



Tampa Bay Nutrient Management Strategy 2017 Reasonable Assurance Update Document

The Tampa Bay Estuary Program (TBEP) and the Tampa Bay Nitrogen Management Consortium (NMC) submitted the “Tampa Bay Watershed Management Summary” to the Florida Department of Environmental Protection (FDEP) on July 29, 2002¹. 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 were 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.”²

Subsequent to the 2002 effort, both a 2007 Reasonable Assurance Update³ and 2009 Reasonable Assurance Addendum⁴ were prepared for FDEP to ensure that the original 2002 determination would be extended until 2012. The 2007 Tampa Bay Update to Reasonable Assurance Documentation and 2009 Addendum 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 Florida Administrative Code 62-303.600 for the 2003-2007 period; and, 3) provide TN loading allocations to categories of nitrogen sources by major bay segment, and facility-specific and MS4 specific allocations within each major bay segment, to support any FDEP water quality based effluent limitation, FDEP Reasonable Assurance determination, and to comply with the federally-recognized TMDL for Tampa Bay. Lastly, a 2012 Reasonable Assurance Update⁵ was submitted to the FDEP to extend the Reasonable Assurance determination through 2017.

The format of this 2017 Reasonable Assurance (RA) 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, updated 2017 Reasonable Assurance documentation is integrated with any relevant documentation detailed in the 2002, 2007, 2009 and 2012 RA submittals.

¹ <https://www.tbep.tech.org/committees/nmc/60-2002-reasonable-assurance>

² https://www.tbep.tech.org/NitrogenMgmtConsort/ReasonableAssurance/2002_Submittal/2002_FDEP_Acceptance_Letter.pdf

³ <https://www.tbep.tech.org/committees/nmc/61-2007-reasonable-assurance>

⁴ <https://www.tbep.tech.org/committees/nmc/50-final-2009-ra-addendum>

⁵ <https://www.tbep.tech.org/committees/nmc/134-2012-tampa-bay-reasonable-assurance-submittal>

Reasonable Assurance Addendum, a response to these exceedances is not necessary unless the exceedances occurred in two concurrent years. Nevertheless, the TBEP and Consortium participants have undertaken actions to address the exceedances observed in the Old Tampa Bay segment as described in [Section 5](#).

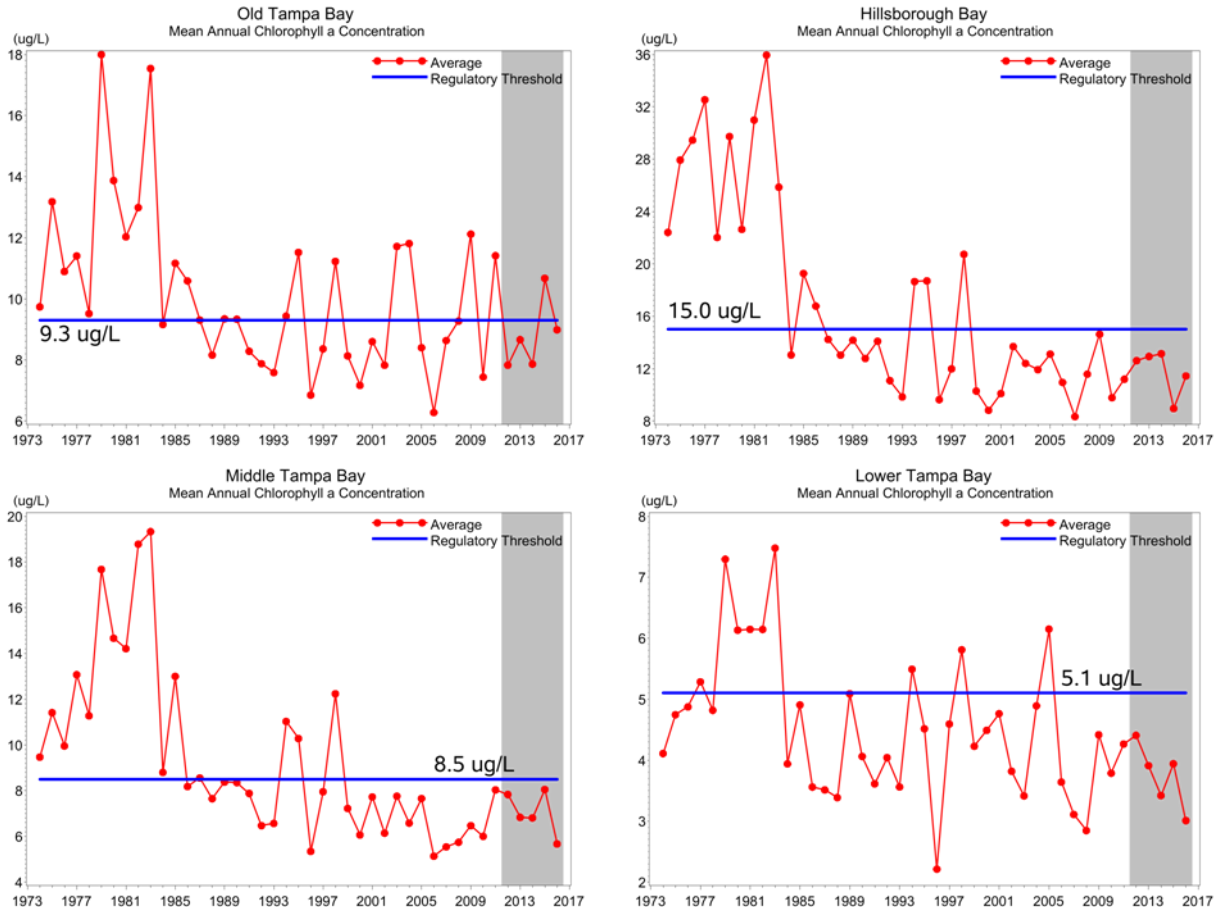


Figure 2: Annual average chlorophyll-a concentration in each of the four major bay segments, 1974-2016. The solid lines represent chlorophyll-a thresholds FDEP recognizes as indicators for impairment in each of the major bay segments and are the designated alternative site-specific thresholds adopted by FDEP in 2002. Grey shaded area indicates the 2012-2016 Reasonable Assurance Period. Data source: Environmental Protection Commission of Hillsborough County (EPCHC).

Furthermore, seagrass acreage in Tampa Bay continues to increase. Between 2012 and 2016, seagrass coverage increased by 7,013 acres. As of 2016, Tampa Bay seagrass acreage (41,655 acres) now exceeds both the recovery goal (38,000 acres) and the historic, 1950 benchmark period estimate (40,420 acres) (Figure 3).

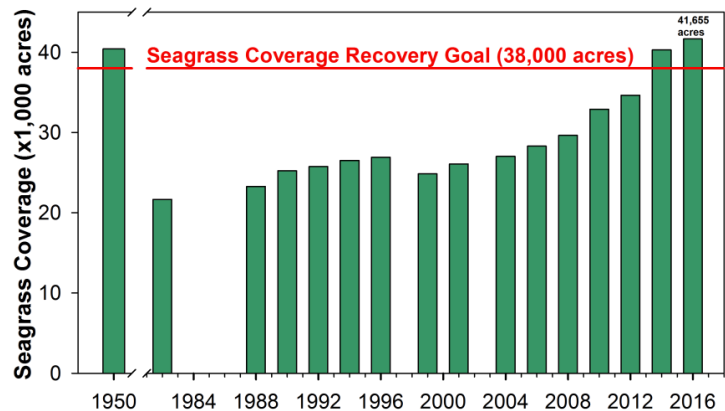


Figure 3: Historic seagrass acreage estimates. Data source: TBEP & SWFWMD.

1.a. Name

2017 RA Update: No change. This document addresses the four main bay segments of Tampa Bay: Old Tampa Bay, Hillsborough Bay, Middle Tampa Bay and Lower Tampa Bay. As of the 2009 RA Addendum, an additional segment was included: “Remainder of Lower Tampa Bay.”

This segment includes Terra Ceia Bay and portions of the Manatee River and Boca Ciega Bay. A cross-reference between these TBEP-identified management segments and FDEP WBID boundaries was previously provided in the 2009 RA Addendum ([Appendix E-2 through E-10](#)). Figure 4 depicts the overlap of the bay segment and FDEP WBIDs as of the 2009 RA Addendum submittal. It should be noted that the Old Tampa Bay, Hillsborough Bay, Middle Tampa Bay and Lower Tampa Bay segments are identical to FDEP’s established estuary nutrient regions.

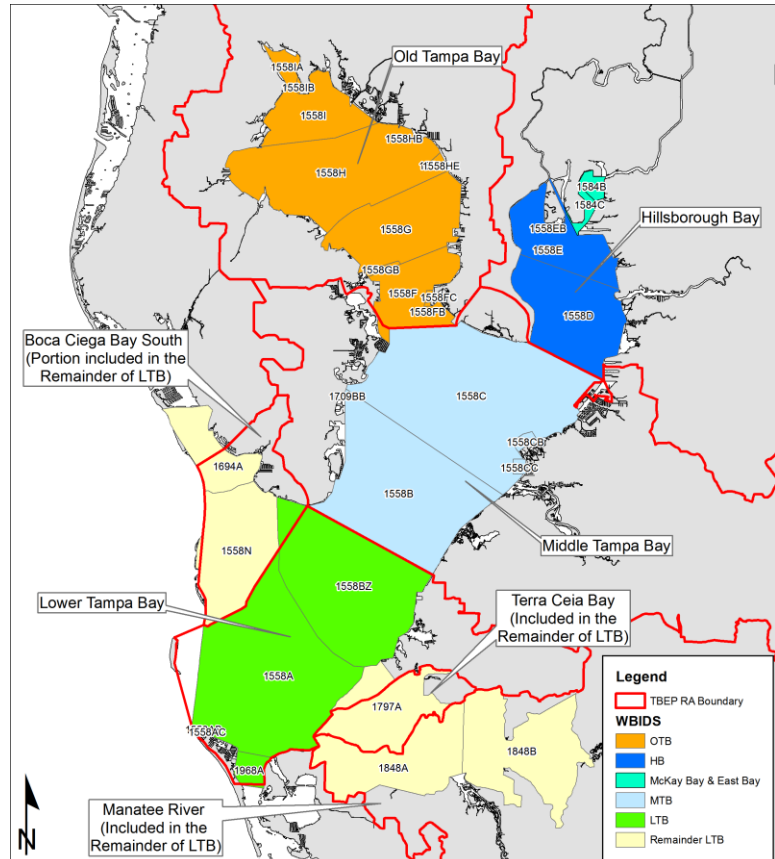


Figure 4: Map showing TBEP RA bay segment boundaries in relation to FDEP-defined WBIDs contained in the major bay segment boundaries.

1.b. Location

2017 RA Update: No change. Please refer to Figure 1 and Figure 4.

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

2017 RA Update: No change. 03100206 Tampa Bay and coastal areas

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

2017 RA Update: No change. Estuary.

1.f. Water use classification:

2017 RA Update: Class II and III waters. Class II waters were realigned in 2015. See rule [62-302.400](#), F.A.C.

1.g. Designated use of waterbody:

2017 RA Update: No change. As per FDEP’s latest 2016 305(b) Integrated Water Quality Assessment Report for Florida, all WBIDs in Tampa Bay proper are identified as either EPA Integrated Assessment

Category 2 (attaining some designated uses) or 4b (impaired for one or more designated uses, but no TMDL is required because an existing or proposed pollutant control mechanism provides reasonable assurance that the water will attain standards in the future) for nutrient-related impairments (Figure 5). Note that this document does not address impairments related to Class II shellfish harvesting areas in Tampa Bay.

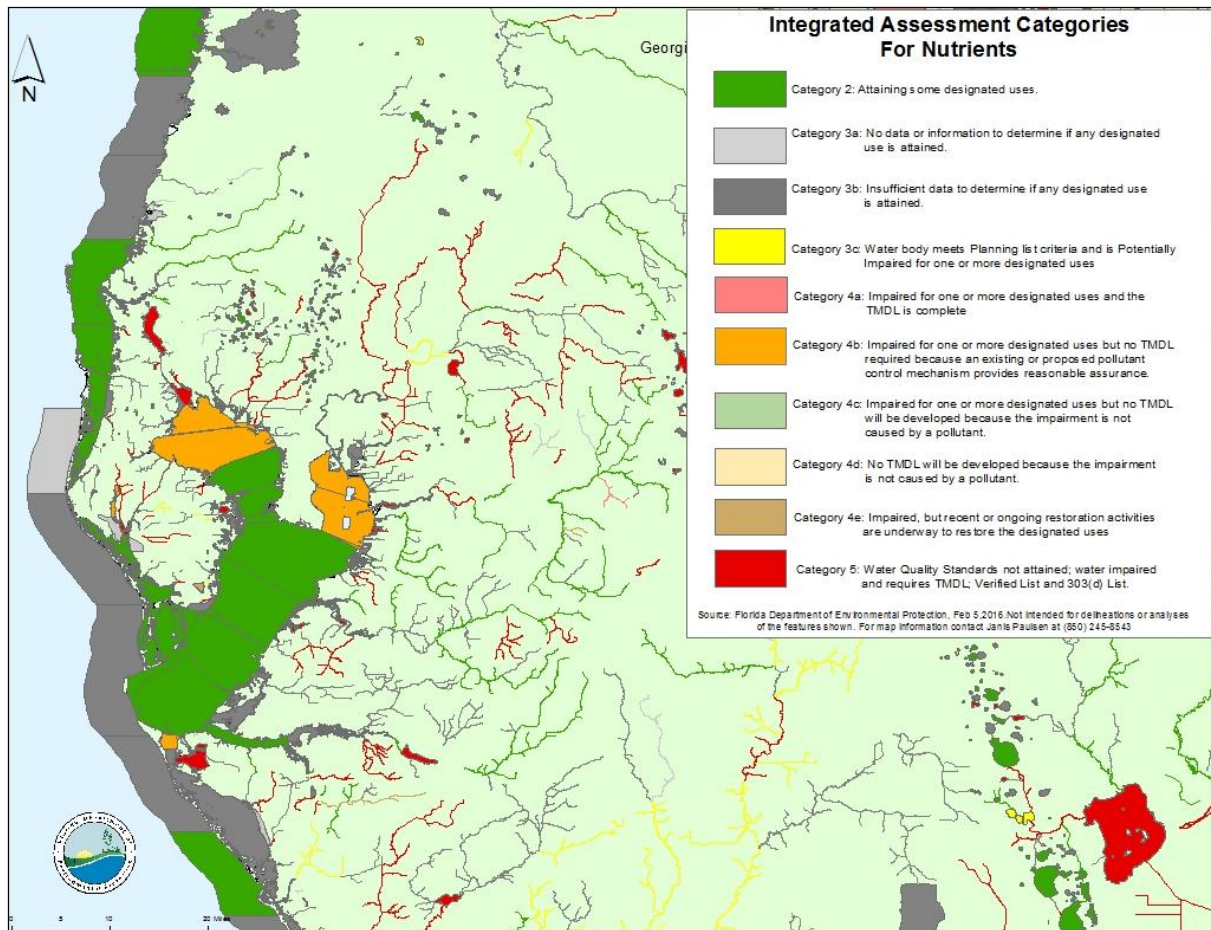


Figure 5: FDEP results of Florida's surface water quality assessment with focus on the Tampa Bay region: EPA assessment categories for nutrients. Source: FDEP.

1.h. Area of the waterbody:

2017 RA Update: No change. The total surface area of the four major bay segments in Tampa Bay is 882 km² (approximately 341 square miles).

1.i. Pollutant(s) of Concern:

2017 RA Update: No change. The pollutant of concern has been identified as Total Nitrogen (TN), which has been determined to be the limiting nutrient in Tampa Bay⁶. Elevated nitrogen loading has been

⁶ Greening, H. et al. 2014. Ecosystem responses to long-term nutrient management in an urban estuary: Tampa Bay, Florida, USA. *Estuaries, Coastal and Shelf Sciences* 151:A1-A16. <http://doi.org/10.1016/j.ecss.2014.10.003>.



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.

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

2017 RA Update: The TBEP has developed loading reports for Tampa Bay since 1985. The most recent estimates of TN loading to Tampa Bay are for the 2012-2016 time period. Overall, total loadings to the bay have declined from previous annual average estimates. Table 1 shows the mix of major contributing sources of TN load to Tampa Bay over the 5-yr RA assessment periods. In addition, the per capita TN loading to the bay has decreased over time (Figure 6), and the amount of TN delivered per unit water has also decreased over time in each of the major bay segments (Figure 7). To date, hydrologically-normalized total loads to Tampa Bay are at the lowest levels since they have been estimated (1985) despite an ever increasing population in the Tampa Bay metropolitan area (Figure 8).

Table 1: Summary of major TN loading sources (mean percentage contribution) estimated for the 5-year Tampa Bay RA periods.

| Source | 2002 RA 1997-2001 (Mean %) | 2007 RA Update 2002-2006 (Mean %) | 2012 RA Update 2007-2011 (Mean %) | 2017 RA Update 2012-2016 (Mean %) |
|-------------------------------|----------------------------------|--|--|--|
| Stormwater | 59.3 | 58.8 | 51.3 | 65.7 |
| Direct Atmospheric Deposition | 22.7 | 18.2 | 25.2 | 17.1 |
| Domestic Wastewater | 9.6 | 9.2 | 14.7 | 11.1 |
| Industrial Wastewater | 3.9 | 10.9 | 6.8 | 4.9 |
| Industrial Fertilizer Losses | 0.7 | 0.5 | 0.4 | 0.2 |
| Groundwater and Springs | 3.8 | 2.4 | 1.5 | 1.0 |

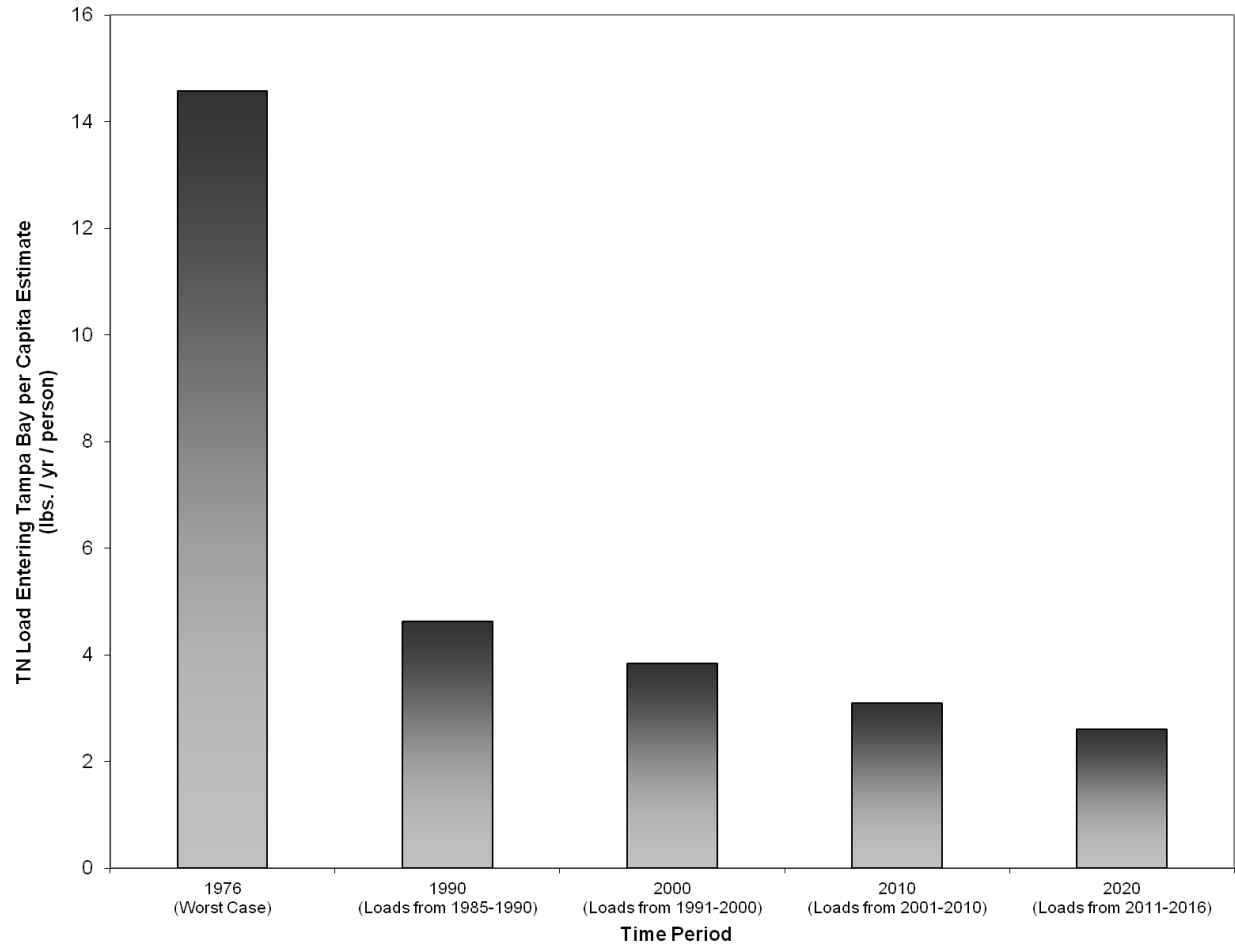


Figure 6: Trend in historic per capita estimate of total nitrogen load (lbs. per person per year) entering Tampa Bay. (Data Sources: TBEP, US Census Bureau).

