appropriate elements of the Consortium

Action Plan into their own Action Plans.

Also in March 1998, the first Consortium Action Plan (for the years 1995-1999) was finalized and approved by the Consortium members. The Consortium Action plan includes project summaries (existing and future) and estimated nitrogen load reductions submitted by the Consortium partners, and a Resolution signed by the Consortium members adopting the 1995-1999 Nitrogen Management Action Plan and committing to its implementation. In addition to the commitment from the government partners of the Interlocal Agreement as noted above, the non-governmental members of the Consortium pledged to exercise their best efforts to implement in a timely manner, either individually or in cooperation with other Consortium members, the projects they offered to undertake as part of the Consortium Action Plan.

### **Federally-recognized TMDL for Tampa Bay**

In 1998, FDEP submitted a TMDL for nitrogen for Tampa Bay to USEPA Region 4 as was required by the federal Clean Water Act. USEPA approved the submitted TMDL on June 18, 1998. The TMDL is based on the 1992-1994 annual average total nitrogen loading to major bay segments, as estimated by TBNEP. The TMDL also includes an "allocation" to major sources, which is also based on the 1992-1994 nitrogen loading to each bay segment as estimated by TBNEP (Janicki and Wade 1996). Comments in the TMDL note that "The TMDL is based on an adopted five year nitrogen management strategy to "hold the line" at existing annual nitrogen loadings to each segment of the bay in order to protect and restore seagrass meadows" and "The nitrogen load targets were developed for the major bay segments and not individual sources. This allows flexibility in the way the loads are controlled."

The 1998 federally-recognized TMDL allocations (in tons/year) are shown in Table 1. Note that these are not loading *reductions*, but total nitrogen loadings. The loading estimates are from the estimated loads in 1992-1994 (Janicki and Wade 1996). EPA considers the assimilative capacity of each bay segment to be the total TMDL load to that segment (e.g., 486 tons/year for Old Tampa Bay, etc).

Table 1. Existing conditions (1992-1994) annual total nitrogen loadings by source and bay segment. Source: Federally-recognized TMDL document for nutrients in Tampa Bay, 1998.

Source	Old Tampa Bay	Hillsborough Bay	Middle Tampa Bay	Lower Tampa Bay
Atmospheric deposition	227	115	306	288
Point sources	85	300	78	1
Material losses	0	233	0	24
Nonpoint sources	174	596	415	36
Groundwater and springs	0	207	0	0
<b>TOTAL</b>	<b>486</b>	<b>1451</b>	<b>799</b>	<b>349</b>

#### Tampa Bay Reasonable Assurance

The Florida State 1999 legislative session produced a TMDL bill, called the Florida Watershed Restoration Act, which establishes the TMDL process for the state. A provision approved in the Watershed Restoration Act recognizes that:

- If existing pollution control programs including the National Estuary Program or the Everglades restoration are deemed sufficient to achieve water quality compliance, no TMDL calculation is required.

Pursuant to the Florida Watershed Restoration Act, TBEP and the Consortium developed and submitted a Reasonable Assurance document to FDEP in 2002, based on the Consortium's Action Plan. The document provided FDEP with a complete description of the Tampa Bay nitrogen management strategy and enabled FDEP to conclude in November 2002, that "the nitrogen management plan developed by TBEP for Tampa Bay provides reasonable assurance that impairment of designated uses related to nutrients in Tampa Bay will be adequately addressed." Based on the submitted documentation, FDEP concluded that "there is sufficient reasonable assurance that:

- 1). Completed and proposed management actions in the nitrogen management plan will result in the continued attainment of the narrative nutrient criteria within Tampa Bay, and
- 2). Reasonable progress towards continued attainment of the narrative nutrient criteria and associated designated uses will be made through 2007, which is the year when the next 303(d) list of impaired waters for Tampa Bay is due to be submitted to the Environmental Protection Agency (EPA)." (letter to H. Greening from D. Joyner, dated November 5, 2002).

## **EXHIBIT "B"**

### **Tampa Bay Nitrogen Management Strategy 2007 Update to Reasonable Assurance Document**

The Tampa Bay Estuary Program and the Tampa Bay Nitrogen Management Consortium submitted the "Tampa Bay Watershed Management Summary" to the Florida Department of Environmental Protection (FDEP) on July 29, 2002. The purpose of that document (called the "2002 Tampa Bay Reasonable Assurance Document") was to summarize the nitrogen management plan developed by the TBEP for Tampa Bay and to outline the underlying scientific basis for the plan. The document was formatted to facilitate its use in demonstrating reasonable assurance that designated uses of waterbody segments within the Tampa Bay basin which are designated as potentially impaired for nutrients pursuant to Chapter 62-303, F.A.C. will be maintained or restored. The document also provided a basis for designation of alternative site-specific thresholds that more accurately reflect conditions beyond which an imbalance of flora and fauna may occur.

In November 2002, the FDEP Bureau of Watershed Management concluded that "the nitrogen management plan developed by TBEP for Tampa Bay provides reasonable assurance that impairment of designated uses related to nutrients in Tampa Bay will be adequately addressed." The basis for the FDEP determination is outlined in Attachment 2007-1.

The purposes of this document, the Tampa Bay Nitrogen Management Strategy 2007 Update to Reasonable Assurance Document (2007 RA Update) are 1) to provide an update on implementation of the Tampa Bay Nitrogen Management Strategy; 2) to provide adequate documentation to allow FDEP a finding of Reasonable Progress pursuant to Florida Administrative Code 62-303.600; and 3) to request an extension of the determination that the Strategy will continue to provide reasonable assurance that the Strategy will adequately address impairment of designated uses related to nutrients in Tampa Bay.

The 2007 RA Update will be followed with a 2009 Reasonable Assurance document by July 31, 2009, which will include TN loading allocations to categories of nitrogen sources by major bay segment, and facility-specific and MS-4 specific allocations within each major bay segment. Documented load reductions from permitted and non-permitted projects undertaken or planned will be incorporated into the allocation process.

The format of this 2007 Reasonable Assurance Update follows that provided in the draft "Guidance for Development of Documentation to Provide Reasonable Assurance that Proposed Pollution Control Mechanisms will Result in the Restoration of Designated Uses in Impaired Waters" provided by FDEP in February 2002. For each element, the July 2002 documentation is included, followed by the 2007 Update documentation.

### 1. Description of the Waterbody

**2002 RA:** The Tampa Bay estuary is located on the eastern shore of the Gulf of Mexico in Florida. At 882 km<sup>2</sup>, it is Florida's largest open water estuary. More than 2 million people live in the 5700 km<sup>2</sup> watershed, with a 20% increase in population projected between 2002 and 2010.

Land use in the watershed is mixed, with about 40% of the watershed undeveloped, 35% agricultural, 16% residential, and the remaining commercial and mining. Major habitats in the Tampa Bay estuary include mangroves, salt marshes and submerged aquatic vegetation.

Between 1950 and 1990, an estimated 40-50% of the seagrass acreage in Tampa Bay was lost due to excess nitrogen loading and related increases in algae concentration, causing light limitation to seagrass survival and growth. In 1980, all municipal wastewater treatment plants were required to provide Advanced Wastewater Treatment (AWT) for discharges directly to the bay and its tributaries. In addition to the significant reductions in nitrogen loadings from municipal wastewater treatment plants, stormwater regulations enacted in the 1980s also resulted in reduced nitrogen loads to the bay. Estimates for average annual total nitrogen loadings to Tampa Bay for 1976 are more than 2.5 times as high as current (1999) estimates.

A key focus of the TBEP has been to establish nitrogen loading targets for Tampa Bay to encourage seagrass recovery. In 1996, local government and agency partners in the TBEP approved a long-term goal to restore 95% of the seagrass coverage observed in 1950. Also in 1996, the Tampa Bay Nitrogen Management Consortium (NMC) was formed. The NMC includes local governments and agencies participating in the TBEP, and phosphate companies, electric utilities and agricultural interests in the Tampa Bay watershed. These entities have pledged to work cooperatively in a voluntary, non-regulatory framework to assist with the maintenance of nitrogen loads to support seagrass restoration in Tampa Bay.

**2007 Update:** Data and observations from Tampa Bay indicate that initial efforts to reduce nitrogen loading and the continuing efforts of the TBEP and NMC partners are resulting in adequate water quality for the expansion of seagrasses. Time series plots show that, with the exception of the 1995-96 and 1998 El Nino years, 2003-2004 in Old Tampa Bay, and 2005 in Lower Tampa Bay, chlorophyll *a* targets have been met in all four major bay segments since 1994 (Figure 1; Attachment 2007-2). In 2006, both chlorophyll *a* and light attenuation targets were met in all four bay segments for the first time since records began in 1974. Actions taken to address exceedances in 2003-2005 are described in Section 5.

