

# TAMPA BAY

NITROGEN MANAGEMENT CONSORTIUM

A PUBLIC - PRIVATE PARTNERSHIP

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

### CATALYZING NEW COMMITMENTS TO RESTORE THE TAMPA BAY ESTUARY

From the uppermost watershed 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. These essential habitats range from lush underwater seagrass beds to oyster reefs, tidal marshes, mangrove swamps, freshwater wetlands, and upland forests. Abundant and ecologically functional habitats are critical to the overall 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 its economic vitality.

Tampa Bay scientists and resource managers agree that submerged seagrass is among the most important habitats in the estuary because it serves as shelter, nursery, and a food source for a diverse variety of species while also stabilizing bay bottoms and water quality. The extent of seagrass coverage in Tampa Bay has served as a key indicator of the bay's overall ecosystem health. The Tampa Bay Estuary Program (TBEP) established the restoration of seagrass habitat as a priority goal in the mid-1990s. The key to restoring seagrass in Tampa Bay has been improving and then maintaining adequate water clarity that allows light to penetrate the shallow waters of the bay where seagrasses grow. And the key to maintaining water clarity has been preventing excessive nitrogen – a nutrient necessary for plant growth – from entering the bay and stimulating the growth of algae that cloud the water or smother seagrasses and prevent sunlight from reaching bay bottoms.

The Tampa Bay National Estuary Program (NEP) was first established in 1991 to help local governments, agencies, and other stakeholders in the Tampa Bay area develop a plan to restore 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 loads at levels 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](#) which also redefined the NEP as the Tampa Bay Estuary Program.

In August 1996, 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” nitrogen load targets. 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 and preservation goal; chlorophyll and nitrogen reduction targets for each major bay segment; apportionment of responsibility for meeting the nitrogen reduction targets amongst partners; 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. In parallel, the U.S. Environmental Protection Agency (EPA) recognized 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 water quality standards. Both FDEP's reasonable assurance determination and the total maximum nitrogen loading recognized by EPA are based on statistical modeling and data analyses performed by the Estuary Program partnerships during the mid-1990s.

Subsequent to the 2002 effort, both a [2007 Reasonable Assurance Update](#) and [2009 Reasonable Assurance Addendum](#) were prepared for FDEP to ensure that the original 2002 determination would be extended. These documents were intended to: 1) provide an update on implementation of the Tampa Bay nitrogen management strategy to FDEP for the 2003-2007 period; 2) provide adequate documentation to allow FDEP a finding of reasonable progress pursuant to rule [62-303.600, F.A.C.](#); 3) provide nitrogen load allocations to categories of nitrogen sources by major bay segment and to facility- and stormwater-specific sources within each major bay segment; and 4) support a subsequent [2010 FDEP water quality based effluent limitation Final Order](#), a [2010 FDEP Reasonable Assurance Determination Final Order](#), and to comply with the federally-recognized TMDL for Tampa Bay. In 2011, FDEP established numeric nutrient criteria for each bay segment utilizing the chlorophyll-a, total nitrogen and total phosphorus assessments developed by the Estuary Program partnerships. Subsequent Reasonable Assurance Updates were submitted in [2012](#) and [2017](#) to extend the Reasonable Assurance determination through 2021.

Over this period, a remarkable recovery of the Tampa Bay ecosystem ensued after decades of decline and despite continuing regional population growth. In 2016, baywide seagrass coverage peaked at 41,655 acres – well exceeding the seagrass recovery goal originally established by the Estuary Program partnerships.

However, during the development of the [2022 Reasonable Assurance Update](#) covering the 2017-2021 period, significant declines in the bay's seagrass resources were documented. Declines in water quality, particularly in the Old Tampa Bay segment, coincided with large losses of seagrass coverage during this period. Furthermore, other confounding stressors were correlated to the declines in water quality and seagrasses within Tampa Bay (e.g. increasing water temperatures, hydrologic inputs, poor tidal circulation, and discrete red tide and wastewater discharge events).

In response to these recent conditions, it is the desire of the Consortium and other partners in the Estuary Program to re-invigorate the successful collaboration that achieved the seagrass recovery goal observed during the 2014-2018 period. At the same time, the Consortium and partners in the Estuary Program recognize that compounding factors, in addition to nitrogen loads, will influence future seagrass recovery in Tampa Bay. Notwithstanding these challenges, it is in the interest of all stakeholders to continue and to expand upon this successful approach to bay management and avoid derailing decades of progress and investments that have been made to restore Tampa Bay.

To help ensure continued recovery of vital seagrass habitat and the successful nitrogen management strategy that makes it possible, local governments, agencies, and industry participants of the Tampa Bay Nitrogen Management Consortium declare their intent to work together over the 2022-2026 period to provide FDEP with an updated 2027 reasonable assurance document, ensuring that state water quality criteria for nutrients will be consistently met and that seagrass recovery towards the 40,000 acre goal will be realized. The partners commit further to collaboratively funding, developing and implementing alternative water quality management strategies and/or actions that may help achieve this end as partners to the Estuary Program and/or Consortium.