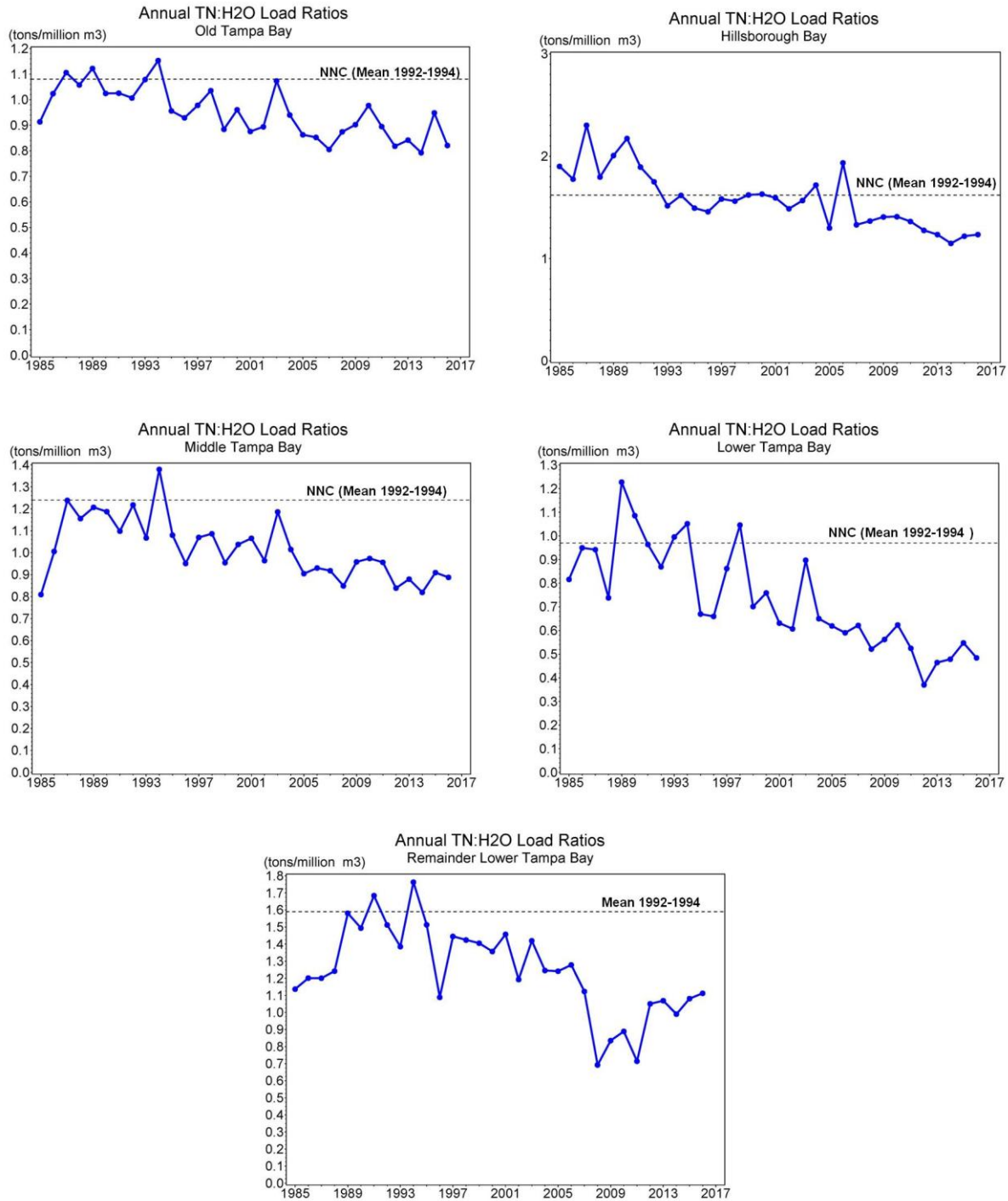


Figure 7: Nitrogen delivery ratio [i.e. total nitrogen load (tons/yr) per unit water (million m³) delivered] to each of the major bay segments. The 1992-1994 ratio targets (black horizontal line) are highlighted for each bay segment and represent the arithmetic mean of those years. The 1992-1994 arithmetic mean ratio targets have been adopted by FDEP and accepted by EPA as the numeric nutrient criteria for the Old Tampa Bay, Hillsborough Bay, Middle Tampa Bay and Lower Tampa Bay segments. These bay segments have been established as FDEP Estuary Nutrient Regions.

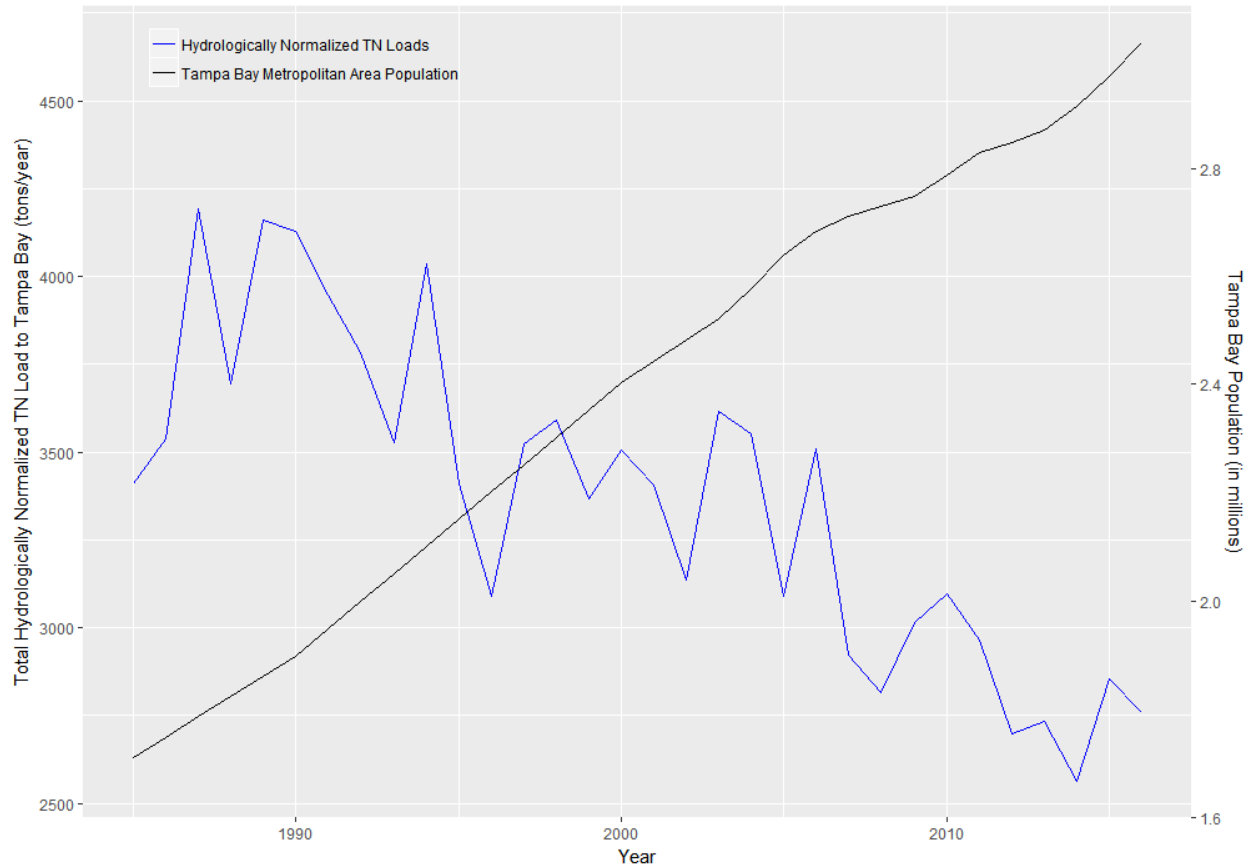


Figure 8: Trend in hydrologically-normalized total nitrogen load to Tampa Bay relative to population increases in the Tampa Bay metropolitan area.

2. Description of Water Quality or Aquatic Ecological Goals

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

2017 RA Update: No change. Maintaining seagrass acreages at near 1950's levels is still the primary restoration goal for Tampa Bay. Maintaining adequate water quality at adopted FDEP threshold levels for chlorophyll-a in each of the major bay segments on an annual average basis is the primary metric for assessing progress in maintaining the seagrass restoration goal. In addition, with adoption of the 2009 Reasonable Assurance Addendum, a secondary goal to maintain hydrologically-normalized total nitrogen loads to each of the major bay segments was established. As a result, a compliance assessment framework was established for future reasonable assurance determinations in the 2009 RA Addendum



(see Section VIII)⁷. The Tampa Bay NMC further refined the allocation compliance assessment methodology^{8,9} during the 2012-2016 RA period with FDEP concurrence¹⁰.

2.b. Averaging Period:

2017 RA Update: No change. The TBEP uses annual average bay segment chlorophyll-a levels for tracking attainment of water quality targets and thresholds. An annual assessment of TN loads is predicated on the water quality assessment as outlined in the compliance assessment framework detailed above. Details on how the annual bay segment assessments are developed can be found here: <http://shiny.tbep.tech.org/tbepwqassess/>. All source code for the analysis is located here: https://github.com/esherwoo77/pull_epc_data.

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

2017 RA Update: No change. Maintaining chlorophyll-a concentrations at target levels is expected to result in the maintenance of water clarity levels adequate to support seagrass at depths observed in 1950, thereby ensuring that nutrient levels do not result in an imbalance in the flora or fauna of Tampa Bay.

2.d. Determining whether additional corrective actions are needed.

2017 RA Update: No changes to the TBEP's annual management Decision Matrix process, the Tampa Bay NMC nutrient management strategy or allocation compliance assessment framework. Annual allocation compliance assessment protocols were established in the 2009 RA Addendum to determine whether any additional corrective actions would be necessary in relation to bay segment specific nitrogen loadings. Results of the bay segment-specific compliance assessment over the 2012-2016 RA Period are described in Figure 9 and Table 2 - Table 6.

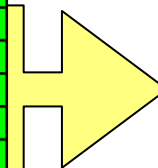
⁷ https://www.tbep.tech.org/attachments/article/50/FINAL_NMC_APPROVED_2009_RA_Addendum_Addressing_FDEP_Comments_01222010.pdf#page=63

⁸ https://www.tbep.tech.org/NitrogenMgmtConsort/Key_Actions/Final_NMC_Decision_Memo_2016-01_Recommended_Compliance_Assessment_Approach.pdf

⁹ https://www.tbep.tech.org/NitrogenMgmtConsort/Key_Actions/FINAL_NMC_Decision_Memo_2016-02_Unanticipated_Discharges.pdf

¹⁰ https://www.tbep.tech.org/NitrogenMgmtConsort/Key_Actions/FDEP_Reponse_TBNMC_2016-01+02_020817.pdf

| Year | Old Tampa Bay | Hillsborough Bay | Middle Tampa Bay | Lower Tampa Bay |
|------|---------------|------------------|------------------|-----------------|
| 1974 | No | No | No | Yes |
| 1975 | No | No | No | Yes |
| 1976 | No | No | No | Yes |
| 1977 | No | No | No | No |
| 1978 | No | No | No | Yes |
| 1979 | No | No | No | No |
| 1980 | No | No | No | No |
| 1981 | No | No | No | No |
| 1982 | No | No | No | No |
| 1983 | No | No | No | No |
| 1984 | Yes | Yes | No | Yes |
| 1985 | No | No | No | Yes |
| 1986 | No | No | Yes | Yes |
| 1987 | No | Yes | No | Yes |
| 1988 | Yes | Yes | Yes | Yes |
| 1989 | No | Yes | Yes | Yes |
| 1990 | No | Yes | Yes | Yes |
| 1991 | Yes | Yes | Yes | Yes |
| 1992 | Yes | Yes | Yes | Yes |
| 1993 | Yes | Yes | Yes | Yes |
| 1994 | No | No | No | No |
| 1995 | No | No | No | Yes |
| 1996 | Yes | Yes | Yes | Yes |
| 1997 | Yes | Yes | Yes | Yes |
| 1998 | No | No | No | No |
| 1999 | Yes | Yes | Yes | Yes |
| 2000 | Yes | Yes | Yes | Yes |
| 2001 | Yes | Yes | Yes | Yes |
| 2002 | Yes | Yes | Yes | Yes |
| 2003 | No | Yes | Yes | Yes |
| 2004 | No | Yes | Yes | Yes |
| 2005 | Yes | Yes | Yes | No |
| 2006 | Yes | Yes | Yes | Yes |
| 2007 | Yes | Yes | Yes | Yes |
| 2008 | Yes | Yes | Yes | Yes |
| 2009 | No | Yes | Yes | Yes |
| 2010 | Yes | Yes | Yes | Yes |
| 2011 | No | Yes | Yes | Yes |
| 2012 | Yes | Yes | Yes | Yes |
| 2013 | Yes | Yes | Yes | Yes |
| 2014 | Yes | Yes | Yes | Yes |
| 2015 | No | Yes | Yes | Yes |
| 2016 | Yes | Yes | Yes | Yes |



2012-2016 RA
Implementation
Period

Figure 9: Attainment of adopted chlorophyll-a thresholds (1974- 2016) in the four major bay segments. Green (yes) indicates that average annual chlorophyll-a thresholds were met; red (no) indicates that threshold levels were not met. Data source: EPCHC.



Table 2: Demonstration of reasonable assurance assessment steps for Old Tampa Bay. Green and yellow squares indicate outcomes of decision points outlined in the NMC's reasonable assurance assessment framework.

| Bay Segment Reasonable Assurance Assessment Steps | DATA USED TO ASSESS ANNUAL REASONABLE ASSURANCE | | | | | OUTCOME |
|--|---|---------------|---------------|-----------------|---------------|--|
| | Year 1 (2012) | Year 2 (2013) | Year 3 (2014) | Year 4 (2015) | Year 5 (2016) | |
| NMC Action 1: Determine if observed chlorophyll-a exceeds FDEP threshold of 9.3 µg/L | 7.8 µg/L (No) | 8.7 µg/L (No) | 7.9 µg/L (No) | 10.7 µg/L (Yes) | 9.0 µg/L (No) | One year (2015) above threshold, not necessary for NMC Actions 2-5, as 2016 results returned to below threshold. |
| NMC Action 2: Determine if any observed chlorophyll-a exceedances occurred for 2 consecutive years | No | No | No | No | No | Concurrent years with threshold exceedances did not occur, not necessary for NMC Actions 3-5 |
| NMC Action 3: Determine if observed hydrologically-normalized total load exceeds federally-recognized TMDL of 486 tons/year | N/A | N/A | N/A | N/A | N/A | Not necessary due to observed water quality and seagrass conditions in the bay segment. |
| NMC Actions 4-5: Determine if any entity/source/facility specific exceedances of 5-yr average allocation occurred during implementation period | | | | | | Not necessary when chlorophyll-a thresholds met. |

Table 3: Demonstration of reasonable assurance assessment steps for Hillsborough Bay. Green and yellow squares indicate outcomes of decision points outlined in the NMC's reasonable assurance assessment framework.

| Bay Segment Reasonable Assurance Assessment Steps | DATA USED TO ASSESS ANNUAL REASONABLE ASSURANCE | | | | | OUTCOME |
|--|---|----------------|----------------|---------------|----------------|---|
| | Year 1 (2012) | Year 2 (2013) | Year 3 (2014) | Year 4 (2015) | Year 5 (2016) | |
| NMC Action 1: Determine if observed chlorophyll-a exceeds FDEP threshold of 15.0 µg/L | 12.6 µg/L (No) | 12.9 µg/L (No) | 13.1 µg/L (No) | 9.0 µg/L (No) | 11.4 µg/L (No) | All years below threshold, not necessary for NMC Actions 2-5 |
| NMC Action 2: Determine if any observed chlorophyll-a exceedances occurred for 2 consecutive years | No | No | No | No | No | All years met threshold, not necessary for NMC Actions 3-5 |
| NMC Action 3: Determine if observed hydrologically-normalized total load exceeds federally-recognized TMDL of 1451 tons/year | N/A | N/A | N/A | N/A | N/A | Not necessary due to observed water quality and seagrass conditions in the bay segment. |
| NMC Actions 4-5: Determine if any entity/source/facility specific exceedances of 5-yr average allocation occurred during implementation period | | | | | | Not necessary when chlorophyll-a thresholds met. |

Table 4: Demonstration of reasonable assurance assessment steps for Middle Tampa Bay. Green and yellow squares indicate outcomes of decision points outlined in the NMC's reasonable assurance assessment framework.

| Bay Segment Reasonable Assurance Assessment Steps | DATA USED TO ASSESS ANNUAL REASONABLE ASSURANCE | | | | | Comment |
|--|---|---------------|---------------|---------------|---------------|---|
| | Year 1 (2012) | Year 2 (2013) | Year 3 (2014) | Year 4 (2015) | Year 5 (2016) | |
| NMC Action 1: Determine if observed chlorophyll-a exceeds FDEP threshold of 8.5 µg/L | 7.8 µg/L (No) | 6.8 µg/L (No) | 6.8 µg/L (No) | 8.1 µg/L (No) | 5.7 µg/L (No) | All years below threshold, not necessary for NMC Actions 2-5 |
| NMC Action 2: Determine if any observed chlorophyll-a exceedances occurred for 2 consecutive years | No | No | No | No | No | All years met threshold, not necessary for NMC Actions 3-5 |
| NMC Action 3: Determine if observed hydrologically-normalized total load exceeds federally-recognized TMDL of 799 tons/year | N/A | N/A | N/A | N/A | N/A | Not necessary due to observed water quality and seagrass conditions in the bay segment. |
| NMC Actions 4-5: Determine if any entity/source/facility specific exceedances of 5-yr average allocation occurred during implementation period | | | | | | Not necessary when chlorophyll-a threshold and TMDL target met |



Table 5: Demonstration of reasonable assurance assessment steps for Lower Tampa Bay. Green and yellow squares indicate outcomes of decision points outlined in the NMC's reasonable assurance assessment framework.

| Bay Segment Reasonable Assurance Assessment Steps | DATA USED TO ASSESS ANNUAL REASONABLE ASSURANCE | | | | | OUTCOME |
|--|---|---------------|---------------|---------------|---------------|---|
| | Year 1 (2012) | Year 2 (2013) | Year 3 (2014) | Year 4 (2015) | Year 5 (2016) | |
| NMC Action 1: Determine if observed chlorophyll-a exceeds FDEP threshold of 5.1 µg/L | 4.4 µg/L (No) | 3.9 µg/L (No) | 3.4 µg/L (No) | 3.9 µg/L (No) | 3.0 µg/L (No) | All years below threshold so far, not necessary for NMC Actions 2-5 |
| NMC Action 2: Determine if any observed chlorophyll-a exceedances occurred for 2 consecutive years | No | No | No | No | No | All years met threshold, not necessary for NMC Actions 3-5 |
| NMC Action 3: Determine if observed hydrologically-normalized total load exceeds federally-recognized TMDL of 349 tons/year | N/A | N/A | N/A | N/A | N/A | Not necessary due to observed water quality and seagrass conditions in the bay segment. |
| NMC Actions 4-5: Determine if any entity/source/facility specific exceedances of 5-yr average allocation occurred during implementation period | | | | | | Not necessary when chlorophyll-a threshold and TMDL target met |

Table 6: Demonstration of reasonable assurance assessment steps for Remainder of Lower Tampa Bay. Green and yellow squares indicate outcomes of decision points outlined in the NMC's reasonable assurance assessment framework.

| Bay Segment Reasonable Assurance Assessment Steps | DATA USED TO ASSESS ANNUAL REASONABLE ASSURANCE | | | | | OUTCOME |
|--|---|---------------|---------------|---------------|---------------|---|
| | Year 1 (2012) | Year 2 (2013) | Year 3 (2014) | Year 4 (2015) | Year 5 (2016) | |
| NMC Action 1: Determine if observed chlorophyll-a exceeds FDEP threshold of 5.1 µg/L for Lower Tampa Bay proper | 4.4 µg/L (No) | 3.9 µg/L (No) | 3.4 µg/L (No) | 3.9 µg/L (No) | 3.0 µg/L (No) | All years below threshold so far, not necessary for NMC Actions 2-5 |
| NMC Action 2: Determine if any observed chlorophyll-a exceedances occurred for 2 consecutive years | No | No | No | No | No | All years met threshold, not necessary for NMC Actions 3-5 |
| NMC Action 3: Determine if observed hydrologically-normalized total load exceeds RA target load of 629 tons/year | N/A | N/A | N/A | N/A | N/A | Not necessary due to observed water quality and seagrass conditions in the bay segment. |
| NMC Actions 4-5: Determine if any entity/source/facility specific exceedances of 5-yr average allocation occurred during implementation period | | | | | | Not necessary when chlorophyll-a threshold and TMDL target met |



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

3.a. Participating Entities

2017 RA Update:

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
- Pasco County (joined in 2016)
- Florida Dept. 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)

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

2017 NMC Public Partners

- Tampa Bay Estuary Program
- U.S. Environmental Protection Agency
- Florida Department of Environmental Protection
- Florida Department of Agriculture & Consumer Services
- Florida Department of Transportation
- Southwest Florida Water Management District
- MacDill Air Force Base
- Tampa Bay Regional Planning Council
- Tampa Bay Water
- Tampa Port Authority
- Environmental Protection Commission of Hillsborough County
- Hillsborough County
- Manatee County
- Pasco County
- Pinellas County
- Polk County
- Sarasota County
- City of Bradenton
- City of Clearwater
- City of Gulfport
- City of Lakeland
- City of Largo
- City of Mulberry
- City of Oldsmar
- City of Palmetto
- City of Plant City
- City of Safety Harbor
- City of St. Petersburg
- City of Tampa

2017 NMC Private Partners

- Busch Entertainment
- Lowry Park Zoo
- Mosaic Company
- Tampa Port Services, LLC
- Kinder Morgan Bulk Terminals, Inc.
- HRK Holdings, Inc.
- Tampa Electric Company
- Duke Energy Corporation
- CSX Transportation
- Tropicana Products, Inc.
- Kerry I&F Contracting
- Trademark Nitrogen
- Yara North America
- Alafia Preserve, LLC
- Eagle Ridge, LLC
- LDC Donaldson Knoll Investments, LLC



3.b. Existing and proposed management activities

2017 RA Update: During the 2012-2016 RA implementation period, partners entered information on completed and planned TN load reduction projects into the on-line, Tampa Bay Action Plan Database (<http://apdb.tbepetech.org>). Consortium participants and regulators have direct access to input and view projects contained in the database. Various reporting tools are available online, and a GIS mapping interface for projects that contain location information is available (Figure 10). Over the 2012-2016 RA implementation period, 51 projects were implemented in the Tampa Bay watershed by Consortium participants. Cumulatively, for those projects that have load reduction estimates associated with them, a TN load reduction of **147.3** tons/year was estimated over the 2012-2016 period (Table 7). This amount would be even larger if estimates were developed for all projects.