**Figure 1 a-d** on following pages. Annual average chlorophyll *a* concentration in each of the four major bay segments, 1974-2006. The solid line represents the TBEP-adopted management target. The upper dotted line represents a "large magnitude difference" from the TBEP chlorophyll *a* target in each bay segment. The large magnitude difference values are the chlorophyll *a* thresholds FDEP will use as indicators of impairment, and are the designated alternative site-specific thresholds adopted by FDEP in 2002. Data source: EPCHC

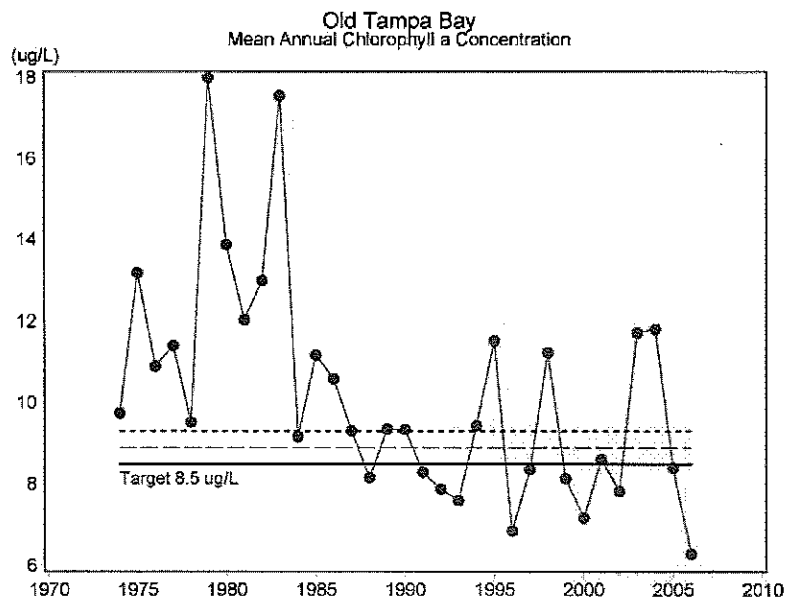


Figure 1-a. Old Tampa Bay mean annual chlorophyll *a* concentration.

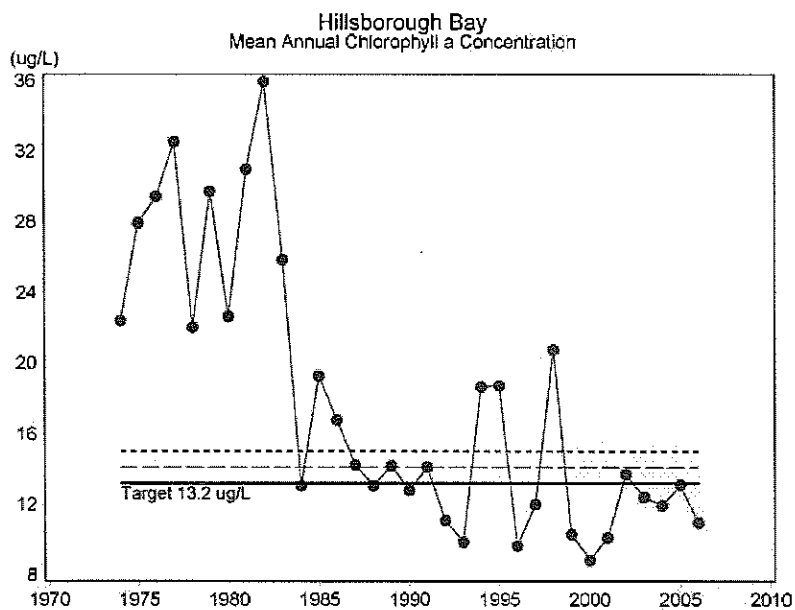


Figure 1.b. Hillsborough Bay mean annual chlorophyll *a* concentration.

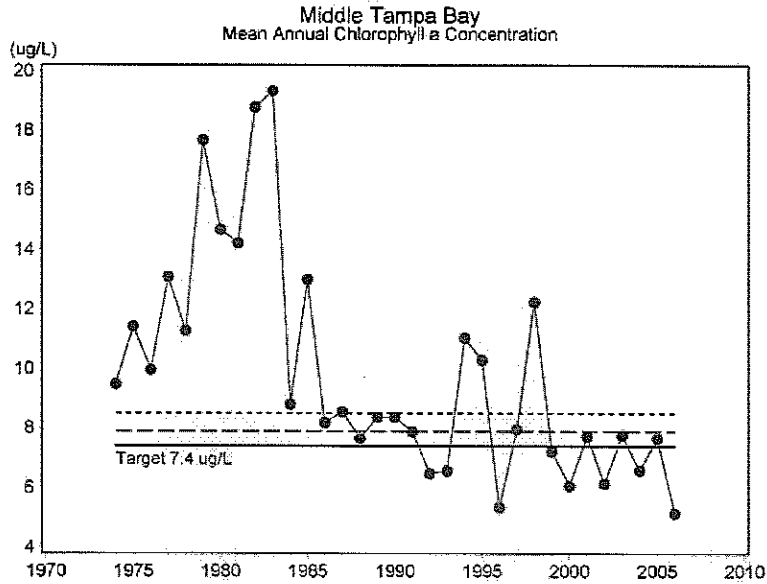


Figure 1.c. Middle Tampa Bay mean annual chlorophyll *a* concentration.

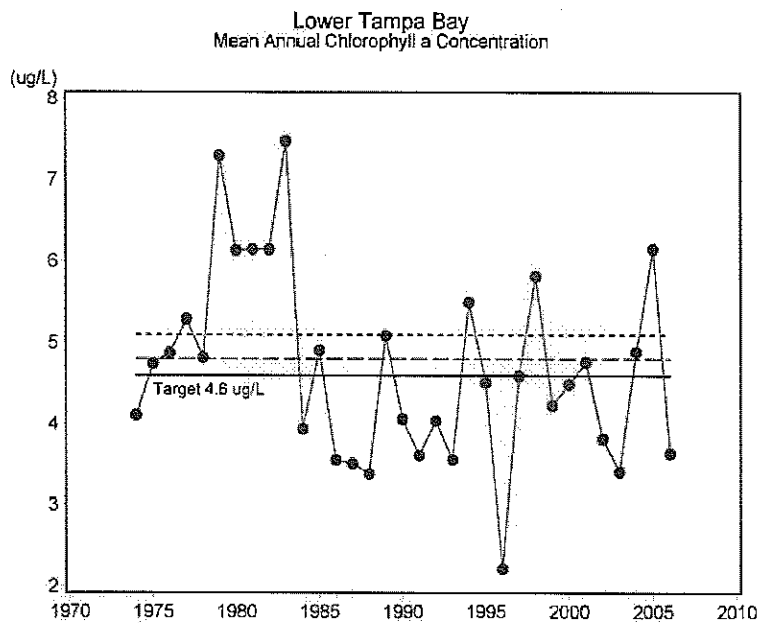
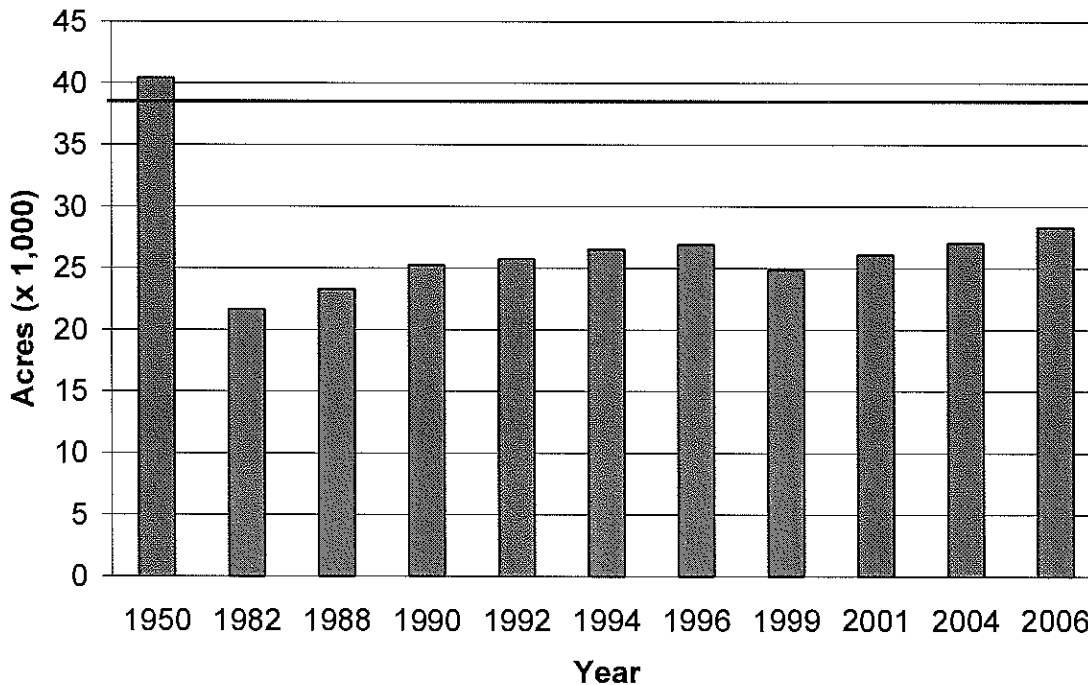


Figure 1.d. Lower Tampa Bay mean annual chlorophyll *a* concentration.

Seagrass acreage in Tampa Bay observed in 2002, 2004 and 2006 showed a similar pattern, with seagrass acreage increasing on a baywide basis (Figure 2; Attachment 2007-3). Seagrass acreage in Tampa Bay in 2006 was the highest recorded since 1950.