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

### **PARTICIPANTS 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: Participants of the Consortium approved the 2022 Update to Reasonable Assurance Document submitted to FDEP and attached as [Exhibit "B"](#) which documents recent progress toward bay segment-specific nutrient targets and seagrass restoration goals adopted by the TBEP and approved by FDEP on Feb. 3, 2023; and,

Section 2: Participants of the Consortium will assist in developing a 2027 Reasonable Assurance Document that includes a revised assimilative capacity assessment for the Old Tampa Bay segment, as determined necessary in the approved 2022 Update. If supported by the assessment, revised allocations will be developed and technically supported by all participants through development of a 2024 Reasonable Assurance Addendum: Old Tampa Bay Assessment and Allocation Report; and,

Section 3: The Consortium will submit a 2024 Reasonable Assurance Addendum to FDEP and EPA by December 31, 2024, which will include a request that FDEP approve, and EPA concur, that continued implementation of the Tampa Bay nitrogen management strategy as reasonable assurance that potential impairment of designated uses related to nutrient impairments in Tampa Bay are and will continue to be adequately addressed through 2027; and,

Section 4: If necessary, the Consortium will develop and implement a set of guiding principles that will fairly and equitably re-assign allocations for affected entities in the Old Tampa Bay segment. The Consortium will include within the 2024 Reasonable Assurance Addendum revised load allocations that are acceptable to the Consortium participants while acknowledging that the facility-specific wasteload allocations will be re-adopted by FDEP as Water Quality-Based Effluent Limitations; and,

Section 5: The Consortium will continue to identify and implement projects to achieve the cumulative nitrogen management targets and entity-specific allocations for Tampa Bay; and,

Section 6: To encourage voluntary efforts which further the attainment of baywide nitrogen reduction and/or management goals, the FDEP, EPA 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; and,

Section 7: Consistent with the Consortium's consensus-based approach, each participant will participate in funding the 2027 Reasonable Assurance Update Document. The estimated total cost of \$250,000 will be shared equally among Consortium Participants at a cost not to exceed \$7,500 per participant to be paid by no later than October 31, 2024, or as soon thereafter as possible.

Section 8: Development of the 2024 Reasonable Assurance Addendum will be initially funded through the Tampa Bay Estuary Program at an estimated cost of \$240,000. If additional funding is necessary, Consortium participants will consider an equitable funding strategy to complete its development. To ensure the accuracy and completeness of the Addendum and the [Estuary Program's Action Plan Database](#), each participant of the Consortium further agrees to provide the Estuary Program and contractor responsible for preparing the Addendum with information and data necessary to adequately describe projects with nitrogen load reduction benefits and to provide documentation supporting the estimated nitrogen reductions where additional documentation may be necessary.

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

# TAMPA BAY

NITROGEN MANAGEMENT CONSORTIUM



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The **Pinellas County Board of County Commissioners** hereby approves the TAMPA BAY NITROGEN MANAGEMENT CONSORTIUM Declaration and attachments herein.

PINELLAS COUNTY, FLORIDA

By: *Janet C. Long*  
Commissioner Janet Long, Board Chair

ATTEST

By: *Deborah Lewis*  
Deputy County Clerk



Approved as to Form: \_\_\_\_\_  
Brendan Mackesey, Senior Assistant County Attorney

**APPROVED AS TO FORM**  
By: *Michael A. Zas*  
Office of the County Attorney

## EXHIBIT “A”

### History: Tampa Bay National Estuary Program 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, Manatee, Pasco, and Pinellas, 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 unanimously adopted the first 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. Two successive updates of the CCMP occurred with the latest being the [2017 CCMP Update](#).

Restoration of vital seagrass habitat was and still remains 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 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 to achieve a baywide coverage of 38,000 acres 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 2020, the baywide seagrass coverage goal was updated to 40,000 acres. As of 2022, an additional 9,863 acres of seagrass needs to be restored to achieve this goal.

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 was to cooperatively develop a plan of action (the Consortium Action Plan) to meet the 85 ton/year nitrogen reduction target over the initial 1995-1999 period, and in subsequent periods thereafter.

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 current Interlocal Agreement](#) includes a commitment from Consortium participants who are also party to the Interlocal Agreement (the Policy Board participants) to meet the nitrogen management strategies and entity-

specific allocations defined in subsequent Reasonable Assurance documentation submitted to FDEP.

Also in March 1998, the first Consortium Action Plan (for the years 1995-1999) was finalized and approved by the Consortium participants. The Consortium Action plan included project summaries (existing and future) and estimated nitrogen load reductions submitted by the Consortium partners, and a Resolution signed by the Consortium participants 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 participants of the Consortium pledged to exercise their best efforts to implement in a timely manner, either individually or in cooperation with other Consortium participants, the projects they offered to undertake as part of the Consortium Action Plan. During each successive 5-year Reasonable Assurance update submitted to FDEP and EPA since 2002, updates to the Consortium Action Plans are cataloged through an [Action Plan Database](#) and incorporated as new or future nitrogen load reduction project commitments of partners.