In addition, Consortium participants continue to look towards the future and have plans to implement or continue to implement a number of projects post-2016. Table 8 lists projects that are being continued by Consortium participants and include education components. Table 9 lists projects that are planned to be initiated/completed in specific years or are in progress of being completed during the 2017-2021 RA Implementation period. Combining information from both tables' projects where load reductions can be estimated, ~ **482.8** tons/year of TN is estimated to be precluded from entering the bay in the future.

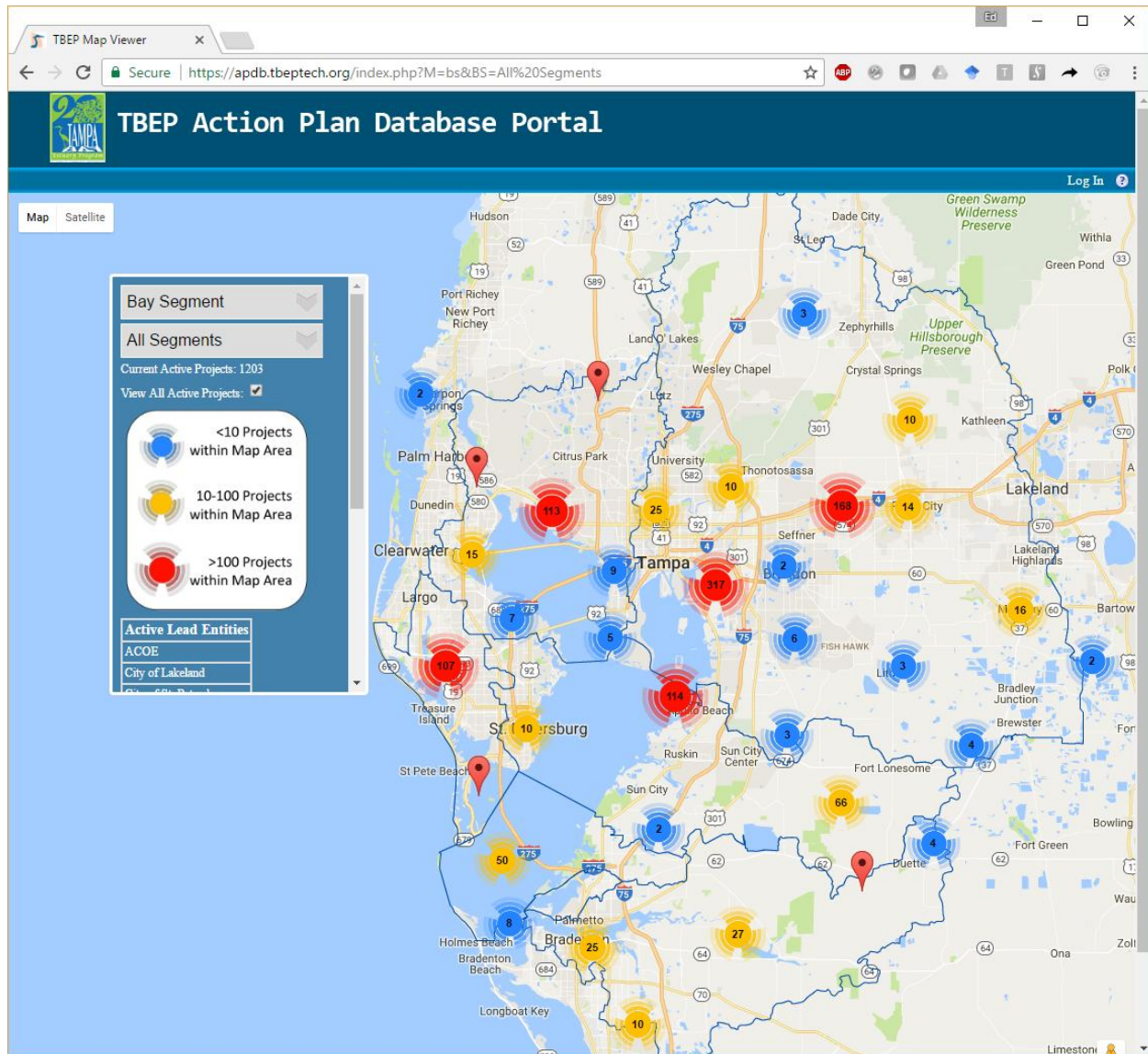


Figure 10: Screenshot of the online Tampa Bay Action Plan Database (<http://apdb.tbep.tech.org>) showing the approximate spatial locations of projects implemented in the watershed from 1990 to date.



Table 7: Listing of completed load reduction projects included in the Tampa Bay Action Plan Database during the 2012-2016 RA Implementation Period (as of 10/18/2017).

| Project ID: | Project Name: | Bay Segment: | Lead Entity: | Completion Date: | TP (lbs/yr): | TN (lbs/yr): |
|--|--|---------------------|------------------------|-------------------------|------------------------|-------------------------|
| 1403 | Street Sweeping – Long Branch & Allens Creek | Old Tampa Bay | City of Largo | 2016 | 309.4 | 482.6 |
| 1404 | Filter Baskets- Allens Creek Watershed | Old Tampa Bay | City of Largo | 2013 | TBD | TBD |
| 1405 | Nitrogen Reduction Evaluation | Old Tampa Bay | City of Largo | 2016 | TBD | TBD |
| 1371 | Street Sweeping | Old Tampa Bay | City of Safety Harbor | 2012-2016 | 115.2 | 180.6 |
| 1309 | Street Sweeping - Old Tampa Bay | Old Tampa Bay | City of St. Petersburg | 2012-2016 | TBD | 136 |
| 1410 | MLKing Ph 2 at 83 Ave N | Old Tampa Bay | City of St. Petersburg | 2015 | 15.5 | 130.7 |
| 1304 | Annual Street Sweeping Maintenance BMP | Old Tampa Bay | City of Tampa | 2012-2016 | TBD | TBD |
| 1054 | North Dale Mabry Highway Stormwater Retrofit & Wetland Restoration | Old Tampa Bay | FDOT | 2012 | TBD | 900 |
| 55 | Lower Sweetwater Creek Stormwater Retrofits | Old Tampa Bay | Hillsborough County | 2012 | 4.2 | 17.3 |
| 1313 | Street Sweeping - Hillsborough County Total | OTB + HB | Hillsborough County | 2012-2016 | TBD | 1958 |
| 135 | Lake Tarpon Stormwater Treatment (Areas 44/47) | Old Tampa Bay | Pinellas County | 2014 | 202.7 | 559.2 |
| 1365 | Bridgeway Acres Pond A Dredging | Old Tampa Bay | Pinellas County | 2012 | TBD | 5212.8 |
| 1372 | Street Sweeping | Old Tampa Bay | Pinellas County | 2012 | 271 | 422 |
| 1376 | Stormwater Catch Basin Cleanouts | Old Tampa Bay | Pinellas County | 2012 | 719 | 1170 |
| 925 | Lake Tarpon Water Quality Area 6 Alum Treatment | Old Tampa Bay | Pinellas Co. & FDOT | 2012 | 1313 | 5055.6 |
| 1236 | Pond project | Old Tampa Bay | Duke Energy, Inc. | 2013 | TBD | 10600 |
| Old Tampa Bay Subtotal | | | | | 2950 | 26824.8 |
| 1065 | City of Plant City proposed reuse by reclaimed water irrigation at Walden Lake Golf course | Hillsborough Bay | City of Plant City | 2012 | 205.2 | 1600.2 |
| 1314 | Street Sweeping - City of Plant City | Hillsborough Bay | City of Plant City | 2012-2016 | TBD | 434.6 |
| 1223 | North Tampa Closed Basins - Phase I | Hillsborough Bay | City of Tampa | 2012 | 3 | 10 |
| 1409 | Street Sweeping Program | Hillsborough Bay | City of Tampa | 2016 | 4363 | 6804 |
| 1182, 1184, 1187, 1189, 1190 | Agricultural BMPs | Hillsborough Bay | FDEP/FDACS | 2012 | TBD | TBD |
| 1317 | Street Sweeping in Alafia River Basin | Hillsborough Bay | FDOT | 2013 | TBD | TBD |
| 1366 | SHARP | Hillsborough Bay | Hillsborough County | 2016 | 2355.5 | 17096.4 |
| 1327 | Itchepakesassa Creek Wetland Treatment Project | Hillsborough Bay | Polk County | 2013 | 6528 | 3760 |
| 1083 | Robles Park Water Quality and Natural Systems Improvement | Hillsborough Bay | SWFWMD | 2016 | 84 | 143 |
| 1067 | Tampa Bay Regional Surface Water Treatment Plant Expansion (Alafia River) | Hillsborough Bay | Tampa Bay Water | 2016 | 0 | 47880 |
| 1078 | Tampa Bay Regional Surface Water Treatment Plant Expansion (TBC/Hillsborough River) | Hillsborough Bay | Tampa Bay Water | 2016 | 0 | 121438 |
| Hillsborough Bay Subtotal | | | | | 13538.7 | 199166.2 |
| 1326 | SWIM Phase 3 Ecosystem Restoration | Middle Tampa Bay | MacDill AFB | 2013 | 192.9 | 965.9 |
| 1374 | Street Sweeping | Middle Tampa Bay | Pinellas County | 2012-2016 | 17 | 27 |
| 1377 | Stormwater Catch Basin Cleanouts | Middle Tampa Bay | Pinellas County | 2012-2016 | 45 | 74 |
| 1414 | Tinney Creek at 94th Ave N | Middle Tampa Bay | City of St. Petersburg | 2016 | 10.9 | 80.4 |
| Middle Tampa Bay Subtotal | | | | | 265.8 | 1147.3 |

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| Project ID: | Project Name: | Bay Segment: | Lead Entity: | Completion Date: | TP (lbs/yr): | TN (lbs/yr): |
|-----------------------------------|--|---------------------|------------------------|-------------------------|----------------------|-----------------------|
| 1307 | Street Sweeping - Boca Ciega Bay | Boca Ciega Bay | City of St. Petersburg | 2012 | TBD | 345 |
| 1412 | Golf Creek at 13th Ave N | Boca Ciega Bay | City of St. Petersburg | 2013 | 14.8 | 109.3 |
| 1423 | Jungle Lake Outfall at 27th Ave N | Boca Ciega Bay | City of St. Petersburg | 2012 | 4.4 | 32.4 |
| 1424 | Jungle Lake NE at Walter Fuller Park | Boca Ciega Bay | City of St. Petersburg | 2013 | 3.6 | 26.6 |
| 923 | Seminole Bypass Canal Regional Stormwater Treatment Facility | Boca Ciega Bay | Pinellas County | 2012 | TBD | 18339 |
| 924 | Alum Treatment of Five Priority Subbasins Discharging to Lake Seminole | Boca Ciega Bay | Pinellas County | 2012 | 4222 | 43812 |
| 1265 | Lealman Area Drainage Improvements | Boca Ciega Bay | Pinellas County | 2012 | 77 | 341 |
| 1266 | Bear Creek Channel Improvements Phase II | Boca Ciega Bay | Pinellas County | 2012 | TBD | TBD |
| 1267 | Bear Creek Channel Improvements Phase III | Boca Ciega Bay | Pinellas County | 2012 | TBD | TBD |
| 1271 | Silver Lake Sediment Inactivation | Boca Ciega Bay | PC & FDOT | 2014 | TBD | TBD |
| 1375 | Street Sweeping | Boca Ciega Bay | Pinellas County | 2012-2016 | 333 | 519 |
| 1378 | Stormwater Catch Basin Cleanouts | Boca Ciega Bay | Pinellas County | 2012 | 884 | 1439 |
| 507 | Clam Bayou Stormwater Treatment and Habitat Restoration (phase 3) | Boca Ciega Bay | SWFWMD | 2012 | 93.7 | 1372 |
| 1007 | Clam Bayou Stormwater Treatment North | Boca Ciega Bay | SWFWMD | 2012 | 41.7 | 952 |
| 1008 | Clam Bayou Stormwater Treatment South | Boca Ciega Bay | SWFWMD | 2012 | 15.1 | 272 |
| 714, 957 | Wares Creek Flood Reduction & Dredging | Manatee River | Manatee County | 2015 | TBD | TBD |
| 1165 | BRASWA | Manatee River | Manatee County | 2012 | TBD | TBD |
| 1260 | Duette Preserve Wetlands Restoration | Manatee River | Manatee County | 2015 | 0 | 0 |
| 1261 | Bennett Park | Manatee River | Manatee County | 2012 | TBD | TBD |
| 1354 | Manatee County SEWRF Upgrades | Manatee River | Manatee County | 2016 | 0 | 0 |
| Remainder of LTB Subtotal | | | | | 5689.3 | 67559.3 |
| Tampa Bay Totals (lbs/yr) | | | | | 22443.8 | 294698 |
| Tampa Bay Totals (tons/yr) | | | | | 11.2 | 147.3 |



Table 8: Listing of ongoing and/or education projects submitted by Consortium participants into the online Tampa Bay Action Plan Database (<http://apdb.tbepetech.org>) that are anticipated to be continued during the 2017-2021 RA Implementation period.

| Bay Segment | Lead Entity | Action Plan ID | Project Name/Description | Completion Year/Implementation Period | Education Credits? | Anticipated N Load Offset (lbs./yr) | Estimated Future Costs |
|------------------|--------------------|----------------|---|---------------------------------------|--------------------|-------------------------------------|------------------------|
| All Segments | SWFWMD | 580 | Water Resources Education Programs for Public Schools | Ongoing | Yes | | \$750,000 |
| All Segments | SWFWMD | 580 | Water Resources Education Programs for Public Schools | Ongoing | Yes | | |
| All Segments | SWFWMD | 589 | Water Conservation - Toilet Rebates | Ongoing | | | \$2,600,000 |
| All Segments | SWFWMD | 594 | Virtual Watershed Excursion | Ongoing | Yes | | |
| All Segments | SWFWMD | 697 | "Water Conservation: Reflect, Connect, Celebrate" | Ongoing | Yes | | |
| All Segments | SWFWMD | 824 | Water Conservation Messaging | Ongoing | Yes | | \$500,000 |
| All Segments | SWFWMD | 837 | Water Conservation Hotel and Motel Program (Water CHAMP) | Ongoing | | | \$27,000 |
| All Segments | SWFWMD | 1426 | Florida Water Star | Ongoing | | | |
| All Segments | Tampa Bay Water | 821 | Community Water-Wise Awards Program for Hillsborough, Pasco and Pinellas Counties | Ongoing | | | \$35,000 |
| All Segments | Tampa Bay Water | 861 | FL Friendly Landscape Program and Assistance with Irrigation-Landscape Ordinances | Ongoing | | | \$456,854 |
| All Segments | Tampa Bay Water | 862 | Landscape and Irrigation Permit and Code Enforcement Training Program | Ongoing | Yes | | |
| All Segments | Tampa Bay Water | 863 | Smart Water Application Technologies Workshop and Training | Ongoing | Yes | | \$5,000 |
| All Segments | Tampa Bay Water | 867 | Source Water Protection - Land Use and Development Review Program | Ongoing | Yes | | \$100,000 |
| Hillsborough Bay | City of Lakeland | 1060 | Lakeland Water to TECO | Ongoing | | | \$75,000 |
| Hillsborough Bay | City of Lakeland | 1082 | Septic Tank Abandonment or Connection to Sanitary Sewer | Ongoing | | | |
| Hillsborough Bay | City of Plant City | 1164 | Dog Waste Signs | Ongoing | Yes | | \$900 |
| Hillsborough Bay | City of Plant City | 1275 | City of Plant City Environmental Education Program | Ongoing | Yes | | |
| Hillsborough Bay | City of Plant City | 1284 | Plant City Stormwater Inlet Marking Program | Ongoing | Yes | | |
| Hillsborough Bay | City of Plant City | 1285 | Plant City Lift Station Auxiliary Power Program | Ongoing | | | |
| Hillsborough Bay | City of Plant City | 1286 | Plant City Lift Station Maintenance | Ongoing | | | |
| Hillsborough Bay | City of Plant City | 1287 | Plant City Lift Station Security Program | Ongoing | | | |
| Hillsborough Bay | City of Plant City | 1288 | Plant City Grease Management Program | Ongoing | | | |
| Hillsborough Bay | City of Plant City | 1289 | Plant City Inflow and Infiltration (I&I) Program | Ongoing | | | |
| Hillsborough Bay | City of Plant City | 1290 | Lake Thonotosassa Diagnostic Assessment and Water Quality Treatment Project | Ongoing | | | |
| Hillsborough Bay | City of Plant City | 1291 | Plant City Spill Prevention/Response Program | Ongoing | | | |
| Hillsborough Bay | City of Plant City | 1292 | Plant City Sewer Line Maintenance Program | Ongoing | | | |
| Hillsborough Bay | City of Plant City | 1314 | Street Sweeping - City of Plant City | Ongoing | | | |
| Hillsborough Bay | City of Tampa | 149 | Assist businesses in implementing site management practices to reduce stormwater runoff | Ongoing | Yes | | |
| Hillsborough Bay | City of Tampa | 161 | Expand Central Sewer Service to areas served by septic systems | Ongoing | | 434.6 | |