### Tampa Bay Seagrass Acreage Estimates



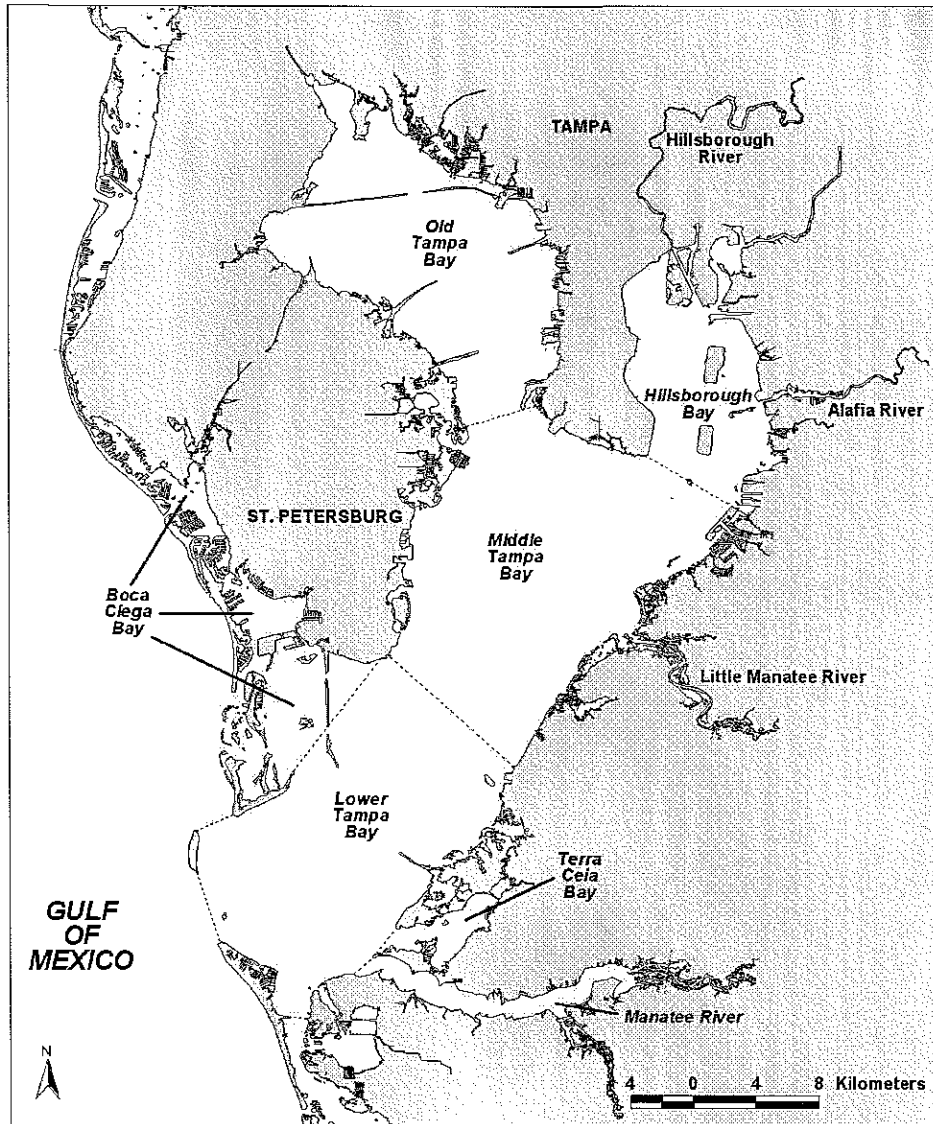
**Figure 2.** Baywide seagrass acreage estimates, 1950 through 2006. The adopted long-term goal (red line on the graph) is a total of 38,000 acres baywide. Data source: Southwest Florida Water Management District.

**1.a. Name:**

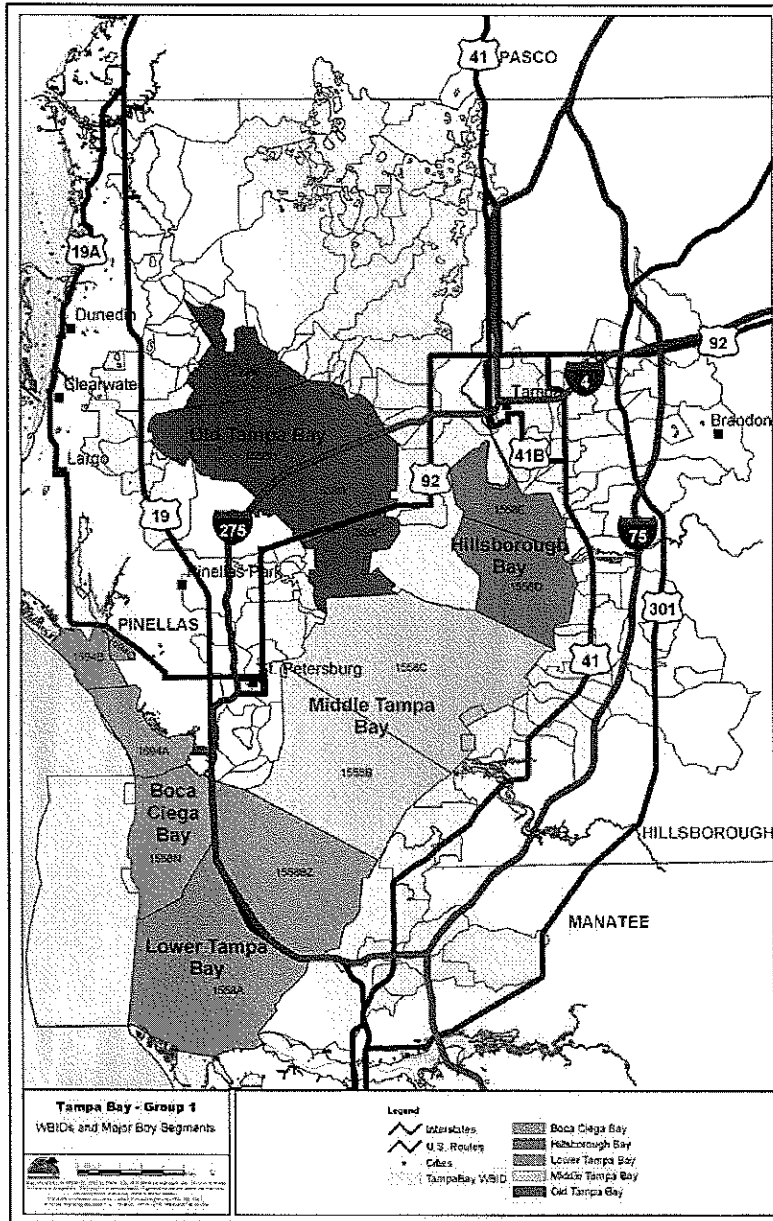
**2002 RA:** This document addresses the four major bay segments of Tampa Bay: Hillsborough Bay, Old Tampa Bay, Middle Tampa Bay and Lower Tampa Bay. Each bay segment includes between two and four individual waterbody segments (WBIDs) as defined in FDEP's 305(b) Report.

**2007 Update:** No change. Figure 3 shows the delineation of the four major bay segments as defined by TBEP. Figure 4 shows the delineation of FDEP's WBIDs for Tampa Bay.





**Figure 3.** Four major bay segments of Tampa Bay (Old Tampa Bay, Hillsborough Bay, Middle Tampa Bay and Lower Tampa Bay) and three smaller segments (Boca Ciega Bay, Terra Ciega Bay and Manatee River).



**Figure 4.** FDEP-defined WBIDs in Tampa Bay. Note that the northern portion of WBID 1558BZ in Lower Tampa Bay is identified as located in the Boca Ciega Bay segment by the Nitrogen Management Consortium. This difference will be addressed as an element of the adopted assessment and allocation process outlined in Section 3.f.

**1.b. Location of the waterbody and watershed:**

**2002 RA:** Please refer to Attachments A-1 and A-2.

**2007 Update:** No change.

**1.c. Watershed/8-digit cataloging unit code:**

**2002 RA:** 03100206 Tampa Bay and coastal areas

**2007 Update:** No change.

**1.d. Type (lake, stream or estuary) of water:**

**2002 RA:** Estuary

**2007 Update:** No change.

**1.f. Water use classification:**

**2002 RA:** Class II, Class III

Class II waters in Tampa Bay are defined in Attachment B (F.A.C. 62-302.400).

Class III: Recreation, Propagation and Maintenance of a Healthy, Well-Balanced Population of Fish and Wildlife. Applies to all remaining portions of the waterbody not designated as Class II.

**2007 Update:** No change.

**1.g. Designated use of waterbody:**

**2002 RA:** All of Hillsborough Bay, Old Tampa Bay, Middle Tampa Bay and Lower Tampa Bay are designated for the propagation and maintenance of a healthy, well-balanced population of fish and wildlife (also referred to as "Aquatic Life Use Support" or ALUS). Several FDEP-defined WBIDs are identified in the 2002 draft Verified List of Group 1 waterbodies in Tampa Bay as not meeting ALUS due to nutrient impairment. Such impairment is based on monitoring chlorophyll *a* relative to generic, statewide criteria developed under the Impaired Waters Rule (IWR), Chapter 63-303, F.A.C. However, all bay segments currently meet the site specific chlorophyll *a* targets established by the TBEP, which are based on many years of directed study and research within the major segments of Tampa Bay. Note that three of the four of these targets are actually lower (i.e., more stringent) than IWR thresholds (refer to Section 2.a.).

Note that this document does not address Class II shellfish harvesting impairment due to fecal coliforms.

For additional information, please refer to Attachment C.

**2007 Update:** As noted above, TBEP-adopted chlorophyll *a* targets in 2002, 2003, 2004 and 2005 were met in three of the four major bay segments, and all targets in all four major bay segments were met in 2006 (Figure 1; Attachment 2007-2). Actions taken to address exceedances in 2003-2005 are described in Section 5.

**1.h. Area of the waterbody:**

**2002 RA:** The total surface area of the four major bay segments in Tampa Bay is 882 km<sup>2</sup> (approximately 341 square miles).