### 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 were developed from the 1992-1994 period ([Janicki and Wade 1996](#)). EPA considered the assimilative capacity (TMDL) of each bay segment to be the total annual 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 established the TMDL process for the state. A provision approved in the Watershed Restoration Act recognized: *“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, the TBEP and Consortium developed and submitted a [Reasonable Assurance document to FDEP and for concurrence with EPA in 2002](#), based on the Consortium’s original Action Plan: *Partnership for Progress*. The document provided FDEP with a complete description of the Tampa Bay nitrogen management strategy and enabled FDEP to conclude 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](#)).

Also in the letter, the FDEP concluded that the uncorrected, chlorophyll-a thresholds identified for each of the 4 main bay segments by the TBEP’s nitrogen management strategy would be used to assess future nutrient impairment. Since 2002, these thresholds have served as the primary numeric nutrient criteria to assess impairment in the mainstem estuary.

In preparation of the 2007 Reasonable Assurance Update, the FDEP and EPA informed the Consortium that wasteload and load allocations would need to be further allocated to comply with the federally-recognized TMDL. The [2007 Reasonable Assurance Update](#) and [2009 Reasonable Assurance Addendum](#) were prepared for FDEP to ensure that the original 2002 determination would be extended and to fully comply with the federally-recognized TMDL. The documents led to a [2010 FDEP water quality based effluent limitation Final Order](#) and a [2010 FDEP Reasonable Assurance Determination Final Order](#) which adopted entity- and source-specific allocations within the Old Tampa Bay, Hillsborough Bay, Middle Tampa Bay, Lower Tampa Bay and Remainder of Lower Tampa Bay (southern Boca Ciega Bay, Terra Ceia Bay, and Manatee River) segments. An annual, compliance assessment framework was also established and relied on the bay segment specific chlorophyll-a thresholds previously adopted by FDEP and hydrologically-normalized bay segment loadings to further comply with the federally-recognized TMDL (see [Section VIII, 2009 Reasonable Assurance Addendum](#)).

Subsequent Reasonable Assurance Update Documents were submitted in [2012](#) and [2017](#) to extend the Reasonable Assurance determination through 2021. Most recently, the [2022 Reasonable Assurance Update](#) was submitted to the FDEP on December 29, 2022.



## Establishment of Numeric Nutrient Criteria for the Tampa Bay Estuary

From 2010-2013, several EPA and FDEP actions were undertaken in response to lawsuits to redefine the narrative nutrient criteria for estuaries and other waterbodies in Florida. The Tampa Bay Estuary Program, in coordination with the Consortium and TBEP Technical Advisory Committee, developed recommended numeric nutrient criteria for the Tampa Bay estuary based on prior and refined nitrogen management strategy analyses and Reasonable Assurance determinations made by FDEP through 2012 (Janicki Environmental, Inc. [2011a](#) & [2001b](#)).

In summary, the recommended estuarine numeric nutrient criteria for Tampa Bay included the chlorophyll-a thresholds previously defined for each bay segment and the expression of the total nitrogen (TN) and total phosphorus (TP) loads to each bay segment relative to total hydrologic loads from the baseline period (i.e. 1992-1994 loadings that were used to establish the federally-recognized TMDL). Thus, the TN and TP estuarine numeric nutrient criteria for Tampa Bay were defined as TN and TP delivery ratios (Table 2).

**Table 2:** Recommended estuarine numeric nutrient criteria for the Tampa Bay estuary. Source: [Subsection 62-302.532 Florida Administrative Code](#).

Bay Segment	Chlorophyll-a Threshold (ug/L)	Total Nitrogen Delivery Ratio (tons / million m <sup>3</sup> of water)	Total Phosphorus Delivery Ratio (tons / million m <sup>3</sup> of water)
Old Tampa Bay	9.3	1.08	0.23
Hillsborough Bay	15.0	1.62	1.28
Middle Tampa Bay	8.5	1.24	0.24
Lower Tampa Bay	5.1	0.97	0.14
Boca Ciega Bay North	8.3	1.54	0.18
Boca Ciega Bay South	6.3	0.97	0.06
Terra Ceia Bay	8.7	1.10	0.14
Manatee River	8.8	1.80	0.37

Through separate actions, both the FDEP and EPA adopted the recommended estuarine numeric nutrient criteria, as outlined above. Currently, these criteria are contained in [Subsection 62-302.532, Florida Administrative Code](#). These criteria remain the basis for tracking nutrient-related impairments by FDEP and EPA in the estuary proper.

## EXHIBIT “B”

[Tampa Bay Nitrogen Management Strategy](#)  
[2022 Update to Reasonable Assurance Document](#)