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| Bay Segment | Lead Entity | Action Plan ID | Project Name/Description | Completion Year/Implementation Period | Education Credits? | Anticipated N Load Offset (lbs./yr) | Estimated Future Costs |
|------------------|----------------------|------------------------------|---|---------------------------------------|--------------------|-------------------------------------|------------------------|
| Hillsborough Bay | City of Tampa | 174 | Encourage waterfront residents to enhance shorelines and limit runoff from yards | Ongoing | Yes | | |
| Hillsborough Bay | City of Tampa | 974 | Reduce Occurrences of Municipal Sewer Overflows to Tampa Bay | Ongoing | | | |
| Hillsborough Bay | City of Tampa | 1293 | City of Tampa Interactive Watershed Atlas | Ongoing | Yes | | |
| Hillsborough Bay | City of Tampa | 1297 | City of Tampa Riverwalk Project | Ongoing | | | |
| Hillsborough Bay | City of Tampa | 1409 | Street Sweeping Program | Ongoing | | | |
| Hillsborough Bay | City of Tampa | 16, 148 | Continue support for Florida Yards & Neighborhoods and similar pollution prevention programs. | Ongoing | Yes | | |
| Hillsborough Bay | FDEP/FDACS | 1182, 1184, 1187, 1189, 1190 | Agricultural BMPs ¹¹ | Ongoing | | | |
| Hillsborough Bay | FDEP/FDACS | 41, 42 | Land Limited BMPs For Dairy Farms In Areas Of Urbanization Within The Hillsborough R. Watershed | Ongoing | Yes | | |
| Hillsborough Bay | Hillsborough County | 22 | Florida Yards And Neighborhood Program | Ongoing | Yes | | |
| Hillsborough Bay | Hillsborough County | 23 | Supplements To FY&N | Ongoing | Yes | | |
| Hillsborough Bay | Hillsborough County | 288 | Support implementation of BMPs | Ongoing | | | |
| Hillsborough Bay | Hillsborough County | 570 | Hillsborough County Adopt-A-Pond | Ongoing | Yes | | \$40,000 |
| Hillsborough Bay | Hillsborough County | 591 | Hillsborough Lake Management Program (LaMP) | Ongoing | Yes | | \$240,000 |
| Hillsborough Bay | Pasco County | 1300 | New River and Hillsborough River Watershed Management Plans in Pasco County | Ongoing | | | |
| Hillsborough Bay | Polk County | 1301 | Drainage Maintenance on Blackwater Creek | Ongoing | | | |
| Hillsborough Bay | Polk County | 1302 | Illicit Discharge Complaint Investigation | Ongoing | | | |
| Hillsborough Bay | Polk County | 1303 | Routine Maintenance Erosion Control | Ongoing | | | |
| Hillsborough Bay | SWFWMD | 1425 | Springs Education Campaign | Ongoing | | | |
| Hillsborough Bay | SWFWMD, FDOT | 534 | Palm River Restoration | Ongoing | | | \$4,400,000 |
| Hillsborough Bay | Tampa Bay Water | 869 | Tampa Bypass Canal Water Quality Protection Plan | Ongoing | | | \$75,000 |
| Hillsborough Bay | Tampa Bay Water | 1067 | Tampa Bay Regional Surface Water Treatment Plant & Expansion (Alafia River) | Ongoing | | 38812 | |
| Hillsborough Bay | Tampa Bay Water | 1078 | Tampa Bay Regional Surface Water Treatment Plant & Expansion (Tampa By-Pass Canal) | Ongoing | | 40537 | |
| Hillsborough Bay | Tampa Bay Water | 1402 | Tampa Bay Water Stormwater Systems | Ongoing | | | |
| Hillsborough Bay | Tampa Port Authority | 394 | Stormwater Pollution Prevention Plan (SWPPP) | Ongoing | Yes | | \$300,000 |

¹¹ Updated information on FDACS BMP enrollment through 2016 can be found in [TBEP's 2017 CCMP Update, Action SW-8](#).



| Bay Segment | Lead Entity | Action Plan ID | Project Name/Description | Completion Year/Implementation Period | Education Credits? | Anticipated N Load Offset (lbs./yr) | Estimated Future Costs |
|------------------|------------------------|----------------|--|---------------------------------------|--------------------|-------------------------------------|------------------------|
| Hillsborough Bay | Tampa Port Authority | 397 | Reduce pollution from recreational boaters | Ongoing | Yes | | \$75,000 |
| Hillsborough Bay | Tampa Port Authority | 402 | Encourage waterfront homeowners to enhance shorelines and limit runoff | Ongoing | Yes | | \$16,000 |
| Hillsborough Bay | Tampa Port Authority | 995 | Support for Multiple Public Education Projects | Ongoing | Yes | | \$15,000 |
| Lower Tampa Bay | City of St. Petersburg | 369, 468 | Expand and Improve Reclaimed Water System | Ongoing | | | \$9,500,000 |
| Lower Tampa Bay | Manatee County | 90 | Florida Yards And Neighborhoods Program | Ongoing | Yes | 845.6 | \$750,000 |
| Lower Tampa Bay | Pinellas County | 69 | FY & N Florida Schoolyard Program | Ongoing | Yes | | |
| Lower Tampa Bay | Pinellas County | 70 | Florida Yards & Neighborhoods Program | Ongoing | Yes | | \$158,500 |
| Lower Tampa Bay | Pinellas County | 71 | FY & N Concepts For County Buildings And Lands | Ongoing | Yes | | |
| Lower Tampa Bay | Pinellas County | 331 | Florida Yards & Neighborhoods (FY&N) and similar pollution prevention programs | Ongoing | Yes | | \$175,000 |
| Lower Tampa Bay | Pinellas County | 332 | Training in Green Industries BMPs | Ongoing | Yes | | |
| Lower Tampa Bay | Pinellas County | 333 | FY&N classes, Water-Wise Awards and Workshops | Ongoing | Yes | | |
| Lower Tampa Bay | Pinellas County | 340 | Expand sewer service to septic tank users in selected areas | Ongoing | | | \$4,000,000 |
| Middle Tampa Bay | City of St. Petersburg | 364 | Support for FY&N Program | Ongoing | Yes | | \$15,000 |
| Middle Tampa Bay | City of St. Petersburg | 365 | Assist businesses in implementing BMPs to reduce stormwater pollution | Ongoing | Yes | | \$50,000 |
| Middle Tampa Bay | City of St. Petersburg | 370 | Expand central sewer system to areas served by septic tanks | Ongoing | | | \$75,000 |
| Middle Tampa Bay | City of St. Petersburg | 373 | Identify overflow areas and address them in their maintenance plan | Ongoing | | | \$8,000,000 |
| Middle Tampa Bay | City of St. Petersburg | 756 | St. Petersburg Municipal Marina – Clean Marina Program | Ongoing | Yes | | \$37,500 |
| Middle Tampa Bay | City of St. Petersburg | 1004 | Green City | Ongoing | Yes | | |
| Middle Tampa Bay | City of St. Petersburg | 1305 | Street Sweeping – Middle Tampa Bay | Ongoing | | 500 | |
| Middle Tampa Bay | City of St. Petersburg | 369, 468 | Expand and Improve Reclaimed Water System | Ongoing | | | |
| Middle Tampa Bay | Hillsborough County | 570 | Hillsborough County Adopt-A-Pond | Ongoing | Yes | | |
| Middle Tampa Bay | Hillsborough County | 1068 | Hillsborough County Pet Waste Campaign | Ongoing | Yes | | |
| Middle Tampa Bay | Pinellas County | 69 | FY & N Florida Schoolyard Program | Ongoing | Yes | | |
| Middle Tampa Bay | Pinellas County | 70 | Florida Yards & Neighborhoods Program | Ongoing | Yes | | |
| Middle Tampa Bay | Pinellas County | 71 | FY & N Concepts For County Buildings And Lands | Ongoing | Yes | | |
| Middle Tampa Bay | Pinellas County | 331 | Florida Yards & Neighborhoods (FY&N) and similar pollution prevention programs | Ongoing | Yes | | |
| Middle Tampa Bay | Pinellas County | 332 | Training in Green Industries BMPs | Ongoing | Yes | | |

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| Bay Segment | Lead Entity | Action Plan ID | Project Name/Description | Completion Year/Implementation Period | Education Credits? | Anticipated N Load Offset (lbs./yr) | Estimated Future Costs |
|------------------|------------------------|----------------|---|---------------------------------------|--------------------|-------------------------------------|------------------------|
| Middle Tampa Bay | Pinellas County | 333 | FY&N classes, Water-Wise Awards and Workshops | Ongoing | Yes | | |
| Middle Tampa Bay | Pinellas County | 340 | Expand sewer service to septic tank users in selected areas | Ongoing | | 56 | |
| Middle Tampa Bay | Pinellas County | 1380 | Street Sweeping Improved | Ongoing | | | |
| Middle Tampa Bay | Pinellas County | 1390 | Pinellas Co Fertilizer Ordinance | Ongoing | Yes | | |
| Middle Tampa Bay | Pinellas County | 1391 | Pinellas Co. Pet Waste Ordinance | Ongoing | Yes | | |
| Middle Tampa Bay | Pinellas County | 1392 | Pinellas Co. Landscape Ordinance | Ongoing | Yes | | |
| Middle Tampa Bay | Pinellas County | 1393 | Pinellas Co. Adopt-A-Pond Program | Ongoing | Yes | | |
| Middle Tampa Bay | Pinellas County | 1394 | Tampa Bay Water Atlas | Ongoing | Yes | | |
| Old Tampa Bay | City of Clearwater | 194 | Continue support for FY&N | Ongoing | Yes | | |
| Old Tampa Bay | City of Clearwater | 195 | Assist business with implementation of BMP's | Ongoing | Yes | | |
| Old Tampa Bay | City of Clearwater | 196 | Promote use of BMP's on City-owned facilities | Ongoing | Yes | | |
| Old Tampa Bay | City of Clearwater | 198 | Encourage alternative stormwater treatment methods | Ongoing | Yes | | |
| Old Tampa Bay | City of Clearwater | 203 | Expansion of central sewer collection (septic tank elimination) | Ongoing | | | \$10,000,000 |
| Old Tampa Bay | City of Clearwater | 210 | Sewer System Evaluation Study and Self Audit Program | Ongoing | | | \$2,800,000 |
| Old Tampa Bay | City of Clearwater | 116, 202 | Development and implementation of a City-wide plan for expansion of reclaimed water service | Ongoing | | | |
| Old Tampa Bay | City of Largo | 1357 | Stormwater Education and Outreach | Ongoing | Yes | 482.6 | |
| Old Tampa Bay | City of Largo | 1403 | Street Sweeping – Long Branch & Allen's Creek | Ongoing | | | |
| Old Tampa Bay | City of Largo | 1406 | Promote use of BMPS on City-Owned Facilities | Ongoing | | | |
| Old Tampa Bay | City of Largo | 1407 | Require Water Quality Treatment for All New Development | Ongoing | | 180.6 | |
| Old Tampa Bay | City of Safety Harbor | 1371 | Street Sweeping | Ongoing | | 136 | \$45,000 |
| Old Tampa Bay | City of St. Petersburg | 1309 | Street Sweeping - Old Tampa Bay | Ongoing | | | |
| Old Tampa Bay | City of St. Petersburg | 369, 468 | Expand and Improve Reclaimed Water System | Ongoing | | | |
| Old Tampa Bay | City of Tampa | 148 | Continue support for Florida Yards & Neighborhoods and similar pollution prevention programs. | Ongoing | Yes | | |
| Old Tampa Bay | City of Tampa | 161 | Expand Central Sewer Service to areas served by septic systems | Ongoing | | | |
| Old Tampa Bay | City of Tampa | 974 | Reduce Occurrences of Municipal Sewer Overflows to Tampa Bay | Ongoing | | | |
| Old Tampa Bay | City of Tampa | 1017 | Bacteria at Ben T. Davis Beach | Ongoing | | | |
| Old Tampa Bay | City of Tampa | 1304 | Annual Street Sweeping Maintenance BMP | Ongoing | | | \$175,000 |

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| Bay Segment | Lead Entity | Action Plan ID | Project Name/Description | Completion Year/Implementation Period | Education Credits? | Anticipated N Load Offset (lbs./yr) | Estimated Future Costs |
|---------------------------------|------------------------|----------------|---|---------------------------------------|--------------------|-------------------------------------|------------------------|
| Old Tampa Bay | Hillsborough County | 284 | Continue support for Florida Yards & Neighborhoods and similar pollution prevention programs. | Ongoing | Yes | | \$6,000 |
| Old Tampa Bay | Hillsborough County | 570 | Hillsborough County Adopt-A-Pond | Ongoing | Yes | | |
| Old Tampa Bay | Pinellas County | 69 | FY & N Florida Schoolyard Program | Ongoing | Yes | | |
| Old Tampa Bay | Pinellas County | 70 | Florida Yards & Neighborhoods Program | Ongoing | Yes | | |
| Old Tampa Bay | Pinellas County | 71 | FY & N Concepts For County Buildings And Lands | Ongoing | Yes | | |
| Old Tampa Bay | Pinellas County | 331 | Florida Yards & Neighborhoods (FY&N) and similar pollution prevention programs | Ongoing | Yes | | |
| Old Tampa Bay | Pinellas County | 332 | Training in Green Industries BMPs | Ongoing | Yes | | |
| Old Tampa Bay | Pinellas County | 333 | FY&N classes, Water-Wise Awards and Workshops | Ongoing | Yes | | |
| Old Tampa Bay | Pinellas County | 340 | Expand sewer service to septic tank users in selected areas | Ongoing | | | |
| Old Tampa Bay | Pinellas County | 831 | Brooker Creek Exhibits | Ongoing | Yes | 886 | |
| Old Tampa Bay | Pinellas County | 1379 | Street Sweeping Improved | Ongoing | | | |
| Old Tampa Bay | Pinellas County | 1390 | Pinellas Co Fertilizer Ordinance | Ongoing | Yes | | |
| Old Tampa Bay | Pinellas County | 1391 | Pinellas Co. Pet Waste Ordinance | Ongoing | Yes | | |
| Old Tampa Bay | Pinellas County | 1392 | Pinellas Co. Landscape Ordinance | Ongoing | Yes | | |
| Old Tampa Bay | Pinellas County | 1393 | Pinellas Co. Adopt-A-Pond Program | Ongoing | Yes | | |
| Old Tampa Bay | Pinellas County | 1394 | Tampa Bay Water Atlas | Ongoing | Yes | | |
| Old Tampa Bay | SWFWMD | 820 | Lake Tarpon - SWIM Plan Implementation | Ongoing | | | \$16,000 |
| Old Tampa Bay | SWFWMD | 832 | Brooker Creek Watershed Education | Ongoing | Yes | | \$75,000 |
| Old Tampa Bay | SWFWMD | 836 | Starkey Park Exhibits | Ongoing | Yes | 1958 | \$178,000 |
| Old Tampa Bay, Hillsborough Bay | Hillsborough County | 1313 | Street Sweeping – Total for County | Ongoing | | | \$375,000 |
| Remainder LTB | City of Largo | 1025 | Commercial User Program | Ongoing | | | |
| Remainder LTB | City of Largo | 1026 | Privately-owned collection and transmission system program | Ongoing | | | |
| Remainder LTB | City of Largo | 1045 | Stormwater Monitoring System | Ongoing | | | \$25,000 |
| Remainder LTB | City of St. Petersburg | 364 | Support for FY&N Program | Ongoing | Yes | | |
| Remainder LTB | City of St. Petersburg | 365 | Assist businesses in implementing BMPs to reduce stormwater pollution | Ongoing | Yes | | |
| Remainder LTB | City of St. Petersburg | 370 | Expand central sewer system to areas served by septic tanks | Ongoing | | | |
| Remainder LTB | City of St. Petersburg | 373 | Identify overflow areas and address them in their maintenance plan | Ongoing | | | |
| Remainder LTB | City of St. Petersburg | 999 | Tropicana Field Stormwater Enhancements and Education | Ongoing | Yes | 345 | \$818,500 |
| Remainder LTB | City of St. Petersburg | 1307 | Street Sweeping - Boca Ciega Bay | Ongoing | | | |
| Remainder LTB | City of St. Petersburg | 369, 468 | Expand and Improve Reclaimed Water System | Ongoing | | | |
| Remainder LTB | Manatee County | 956 | Visitors Center at Emerson Point Park | Ongoing | Yes | | \$800,000 |

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| Bay Segment | Lead Entity | Action Plan ID | Project Name/Description | Completion Year/Implementation Period | Education Credits? | Anticipated N Load Offset (lbs./yr) | Estimated Future Costs |
|-------------------------|-----------------|----------------|--|---------------------------------------|--------------------|-------------------------------------|------------------------|
| Remainder LTB | Manatee County | 970 | Clean Marina Requirement | Ongoing | Yes | | \$2,500 |
| Remainder LTB | Pinellas County | 69 | FY & N Florida Schoolyard Program | Ongoing | Yes | | |
| Remainder LTB | Pinellas County | 70 | Florida Yards & Neighborhoods Program | Ongoing | Yes | | |
| Remainder LTB | Pinellas County | 71 | FY & N Concepts For County Buildings And Lands | Ongoing | Yes | | |
| Remainder LTB | Pinellas County | 331 | Florida Yards & Neighborhoods (FY&N) and similar pollution prevention programs | Ongoing | Yes | | |
| Remainder LTB | Pinellas County | 332 | Training in Green Industries BMPs | Ongoing | Yes | | |
| Remainder LTB | Pinellas County | 333 | FY&N classes, Water-Wise Awards and Workshops | Ongoing | Yes | | |
| Remainder LTB | Pinellas County | 340 | Expand sewer service to septic tank users in selected areas | Ongoing | | | |
| Remainder LTB | Pinellas County | 671 | Shell Key Preserve Management Plan | Ongoing | | | \$2,000 |
| Remainder LTB | Pinellas County | 736 | Pinellas County Adopt-A-Pond | Ongoing | Yes | 1090 | \$27,500 |
| Remainder LTB | Pinellas County | 1381 | Street Sweeping Improved | Ongoing | | | |
| Remainder LTB | Pinellas County | 1390 | Pinellas Co Fertilizer Ordinance | Ongoing | Yes | | |
| Remainder LTB | Pinellas County | 1391 | Pinellas Co. Pet Waste Ordinance | Ongoing | Yes | | |
| Remainder LTB | Pinellas County | 1392 | Pinellas Co. Landscape Ordinance | Ongoing | Yes | | |
| Remainder LTB | Pinellas County | 1393 | Pinellas Co. Adopt-A-Pond Program | Ongoing | Yes | | |
| Remainder LTB | Pinellas County | 1394 | Tampa Bay Water Atlas | Ongoing | Yes | | |
| Remainder LTB | Sarasota County | 1243 | Florida Yards & Neighborhoods | Ongoing | Yes | 9225.5 | |
| Remainder LTB | Sarasota County | 1246 | Benderson Park Rowing Facility | Ongoing | | | |
| Remainder LTB | Sarasota County | 1247 | Illicit Discharge Detection & Elimination | Ongoing | | | |
| Remainder LTB | SWFWMD | 840 | South Cross Bayou Water Reclamation Facility Tour and Education Program | Ongoing | Yes | 6804 | \$95,000 |
| Tampa Bay Totals | | | | | | 102293 | \$47,912,254 |

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Table 9: Listing of future planned projects submitted by Consortium participants into the online Tampa Bay Action Plan Database (<http://apdb.tbepotech.org>).