**2007 Update:** No change.

**1.i. Pollutant(s) of Concern:**

**2002 RA:** The pollutant of concern has been identified as Total Nitrogen, which has been determined to be the limiting nutrient in Tampa Bay. Elevated nitrogen loading has been demonstrated to lead to excess algal growth (as indicated by chlorophyll *a* concentrations), which in turn leads to reduced light penetration and loss of seagrass in the bay.

**2007 Update:** No change.

**1.j. Suspected or documented sources of pollutant of concern:**

**2002 RA:** 1995-1998 average for all four bay segments combined:

Stormwater	62%
Direct Atmospheric Deposition	21%
Domestic Wastewater	8%
Groundwater and Springs	4%
Industrial Wastewater	4%
Fertilizer Terminal Losses	1%

For additional information, please refer to Attachment D.

**2007 Update:**

1999-2003 average for all four bay segments combined:

Stormwater	63%
Direct Atmospheric Deposition	21%
Domestic Wastewater	9%
Groundwater and Springs	3%
Industrial Wastewater	3%
Fertilizer Terminal Losses	1%

For additional information, please refer to Attachment 2007-4.

The 1999-2003 nitrogen loading update was completed in 2005 (Attachment 2007-4). The next scheduled and budgeted TBEP nitrogen loading update is planned for 2009-2010 (for the years 2004-2008).

However, to allow the FDEP designation cycle for Group 1 including Tampa Bay (every 5 years; 2002, 2007, 2012, etc) and the TBEP cycle of updated loadings to come into sync, at the request of TBEP, FDEP is funding an effort to update the Tampa Bay estimated and measured existing loadings (TN, TP and TSS) to bay segments from all sources for the years 2004, 2005, 2006 and 2007. This effort will provide the most recent information available for calculation of point source, MS4s, atmospheric deposition, non-permitted sources and groundwater and springs TN loading, for inclusion in the allocation process. The updated TN loadings will be included in the 2009 RA Update.

## **2. Description of Water Quality or Aquatic Ecological Goals**

### **2.a. Water quality-based targets or aquatic ecological goals**

**2002 RA:** The TBEP and its partners (see Section 3.a.) have adopted a goal of restoring seagrass in Tampa Bay to 95% of the areal extent estimated to have occurred in 1950. The adopted **minimum seagrass areal extent goal** is 38,000 acres of seagrass baywide. This goal includes the protection of existing 24,840 acres (1999 estimate) and restoration of an additional 13,160 acres.

The TBEP and its partners have also adopted chlorophyll *a* targets for Tampa Bay based on the light requirements of the seagrass species *Thalassia testudinum* (turtlegrass). The **average annual chlorophyll *a* targets** for each major bay segment are:

Old Tampa Bay	8.5 ug/L
Hillsborough Bay	13.2 ug/L
Middle Tampa Bay	7.4 ug/L
Lower Tampa Bay	4.6 ug/L

The IWR threshold for potential nutrient impairment based on chlorophyll *a* levels is 11 ug/L.

Based on modeling results, it appears that light and chlorophyll levels can be maintained at the TBEP target levels noted above by “holding the line” at average annual nitrogen loadings estimated for 1992-1994. However, increases in the watershed’s human population and associated 7% increase in nitrogen loading are projected to occur over the next 10 years. These expected increases are addressed by the adoption by the TBEP and Nitrogen Management Consortium (NMC) partners of a **17 ton per year reduction target for total nitrogen**, necessary to offset expected increases in TN loading and maintain TN loading rates at average annual rates for 1992-1994.

See Attachment E for a summary of the technical aspects of the goal-setting process, and Attachment F for supporting documentation.

**2007 Seagrass update:** In January 2002, SWFWMD seagrass maps showed that seagrass had increased by 1,237 acres baywide over 1999 estimates. By January 2004, seagrass acreage had increased an additional 946 acres (Attachment 2007-3), and by January 2006, another increase of 1,297 acres was recorded, resulting in the highest observed acreage estimate (28,321 acres baywide) since 1950 (Figure 2). The adopted seagrass areal extent goal of a total of 38,000 acres includes protection of the existing 28,321 acres (2006 estimate) and restoration of an additional 9,679 acres. Estimated seagrass extent has increased by 3,480 acres since 1999 (the estimate available for the 2002 RA submittal).

**2007 Chlorophyll *a* update:** In the letter accepting the Tampa Bay Nitrogen Management Strategy as providing Reasonable Assurance for Tampa Bay water segments (Attachment 2006-1), FDEP stated that they will use the TBEP-defined “large magnitude difference thresholds” (expressed as annual averages and defined in TBEP Technical Report # 04-00, Attachment G-1) rather than the chlorophyll *a* management targets listed above, as indicators of impairment for future assessments of water segments in Tampa Bay. These are:

Old Tampa Bay	9.3 ug/l
Hillsborough Bay	15.0 ug/l
Middle Tampa Bay	8.5 ug/l
Lower Tampa Bay	5.1 ug/l

**2.b. Averaging Period:**

**2002 RA:** The TBEP uses annual average bay segment chlorophyll *a* levels for tracking water quality targets. See Attachment F: TBEP Technical Reports #06-96, 06-01 and 07-01.

**2007 Update:** No change.

**2.c. How will goals result in restoration of impaired designated uses:**

**2002 RA:** Maintaining chlorophyll *a* concentrations at target levels is expected to result in the maintenance of water clarity levels adequate to support eventual seagrass expansion to depths observed in 1950, thereby ensuring that nutrient levels do not result in an imbalance in the flora or fauna of Tampa Bay. See documentation in Attachment F, particularly TBEP Technical Reports # 06-96 and 10-01.

**2007 Update:** No change.

**2.d. Procedures to determine whether additional corrective actions are needed.**

**2002 RA:** In 2000, a “decision matrix” process was developed by the TBEP Technical Advisory Committee and approved by the TBEP Management and Policy Boards to help determine if seagrass goals and water quality targets are remaining “within bounds,” or if management action is required to get back on track. Recommended types of management actions if the process indicates deviation from targets are also identified. This process is applied on an annual basis to determine if water clarity and chlorophyll *a* concentrations are remaining at or near target levels.

**2007 Update:** No change. The decision matrix process has been applied on an annual basis since 2000. The 2006 application of the decision matrix (Figure 5; Attachment 2007-2) shows that both chlorophyll a and light attenuation targets were met in all four major bay segments for the first time since records began in 1974.

**Figure 5.** Application of the TBEP Decision Matrix, 1975-2006. Source: Janicki Environmental 2007 (Attachment 2007-2).

Decision matrix results.				
Year	Old Tampa Bay	Hillsborough Bay	Middle Tampa Bay	Lower Tampa Bay
1975				Green
1976				Yellow
1977				
1978				Yellow
1979				
1980				
1981				
1982				
1983		Yellow		
1984		Green		Yellow
1985				Yellow
1986		Yellow		Green
1987		Yellow		Green
1988	Yellow	Green	Yellow	Green
1989		Yellow		Yellow
1990		Green		Yellow
1991	Green	Yellow	Yellow	Yellow
1992	Yellow	Green	Yellow	Yellow
1993	Yellow	Green	Yellow	Yellow
1994	Yellow	Yellow		
1995		Yellow		Yellow
1996	Yellow	Green	Yellow	Green
1997	Yellow	Green		Yellow
1998				
1999	Yellow	Green	Yellow	Yellow
2000	Green	Green	Yellow	Yellow
2001	Yellow	Green	Yellow	Yellow
2002	Yellow	Green	Green	Green
2003		Yellow	Green	Yellow
2004		Green	Green	Yellow
2005	Green	Green	Yellow	Yellow
2006	Green	Green	Green	Green

The question of how long it will take to recovery seagrass to the adopted acreage goal is not



easily answered. The expected rate of seagrass recovery for dominant species in subtropical waters in response to maintained water quality conditions is unclear, and appears to be variable depending upon local conditions. A recent synthesis of seagrass communities of the Gulf Coast of Florida (Dawes and others 2004) found that four estuarine systems within this region for which historic aerial photographs are available (Charlotte Harbor, Tampa Bay, St. Joseph Sound, and Sarasota Bay) all showed a loss of seagrass coverage between 1950 and 1982. Dawes and others (2004) note that recent seagrass-coverage trends in this region appear somewhat irregular, apparently responding to site-specific situations within the different estuaries. Relative increases between 1988 and 2004 show that Tampa Bay seagrass experienced an estimated 13.8% increase (1513 ha), while Charlotte Harbor seagrass coverage decreased slightly (0.3% or 30 ha) and Sarasota Bay seagrass coverage increased by 6.4% (240 ha) (Tomasko and others 2005; Attachment 2007-3).

### **3. A Description of the Proposed Management Actions to be Undertaken**

#### **3.a. Participating Entities**

**2002 RA:** Members of the Tampa Bay Estuary Program Policy Board include the following:

- City of Tampa
- City of Clearwater
- City of St. Petersburg
- Manatee County
- Hillsborough County
- Pinellas County
- Florida Department of Environmental Protection
- Southwest Florida Water Management District
- U.S. Environmental Protection Agency (EPA serves as a non-voting advisory agency to the Tampa Bay Estuary Program)

**2007 Update:** No change in Policy Board membership.

The Tampa Bay Nitrogen Management Consortium includes the following public and private entities:

#### **2002 Public Partners:**

In addition to the nine TBEP Policy Board entities, public participants in the NMC include:

- Manatee County Agricultural Extension Service
- Environmental Protection Commission of Hillsborough County
- Tampa Bay Regional Planning Council
- Florida Fish and Wildlife Commission/Florida Marine Research Institute
- U.S. Army Corps of Engineers
- Tampa Port Authority
- Florida Department of Agriculture and Consumer Services

**2002 Private Partners:**

- Florida Phosphate Council
- Florida Power & Light Company
- Tampa Electric Company
- Florida Strawberry Growers Association
- IMC-Phosphate Company
- Cargill Fertilizer, Inc.
- CF Industries, Inc.
- Pakhoed Dry Bulk Terminals (now Kinder-Morgan)
- Eastern Associated Terminals Company
- CSX Transportation, Inc.