| Bay Segment | Lead Entity | Action Plan ID | Project Name/Description | Completion Year/Implementation Period | Education Credits? | Anticipated N Load Offset (lbs./yr) | Estimated Future Costs |
|------------------|------------------------|----------------|---|---------------------------------------|--------------------|-------------------------------------|------------------------|
| Hillsborough Bay | City of Lakeland | 1058 | Lakeland SCR Project | In Progress | | | |
| Hillsborough Bay | City of Lakeland | 1059 | Lakeland Hi-Efficiency Burners | In Progress | | | |
| Hillsborough Bay | City of Lakeland | 1061 | Lakeland Methane to Energy project – Phase I | In Progress | | | \$150,000 |
| Middle Tampa Bay | City of St. Petersburg | 1413 | Snell Isle & Rafael Blvds. NE | 2017 | | | |
| Middle Tampa Bay | City of St. Petersburg | 1422 | Crescent Lake at 14th Ave N | 2017 | | 41.9 | |
| Remainder LTB | Manatee County | 1262 | Manatee County SWWRF Upgrade | 2017 | | 34.3 | |
| Remainder LTB | Manatee County | 1351 | Deep Well Injection at SWWRF | 2017 | | | \$6,627,000 |
| Remainder LTB | Pinellas County | 1382 | Lake Seminole Alum Treatment Subbasin 2 | 2017 | | | |
| Lower Tampa Bay | Manatee County | 1353 | MARS Reclaimed Network Upgrades | 2018 | | 2663 | \$4,890,000 |
| Middle Tampa Bay | City of St. Petersburg | 1419 | 34th Ave NE at Poplar St | 2018 | | | |
| Remainder LTB | Manatee County | 1350 | Deep Well Injection at NWRF | 2018 | | 0 | \$9,997,719 |
| Hillsborough Bay | Mosaic | 857 | Mulberry, Closure of Mulberry Phosphogypsum Stack | 2020 | | | |
| Old Tampa Bay | City of Largo | 1408 | Planned WWRF Improvements | 2020 | | | |
| Old Tampa Bay | Pinellas County | 484 | Mobbly Bayou Habitat Restoration | 2020 | | 14800.4 | \$2,140,839 |
| Old Tampa Bay | Pinellas County | 1248 | Weedon Island Salt Marsh Restoration | 2020 | | | \$500,000 |
| Old Tampa Bay | Pinellas County | 1345 | Cross Bayou Improvements | 2020 | | | \$7,500,000 |
| Old Tampa Bay | Pinellas County | 1383 | Roosevelt Stormwater Ponds | 2020 | | | |
| Old Tampa Bay | Pinellas County | 1384 | Eagle Lake Stormwater Ponds | 2020 | | 157 | |
| Remainder LTB | FDOT | 1166 | 201032-2 - I-75 at SR 70 Interchange | 2020 | | | \$10,000,000 |
| Remainder LTB | Pinellas County | 1397 | St. Joes Creek Stormwater Pond Improvement WQ | 2020 | | | |
| Hillsborough Bay | Tampa Bay Water | 868 | Alafia River Water Quality Protection Plan (WQPP) | 2021 | | | \$75,000 |
| Remainder LTB | Pinellas County | 1252 | Joe's Creek Greenway Park | 2021 | | 1339 | \$397,200 |
| Remainder LTB | Pinellas County | 1398 | Lake Seminole Sediment Removal | 2021 | | | \$16,732,300 |
| Old Tampa Bay | Pinellas County | 1399 | Long Branch Stormwater Improvements, W22-04, -05, -08 | 2030 | | 832000 | |
| Old Tampa Bay | Pinellas County | 1400 | Alligator Creek Stormwater Improvements, W14-03 | 2030 | | | |
| Old Tampa Bay | Pinellas County | 1401 | Roosevelt Stormwater Ponds, W23-01,-10, -03 | 2030 | | | |
| Hillsborough Bay | City of Lakeland | 1057 | Lakeland Methane to Energy project – Phase II | Future | | | \$950,000 |
| Hillsborough Bay | City of Tampa | 158 | South Tampa Area Reclaim Project (STAR) | Future | | | \$21,000,000 |
| Hillsborough Bay | City of Tampa | 1218 | Sediment Trap NSBB: Brorien St | Future | | | \$75,000 |
| Hillsborough Bay | City of Tampa | 1223 | North Tampa Closed Basins – Phase 1 | Future | | 6.6 | \$1,100,000 |

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| Bay Segment | Lead Entity | Action Plan ID | Project Name/Description | Completion Year/Implementation Period | Education Credits? | Anticipated N Load Offset (lbs./yr) | Estimated Future Costs |
|------------------|-----------------------------|------------------|--|---------------------------------------|--------------------|-------------------------------------|------------------------|
| Hillsborough Bay | City of Tampa | 1255 | Bayshore Blvd. Reclaimed Water Expansion | Future | | 10 | \$550,000 |
| Hillsborough Bay | City of Tampa | 571, 830 | North Tampa Pipeline | Future | | | \$200,000 |
| Hillsborough Bay | City of Tampa, SWFWMD, FDOT | 1294, 1224, 1056 | River Tower Park Shoreline Restoration and Stormwater Improvements | Future | | | \$2,590,000 |
| Hillsborough Bay | Hillsborough County | 294 | Hillsborough County Reclaimed Aquifer Storage and Recovery (ASR) | Future | | | |
| Hillsborough Bay | Mosaic | 1233 | Green Bay Discharge Diversion to Progress Energy | Future | | 12233.4 | |
| Hillsborough Bay | Pasco County | 1179 | Reclaimed Water Reservoir Floating Wetland Island | Future | | | \$250,000 |
| Middle Tampa Bay | SWFWMD | 478 | Sawgrass Lake Park Habitat Enhancement Project | Future | | | \$4,089,261 |
| Old Tampa Bay | SWFWMD | 1226 | South Bayshore Blvd. | Future | | | \$3,017,298 |
| Remainder LTB | Manatee County | 714 | Ware's Creek Flood Reduction | Future | | | \$4,600,000 |
| Remainder LTB | Manatee County | 1260 | Duette Preserve Wetlands Restoration | Future | | | \$200,000 |
| Remainder LTB | Manatee County | 1261 | Bennett Park | Future | | | \$285,310 |
| Remainder LTB | Manatee County | 1354 | Manatee County SEWRF Upgrade | Future | | | \$9,866,747 |
| Remainder LTB | Pinellas County | 470 | Lake Seminole Clean-up | Future | | | \$16,700,000 |
| Remainder LTB | Pinellas County | 1365 | Bridgeway Acres Pond A Dredging | Future | | | |
| Tampa Bay Totals | | | | | | 863286 | \$124,483,674 |

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

2017 RA Update: No change. The NMC Action Plan projects are located throughout the Tampa Bay watershed, as described and depicted in the previous section.

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

2017 RA Update: Based on projects implemented over the 2012-2016 period, it is estimated that cumulatively an additional **147.3** tons/yr of total nitrogen has been precluded from entering Tampa Bay (Table 7). In addition, Consortium participants anticipate completion of projects after 2016 that will be incorporated into the future, 2021 Reasonable Assurance Update. So far to date, ~ **482.8** tons/yr of total nitrogen is estimated to be precluded from entering Tampa Bay after 2016 (Table 8 & Table 9).

3.e. Written agreements committing partners to actions:

2017 RA Update: The Tampa Bay Nitrogen Management Consortium gave consensus approval (with no objections) at their September 29, 2017 meeting to submit this document to FDEP as the 2017 RA Update for Tampa Bay. Participation status, meeting notes, presentations, discussions and decision memos of NMC participants during the course of this 2017 RA Update can be found here:

<https://www.tbepetech.org/committees/nmc> .

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

2017 RA Update: Consistent with prior RA approvals and the 2009 RA Addendum, allocations to all TN loading sources in the Tampa Bay watershed have been formalized and cumulatively capped at the federally-recognized TMDL for each bay segment. To stay within the TMDL limits, allocations for interim, new and transferred sources were reviewed and updated during the 2017 RA Update. These reviews led to formal NMC concurrence of allocations assigned to each entity for the 2017-2021 Reasonable Assurance implementation period, and total allocations continue to remain within the TMDL limits for the Tampa Bay segments recognized under the 2002-2012 RA periods (Table 10 - Table 14). In addition, the FDEP SW District has provided updated information on facilities considered under the small source allocation for each bay segment. Based on FDEP SW District staff guidance, small sources are defined in Appendix 1 and include facilities that discharge less than 0.1 MGD to groundwater or surface waters (excluding facilities that have individual allocations from prior RA Updates).

Furthermore, the Tampa Bay NMC has developed recommended protocols to address any unforeseen need for a TN load allocation. Consortium participants have previously formalized a process¹² to address new, missed or expanded TN sources in future RA updates, and FDEP has concurred with those recommendations.¹³ Lastly, during the development of the 2017 RA Update, Consortium participants have developed recommendations for future assignment of any unassigned reservation allocation that may occur in the future (see Appendix 2).

¹² https://www.tbeptech.org/NitrogenMgmtConsort/Key_Actions/TBNMC_FINAL_2012-01_Process_for_New_Missed_Expanded_Sources.pdf

¹³ https://www.tbeptech.org/NitrogenMgmtConsort/Key_Actions/FDEP_Response_NMC_Decision_Memo_12032012.pdf



Table 10: Total nitrogen load allocation table for Old Tampa Bay for the 2017-2021 Reasonable Assurance implementation period. SW=Surface water discharge allocation, RE=Reuse discharge allocation.

| Entity | Source | Percent Remaining Allocation (if applicable) | 5-yr Average TMDL Equivalent Load (tons/year) |
|------------------------|--|--|---|
| Cheval West | MS4 | 0.20% | 0.7 |
| City of Clearwater | MS4 | 2.70% | 10.6 |
| | Point Source – Clearwater East SW | | 9.3 |
| | Point Source – Clearwater East RE | | 0.1 |
| | Point Source – Clearwater Northeast SW | | 16.6 |
| | Point Source – Clearwater Northeast RE | | 1.1 |
| Duke Energy | Point Source – Bartow Plant SW | | 3 |
| Heritage Harbor | NPS | 0.20% | 0.6 |
| Hillsborough County | MS4 | 23.30% | 91.6 |
| | Point Source – Dale Mabry SW | | 7.4 |
| | Point Source – Dale Mabry RE | | 2.8 |
| | Point Source – Northwest Regional SW | | 2.9 |
| | Point Source – Northwest Regional RE | | 5.5 |
| | Point Source – River Oaks SW | | 13.4 |
| | Point Source – River Oaks RE | | 1.6 |
| | Point Source – Van Dyke | | 0.8 |
| City of Largo | MS4 | 1.40% | 5.5 |
| | Point Source – Largo SW | | 16.4 |
| | Point Source – Largo RE | | 2.6 |
| MacDill Air Force Base | MS4 | 0.10% | 0.4 |
| City of Oldsmar | MS4 | 1.40% | 5.4 |
| | Point Source – Oldsmar SW | | 2.7 |
| | Point Source – Oldsmar RE | | 0.5 |
| On Top of the World | Point Source – On Top of the World RE | | 0.5 |
| Palm Bay | NPS | <0.1% | 0 |
| Park Place | NPS | 0.10% | 0.4 |
| Pasco County | MS4 | 0.40% | 1.7 |
| Pinellas County | MS4 | 14.70% | 57.6 |
| | Point Source – W.E. Dunn RE | | 2.3 |
| | Point Source – Bridgeway Acres SW | | 1.2 |
| City of Pinellas Park | MS4 | 1.00% | 4 |
| City of Safety Harbor | MS4 | 1.30% | 5 |

| Entity | Source | Percent Remaining Allocation (if applicable) | 5-yr Average TMDL Equivalent Load (tons/year) |
|--|---------------------------------------|--|---|
| City of St. Petersburg | MS4 | 0.90% | 3.5 |
| | Point Source – St. Pete Facilities RE | | 4.7 |
| | | | |
| Stonebriar | NPS | 0.10% | 0.2 |
| City of Tarpon Springs | MS4 | 0.40% | 1.6 |
| City of Tampa | MS4 | 5.30% | 20.8 |
| Westchase | NPS | 0.40% | 1.4 |
| Westchase East | NPS | 0.40% | 1.7 |
| Non-MS4/Non-Ag NPS | | 2.60% | 10.1 |
| Atmospheric Deposition | | 33.60% | 131.8 |
| Other (Groundwater, Springs, Conservation) | | 3.60% | 11 |
| FDACS (Agriculture) | | 6.10% | 24.1 |
| Small Sources | | | 1 |
| Total | | | 486 |



Table 11: Total nitrogen load allocation table for Hillsborough Bay for the 2017-2021 Reasonable Assurance implementation period. SW=Surface water discharge allocation, RE=Reuse discharge allocation.

| Entity | Source | Percent Remaining Allocation (if applicable) | 5-yr Average TMDL Equivalent Load (tons/year) |
|---------------------|--|--|---|
| Hillsborough County | MS4 | 22.60% | 235.6 |
| | Point Source – Falkenburg SW | | 15.2 |
| | Point Source – Falkenburg RE | | 2.8 |
| | Point Source – South County SW | | 1.8 |
| | Point Source – Pebble Creek SW | | 0.3 |
| | Point Source – Pebble Creek RE | | 0.1 |
| | Point Source – Valrico SW | | 5.6 |
| | Point Source – Valrico RE | | 5 |
| City of Lakeland | MS4 | 1.10% | 10.9 |
| | Point Source – Lakeland SW | | 20 |
| | Point Source – Lakeland RE | | 0.2 |
| City of Mulberry | MS4 | 0.20% | 2.1 |
| | Point Source – Mulberry SW | | 2.4 |
| Pasco County | MS4 | 3.70% | 38.4 |
| | Point Source – Master Reuse System RE | | 5.8 |
| City of Plant City | MS4 | 0.90% | 9.2 |
| | Point Source – Plant City SW | | 9.5 |
| | Point Source – Plant City RE | | 1 |
| Polk County | MS4 | 6.50% | 67.5 |
| | Point Source – NW Regional RE | | 0.6 |
| | Point Source – SW Regional RE | | 1.1 |
| City of Tampa | MS4 | 4.80% | 50 |
| | Point Source – HF Curren SW | | 212.2 |
| | Point Source – HF Curren RE | | 1 |
| City of Zephyrhills | MS4 | 0.20% | 1.6 |
| | Point Source – Zephyrhills RE | | 3 |
| CSX | Point Source – Rockport Material Losses | | 5.6 |
| | Point Source – Winston Yard SW | | 3 |
| | Point Source – Rockport SW | | 6 |
| | Point Source – Newport SW (FKA Eastern Terminals SW) | | |

| Entity | Source | Percent Remaining Allocation (if applicable) | 5-yr Average TMDL Equivalent Load (tons/year) |
|---------------|--|--|---|
| | Point Source – Newport Material Losses (FKA East. Term. Material Losses) | | 5.6 |
| Kinder Morgan | Point Source – Material Losses – Port Sutton | | 1.8 |
| | Point Source – Material Losses – Tampaplex | | 3.4 |
| | Point Source – Hartford Terminal SW | | 25 |
| | Point Source – Port Sutton SW | | |
| | Point Source – Tampaplex SW | | |
| Mosaic | Point Source – Riverview Material Losses | | 9.9 |
| | Point Source – Tampa Marine ML (FKA CF Material Losses) | | |
| | Point Source – Big Bend Material Losses | | |
| | Point Source – Bartow SW | 12% | 123.8 |
| | Point Source – Ft. Lonesome SW | | |
| | Point Source – Green Bay SW | | |
| | Point Source – Hookers Prairie SW | | |
| | Point Source – Hopewell SW | | |
| | Point Source – Kingsford SW | | |
| | Point Source – Mulberry SW | | |
| | Point Source – New Wales Stack Closure SW | | |
| | Point Source – Nichols Mine SW | | |
| | Point Source – Riverview SW | | |
| | Point Source – Riverview Stack Closure SW | | |
| | Point Source – South Pierce SW | | |
| | Point Source – Bonnie (FKA CF Bartow SW) | | |
| | Point Source – Tampa Ammonia SW (FKA CF Tampa NH ₄ SW) | | |
| | Point Source – Tampa Marine SW (FKA CF Tampa Phos. SW) | | |
| | Point Source – Port Sutton SW (FKA KM NH ₄ Facility SW) | | |
| | Point Source – Plant City SW (FKA CF Plant City SW) | | |
| | Point Source – Mulberry Phosphogypsum Stack SW | | |
| | Point Source – New Wales Chemical Plant SW | | |
| Agrifos | Point Source – Nichols Prep Plant SW | <0.1% | 0 |

| Entity | Source | Percent Remaining Allocation (if applicable) | 5-yr Average TMDL Equivalent Load (tons/year) |
|--|-----------------|--|---|
| Brewster Phosphogypsum | Point Source SW | 0.10% | 1 |
| Alpha/Owens Corning | Point Source SW | 0.10% | 1 |
| Coronet Industries | Point Source SW | 0.50% | 4.7 |
| Estech Agricola | Point Source SW | 0.30% | 2.6 |
| Exxon Mobil | Point Source SW | 0.20% | 1.7 |
| Kerry I&F Contracting | Point Source SW | | 1.3 |
| Tampa Bay Water | Point Source SW | | 1.5 |
| TECO Bayside | Point Source SW | 0.10% | 0.8 |
| Trademark Nitrogen | Point Source SW | <0.1% | 0.2 |
| Yara North America | Point Source SW | <0.1% | 0.3 |
| Alafia Preserve | NPS | 0.10% | 0.6 |
| Bloomingtondale | NPS | <0.1% | 0 |
| Donaldson Knoll | NPS | <0.1% | 0.1 |
| Eagle Ridge | NPS | 0.10% | 0.7 |
| Lake St. Charles | NPS | <0.1% | 0.4 |
| Live Oak I | NPS | <0.1% | 0.2 |
| Live Oak II | NPS | <0.1% | 0.1 |
| Magnolia Park | NPS | <0.1% | 0.1 |
| MacDill Air Force Base | MS4 | 0.10% | 0.7 |
| Palm River | NPS | <0.1% | 0 |
| Panther Trace | NPS | <0.1% | 0.3 |
| Panther Trace II | NPS | <0.1% | 0.2 |
| Rivercrest | NPS | <0.1% | 0.3 |
| City of San Antonio | NPS | <0.1% | 0.3 |
| Spring Lake | NPS | <0.1% | 0.1 |
| City of St. Leo | NPS | <0.1% | 0 |
| Stone Crest | NPS | <0.1% | 0 |
| Stone Dairy Creek | NPS | <0.1% | 0 |
| Stonelake Ranch | NPS | <0.1% | 0 |
| City of Temple Terrace | MS4 | 0.20% | 2.1 |
| Non-MS4/Non-Ag NPS | | 0.50% | 5.2 |
| Atmospheric Deposition | | 6.00% | 63 |
| Other (Groundwater, Springs, Conservation) | | 13.50% | 140.2 |

| Entity | Source | Percent Remaining Allocation (if applicable) | 5-yr Average TMDL Equivalent Load (tons/year) |
|------------------------------|-----------------|--|---|
| FDACS (Agriculture) | | 25.80% | 268.8 |
| Small Sources | | | 10.5 |
| Lowry Park Zoo | Point Source SW | | 1 |
| Busch Gardens | Point Source SW | | 1 |
| Cypress Lakes WWTP | Point Source | | 0.3 |
| Forest Lake Estates WWTP | Point Source | | 0.3 |
| Windemere Utilities | Point Source | | 0.9 |
| Country Meadows-Golden Lakes | Point Source | | 1.0 |
| Unassigned reservation | | | 50.5 |
| Total | | | 1451 |



Table 12: Total nitrogen load allocation table for Middle Tampa Bay for the 2017-2021 Reasonable Assurance implementation period. SW=Surface water discharge allocation, RE=Reuse discharge allocation.

| Entity | Source | Percent Remaining Allocation (if applicable) | 5-yr Average TMDL Equivalent Load (tons/year) |
|--|---------------------------------------|--|---|
| Harbor Bay | NPS | <0.1% | 0.2 |
| Hillsborough County | MS4 | 9.90% | 70.9 |
| | Point Source - South County RE | | 0.5 |
| MacDill Air Force Base | MS4 | 1.00% | 7 |
| | Point Source - WWTP RE | | 0.7 |
| Manatee County | MS4 | 3.00% | 21.8 |
| Pinellas County | MS4 | 0.50% | 3.2 |
| City of Pinellas Park | MS4 | 0.70% | 5.3 |
| City of St. Petersburg | MS4 | 6.50% | 46.5 |
| | Point Source - St. Pete Facilities RE | | 20.8 |
| Mosaic | Point Source - Four Corners SW | 4.10% | 29.3 |
| TECO Big Bend | Point Source – SW | | 56.5 |
| | Point Source - RE | | 2.1 |
| Non-MS4/Non-Ag NPS | | 0.50% | 3.8 |
| Atmospheric Deposition | | 35.20% | 252.1 |
| Other (Groundwater, Springs, Conservation) | | 5.10% | 36.7 |
| FDACS (Agriculture) | | 33.40% | 239.2 |
| Small Sources | | | 2.4 |
| Total | | | 799 |



Table 13: Total nitrogen load allocation table for Lower Tampa Bay for the 2017-2021 Reasonable Assurance implementation period. SW=Surface water discharge allocation, RE=Reuse discharge allocation.

| Entity | Source | Percent Remaining Allocation (if applicable) | 5-yr Average TMDL Equivalent Load (tons/year) |
|---|--|--|---|
| Hillsborough County | MS4 | <0.1% | 0 |
| Lexington | NPS | <0.1% | 0.1 |
| Manatee County | MS4 | 7.80% | 26.8 |
| | Point Source - Manatee County North RE | | 3.9 |
| City of St. Petersburg | MS4 | <0.1% | 0 |
| Kinder Morgan Port Manatee Material Losses | Point Source | | 0.3 |
| Piney Point Facility | Point Source SW | | 0.9 |
| Non-MS4/Non-Ag NPS | | 0.50% | 1.7 |
| Atmospheric Deposition | | 81.80% | 281 |
| Other (Groundwater, Springs, Conservation) | | 1.20% | 4.2 |
| FDACS (Agriculture) | | 8.60% | 29.7 |
| Small Sources | | | 0.3 |
| Total | | | 349 |



Table 14: Total nitrogen load allocation table for the Remainder of Lower Tampa Bay for the 2017-2021 Reasonable Assurance implementation period. SW=Surface water discharge allocation, RE=Reuse discharge allocation.

| Entity | Source | Percent Remaining Allocation (if applicable) | 5-yr Average TMDL Equivalent Load (tons/year) |
|--|---------------------------------------|--|---|
| City of Bradenton | MS4 | 1.80% | 10.8 |
| | Point Source - Bradenton SW | | 18.6 |
| | Point Source - Bradenton RE | | 0.6 |
| City of Gulfport | MS4 | 0.40% | 2.2 |
| Greyhawk Landing | NPS | 0.10% | 0.8 |
| Harbourage at Braden River | NPS | <0.1% | 0 |
| Heritage Harbour | NPS | 0.10% | 0.8 |
| Heritage Harbour Marketplace | NPS | <0.1% | 0.1 |
| Lakewood Ranch | MS4 | 1.50% | 8.7 |
| Lexington | NPS | <0.1% | 0.1 |
| Manatee County | MS4 | 22.00% | 130.2 |
| | Point Source - Southeast RE | | 2.7 |
| Pinellas County | MS4 | 0.20% | 1.1 |
| City of Palmetto | MS4 | 0.80% | 4.6 |
| | Point Source - Palmetto SW | | 2.2 |
| | Point Source - Palmetto RE | | 1 |
| Sarasota County | MS4 | 1.40% | 8.2 |
| City of St. Petersburg Beach | MS4 | 0.20% | 1.2 |
| City of St. Petersburg | MS4 | 1.30% | 7.5 |
| | Point Source - St. Pete Facilities RE | | 1.6 |
| Tara | NPS | 0.20% | 1.1 |
| University Place | NPS | 0.10% | 0.6 |
| Waterlefe | NPS | 0.10% | 0.6 |
| Tropicana | Point Source SW | | 9.1 |
| Non-MS4/Non-Ag NPS | | <0.1% | 0 |
| Atmospheric Deposition | | 13.00% | 76.9 |
| Other (Groundwater, Springs, Conservation) | | 10.90% | 64.8 |
| FDACS (Agriculture) | | 46.00% | 272.6 |
| Total | | | 629 |



3.g. Confirmed sources of funding

2017 RA Update: No change. Consortium participants continue to abide by the recommended funding levels¹⁴ for participation in the NMC's process to deliver 5-year RA updates to the FDEP. For each 5-year RA period, all participating NMC entities with a 5-year annual average allocation less than one ton TN per year are requested to contribute a recommended nominal amount of \$500, and all other sources are requested to contribute a one-time recommended amount of \$6,000. The per-entity contribution can be reduced accordingly if more than 25 members contribute. Consortium contributions are due generally in Years 1-2 of an RA cycle, to allow time for development of the technical basis required for an update. All entities with allocations or providing regulatory oversight/input to the RA Update process (in-kind support) are invited to attend and encouraged to participate in all Consortium meetings and deliberations in the future. A chronology of NMC activities and meetings can be found here:

<https://www.tbepotech.org/committees/nmc>.