**2007 Update:** The Tampa Bay Nitrogen Management Consortium is open to public and private entities wishing to participate in the Nitrogen Management Strategy. Public and private participants in the Tampa Bay Nitrogen Management Consortium (as of December 2007) include:

**2007 Public Partners:**

- Hillsborough County
- Manatee County
- Pinellas County
- City of Tampa
- City of St. Petersburg
- City of Clearwater
- Southwest Florida Water Management District
- US Environmental Protection Agency
- Florida Department of Environmental Protection
- Environmental Protection Commission of Hillsborough County
- Tampa Bay Regional Planning Council
- Agricultural Economic Development Council of Hillsborough County
- Florida Fish and Wildlife Commission/Florida Marine Research Institute
- Tampa Port Authority
- Florida Department of Agriculture and Consumer Services
- Florida Department of Health
- Tampa Bay Water
- City of Palmetto
- City of Bradenton
- City of Largo
- City of Oldsmar
- City of Gulfport

**2007 Private Partners:**

Eastern Terminals  
Mosaic  
CSX Transportation  
Florida Power and Light Company  
CF Industries  
Tampa Electric Company  
Kinder Morgan Bulk Terminals, Inc.  
Progress Energy  
Tropicana Products, Inc.

**3.b. Existing and proposed management activities**

**2002 RA:** Over 100 existing and proposed activities are included in the Tampa Bay Nitrogen Management Consortium Action Plan (see Attachment H-1). They include the following types of projects:

Stormwater facilities and upgrades  
Land acquisition and protection  
Wastewater effluent reuse  
Air emissions reduction  
Habitat restoration  
Agricultural BMPs  
Education/public involvement  
Industrial treatment upgrades

NMC partners are currently updating projects in the Consortium Action Plan, which is being developed as an electronic database for 2001-2005 projects.

For additional information, please refer to Attachments H-1 and H-2.

**2007 Update:**

**Revised apportionment:** In 2002, following submittal of the 2002 Reasonable Assurance document, the Tampa Bay Nitrogen Management Consortium and TBEP Management and Policy Boards adopted a revision of the apportionment of total nutrient reduction (Attachment 2007-5). Under the revised apportionment, the 5-year reduction target is apportioned to major segments in direct proportion to the baseline load, future load, and existing load. Thus, all three loading conditions—baseline, existing and future- are considered in the apportionment decision. The weighting for the three conditions recognizes that the existing load represents the most recent and best estimate of nitrogen loading to the bay, and that the future load estimate is the least accurate. See Attachment 2007-5 for detailed process description and results of the revised apportionment. The revised apportionment also combines Terra Ceia Bay and Manatee River with Lower Tampa Bay.

The first Tampa Bay Nitrogen Consortium Action Plan *Partnership for Progress* established goals for nitrogen loading management that incorporated Manatee River and Terra Ceia Bay into

the Lower Tampa Bay segment (Table 1 in Attachment H-1). The 1992-1994 TN loadings estimates for Lower Tampa Bay used in the federally-recognized TMDL did not include loadings from Manatee River and Terra Ceia Bay (Table 3 in this document). Discrepancies between the federally-recognized TMDL and the nutrient reduction goals adopted by the Consortium for the Lower Tampa Bay segment will be addressed by the Consortium prior to July 31, 2009 as an element of the guiding principles (Section 3.f. of this document).

A comparison of the 1995-1999 apportionment and the revised apportionment adopted in 2002 is summarized in Table 1. See Attachment 2007-5 for detailed process and results.

**Table 1. Comparison of 1995-1999 and adopted 5-year Bay Segment reduction targets. All reductions are in tons.**

1995-1999			Re-apportioned 5-year	
	Reduction Target	Percent of Total	Reduction Target	Percent of Total
Old Tampa Bay	2.1	2.5	11.80	13.9
Hillsborough Bay	41.5	49.5	31.07	36.6
Middle Tampa Bay	11.05	13.2	16.29	19.1
Lower Tampa Bay, including TCB and MR	25.35	30.2	21.24	25.0
Boca Ciega Bay	3.9	4.6	4.62	5.4
<b>TOTAL</b>	<b>83.9</b>	<b>100</b>	<b>85.02</b>	<b>100</b>

Boca Ciega Bay is included in the Tampa Bay Nitrogen Management Strategy, but is not included in the federally-recognized TMDL.

**Tracking Database:** A Microsoft Access database has been created and populated with projects submitted by the TBEP and Nitrogen Management Consortium partners. The database performs all calculations necessary to determine pollutant load reductions based on several key factors such as land use type and treatment method. To accurately calculate pollutant load reductions, the database incorporates a linked Microsoft Excel table which contains the most recent nutrient loading rates by land use type. If a project has adequate documentation, site-specific information on treatment efficiencies is also acceptable. Once information is entered into the database customized pollutant load reduction reports for total nitrogen (TN) and total suspended solids (TSS) can be printed for specific areas such as county jurisdiction, bay segment and major basin.

Through February 2006, more than 250 load reduction or preclusion projects have been entered into the database. A summary of the projects (listed by drainage basin) is included in Attachment 2007-6. A summary of reductions by bay segment is shown in Table 2. Drainage basins contributing to each bay segment are also shown in Table 2. A copy of the full database, including project descriptions for each submitted project, can be requested from the TBEP Database Coordinator at [misty@tbep.org](mailto:misty@tbep.org).

A comprehensive review of the projects in the Action Plan Database through 2007 and expected TN load reductions associated with them is scheduled to be completed for inclusion in the revised detailed allocation and will be included in the 2009 RA Update. See Section 3.f. for the timeline and schedule of the detailed allocation process.

**Table 2.** Estimated TN loading reductions (as of December 2007) by bay segment. All loads are in tons/year.

BAY SEGMENT	5-Year TN Load Reduction Target	TN Load Reduction reported to date 1995-1999	TN Load Reduction reported to date 2000-2004	TN Load Reduction Planned 2005-2009
Hillsborough Bay (includes Alafia River basin, Hillsborough River basin and Coastal Hills. Bay basin)	31.07	112.70	51.60	57.61
Old Tampa Bay (includes Coastal Old Tampa Bay basin)	11.80	32.17	8.88	44.39
Middle Tampa Bay (includes Little Manatee River basin and Coastal Middle Tampa Bay basin)	16.29	16.44	5.45	4.08
Lower Tampa Bay (includes Manatee River basin, Terra Ceia Bay basin and Coastal Lower Tampa Bay basin)	21.24	3.85	44.56	10.05
Boca Ciega Bay (includes Coastal Boca Ciega Bay basin)	4.62	0.88	2.60	14.12
<b>BAYWIDE TOTAL</b>	<b>85.02</b>	<b>166.04</b>	<b>113.09</b>	<b>130.25</b>

As noted for Table 1., Boca Ciega Bay is included in the Tampa Bay Nitrogen Management Strategy, but is not included in the federally-recognized TMDL.

**3. c. Geographic scope of any proposed management activity:**

**2002 RA:** The NMC Action Plan projects are located throughout the Tampa Bay watershed. The updated Consortium Action Plan Database includes project location (subbasin), drainage basin and bay segment. See Attachments H-1 and H-2.

**2007 Update:** No change.

**3.d. Estimated Pollutant Load Reduction Anticipated from each activity:**

**2002 RA:** To ensure consistency, the Consortium Action Plan Database program includes a standardized method for electronically calculating both existing conditions (no treatment) TN, TP and TSS loading for each project, and estimated loadings after treatment is applied. Each treatment type (for example, wet retention pond) has been assigned a treatment efficiency based on best available data/information, and is applied within the database program to estimate the nitrogen load attenuation. Parameters included in these calculations are land use, soils, rainfall and hydrologic connectivity. The difference between the “treatment” and “no treatment” estimates is the load reduction anticipated for each activity. NMC partners may also propose site-specific load reduction estimates for specific projects, providing adequate documentation is provided.

**2007 Update:** no change.

**3.e. Written agreements committing partners to actions:**

**2002 RA:** The Tampa Bay Estuary Program government partners executed an Interlocal Agreement in 1998, pledging to assist in meeting the goals of the TBEP Comprehensive Conservation and Management Plan (Attachment 1). Also in 1998, public and private members of the Tampa Bay Nitrogen Management Consortium pledged to exercise their best efforts to implement, either individually or in cooperation with other Consortium members, the projects they have offered to undertake as part of the Consortium Action Plan (Attachment H-1). Many of these projects have already been completed.

**2007 Update:** This document is “Exhibit B” of the 2007 Declaration of Cooperation. The Declaration is also included as Attachment 2007-7.

**3.f. How will future growth and new sources be addressed:**

**2002 RA:** The TN load reduction target of 17 tons per year needed to maintain TN loading at 1992-1994 levels assumes growth in population and the associated changes in stormwater, atmospheric deposition and point sources. In this manner, TN loading from future growth is anticipated and addressed. See Attachment G-3: TBEP Technical Report #08-01.

The TBEP Interlocal Agreement requires that the technical basis for estimating loads and establishing targets be reexamined every 5 years. The first five-year re-examination was complete in 2001. Results from the re-examination indicate that the models and assumptions used for the initial calculations continue to provide appropriate estimates of loading and resulting

chlorophyll *a* concentrations. See Attachments F and G.