In addition, Consortium participants have planned investments of **\$172,395,928** to continue projects listed in Table 8 and implement new projects listed in Table 9.

3.h. Implementation schedule:

2017 RA Update: No change. Consortium participants continue to develop future load reduction projects within the watershed and document these planned activities within the online Tampa Bay Action Plan Database (<http://apdb.tbepotech.org>). Table 8 shows a listing of ongoing projects being implemented by Consortium participants. Table 9 lists projects that are planned to be initiated/completed after 2016 by Consortium participants.

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

2017 RA Update: No change. 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 allocation compliance assessment process referenced in [Section 2.a.](#) will continue to be employed during the 2017-2021 RA implementation period, and an assessment of the current 2012-16 RA period can be found in Appendix 3 - Appendix 7. Lastly, FDEP representatives of the NMC emphasize that FDEP and other regulatory agencies will continue to ensure that permitted facilities meet all permit requirements through existing regulatory and permit enforcement programs.

¹⁴ https://www.tbepotech.org/NitrogenMgmtConsort/Key_Actions/NMC_Action_Memo_25-NMC_Funding_and_Voting_Protocol.pdf



4. Procedures for Monitoring and Reporting Results:

4.a. A description of the water quality monitoring program to be implemented

2017 RA Update: No change. Existing water quality monitoring programs include monthly ambient collections 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. The Tampa Bay regional monitoring programs have been recently highlighted among other top programs in the nation.¹⁵

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

2017 RA Update: No change. All county monitoring programs and their laboratories have State-approved Quality Assurance Plans on file, and comply with FDEP's QA rule, Chapter 62-160, including FDEP approved Standard Operating Procedures. All participating county laboratories are National Environmental Laboratory Accreditation Conference (NELAC) certified. Quarterly round-robin exchanges for statistically-rigorous inter-laboratory comparisons are conducted by the Southwest Florida Regional Ambient Monitoring Program (SWFL RAMP) participants.¹⁶

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

2017 RA Update: No change. The County programs continue to comply with the latest STORET data upload procedures developed by the FDEP. Through discussions of the SWFL RAMP, all Tampa Bay water quality monitoring data providers are anticipating a seamless transition to upload data to FDEP's new WIN system after December 2017.

4.d. Responsible monitoring and reporting entity:

2017 RA Update: No change. The three entities identified in [Section 4.a.](#) continue to be responsible for collecting water quality data. TBEP staff continue to assimilate and summarize relevant data on an annual basis to provide compliance assessment reports to the FDEP. Reports for the 2012-2016 RA period can be found here: <https://www.tbep.tech.org/data/tech-pubs>.

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

2017 RA Update: No change. As part of this update, the TBEP and TBNMC have funded the development of estimated TN, TP, TSS and BOD loads for the Tampa Bay watershed over the 2012-2016 RA Period¹⁷.

¹⁵ Schiff, K. et al. 2015. Regional monitoring programs in the US: Synthesis of four case studies from Pacific, Atlantic, and Gulf Coasts. *Regional Studies in Marine Science* 4: A1-A7. <http://dx.doi.org/10.1016/j.rsma.2015.11.007>.

¹⁶ Sherwood, E.T. et al. 2015. Tampa Bay estuary: Monitoring long-term recovery through regional partnerships. *Regional Studies in Marine Science* 4:1-11. <http://dx.doi.org/10.1016/j.rsma.2015.05.005>.

¹⁷ http://www.tbep.tech.org/TBEP_TECH_PUBS/2017/TBEP_04_17_FINAL_TBNMC_Loads_2012-2016.pdf



In addition, the Consortium updated a Screening Level Tool for Estimating Annual Hydrologic Loadings to Tampa Bay¹⁸ for use to assess annual compliance of hydrologically-adjusted allocations.

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

2017 RA Update: No change. Formal reporting of results and action plan projects will continue to occur every 5 years. Annual assessment of bay water quality conditions will continue during the 2017-2021 RA period.

4. g. Methods for evaluating progress towards goals:

2017 RA Update: No change. Formal reporting of chlorophyll-a threshold compliance will continue on an annual basis and integrate any new seagrass acreage estimates or trends. If exceedances of the chlorophyll-a thresholds occur in two concurrent years in any one bay segment, additional assessment steps are required by the Consortium. Otherwise, Reasonable Assurance updates with a full assessment of loading conditions to Tampa Bay will occur every 5 years.

¹⁸https://www.tbep.tech.org/TBEP_TECH_PUBS/2016/TBEP_03_16_TBNMC_Tech_Memo_Update_LTB_Hyd_Tool.pdf

5. Description of Proposed Corrective Actions:

2017 RA Update: One annual exceedance of the chlorophyll-a threshold occurred in the Old Tampa Bay segment during the 2012-2016 RA period. Although seagrass conditions in this bay segment still show increasing acreage trends, bay managers continue to explore the feasibility and implementation of management actions that could improve this bay segment's overall ecological condition and water quality. Several Tampa Bay Estuary Program (TBEP) research initiatives and Technical Advisory Committee recommendations have directed research and restoration efforts in this bay segment and its watershed. As a result, several cooperative projects have been implemented over the 2012-2016 RA period and continue to be implemented today. Furthermore, TBEP and Consortium partners continue to implement habitat restoration, stormwater infrastructure and point source improvement projects throughout the Tampa Bay watershed that cumulatively contribute to the Bay's overall ecological improvement. A summary of relevant projects focused in Old Tampa Bay follows.

Pinellas Countywide Wastewater and Stormwater Task Force

Project Partner(s): Pinellas County & 17 Municipalities within Pinellas County

Project Summary & Accomplishments:

The Task Force was initiated in 2016 with 3 main goals: 1) Avoid and mitigate wastewater spills, overflows and releases of sewage into the environment, particularly coastal water bodies; 2) Seek opportunities to address drainage and stormwater issues that impact the sewer system; and 3) Increase capacity and resiliency of collective sewer system and wastewater treatment infrastructure throughout Pinellas County. Approximately 7 action plan project categories have been identified and are currently being implemented to address the goals above. A progress report on accomplishments undertaken by the Task Force has been completed and can be viewed here: <http://www.pinellascounty.org/taskforce/pdf/agenda-minutes/2017/06-22-17-Wastewater-Stormwater-Tasks-Force-Progress-Report.PDF>. In addition, Task Force representatives also participate in a broader regional Utilities Forum convened by the FDEP SW District on a quarterly basis.

Project Funding:

- FY2017 Stormwater/Wastewater Capital Budget: \$157 Million

Be Floridian Fertilizer Education Program

Project Partner(s): TBEP, Pinellas County

Project Summary & Accomplishments:

In 2010, TBEP initiated a 5-year social marketing campaign to support local ordinances restricting application of nitrogen fertilizer on residential landscapes during the summer in Tampa Bay, where

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frequent storm events can wash fertilizer into waterways and contribute to degraded water quality. The campaign, called “Be Floridian,” targeted homeowners, retail outlets and lawn care professionals. Pre-campaign formative research indicated that the greatest challenge was to ensure residents understood *why* fertilizer restrictions are needed. The campaign reminded people why they live in the Tampa Bay area using multiple marketing methods and a roving flock of painted flamingos (i.e. relaying the natural capital of beautiful water quality, water-based recreational activities, and beaches). In doing so, the campaign emphasized that True Floridians know better than to fertilize in the summer, and a majority of homeowners surveyed across the Tampa Bay area now understand that applying fertilizer before heavy rain is not a good idea. Be Floridian is now currently implemented by municipalities throughout Florida.

Project Funding:

- TBEP FY12-13 through FY16-17 Funds: \$320,000
- FDOT Grant: \$10,000
- 2012 Tampa Bay Environmental Fund Grant: \$75,000

Autonomous Water Quality and Harmful Algal Bloom Monitoring (FL) in Old Tampa Bay

Project Partner(s): FWCC/FWRI

Project Summary & Accomplishments:

Between May 2013 and October 2014, FWRI collected temporally-and spatially-rich water quality data sets, filling existing monitoring gaps within Old Tampa Bay. FWRI identified the extent and duration of harmful algal blooms (HABs) and mapped algal biomass in surface waters for early bloom detection and documentation of bloom patchiness. Their analyses revealed a strong seasonal cycle in phytoplankton dynamics and identified factors that contributed to high chlorophyll a concentrations in the system. FWRI have made the high-resolution data available to stakeholders for use in continued monitoring, modeling, and management efforts in Old Tampa Bay.

Project Funding:

- 2012/13 Tampa Bay Environmental Fund Grant: \$50,000
- FWRI Matching Contributions: \$50,815

Safety Harbor Waterfront Park Habitat Restoration

Project Partner(s): City of Safety Harbor, SWFMWD, FDOT

Project Summary & Accomplishments:

This shoreline restoration project resulted in: 1) the removal of 2 acres of invasive vegetation and debris from disturbed mangrove habitat, 2) grading of the project area to elevations suitable for long-term



mangrove establishment and growth, and 3) planting of native vegetation across the two (2) acre site during several volunteer planting events.

Project Funding:

- 2014 Tampa Bay Env. Restoration Fund Grant: \$70,000 (SWFWMD; \$25,000 from FDOT)
- City of Safety Harbor Matching Contributions: \$70,000

Seeding Potential of *Pyrodinium bahamense* Cysts in Old Tampa Bay

Project Partner(s): FWCC/FWRI

Project Summary & Accomplishments:

The overall goal of this project was to characterize seeding potential of *Pyrodinium* cyst beds in OTB. FWRI quantified cyst abundance, germination, and sediment mobility in the upper five centimeters of sediment cores taken seasonally from three sites in OTB between August 2015 and September 2016, with the premise that buried cysts may serve as an important seeding source, especially in areas of increased sediment mobility. FWRI further characterized temporal patterns in cyst dormancy within this region.

Project Funding:

- 2015 Tampa Bay Env. Restoration Fund Grant: \$83,150
- FWRI Matching Contributions: \$89,212

Old Tampa Bay Integrated Model Development & Investigations of Causeway Modifications that Could Have Positive Ecological Benefits in OTB

Project Partner(s): FDOT, SWFWMD, TBEP

Project Summary & Accomplishments:

The Tampa Bay Estuary Program (TBEP), in partnership with the Southwest Florida Water Management District (SWFWMD), developed an integrated ecosystem model to assess potential, large-scale management actions that could improve Old Tampa Bay's (OTB) ecological condition. The integrated model included the development of a linked watershed, bay hydrodynamic, bay water/sediment quality, and set of ecological models (biota and seagrass suitability)¹⁹. The new tool was used to simulate the net environmental benefits of potential, large-scale management actions relative to baseline conditions (2000-2009 period) in OTB. Because much has been done in the Tampa Bay region to kick-start the Bay's

¹⁹ Sherwood, E.T. & 10 others. 2016. [Development of an integrated ecosystem model to determine the effectiveness of potential watershed management projects on improving Old Tampa Bay](#), pp 156-163 in Stringer, Christina E.; Krauss, Ken W.; Latimer, James S., eds. Proceedings of the Fifth Interagency Conference on Research in the Watersheds. March 2-5, 2015, N. Charleston, SC. Tech. Rep. SRS-211. U.S. Dept. of Agriculture Forest Service, Southern Research Station. 302 p.



recovery (e.g. wastewater treatment plant upgrades, enhanced stormwater regulations, residential fertilizer use ordinances, etc.), the models were intended to simulate actions that would require significant investment and buy-in from the region. Such actions as bridge/causeway infrastructure modifications, modifying managed freshwater inflows, and continued wastewater/stormwater infrastructure improvements were considered under the initial set of simulations. The model is continuing to be used to investigate potential ecological benefits of modifying the Courtney Campbell Causeway and Howard Frankland causeways.

Project Funding:

- Initial Model Development: \$1,000,000 (SWFWMD); \$200,000 (TBEP)
- Continued Investigations: FDOT/TBEP In-Kind Contributions

Increased Water Quality for County Permitted Stormwater Facilities – Eagle Lake Park

Project Partner(s): Pinellas County Environmental Management, SWFWMD

Project Summary & Accomplishments:

The project will design and construct improvements to Eagle Lake Park stormwater facilities to increase water quality treatment and provide public awareness about such activities. Eagle Lake Park is located within the Allen's Creek watershed, a tributary to Old Tampa Bay.

Project Funding:

- 2016 Tampa Bay Env. Restoration Fund Grant: \$130,000 (PC & SWFWMD)
- Pinellas County Matching Contributions: \$130,000 (Penny for Pinellas)

Mobbly Bayou Habitat Restoration

Project Partner(s): Southwest Florida Water Management District, City of Oldsmar

Project Summary & Accomplishments:

This project will focus on the restoration and enhancement of tidal creeks and estuarine tidal habitats within the Mobbly Bayou Preserve (an embayment of Old Tampa Bay). Construction will consist of traditional habitat restoration techniques and hydro-blasting to remove spoil mounds, create littoral shelves, and establish ditch blocks to restore natural hydrology and increase estuarine habitat.

Project Funding:

- 2017 Tampa Bay Env. Restoration Fund Grant: \$200,000 (\$19,229 from SWFWMD)
- SWFWMD Matching Contributions: \$900,000



6. Summary of progress since 2012 Reasonable Assurance Update Report

Data and observations from Tampa Bay indicate that continuing efforts to reduce nitrogen loading by the NMC partners are resulting in more than adequate water quality for the expansion of seagrasses. A summary of progress since the 2012 Tampa Bay Reasonable Assurance Update is below:

Management Actions & Restoration Investments

- More than 470 nitrogen load reduction projects have been implemented by Consortium participants since 1992. Collectively over the twenty-five year period from 1992-2016, ~529.4 tons/year of TN loads have been precluded from entering Tampa Bay. Since 1992, over \$710 million has been invested by Consortium participants towards nitrogen load reduction projects in the Bay. When accounting for additional land acquisition and preservation activities, as well as educational stewardship programs within the watershed, the total amount invested is over \$2.47 billion (as reported in the Tampa Bay Action Plan Database).
- The number of Tampa Bay Nitrogen Management Consortium participants continues to increase with over 45 participating public and private partners.
- Cumulatively, baywide TN load reductions over the 2012-2016 time period were estimated to be **147.3** tons/year. Additional ongoing, planned and budgeted projects post-2016 are expected to reduce TN loading by **482.8** tons at cost equal to **\$172,395,928** in the future.
- The Consortium local government and private partners have agreed to maintain TN load allocations within the federally-recognized TMDLs for each bay segment and as updated in Table 10 - Table 14. Additionally, the Consortium continues to recognize that any load reductions generated by the entity over the 2007-2021 period will remain as a credit with that entity indefinitely, as described in [Section IX.D. of the 2009 RA Addendum](#).

Environmental Indicators

- From 2012 to 2016, baywide seagrass coverage increased by 7,013 acres. To date, total seagrass acreage in the bay (41,655 acres) is the greatest it has ever been estimated, including in the 1950s.
- Time series plots show that chlorophyll-a thresholds have been consistently met in all four major bay segments (the exception being in 2015 for Old Tampa Bay). Bay managers continue to evaluate appropriate management actions within the Old Tampa Bay segment to improve its overall ecological integrity and reduce the potential for future chlorophyll-a exceedances in this bay segment. TBEP and its partners continue to make significant investments (>\$200 million) towards implementing projects within this bay segment.

Nitrogen Management Consortium Partnership Recognition

- **1st Place Partnership: 2011 EPA Gulf of Mexico Program Gulf Guardian Awards.** The TBNMC was recognized as a highly successful public-private partnership that has proactively and

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voluntarily developed pollution-reduction actions for the Tampa Bay estuary. The Consortium's collaborative approach to meeting water quality targets was recognized as one of the most unique and successful partnerships in the entire country.

- **One Bay McIntosh Award: 2016 Tampa Bay Regional Planning Council Future of the Region Awards.** The TBEP and its partners (including TBNMC participants) were collectively recognized for the regional collaboration that has successfully restored Tampa Bay seagrass to 1950's levels – a goal that TBEP established in 1996.
- **Costal Stewardship Award: 2017 Coastal and Estuarine Research Federation Biennial Conference.** The TBNMC was recognized for the impressive achievements in all the key criteria considered important in the mission of CERF to promote the wise use of science and management toward the stewardship of estuaries and coasts around the world. The TBNMC partners were further recognized for their commitment towards collaborating to maintain water quality adequate to continue the Tampa Bay ecosystem's recovery.



Appendix 1: List of facilities defined under the small source allocations for each bay segment (see Table 10 - Table 14).

| ID | County | Bay Segment | Facility ID | Name | IW/DW | MGD | Tons/Year @ 10mg/L | Attenuatio n Rate | Annual Load | FREQ | Type | Comments |
|-------------------------|--------------|------------------|-------------|------------------------------------|-------|-------|-----------------------|----------------------|----------------|------|---------|----------|
| Hillsborough Bay | | | | | | | | | | | | |
| 1 | Hillsborough | Hillsborough Bay | FLA012178 | Waterside MHP | | 0.012 | 0.18 | 70% | 0.055 | | Perc | |
| 3 | Hillsborough | Hillsborough Bay | FLA012162 | Lamplighter MHP | | 0.096 | 1.46 | 70% | 0.438 | AA | Perc | |
| 4 | Hillsborough | Hillsborough Bay | FLA012190 | Featherock | | 0.08 | 1.22 | 70% | 0.365 | 3M | Perc | |
| 5 | Hillsborough | Hillsborough Bay | FLA012168 | Paradise Village MHP | | 0.077 | 1.17 | 70% | 0.351 | AA | Perc | |
| 6 | Pasco | Hillsborough Bay | FLA012820 | Hillcrest RV Resort WWTF | | 0.07 | 1.06 | 70% | 0.319 | AA | Perc | |
| 8 | Pasco | Hillsborough Bay | FLA012803 | Ramblewood MHP WWTF | | 0.06 | 0.91 | 90% | 0.091 | AA | SF/Perc | |
| 9 | Hillsborough | Hillsborough Bay | FLA012208 | The Oaks of Thonotosassa MHP WWTP | | 0.06 | 0.91 | 90% | 0.091 | 3M | SF | |
| 10 | Hillsborough | Hillsborough Bay | FLA012219 | Southern Aire RVP | | 0.08 | 1.22 | 70% | 0.365 | 3M | Perc | |
| 11 | Pasco | Hillsborough Bay | FLA012778 | Country Aire Village WWTF | | 0.04 | 0.61 | 70% | 0.182 | AA | Perc | |
| 12 | Hillsborough | Hillsborough Bay | FLA012189 | Paradise Village #2-South | | 0.04 | 0.61 | 70% | 0.182 | AA | Perc | |
| 13 | Hillsborough | Hillsborough Bay | FLA012232 | Parkwood Estates Mobile home Park | | 0.048 | 0.73 | 70% | 0.219 | 3M | Perc | |
| 14 | Hillsborough | Hillsborough Bay | FLA012128 | Briarwood MHP | | 0.035 | 0.53 | 70% | 0.160 | 3M | Perc | |
| 15 | Hillsborough | Hillsborough Bay | FLA012200 | Spanish Main Travel Resort | | 0.035 | 0.53 | 70% | 0.160 | 3M | Perc | |
| 16 | Hillsborough | Hillsborough Bay | FLA012113 | Durrant High School WWTP | | 0.033 | 0.50 | 70% | 0.150 | 3M | Perc | |
| 17 | Hillsborough | Hillsborough Bay | FLA012223 | Eastfield Slopes | | 0.03 | 0.46 | 70% | 0.137 | AA | Perc | |
| 18 | Hillsborough | Hillsborough Bay | FLA012139 | STRAWBERRY SQUARES | | 0.027 | 0.41 | 70% | 0.123 | 3M | Perc | |
| 19 | Hillsborough | Hillsborough Bay | FLA012186 | Windward Knoll | | 0.026 | 0.40 | 70% | 0.119 | 3M | Perc | |
| 20 | Pasco | Hillsborough Bay | FLA012822 | Arbor Oaks | | 0.025 | 0.38 | 70% | 0.114 | 3M | Perc | |
| 21 | Pasco | Hillsborough Bay | FLA012836 | Grove Ridge Estates | | 0.025 | 0.38 | 70% | 0.114 | AA | Perc | |
| 22 | Hillsborough | Hillsborough Bay | FLA012263 | Bay Hills Village Mobile Home Park | | 0.025 | 0.38 | 70% | 0.114 | 3M | Perc | |
| 23 | Hillsborough | Hillsborough Bay | FLA012218 | River Palm RV Resort | | 0.025 | 0.38 | 90% | 0.038 | 3M | SF | |
| 24 | Hillsborough | Hillsborough Bay | FLA012209 | King Richards Court MHP | | 0.025 | 0.38 | 70% | 0.114 | 3M | Perc | |
| 25 | Hillsborough | Hillsborough Bay | FLA012173 | Oakhill Mobile Home Park | | 0.025 | 0.38 | 70% | 0.114 | 3M | Perc | |
| 26 | Hillsborough | Hillsborough Bay | FLA012246 | Magnolia Hill | | 0.024 | 0.36 | 70% | 0.109 | 3M | Perc | |
| 27 | Hillsborough | Hillsborough Bay | FLA012145 | Tampa East RV Resort | | 0.045 | 0.68 | 70% | 0.205 | AA | | |

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| ID | County | Bay Segment | Facility ID | Name | IW/DW | MGD | Tons/Year @ 10mg/L | Attenuatio n Rate | Annual Load | FREQ | Type | Comments |
|----|--------------|------------------|-------------|------------------------------------|-------|--------|-----------------------|----------------------|----------------|------|---------------------------|----------|
| 28 | Hillsborough | Hillsborough Bay | FLA012136 | Happy Traveler RVP | | 0.0225 | 0.34 | 70% | 0.103 | 3M | Perc | |
| 29 | Pasco | Hillsborough Bay | FLA012807 | Happy Days RV Park WWTF | | 0.022 | 0.33 | 70% | 0.100 | AA | Perc | |
| 30 | Polk | Hillsborough Bay | FLA013056 | Scenic View MHP | | 0.022 | 0.33 | 70% | 0.100 | AA | Perc | |
| 31 | Hillsborough | Hillsborough Bay | FLA012238 | Alafia Riverfront, Inc | | 0.022 | 0.33 | 70% | 0.100 | 3M | Perc | |
| 32 | Hillsborough | Hillsborough Bay | FLA012177 | Camelot MHP | | 0.022 | 0.33 | 70% | 0.100 | | Perc | |
| 33 | Hillsborough | Hillsborough Bay | FLA012253 | Robinson's Orange Park | | 0.021 | 0.32 | 70% | 0.096 | 3M | Perc | |
| 34 | Pasco | Hillsborough Bay | FLA012818 | Fisherman's Cove WWTF | | 0.02 | 0.30 | 70% | 0.091 | AA | Perc | |
| 35 | Hillsborough | Hillsborough Bay | FLA012158 | Bullfrog Creek MHP | | 0.02 | 0.30 | 90% | 0.030 | 3M | SF | |
| 36 | Hillsborough | Hillsborough Bay | FLA012176 | Chatteau Forrest MHP | | 0.02 | 0.30 | 70% | 0.091 | 3M | Perc | |
| 37 | Hillsborough | Hillsborough Bay | FLA012225 | Country Aire Mobile home Park WWTF | | 0.02 | 0.30 | 70% | 0.091 | 3M | Perc | |
| 38 | Hillsborough | Hillsborough Bay | FLA012227 | Grand Oaks Apartments WWTP | | 0.02 | 0.30 | 70% | 0.091 | 3M | Perc | |
| 39 | Hillsborough | Hillsborough Bay | FLA012212 | Pine Oaks MHP | | 0.02 | 0.30 | 70% | 0.091 | 3M | Perc/asbor ption field | |
| 40 | Hillsborough | Hillsborough Bay | FLA012261 | Riverview Oaks Shopping Center | | 0.02 | 0.30 | 70% | 0.091 | 3M | absorption field | |
| 41 | Hillsborough | Hillsborough Bay | FLA012194 | Speer MHP | | 0.02 | 0.30 | 70% | 0.091 | 3M | Perc | |
| 42 | Polk | Hillsborough Bay | FLA016596 | Lakeland Cold Storage | | 0.018 | 0.27 | 70% | 0.082 | AA | Perc | |
| 43 | Hillsborough | Hillsborough Bay | FLA012121 | Maniscalco Elementary School | | 0.018 | 0.27 | 70% | 0.082 | 3M | Perc | |
| 44 | Hillsborough | Hillsborough Bay | FLA012192 | Plantation Oaks MHP | | 0.0164 | 0.25 | 70% | 0.075 | 3M | Perc | |
| 45 | Pasco | Hillsborough Bay | FLA012739 | Centennial Elementary School | | 0.016 | 0.24 | 70% | 0.073 | AA | Perc | |
| 46 | Hillsborough | Hillsborough Bay | FLA012152 | Hideway Hills MHP WWTP | | 0.016 | 0.24 | 70% | 0.073 | 3M | Perc/asbor ption field | |
| 47 | Polk | Hillsborough Bay | FLA012999 | Briarwood Estates | | 0.015 | 0.23 | 70% | 0.068 | 3M | Perc | |
| 48 | Polk | Hillsborough Bay | FLA013052 | Country Villa MHC | | 0.015 | 0.23 | 70% | 0.068 | AA | Perc | |
| 49 | Hillsborough | Hillsborough Bay | FLA012148 | Mount Carmel Ridge WWTF | | 0.015 | 0.23 | 70% | 0.068 | 3M | Perc | |
| 50 | Hillsborough | Hillsborough Bay | FLA012174 | Charlie's MHP | | 0.035 | 0.53 | 70% | 0.160 | 3M | Perc | |
| 51 | Hillsborough | Hillsborough Bay | FLA012247 | Citrus Hills RV Park | | 0.015 | 0.23 | 90% | 0.023 | 3M | SF | |
| 52 | Hillsborough | Hillsborough Bay | FLA012233 | Country Haven on Bullfrog Creek | | 0.015 | 0.23 | 70% | 0.068 | AA | Perc | |
| 53 | Hillsborough | Hillsborough Bay | FLA012091 | Knights Elementary School | | 0.015 | 0.23 | 70% | 0.068 | 3M | Perc | |

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|----|--------------|------------------|-------------|---------------------------------------|-------|--------|-----------------------|----------------------|----------------|-----------|--|----------|
| 54 | Hillsborough | Hillsborough Bay | FLA012101 | Mcdonald Elem Sch | | 0.015 | 0.23 | 70% | 0.068 | 3M | Perc | |
| 55 | Hillsborough | Hillsborough Bay | FLA012092 | Dover Elem Sch | | 0.014 | 0.21 | 70% | 0.064 | 3M | Perc | |
| 56 | Pasco | Hillsborough Bay | FLA012722 | San Antonio Elementary School WWTF | | 0.0123 | 0.19 | 70% | 0.056 | 3M | Perc | |
| 57 | Pasco | Hillsborough Bay | FLA012774 | Wooddale MHP WWTF | | 0.012 | 0.18 | 70% | 0.055 | AA | Perc | |
| 58 | Hillsborough | Hillsborough Bay | FLA012156 | Oakside MHP | | 0.012 | 0.18 | 70% | 0.055 | 3M | Perc/asbor ption field | |
| 59 | Hillsborough | Hillsborough Bay | FLA012108 | Pinecrest Elementary School | | 0.012 | 0.18 | 70% | 0.055 | 3M | Perc | |
| 60 | Hillsborough | Hillsborough Bay | FLA012240 | Rainbow Rock Mobile Home Park | | 0.012 | 0.18 | 70% | 0.055 | 3M | Perc/asbor ption field | |
| 61 | Hillsborough | Hillsborough Bay | FLA012096 | Springhead Elem Sch | | 0.012 | 0.18 | 70% | 0.055 | 3M | Perc | |
| 62 | Hillsborough | Hillsborough Bay | FLA012181 | Twin Oaks Plaza | | 0.0105 | 0.16 | 70% | 0.048 | 3M | Perc | |
| 63 | Polk | Hillsborough Bay | FLA013007 | Elim Mobile Home Park | | 0.01 | 0.15 | 70% | 0.046 | AA | Perc | |
| 64 | Pasco | Hillsborough Bay | FLA012783 | Florida Villas MHP WWTF | | 0.01 | 0.15 | 70% | 0.046 | AA | Perc | |
| 65 | Polk | Hillsborough Bay | FLA017408 | Hines Energy Complex WWTF | | 0.01 | 0.15 | 70% | 0.046 | MMA DF | Cooling ponds | |
| 66 | Pasco | Hillsborough Bay | FLA012825 | Lakeside Oaks MHP WWTF | | 0.01 | 0.15 | 70% | 0.046 | AA | Perc | |
| 67 | Pasco | Hillsborough Bay | FLA012828 | Lakeview in the Hills MHP | | 0.01 | 0.15 | 70% | 0.046 | AA | Perc | |
| 68 | Polk | Hillsborough Bay | FLA013039 | Lazy Dazy Retreat | | 0.01 | 0.15 | 70% | 0.046 | AA | Perc | |
| 69 | Polk | Hillsborough Bay | FLA012994 | Spring Hill MHP | | 0.01 | 0.15 | 70% | 0.046 | AA | Perc | |
| 70 | Hillsborough | Hillsborough Bay | FLA012191 | Carousel Village MHP | | 0.01 | 0.15 | 70% | 0.046 | 3M | Perc | |
| 71 | Hillsborough | Hillsborough Bay | FLA012109 | Cork Elem Sch | | 0.01 | 0.15 | 70% | 0.046 | 3M | Perc | |
| 72 | Hillsborough | Hillsborough Bay | FLA012217 | Countryside Plaza | | 0.01 | 0.15 | 70% | 0.046 | 3M | Perc | |
| 73 | Hillsborough | Hillsborough Bay | FLA012199 | Livingston MHP | | 0.01 | 0.15 | 70% | 0.046 | 3M | Perc | |
| 74 | Pasco | Hillsborough Bay | FLA012782 | Mockingbird MHP WWTF | | 0.0075 | 0.11 | 70% | 0.034 | AA | Perc | |
| 75 | Hillsborough | Hillsborough Bay | FLA012222 | Breman Apartments | | 0.0075 | 0.11 | 70% | 0.034 | 3M | Perc | |
| 76 | Hillsborough | Hillsborough Bay | FLA012131 | East Bay Raceway | | 0.0075 | 0.11 | 70% | 0.034 | 3M | Perc | |
| 77 | Polk | Hillsborough Bay | FLA013116 | Evergreen Motel & MHP | | 0.007 | 0.11 | 70% | 0.032 | AA | Perc | |
| 78 | Hillsborough | Hillsborough Bay | FLA012610 | Hillsborough River State Park WWTP #1 | | 0.006 | 0.09 | 90% | 0.009 | AA | SF | |
| 79 | Hillsborough | Hillsborough Bay | FLA012188 | Rainbow Forest Mobile home Park | | 0.006 | 0.09 | 70% | 0.027 | 3M | subsurface irrigation/absorption field | |
| 80 | Polk | Hillsborough Bay | FLA013030 | Southwinds MHP | | 0.005 | 0.08 | 70% | 0.023 | AA | Perc | |

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|------------------|--------------|------------------|-------------|-------------------------------------|-------|--------|-----------------------|----------------------|----------------|------|------------------------------------|---|--|
| 81 | Hillsborough | Hillsborough Bay | FLA012146 | Crawfords 3 B's MHP | | 0.005 | 0.08 | 70% | 0.023 | 3M | Perc | Flow is based on actual data from 2012-2016. Annual Load is estimated based on Kerry Industries data. Annual load is based on actual discharge data from 2013-2016. | |
| 82 | Hillsborough | Hillsborough Bay | FLA012157 | Gaf Materials Corporation | | 0.003 | 0.05 | 70% | 0.014 | 3M | Perc | | |
| 83 | Hillsborough | Hillsborough Bay | FLA012235 | People For Christ Ministries, Inc | | 0.0075 | 0.11 | 70% | 0.034 | 3M | Perc | | |
| 84 | Hillsborough | Hillsborough Bay | FLA012215 | Florida Light & Life Camp | | 0.045 | 0.68 | 70% | 0.205 | 3M | Perc/SF | | |
| 85 | Hillsborough | Hillsborough Bay | FLA012179 | Masters Economy Inn | | 0.05 | 0.76 | 70% | 0.228 | 3M | Perc | | |
| 86 | Hillsborough | Hillsborough Bay | FLA012230 | McIntosh utilities | | 0.03 | 0.46 | 70% | 0.137 | 3M | subsurface irrigation | | |
| 87 | Hillsborough | Hillsborough Bay | FLA012163 | Starlite MHP | | 0.025 | 0.38 | 70% | 0.114 | 3M | Perc/SF | | |
| 88 | Hillsborough | Hillsborough Bay | FLA012211 | Stone Ledge Manor WWTP | | 0.023 | 0.35 | 70% | 0.105 | 3M | Perc | | |
| 91 | Hillsborough | Hillsborough Bay | FLA012091 | Knights Elementary School | DW | 0.015 | 0.23 | 90% | 0.023 | 3M | SF | | |
| 92 | Hillsborough | Hillsborough Bay | FLA012159 | Town & Country WWTP | DW | 0.012 | 0.18 | 70% | 0.055 | 3M | PP/SF | | |
| 93 | Hillsborough | Hillsborough Bay | FLA012129 | Strawberry Fields MHP WWTP | DW | 0.017 | 0.26 | 70% | 0.078 | | PP/SF | | |
| 94 | Hillsborough | Hillsborough Bay | FLA012198 | Valrico Hills MHP | DW | 0.008 | 0.12 | 70% | 0.036 | | PP | | |
| 95 | POLK | Hillsborough Bay | FLA131776 | BeckrygerCapital Partners LLLP | IW | 0.022 | 0.33 | 70% | 0.100 | MA | PERC | | |
| 96 | POLK | Hillsborough Bay | FLA016917 | Tropic Star Seafood, Inc. | IW | 0.0106 | 0.16 | 70% | 0.048 | AA | drainfield | | |
| 97 | Hillsborough | Hillsborough Bay | FL0702820 | University of South Florida | IW | 0.024 | | | 0.020 | | | | |
| 98 | Hillsborough | Hillsborough Bay | FL0774383 | Vulcan Materials | IW | 0.05 | | | 0.050 | | | | |
| | | | | | | SUM | 31.89 | SUM | 9.08 | | | | |
| Lower Tampa Bay | | | | | | | | | | | | | |
| 1 | Manatee | Lower Tampa Bay | FLA012654 | Lake Manatee State Park WWTF | DW | 0.005 | 0.08 | 70% | 0.023 | AA | absorption field | | |
| | | | | | | SUM | 0.08 | SUM | 0.02 | | | | |
| Middle Tampa Bay | | | | | | | | | | | | | |
| 1 | Hillsborough | Middle Tampa Bay | FLA012169 | Riverside Club WWTP | DW | 0.06 | 0.91 | 70% | 0.274 | 3M | Perc | | |
| 2 | Hillsborough | Middle Tampa Bay | FLA012255 | Hawaiian Isles MHP | DW | 0.099 | 1.50 | 70% | 0.451 | AA | Perc | | |
| 3 | Hillsborough | Middle Tampa Bay | FLA012609 | Hillsborough County Rest Area I-75n | DW | 0.04 | 0.61 | 70% | 0.182 | 3M | subsurface absorption fields | | |
| 4 | Hillsborough | Middle Tampa Bay | FLA012170 | Little Manatee Springs MH&RV Resort | DW | 0.04 | 0.61 | 70% | 0.182 | 3M | Perc | | |

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|----------------------|--------------|------------------|-------------|--|------------------------|--------|-----------------------|----------------------|----------------|------|----------------------|----------|
| 5 | Hillsborough | Middle Tampa Bay | FLA012144 | Manatee RV Park | DW | 0.035 | 0.53 | 70% | 0.160 | 3M | Perc | |
| 6 | Hillsborough | Middle Tampa Bay | FLA012203 | Little Manatee Isles MHP | DW | 0.03 | 0.46 | 70% | 0.137 | 3M | Perc | |
| 7 | Hillsborough | Middle Tampa Bay | FLA012260 | Neptune Mv | DW | 0.0265 | 0.40 | 70% | 0.121 | AA | Perc | |
| 8 | Hillsborough | Middle Tampa Bay | FLA012210 | Chula Vista Mobile Home Park WWTP | DW | 0.025 | 0.38 | 70% | 0.114 | AA | Perc | |
| 9 | Hillsborough | Middle Tampa Bay | FLA012264 | Tampa South RV Resort | DW | 0.0121 | 0.18 | 70% | 0.055 | 3M | absorption fields | |
| 10 | Hillsborough | Middle Tampa Bay | FLA012143 | Holiday Palms RVP | DW | 0.01 | 0.15 | 70% | 0.046 | 3M | Perc | |
| 11 | Hillsborough | Middle Tampa Bay | FLA012231 | River Oaks RV Resort | DW | 0.01 | 0.15 | 70% | 0.046 | AA | Perc | |
| 12 | Hillsborough | Middle Tampa Bay | FLA177342 | Dimare of Ruskin Inc | IW | 0.014 | 0.21 | 90% | 0.021 | | SF | |
| 13 | Hillsborough | Middle Tampa Bay | FLA017287 | South County Career Center (FKA Adam Payne) | DW | 0.06 | 0.91 | 70% | 0.274 | | Perc | |
| 14 | Hillsborough | Middle Tampa Bay | FLA012133 | Hide-A-Way RV Resort WWTP | DW | 0.03 | 0.46 | 70% | 0.137 | 3M | Perc | |
| | | | | | | SUM | 7.47 | SUM | 2.20 | | | |
| Old Tampa Bay | | | | | | | | | | | | |
| 1 | Hillsborough | Old Tampa Bay | FLA012165 | Sunset Plaza Shopping Center | DW | 0.05 | 0.76 | 70% | 0.228 | 3M | Perc | |
| 2 | Hillsborough | Old Tampa Bay | Fla012140 | Silver Dollar Resort | DW | 0.035 | 0.53 | 70% | 0.160 | 3M | SF and Perc | |
| 3 | Hillsborough | Old Tampa Bay | FLA012205 | Sunrise Mobile Home Park | DW | 0.025 | 0.38 | 70% | 0.114 | 3M | Perc | |
| 4 | Hillsborough | Old Tampa Bay | FLA012094 | Lutz Elementary School | DW | 0.0124 | 0.19 | 70% | 0.057 | 3M | Perc | |
| 5 | Pasco | Old Tampa Bay | FLA012791 | Linda Lakes | DW | 0.02 | 0.30 | 70% | 0.091 | AA | Perc | |
| 7 | Pinellas | Old Tampa Bay | FLA012901 | Southern Comfort Mobile Home Park | DW | 0.015 | 0.23 | 70% | 0.068 | 12M | Absorption Field | |
| 8 | Pinellas | Old Tampa Bay | FLA012907 | Tarponaire Mobile Resort | DW | 0.0125 | 0.19 | 70% | 0.057 | AA | Perc | |
| 9 | Hillsborough | Old Tampa Bay | FLA012193 | Ray Mar MHP | DW | 0.0062 | 0.09 | 70% | 0.028 | 3M | Perc | |
| 10 | Hillsborough | Old Tampa Bay | FLA012257 | Crenshaw Lake Road Mh Court | DW | 0.005 | 0.08 | 70% | 0.023 | AA | Perc | |
| | | | | | | SUM | 2.75 | SUM | 0.83 | | | |
| SUM (NOT ATTENUATED) | | | | 42 | SUM (ALL BAY SEGMENTS) | | | | 12.13 | | | |

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Appendix 2: TBNMC Decision Memo 2017-01

THE TAMPA BAY NITROGEN MANAGEMENT CONSORTIUM *PARTNERSHIP FOR PROGRESS*

TO: Drew Bartlett, FDEP
Trey Glenn, US EPA Region 4

FROM: Holly Greening, TBEP Executive Director (NMC Facilitator)

DATE: September 29, 2017

SUBJECT: 2017 Reasonable Assurance Update Outstanding, Near-Term Issue Recommendations

cc: Erin Rasnake, Kevin Petrus, Kevin O'Donnell, Julie Espy, Tom Frick, Terry Hansen, Daryll Joyner (FDEP Tallahassee)
Jacki Champion, Cindy Zhang-Torres, Vishwas Sathe, Amaury Betancourt, Anthony Annibali, Edgar Guerron-Orejuela (FDEP Tampa)
Annie Godfrey, Felicia Burks, Tom McGill (EPA Region 4)
Tampa Bay Nitrogen Management Consortium
Holly Greening, Ed Sherwood (TBEP)

On behalf of the Tampa Bay Nitrogen Management Consortium (TBNMC) co-chairs, please find below recommendations for consideration under development of the 2021 Reasonable Assurance Update (anticipated to be due to FDEP by December 31, 2021). The recommendations stem from discussions of the Consortium between January 2013 and September 2017 during the development of the 2017 RA Update. As such, these recommendations are incorporated into the 2017 RA Update as an appendix to that document.