The Nitrogen Management Consortium is currently examining how to address unexpected new point sources in the Consortium framework. This work is expected to be complete by 2003, and will be included in future updates to this documentation. However, it is important to note that nonpoint source discharges and atmospheric deposition are the dominant sources of nitrogen to Tampa Bay, comprising 83% of the total nitrogen load annually.

**2007 Update:**

To maintain the Tampa Bay Nitrogen Management Consortium's successful watershed approach and to allow the Consortium to collectively define nitrogen load allocations from point and nonpoint sources within the Tampa Bay watershed, in October 2007 the Consortium, FDEP and EPA agreed to the following:

1. Develop and submit to FDEP by January 31, 2007 a bay-wide Reasonable Assurance document (*this document*) defining the Tampa Bay nitrogen management strategy for 2008-2012 and providing documentation of reasonable progress during the 2002-2007 RA period.
2. Develop total nitrogen Waste Load Allocations and Load Allocations for each bay segment, taking into account the nitrogen load reductions (existing and future) that have been documented through projects submitted by Consortium partners and other sources; and (b) develop of total nitrogen WLAs for each point source permitted facility and MS4 stormwater system within each bay segment. The cumulative total nitrogen loading maximum for all WLAs together with Load Allocations will not exceed the assimilative capacity for a bay segment, as defined in the federally-recognized TMDL for Tampa Bay (Table 3). Detailed allocations will be developed by July 31, 2009.



**Table 3.** 1998 federally-recognized TMDL allocations (in tons/year). EPA considers the assimilative capacity of each bay segment to be the total load to that segment (e.g., 486 tons/year for Old Tampa Bay, etc). Source: Federally-recognized TMDL document for nutrients in Tampa Bay, 1998.

Source	Old Tampa Bay	Hillsborough Bay	Middle Tampa Bay	Lower Tampa Bay
Atmospheric deposition	227	115	306	288
Point sources	85	300	78	1
Material losses	0	233	0	24
Nonpoint sources	174	596	415	36
Groundwater and springs	0	207	0	0
<b>TOTAL</b>	<b>486</b>	<b>1451</b>	<b>799</b>	<b>349</b>

As noted in Section 3.b, discrepancies between the federally-recognized TMDL and the nutrient reduction goals adopted by the Consortium for the Lower Tampa Bay segment will be addressed by the Consortium prior to July 31, 2009 as an element of the guiding principles (Section 3.f. of this document).

3. Develop a supporting assessment document detailing background information and data analyses that will be needed to support the Consortium's development of revised bay-segment Waste Load Allocations and Load Allocations, and the Waste Load Allocations for individual permitted sources within each segment. A draft assessment document outline is shown in Attachment B.

4. Develop "guiding principles" for the collective determination of WLAs for individual facilities. Elements of the guiding principles may include:

- How to establish a minimum threshold for discharge volume and load for the establishment of total loading targets for smaller permitted sources
- How to incorporate small sources and others that are not members of the Consortium
- How to determine existing loads from MS4s
- How to average reporting periods
- How to incorporate new sources after the WLAs are defined for existing sources
- How to ensure consistency in determining loads within like sources
- How to incorporate residence time in estimating water quality response to load
- How to define the Consortium's role in implementation and maintenance of the WLAs
- How (and how much) to incorporate as a buffer of unallocated load for future growth
- How to account or give credit for reductions from entities that have already reduced their load

- How to define and estimate load “credits”, given the existing reduction/preclusion target
- How to account for new sources vs. existing source expansion
- How to resolve differences between the federally-recognized TMDL loadings and the Nitrogen Management Consortium reduction goals for Lower Tampa Bay, including Manatee River and Terra Ceia Bay.
- How to resolve differences for the 1558BZ WBID definition. FDEP includes portions of this area in Lower Tampa Bay and the Consortium defines this area as part of Boca Ciega Bay.

5. Based on the results of Actions 3 and 4 above, the Consortium will develop revised Waste Load Allocations and Load Allocations for each bay segment, for FDEP and EPA review.

6. Based on the results of Actions 3, 4 and 5 above, by July 31, 2009 the Consortium will develop total nitrogen WLAs for each permitted facility (for facilities with discharges above the Consortium-established minimum loading threshold) within each bay segment, for FDEP and EPA review. The final allocation categories for each bay segment are shown in Table 4.

**Table 4.** Proposed revised allocation categories. The WLAs (point sources and MS4s) will include allocations to individual facilities.

<b>Source</b>	<b>Old Tampa Bay</b>	<b>Hillsborough Bay</b>	<b>Middle Tampa Bay</b>	<b>Lower Tampa Bay</b>
Permitted point source WLAs (WWTP, industrial)	TBD	TBD	TBD	TBD
Permitted MS4s WLAs	TBD	TBD	TBD	TBD
Unpermitted sources (LAs)	TBD	TBD	TBD	TBD
<b>TOTAL</b>	<b>486</b>	<b>1451</b>	<b>799</b>	<b>349</b>

The timeline and process for development of detailed allocations

Submit 2007 RA update to FDEP by January 31, 2008

Interactions with individual Consortium entities Jan 2008 – Dec 2008

Steering Group Allocation Guiding Principles Workshop February 8, 2008

Draft Allocation Guiding Principles March 2008

Develop basinwide allocations to WLAs and LAs May 2008

Finalize Action Plan database July 2008

Develop draft WLAs for individual sources December 2008

Finalize WLAs for individual sources February 2009

Draft Allocation and Assessment Report March 2009

Final Resolution agreeing to allocations March 2009

Final Allocation and Assessment Report by July 31, 2009

FDEP will develop interim WLAs for facilities that are expected to come up for renewal before July 2009, in cooperation with those specific facilities. The interim WLAs will be based on the

“existing loading” of those facilities, which will be based on the most recent loading information available but will also take recent growth and variability into account (especially for industrial facilities where the discharge is related to rainfall). FDEP intends to include the interim WLAs for those facilities which are expected to come up for renewal prior to July 2009 in their response to this document. If a facility can meet the “interim WLA”, the allocation will be the basis for a TN effluent limit for the facility, but the permit will include a re-opener clause allowing the limit to be revised when the final WLA is completed for the facility in July 2009. If the facility cannot meet its “interim allocation,” the allocation will be the basis for a final TN effluent limit, but an Administrative Order will provide an interim permit limit and compliance schedule to meet either the interim WLA or the final WLA when it is available.

### **3.g. Confirmed sources of funding**

**2002 RA:** Information on funding sources and amounts for projects included in the Action Plan are being provided voluntarily for projects in the Consortium Action Plan Database. Funding sources include local governments, the Southwest Florida Water Management District (SWFWMD) and private corporations. More detailed funding source information is being requested for the ongoing Action Plan Update, due for finalization in early 2003.

The Tampa Bay Estuary Program is funded by the signatories of the Interlocal Agreement, for funding amounts as defined in the IA (see attachment I).

**2007 Update:** The majority of projects in the updated Project Database include estimates of costs and funding sources.

The Assessment and Allocation process outlined in Section 3.f. will include technical analyses and the Assessment Report; support and organization of meetings with individual Consortium entities and agencies; analyzing issues and options to support the Consortium in the development of guiding principles; facilitation of Consortium meetings and Implementation Group meetings and workshops; support and documentation for draft and final bay-segment allocations; support and documentation for draft and final facility-specific allocations; and full documentation of analyses and process.

In keeping with the Tampa Bay Nitrogen Management Consortium’s collective approach, each Consortium partner (government, private and agency) will contribute equally to the development of the Assessment and Allocation Report.

Advantages of collectively funding the allocation process:

- All Consortium members share the responsibility and benefits in the development of the allocations;
- Maintains collective approach that Consortium has used successfully to address issues;
- Sharing the cost allows each entity to benefit from a large effort with relatively small funding commitment

Entities which are not members of the Consortium by December 28, 2007 but wish to join the Consortium after this date will be assessed \$5000 to participate in the allocation process.

**3.h. Implementation schedule:**

**2002 RA:** Chlorophyll *a* concentrations are currently meeting adopted site-specific targets. In addition, each project has an implementation schedule included in the Consortium Action Plan Database.

**2007 Update:** The updated Project Database includes a schedule for expected completion for each project.

**3.i. Enforcement programs, if the management strategy is not voluntary.**

**2002 RA:** Participation in the Tampa Bay Nitrogen Management Consortium is voluntary. The NMC partners will continue to encourage point and nonpoint sources who are not currently participating in the NMC to join this effort.

FDEP emphasizes that it and other regulatory agencies will continue to ensure that permitted facilities meet all permit requirements through existing regulatory and permit enforcement programs.

**2007 Update:** Participation in the Tampa Bay Nitrogen Management Consortium will continue to be voluntary, and the NMC partners will continue to encourage point and nonpoint sources who are not currently participating in the NMC to join this effort. The Assessment and Allocation process defined in Section 3.f. will define agreed-upon TN load allocations for Consortium member permits. The Assessment and Allocation will also recommend processes for new or expanded TN load sources or permitted entities not participating in the Consortium.

FDEP emphasizes that it and other regulatory agencies will continue to ensure that permitted facilities meet all permit requirements through existing regulatory and permit enforcement programs.

**4. Procedures for Monitoring and Reporting Results:**

**2002 RA: 4.a. A description of the water quality monitoring program to be implemented**

Existing water quality monitoring programs include ambient programs conducted by the Environmental Protection Commission of Hillsborough County, Manatee County, and Pinellas County. Water quality samples from over 100 stations baywide are collected and analyzed on a monthly basis through the collective efforts of these monitoring programs.

**2007 Update:** Monitoring by EPCHC and Manatee County continue as in 2002. Pinellas County has redesigned their bay water quality monitoring program to allow additional focus on shallow waters (less than 3 meters). Additional stations in all areas have been added within the watershed.

**4.b. Quality Assurance/Quality Control elements of monitoring**

**2002 RA:** All these programs and their laboratories have State-approved Quality Assurance Plans on file, and comply with DEP's QA rule, Chapter 62-160, including DEP approved Standard Operating Procedures. The participating laboratories have or are working to receive National Environmental Laboratory Accreditation Conference (NELAC) certification.

**2007 Update:** All participating laboratories have now received NELAC certification.

**4.c. Procedures for entering all appropriate data into STORET:**

**2002 RA:** The participating laboratories will continue to deliver all appropriate data to FDEP's SW District office in Tampa for uploading into STORET, pending development of each entity's capability for routine uploads to STORET. Upon finalization of this capability, each entity will submit data directly to STORET.

**2007 Update:** Although some problems with entering data directly into the state's STORET system remain, the participating laboratories either enter data directly to STORET or deliver all appropriate data to FDEP.

**4.d. Responsible monitoring and reporting entity:**

**2002 RA:** The four entities identified in 4.a. are responsible for collecting water quality data.

TBEP will be responsible for compiling bay-wide water quality monitoring data on an annual basis, and reporting the results of the "decision matrix" to the TBEP partners (including FDEP). See TBEP Technical Report #11-01 (Attachment C) for the Year 2001 annual report.

**2007 Update:** The three entities identified in 4.a. continue to be responsible for collecting water quality data. See Attachment 2007-2 for the most recent annual "decision matrix" update reporting progress towards water quality targets in each bay segment.

**4. e. Frequency and reporting format for reporting monitoring results:**

**2002 RA:** Reporting is done annually, as noted in 4.d. In addition, TBEP conducts a full revision and update of nitrogen loading estimates (current and estimated future loads) and model evaluations every 5 years. The next update is due in 2005.

**2007 Update:** The 1999-2003 nitrogen loading update was completed in 2005 (Attachment 2007-4). The next scheduled TBEP nitrogen loading update is planned for 2009-2010 (for the years 2004-2008).

However, to allow the FDEP designation cycle for Group 1 including Tampa Bay (every 5 years; 2002, 2007, 2012, etc) and the TBEP cycle of updated loadings to come into sync, FDEP is funding an effort to update the Tampa Bay TN, TP and TSS loadings from all sources for the following:

1. Estimated and measured existing loadings (TN, TP and TSS) to bay segments from all sources for the years 2004, 2005, 2006 and 2007. This will provide the most recent information available for calculation of point source, MS4s, atmospheric deposition, non-permitted sources and groundwater and springs, for inclusion in the allocation process.

2. Estimated future TN, TP and TSS loads to bay segments from all sources for 2020. This effort will allow assessment and re-evaluation of the Consortium's current strategy of reducing TN loadings by 17 tons/year to compensate for expected population growth. Our last future estimate was for the year 2010, and future growth estimates have changed since then.

These tasks will provide information for the Group 1 Tampa Bay waters and the Group 2 major drainage basins to Tampa Bay, thus supporting both the RA/TMDL allocation process and upcoming BMAPs for nutrient TMDLs throughout the Tampa Bay watershed.

If these loadings can be updated as requested, TBEP will be able to fund updated loadings in the future to support the next round of the IWR. TBEP will plan for funds for loading updates for 2008-2011, to be assessed in early 2012 to allow inclusion in the 2012 Group 1 assessment.

**4.f. Frequency and format for reporting on the implementation of all proposed management activities:**

**2002 RA:** The Consortium Action Plan Database will allow entry of new projects and summary queries at any time. The TBEP staff will solicit information on new projects (or revisions to existing projects) every 2 ½ years, and will enter this information into the Database. In addition, a NMC partner can request to revise an existing project or submit a new one at any time. A formal reporting of management activities by TBEP will take place every 5 years, to correspond with the model assumption re-evaluation and CCMP update. TBEP staff is responsible for Action Plan Database maintenance.

**2007 Update:** No change. Formal reporting of results will continue to occur every 5 years.

**4. g. Methods for evaluating progress towards goals:**

**2002 RA:** Progress towards water quality targets is evaluated annually by the application of the "decision matrix" (TBEP Technical Report #03-02, Attachment C). Progress towards seagrass acreage goals is evaluated every 2-3 years using the Southwest Florida Water Management District's seagrass aerial photography and digital mapping.

**2007 Update:** No change.

**5. Description of Proposed Corrective Actions:**

**2002 RA:** The "decision matrix" (TBEP Technical Report #04-00, Attachment G-1) outlines a process by which potential management actions may be determined. In this process, the magnitude and duration of deviations from chlorophyll *a* and light targets are used to help

determine the degree of the management response. Recommended management actions range from those associated with a “green” ranking in which all targets are met (maintain existing programs and actions); to “yellow”, in which the TAC and Management Board review monitoring data and loading estimates and attempt to identify causes of target exceedences; to “red” for cases where magnitude and duration are large and a response appears necessary. Responses to “yellow” and “red” conditions will vary according to the specific conditions of the exceedences. The Management and Policy Boards will take actions they deem to be appropriate.

Because FDEP is a member of the TBEP and the Tampa Bay Nitrogen Management Consortium, the Department will be aware of all actions of the Management and Policy Boards and the Consortium, including any corrective actions that are proposed and implemented.

**2007 Update:** Since 1996, application of the decision framework has indicated two problematic time periods: in 1997 and 1998 all bay segments were in the “red” condition category (corresponding to high rainfall associated with a strong El Niño event), and in 2003 and 2004 the condition of one bay segment, Old Tampa Bay, resulted in a red category (Attachment 2006-2). Recommendations from the TBEP TAC for management response to the El Niño-associated period were to support immediate actions towards repair of sewer transport and pumping systems and industrial treatment water holding systems that had failed during periods with high rainfall amounts and/or rainfall rates. Actions were taken by municipalities and industrial facilities to address these failed systems. In addition to these immediate actions, the TAC recommendations were to continue monitoring to assess the need for further action following the El Niño event.

Recommendations for action in Old Tampa Bay in response to the decision matrix results in 2003-2004 were quite different than for the baywide El Niño-associated event. Following an extensive review of existing data and information, the TBEP TAC recommended an Old Tampa Bay Seagrass Recovery research program be implemented to examine factors potentially affecting seagrass recovery in this segment of Tampa Bay, followed by development of a recovery and management plan based on research results. Results and observations showed that some shallow areas in Old Tampa Bay had poorer water quality (and thus, less light available for seagrasses) than three other study areas within this bay segment. Epiphytes caused significant light reduction (25-32%) in all portions of Old Tampa Bay. Transplanted seagrass survival was very low; 0.9% after two growing seasons, compared with 21% in other areas of Tampa Bay. Additional factors, such as high wave energy or inputs of submarine groundwater, were examined; however, neither of these appears to be responsible for slower seagrass recovery rates (Griffin and Greening 2004; attachment 2007-8).

Further evaluations examined additional potential causes of poor water quality and slower seagrass recovery in Old Tampa Bay, as suggested by results of the initial study. Assessments (Attachment 2007-9) included examination of reduced circulation and slower flushing rates (possibly resulting in higher chlorophyll *a* concentrations), local sources of nitrogen loading, increased epiphyte loads, high rates of bioturbation (by stingrays and burrowing organisms), and possibly the influence of hydrogen sulfide concentrations. Results show that the Feather Sound



area of Old Tampa Bay is subject to multiple impacts, including nearshore nitrogen loading sources. Management recommendations include improved management of urban and residential stormwater runoff in the immediate watershed; conversion of septic systems to sewer in Feather Sound watershed areas ; additional planning and management for local golf courses; and restoring mosquito-ditched management areas so that water drains more slowly into the bay (thus allowing more time for nutrient uptake).

#### **6. Summary of progress since 2002 Reasonable Assurance report**

Data and observations from Tampa Bay indicate that initial efforts to reduce nitrogen loading and the continuing efforts of the TBEP and NMC partners are resulting in adequate water quality for the expansion of seagrasses. A summary of progress since the 2002 Tampa Bay Reasonable Assurance document includes the following:

##### **Actions:**

- More than 250 nitrogen reduction projects have been implemented by Consortium members since 1996, an increase of more than 100 projects since 2002.
- The baywide TN load reduction goal of 85 tons every five years has been met and exceeded for 1995-1999 (estimated 166 tons TN reduced) and 2000-2004 (estimated 113 TN tons reduced). Planned and budgeted projects for 2005-2009 are expected to reduce an additional 130 tons TN loading per year by 2009.
- The number of Tampa Bay Nitrogen Management Consortium members has increased by 5 local government entities and one private partner, to a total of 32 participating public and private partners in 2007.
- The Consortium local government and private partners have agreed to work with FDEP and EPA to develop fair and equitable TN load allocations to permitted and non-permitted sources throughout the watershed by July 2009, with the goal of meeting TN load management targets to support seagrass recovery.

##### **Environmental Indicators**

- Between January 2002 and January 2004, seagrass acreage baywide increased 946 acres, and by January 2006, another increase of 1,297 acres was recorded, resulting in the highest observed acreage estimate (28,321 acres baywide) since 1950. Estimated seagrass extent has increased by 3,480 acres since 1999 (the estimate available for the 2002 RA submittal).
- Time series plots show that, with the exception of 2003-2004 in Old Tampa Bay, and 2005 in Lower Tampa Bay, chlorophyll *a* targets have been met in all four major bay segments since 2002. In 2006, both chlorophyll *a* and light attenuation targets were met in all four major bay segments for the first time since records began in 1974.

**Attachments** (available at [www.tbep.tech.org](http://www.tbep.tech.org) (click on "2007 RA Update") unless noted below).

**Attachment A:**

(A-1): state map with Tampa Bay delineated

(A-2): Final Tampa Bay (Group 1) Status Report, developed by FDEP and dated May 9, 2002, including 305(b) bay segment boundaries, watershed boundaries and HUC codes.

Available from the FDEP website.

**Attachment B:**

Excerpts from F.A.C. 62-302.400 defining Class II waters for Hillsborough, Pinellas and Manatee counties.

**Attachment C:**

Tracking Chlorophyll-*a* and Light Attenuation in Tampa Bay: Application to 2001 Data. 2002. Technical Report #03-02 of the Tampa Bay Estuary Program. Prepared by Janicki Environmental, Inc. (A. Janicki and R. Pribble)

**Attachment D:**

Estimates of Total Nitrogen, Total Phosphorus, Total Suspended Solids, and Biochemical Oxygen Demand Loadings to Tampa Bay, Florida. 2001. Technical Report #05-01 of the Tampa Bay Estuary Program. Prepared by Janicki Environmental, Inc. (R. Pribble, A. Janicki, H. Zarbock, S. Janicki and M. Winowitch).

**Attachment E:**

Greening, H. 2001. Nutrient Management and Seagrass Restoration in Tampa Bay, Florida, USA. InterCoast; Fall 2001.

**Attachment F:**

(F-1): Final Action taken by TBNEP Management and Policy Committees, June 14, 1996, adopting goals for seagrass acreage, targets for segment-specific chlorophyll *a* concentrations, and a five-year nitrogen management strategy to "hold the line" at 1992-1994 nitrogen loadings for each bay segment.

(F-2): Final Action taken by TBEP Management and Policy Boards, May 11, 2001, extending through 2005 the previously adopted chlorophyll *a* concentrations for each bay segment, and the nitrogen management strategy to "hold the line".

(F-3): Estimating Critical Nitrogen Loads for the Tampa Bay Estuary: An Empirically Based Approach to Setting Management Targets. 1996. Technical Publication #06-96 of the Tampa Bay National Estuary Program. Prepared by Coastal Environmental, Inc. (A.J. Janicki and D.L. Wade).

(F-4): Tampa Bay Estuary Program Model Evaluation and Update: Chlorophyll *a*-Light Attenuation Relationship. 2001. Technical Report #06-01 of the Tampa Bay Estuary Program. Prepared by Janicki Environmental, Inc. (A. Janicki and D. Wade).

(F-5): Tampa Bay Estuary Program Model Evaluation and Update: Nitrogen Load-Chlorophyll *a* Relationship. 2001. Technical Report #07-01 of the Tampa Bay Estuary Program. Prepared by Janicki Environmental, Inc. (A. Janicki and D. Wade).

(F-6): Tampa Bay Estuary Program Tracking Progress Toward Its Nitrogen Management Goals: Fifth Year Assessment of Bay Water Quality Indicators and Models. 2001. Technical Report #10-01 of the Tampa Bay Estuary Program. Prepared by Janicki Environmental, Inc. (A. Janicki).

Attachment G:

(G-1): Developing and Establishing a Process to Track the Status of Chlorophyll-*a* Concentrations and Light Attenuation to Support Seagrass Restoration Goals in Tampa Bay. 2000. Technical Report #04-00 of the Tampa Bay Estuary Program. Prepared by Janicki Environmental, Inc. (A. Janicki, D. Wade and J.R. Pribble).

(G-2): Assessing the 2000 Chlorophyll *a* and Light Attenuation Conditions in Tampa Bay: Tracking Progress Toward TBEP Goals. 2001. Technical Report #11-01 of the Tampa Bay Estuary Program. Prepared by Janicki Environmental, Inc. (A. Janicki and R. Pribble).

(G-3): Model-Based Estimates of Total Nitrogen Loading to Tampa Bay: Current Conditions and Updated 2010 Conditions. 2001. Technical Report #08-01 of the Tampa Bay Estuary Program. Prepared by Janicki Environmental, Inc. (A. Janicki, R. Pribble, H. Zarbock, S. Janicki, and M. Winowitch).

Attachment H:

(H-1): Partnership for Progress: The Tampa Bay Nitrogen Management Consortium Action Plan 1995-1999.

(H-2): 2002 Tampa Bay Nitrogen Management Consortium Action Plan Database. Available from TBEP, contact Misty Cladas at [misty@tbep.org](mailto:misty@tbep.org).

Attachment I:

Tampa Bay National Estuary Program Interlocal Agreement, February 1998

## **2007 Update: Attachments**

### **Attachment 2007-1**

Letter dated November 5, 2002 from D. Joyner (FDEP Bureau of Watershed Management) concluding that the Tampa Bay Nitrogen Management Strategy provides reasonable assurance that impairment of designated uses related to nutrients in Tampa Bay will be adequately addressed.

### **Attachment 2007-2**

Tracking Chlorophyll-*a* and Light Attenuation in Tampa Bay: Application to 2006 Data. 2007. Technical Report #01-07 of the Tampa Bay Estuary Program. Prepared by Janicki Environmental, Inc.

### **Attachment 2007-3**

Tomasko, D.A., C.A. Corbett, H.S.Greening and G.E. Raulerson. 2005. Spatial and temporal variations in seagrass coverage in Southwest Florida: Assessing the relative effects of anthropogenic nutrient load reductions and rainfall in four contiguous estuaries. Marine Pollution Bulletin 50(2005) 797-805.

### **Attachment 2007-4**

Estimates of Total Nitrogen, Total Phosphorus, Total Suspended Solids, and Biochemical Oxygen Demand Loadings to Tampa Bay, Florida: 1999 -2003. 2005. Technical Report #02-05 of the Tampa Bay Estuary Program. Prepared by Janicki Environmental, Inc. (A. Poe, K. Hackett, S. Janicki, R. Pribble, and A. Janicki).

### **Attachment 2007-5**

Nitrogen Loadings to Tampa Bay: Model Based Estimates of 1998 and 2010 Loads to Major Basins, and TN Load Reduction/Preclusion Apportionment. 2003. Technical Report # 04-03 of the Tampa Bay Estuary Program. Prepared by Janicki Environmental, Inc.(A. Janicki, R.Pribble and K. Hackett).

### **Attachment 2007-6**

Summary tables of nitrogen load reduction projects in the Tampa Bay Project Database. Projects are listed by major drainage basin.

### **Attachment 2007-7**

2007 Tampa Bay Nitrogen Management Consortium Declaration of Cooperation (this document)..

### **Attachment 2007-8**

Griffen, L. and H. Greening. 2004. Factors Influencing Seagrass Recovery in Feather Sound, Tampa Bay, Florida. Final Report of the Feather Sound Seagrass Recovery Workgroup. Prepared for the Pinellas County Environmental Foundation. Including

Approved by the Tampa Bay Nitrogen Management Consortium  
December 20, 2007

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technical appendices on CD. 29 pages.

**Attachment 2007-10**

Cross, L.M. 2007. Feather Sound Seagrass Recovery Project: Final Report and Management Recommendations for Feather Sound, Old Tampa Bay, Florida. Technical Report #03-07 of the Tampa Bay Estuary Program. Report to the Pinellas County Environmental Fund.

Approved by the Tampa Bay Nitrogen Management Consortium  
December 20, 2007

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EXHIBIT "C" on following page



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 4  
ATLANTA FEDERAL CENTER  
61 FORSYTH STREET  
ATLANTA, GEORGIA 30303-8960

NOV 6 2007

Holly Greening  
Senior Scientist  
Tampa Bay Estuary Program  
100 8th Ave Se  
St Petersburg, FL 33701

Dear Ms. Greening:

On October 18, 2007 representatives from the Environmental Protection Agency's (EPA) Region 4 Water Management Division attended a meeting of the Tampa Bay Nitrogen Management Consortium (Consortium). The focus of the meeting was the Consortium's reasonable assurance (Category 4b) plan and its impact on the Florida Department of Environmental Protection's (FDEP) upcoming list of impaired waters.

As you are aware, in 1998 the FDEP developed a Total Maximum Daily Load (TMDL) for nitrogen, based upon water quality modeling coordinated through the National Estuary Program, and submitted that TMDL to EPA. On June 18, 1998, EPA approved the TMDL for four major segments of Tampa Bay. However, subsequent legislation (1999 Florida Watershed Restoration Act) required that all TMDLs be adopted by rule and FDEP did not adopt the TMDL after it placed the water in Category 4b, though it remains a federally approved TMDL.

The Consortium passed a recommendation to 1) develop and submit to FDEP by December 31, 2007 a bay-wide Reasonable Assurance document defining the Tampa Bay nitrogen management strategy for 2008-2012 and providing documentation of adequate progress during the 2002-2007 RA period, and 2) by July 2009 to submit total nitrogen waste load allocations (WLAs) for each permitted facility (for facilities with discharges above the established minimum loading threshold) within each bay segment for FDEP and EPA review. By these actions, the Consortium anticipates that FDEP will not include the Tampa Bay segments on its next list of impaired waters for the "Group 1" Basins, which includes Tampa Bay.

FDEP has indicated that the Consortium's approach will probably be acceptable to show adequate progress. It has also stated that permits which need renewal or revision before July 2009 will be renewed or revised to reflect existing nitrogen loadings. This permitting strategy will address EPA's concern with current permitted loadings exceeding the federally approved TMDL.