Unassigned Reserved Allocations

Background:

For the 2017 RA Update, Consortium participants agreed that allocations developed under the 2009 RA Addendum be maintained through 2021. The exception to this was the assignment of allocations to new, interim or acquired sources that occurred since the 2009 RA Addendum and 2012 RA Update were approved. Tables 10-14 contained in the 2017 RA Update detail the revised allocations for each of the bay segments recognized under the current RA plan. The total allocations for each bay segment remain equal to the federally-recognized TMDL for Tampa Bay and previous RA plans submitted to the FDEP. In the updated table for Hillsborough Bay, an "Unassigned reservation" allocation has been defined in the 2017 RA Update. The "unassigned reservation" allocation resulted from the update and assignment of allocations from previously recognized interim allocation sources listed in the 2009 RA Addendum and 2012 RA Update. Consensus approval by the TBNMC of how the "unassigned reservation" allocation should be considered in future RA plans and assessments was developed at the June 29 and September 29, 2017 TBNMC meetings. The recommendations are below.

Consortium Recommendations:

1. This allocation will be held as a reservation for future bay segment and entity compliance assessments.
2. Permanent transfer of any portion of the unassigned reservation allocation to existing or new sources will be contingent upon Consortium consensus approval and follow the protocol detailed in [NMC Decision Memo 2012-01](#)²⁰ and then later approved by the FDEP²¹.

²⁰ http://tbep.tech.org/NitrogenMgmtConsort/Key_Actions/TBNMC_FINAL_2012-01_Process_for_New_Missed_Expanded_Sources.pdf

²¹ http://tbep.tech.org/NitrogenMgmtConsort/Key_Actions/FDEP_Response_NMC_Decision_Memo_12032012.pdf

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Appendix 3: Old Tampa Bay allocation assessment for the 2012-2016 Reasonable Assurance period.

| Entity | Source | % Allocation (Based on Percentage of Remaining Load) | Allocated TMDL Load (tons/yr) | Mean 2012-2016 Loads (tons/yr), Entities/Facilities with % Allocations Hydrologically Normalized BASIN |
|------------------------|--|---|----------------------------------|--|
| Cheval West | MS4 | 0.18% | 0.7 | 0.4 |
| City of Clearwater | Point Source - Clearwater East SW | | 9.3 | 5.4 |
| | Point Source - Clearwater East RE | | 0.1 | 0.0 |
| | Point Source - Clearwater Northeast SW | | 16.6 | 8.2 |
| | Point Source - Clearwater Northeast RE | | 1.1 | 1.7 |
| | MS4 | 2.71% | 10.6 | 9.9 |
| | TOTAL | | 37.7 | 25.2 |
| Heritage Harbor | MS4 | 0.15% | 0.6 | 0.4 |
| Hillsborough County | Point Source - Dale Mabry SW | | 7.4 | 4.0 |
| | Point Source - Dale Mabry RE | | 2.8 | 1.2 |
| | Point Source - Northwest Regional SW | | 2.9 | 1.8 |
| | Point Source - Northwest Regional RE | | 5.5 | 5.2 |
| | Point Source - River Oaks SW | | 13.4 | 11.0 |
| | Point Source - River Oaks RE | | 1.6 | 2.7 |
| | Point Source - Van Dyke RE | | 0.8 | 0.9 |
| | MS4 | 23.34% | 91.6 | 66.8 |
| | TOTAL | | 126.0 | 93.6 |
| City of Largo | Point Source - Largo SW | | 16.4 | 25.9 |
| | Point Source - Largo RE | | 2.6 | 2.0 |
| | MS4 | 1.40% | 5.5 | 4.7 |
| | TOTAL | | 24.5 | 32.6 |
| MacDill Air Force Base | MS4 | 0.09% | 0.4 | 0.3 |

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| Entity | Source | % Allocation (Based on Percentage of Remaining Load) | Allocated TMDL Load (tons/yr) | Mean 2012-2016 Loads (tons/yr), Entities/Facilities with % Allocations Hydrologically Normalized BASIN |
|------------------------|---------------------------------------|---|----------------------------------|--|
| City of Oldsmar | Point Source - Oldsmar SW | | 2.7 | 1.7 |
| | Point Source - Oldsmar RE | | 0.5 | 0.9 |
| | MS4 | 1.38% | 5.4 | 4.0 |
| | TOTAL | | 8.7 | 6.6 |
| On Top of the World | Point Source - OTOTW RE | | 0.5 | 0.8 |
| Palm Bay | MS4 | 0.01% | 0.0 | 0.0 |
| Park Place | MS4 | 0.10% | 0.4 | 0.4 |
| Pasco County | MS4 | 0.44% | 1.7 | 1.1 |
| Pinellas County | Point Source - W.E. Dunn RE | | 2.3 | 0.8 |
| | Point Source - Bridgeway Acres SW | | 1.2 | 2.1 |
| | MS4 | 14.66% | 57.6 | 38.4 |
| | TOTAL | | 61.1 | 41.3 |
| City of Pinellas Park | MS4 | 1.01% | 4.0 | 3.4 |
| City of Safety Harbor | MS4 | 1.27% | 5.0 | 4.4 |
| City of St. Petersburg | Point Source - St. Pete Facilities RE | | 4.7 | 3.8 |
| | MS4 | 0.88% | 3.5 | 2.8 |
| | TOTAL | | 8.2 | 6.6 |
| Stonebriar | MS4 | 0.05% | 0.2 | 0.2 |
| City of Tarpon Springs | MS4 | 0.41% | 1.6 | 0.7 |
| City of Tampa | MS4 | 5.30% | 20.8 | 17.9 |
| Westchase | MS4 | 0.36% | 1.4 | 1.2 |
| Westchase East | MS4 | 0.43% | 1.7 | 1.4 |
| Duke Energy Bartow | Point Source (2 yrs data) | | 3.0 | 0.8 |

*Interim Allocation, as identified in the 2009 RA Addendum and 2012 RA Update

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Appendix 4: Hillsborough Bay allocation assessment for the 2012-2016 Reasonable Assurance period.

| Entity | Source | % Allocation (Based on Percentage of Remaining Load) | Allocated TMDL Load (tons/yr) | Mean 2012-2016 Loads (tons/yr), Entities/Facilities with % Allocations Hydrologically Normalized BASIN |
|---------------------|---------------------------------------|--|-------------------------------------|---|
| Lowry Park Zoo | Point Source - Lowry Park SW | | 1.0 | 0.2 |
| Hillsborough County | Point Source - Falkenburg SW | | 15.2 | 15.3 |
| | Point Source - Falkenburg RE | | 2.8 | 3.6 |
| | Point Source - Pebble Creek SW | | 0.3 | 0.4 |
| | Point Source - Pebble Creek RE | | 0.1 | 0.3 |
| | Point Source - South County SW | | 1.8 | 5.3 |
| | Point Source - Valrico SW | | 5.6 | 4.4 |
| | Point Source - Valrico RE | | 5.0 | 3.5 |
| | MS4 | 22.60% | 235.6 | 186.3 |
| | TOTAL | | 266.5 | 219.2 |
| City of Lakeland | Point Source - Lakeland SW | | 20.0 | 13.3 |
| | Point Source - Lakeland RE | | 0.2 | 0.0 |
| | MS4 | 1.05% | 10.9 | 10.5 |
| | TOTAL | | 31.1 | 23.8 |
| City of Mulberry | Point Source - Mulberry SW | | 2.4 | 1.3 |
| | MS4 | 0.20% | 2.1 | 2.3 |
| | TOTAL | | 4.5 | 3.6 |
| Pasco County | Point Source - Master Reuse System RE | | 5.8 | 4.8 |
| | MS4 | 3.69% | 38.4 | 24.4 |
| | TOTAL | | 44.2 | 29.2 |
| City of Plant City | Point Source - Plant City SW | | 9.5 | 4.5 |
| | Point Source - Plant City RE | | 1.0 | 0.3 |

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| Entity | Source | % Allocation (Based on Percentage of Remaining Load) | Allocated TMDL Load (tons/yr) | Mean 2012-2016 Loads (tons/yr), Entities/Facilities with % Allocations Hydrologically Normalized BASIN |
|---------------------|---|--|-------------------------------------|---|
| | MS4 | 0.88% | 9.2 | 8.4 |
| | TOTAL | | 19.7 | 13.2 |
| Polk County | Point Source - Northwest Regional RE | | 0.6 | 0.3 |
| | Point Source - Southwest Regional RE | | 1.1 | 0.2 |
| | MS4 | 6.47% | 67.5 | 57.7 |
| | TOTAL | | 69.3 | 58.2 |
| City of Tampa | Point Source - HF Curren SW | | 212.2 | 204.6 |
| | Point Source - HF Curren RE | | 1.0 | 3.5 |
| | MS4 | 4.80% | 50.0 | 44.4 |
| | TOTAL | | 263.2 | 252.5 |
| City of Zephyrhills | Point Source - Zephyrhills RE | | 3.0 | 1.1 |
| | MS4 | 0.16% | 1.6 | 1 |
| | TOTAL | | 4.6 | 2.1 |
| CSX | Point Source - Rockport Material Losses | | 5.6 | 1.5 |
| | Point Source - Winston Yard | | 3.0 | 0.0 |
| | Point Source - Rockport | | 5.0 | 1.0 |
| | Point Source - Newport Material Losses (kfa Eastern) | | 5.6 | 1.3 |
| | Point Source - Rockport/Newport (fka Eastern Terminals) | 0.72% | 7.5 | 4.6 |
| | TOTAL | | 26.8 | 8.4 |
| Kinder Morgan | Point Source - Port Sutton Material Losses | | 1.8 | 0.6 |
| | Point Source - Tampaplex Material Losses | | 3.4 | |
| | Point Source - Tampaplex | | 69.0 | 6.2 |
| | Point Source - Hartford Terminal* | | | |

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| Entity | Source | % Allocation (Based on Percentage of Remaining Load) | Allocated TMDL Load (tons/yr) | Mean 2012-2016 Loads (tons/yr), Entities/Facilities with % Allocations Hydrologically Normalized BASIN |
|-----------------------|--|--|-------------------------------------|---|
| | Point Source - Port Sutton* | | | |
| | TOTAL | | 74.2 | 6.8 |
| Kerry I&F Contracting | Point Source* | | 1.8 | 1.3 |
| Tampa Bay Water | Point Source | | 1.5 | 0.0 |
| Mosaic | Point Source - Tampa Marine (fka CF) Material Losses | | 3.4 | 1.4 |
| | Point Source - Bonnie (fka CF Bartow) | 1.45% | 15.1 | 6.0 |
| | Point Source - Plant City (fka CF) | 0.09% | 0.9 | 0.2 |
| | Point Source - Tampa Ammonia Terminal (fka CF) | 0.02% | 0.2 | 0.6 |
| | Point Source - Tampa Marine (fka CF Phosphate Warehouse) | 0.06% | 0.6 | 0.1 |
| | Point Source - Riverview Material Losses | | 3.4 | 1.8 |
| | Point Source - Bartow | 0.10% | 1.1 | 0.7 |
| | Point Source - Ft. Lonesome | 0.25% | 2.6 | 6.0 |
| | Point Source - Green Bay | 0.64% | 6.6 | 9.3 |
| | Point Source - Hookers Prairie | 0.52% | 5.5 | 1.7 |
| | Point Source - Hopewell | 0.25% | 2.6 | 2.0 |
| | Point Source - Kingsford | 6.17% | 64.3 | 11.3 |
| | Point Source - Mulberry | 0.53% | 5.6 | 0.0 |
| | Point Source - New Wales Stack Closure | 0.00% | 0.0 | 0.0 |
| | Point Source - Nichols Mine | 0.33% | 3.5 | 1.9 |
| | Point Source - Riverview | 0.84% | 8.8 | 0.8 |
| | Point Source - Riverview Stack Closure | 0.47% | 4.9 | 0.1 |
| | Point Source - Port Sutton Ammonia Terminal* | | 6.0 | 0.5 |
| | Point Source - South Pierce | 0.18% | 1.9 | 7.3 |

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| Entity | Source | % Allocation (Based on Percentage of Remaining Load) | Allocated TMDL Load (tons/yr) | Mean 2012-2016 Loads (tons/yr), Entities/Facilities with % Allocations Hydrologically Normalized BASIN |
|---------------------------|---------------------------------------|--|-------------------------------------|---|
| | TOTAL | | 136.8 | 51.6 |
| Agrifos | Point Source - Nichols Prep Plant | 0.00% | 0.0 | 0.0 |
| Brewster Phosphogypsum | Point Source - Brewster Phosphogypsum | 0.10% | 1.0 | 0.2 |
| Alpha/Owens Corning | Point Source - Alpha/Owens Corning | 0.10% | 1.0 | 0.0 |
| Coronet Industries | Point Source - Coronet Industries | 0.45% | 4.7 | 1.6 |
| Estech Agricola | Point Source - Estech Agricola | 0.25% | 2.6 | 2.5 |
| Exxon Mobil | Point Source - Exxon Mobil | 0.16% | 1.7 | 0.0 |
| TECO Bayside | Point Source - TECO Bayside | 0.07% | 0.8 | 0.4 |
| Trademark Nitrogen | Point Source - Trademark Nitrogen | 0.00% | 0.0 | 0.1 |
| Yara North America | Point Source - Yara North America | 0.03% | 0.3 | 0.9 |
| Alafia Preserve | Nonpoint Source/MS4 | 0.06% | 0.6 | 0.4 |
| Bloomingle | Nonpoint Source/MS4 | 0.00% | 0.0 | 0.2 |
| Donaldson Knoll | Nonpoint Source /MS4 | 0.01% | 0.1 | 0.1 |
| Eagle Ridge | Nonpoint Source/MS4 | 0.07% | 0.7 | 0.8 |
| Lake St. Charles | Nonpoint Source/MS4 | 0.04% | 0.4 | 0.5 |
| Live Oak I | Nonpoint Source/MS4 | 0.02% | 0.2 | 0.2 |
| Live Oak II | Nonpoint Source/MS4 | 0.01% | 0.1 | 0.1 |
| Magnolia Park | Nonpoint Source/MS4 | 0.00% | 0.1 | 0.2 |
| MacDill Air Force Base | Nonpoint Source/MS4 | 0.07% | 0.7 | 1.0 |
| Palm River | Nonpoint Source/MS4 | 0.00% | 0.0 | 0.0 |
| Panther Trace | Nonpoint Source/MS4 | 0.03% | 0.3 | 0.5 |
| Panther Trace II | Nonpoint Source/MS4 | 0.02% | 0.2 | 0.7 |
| Rivercrest | Nonpoint Source/MS4 | 0.03% | 0.3 | 0.5 |

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| Entity | Source | % Allocation (Based on Percentage of Remaining Load) | Allocated TMDL Load (tons/yr) | Mean 2012-2016 Loads (tons/yr), Entities/Facilities with % Allocations Hydrologically Normalized BASIN |
|------------------------|---|--|-------------------------------------|---|
| City of San Antonio | Nonpoint Source/MS4 | 0.03% | 0.3 | 0.2 |
| Spring Lake | Nonpoint Source/MS4 | 0.01% | 0.1 | 0.0 |
| St. Leo | Nonpoint Source/MS4 | 0.00% | 0.0 | 0.0 |
| Stone Crest | Nonpoint Source/MS4 | 0.00% | 0.0 | 0.0 |
| Stone Dairy Creek | Nonpoint Source/MS4 | 0.00% | 0.0 | 0.0 |
| Stonelake Ranch | Nonpoint Source/MS4 | 0.00% | 0.0 | 0.1 |
| City of Temple Terrace | Nonpoint Source/MS4 | 0.20% | 2.1 | 1.2 |
| Mosaic | New Load: Big Bend Material Losses | | 0.0 | 0.7 |
| Kinder Morgan | New Load: Point Source - Tampaplex Bulk Terminal | | 0.0 | 0.4 |
| Busch Gardens | New Load: Point Source - Busch Gardens | | 0.0 | 0.1 |
| Mosaic | New Load: Point Source - Mulberry Phosphogypsum Stack | 0.00% | 0.0 | 1.8 |
| Mosaic | New Load: Point Source - New Wales Chemical Plant | 0.00% | 0.0 | 14.1 |

*Interim Allocation, as identified in the 2009 RA Addendum and 2012 RA Update



Appendix 5: Middle Tampa Bay allocation assessment for the 2012-2016 Reasonable Assurance period.

| Entity | Source | % Allocation (Based on Percentage of Remaining Load) | Allocated TMDL Load (tons/yr) | Mean 2012-2016 Loads (tons/yr), Entities/Facilities with % Allocations Hydrologically Normalized BASIN |
|------------------------|---------------------------------------|---|----------------------------------|--|
| Harbor Bay | MS4 | 0.03% | 0.2 | 0.5 |
| Hillsborough County | Point Source - South County RE | | 0.5 | 0.5 |
| | MS4 | 9.91% | 70.9 | 72.2 |
| | TOTAL | | 71.4 | 72.7 |
| MacDill Air Force Base | Point Source - MacDill AFB RE | | 0.7 | 0.7 |
| | MS4 | 0.97% | 7.0 | 3.2 |
| | TOTAL | | 7.7 | 3.9 |
| Manatee County | MS4 | 3.05% | 21.8 | 20.8 |
| Pinellas County | MS4 | 0.45% | 3.2 | 2.1 |
| City of Pinellas Park | MS4 | 0.74% | 5.3 | 3.5 |
| City of St. Petersburg | Point Source - St. Pete Facilities RE | | 20.8 | 17.1 |
| | MS4 | 6.49% | 46.5 | 27.3 |
| | TOTAL | | 67.3 | 44.4 |
| Mosaic | Point Source - Four Corners | 4.09% | 29.3 | 30.1 |
| TECO Big Bend | Point Source - Big Bend SW* | | 56.5 | 52.8 |
| | Point Source - Big Bend RE | | 2.1 | 0.0 |
| | TOTAL | | 58.6 | 52.8 |

*Interim Allocation, as identified in the 2009 RA Addendum and 2012 RA Update



Appendix 6: Lower Tampa Bay allocation assessment for the 2012-2016 Reasonable Assurance period.

| Entity | Source | % Allocation (Based on Percentage of Remaining Load) | Allocated TMDL Load (tons/yr) | Mean 2012-2016 Loads (tons/yr), Entities/Facilities with % Allocations Hydrologically Normalized BASIN |
|-------------------------------|--|---|----------------------------------|--|
| Hillsborough County | MS4 | 0.01% | 0.0 | 0.0 |
| Lexington | MS4 | 0.04% | 0.1 | 0.1 |
| Manatee County | Point Source - Manatee County North RE | | 3.9 | 3.4 |
| | Point Source - Manatee County North SW | | 0.0 | 0.8 |
| | MS4 | 7.81% | 26.8 | 15.6 |
| | TOTAL | | 30.7 | 19.8 |
| City of St. Petersburg | MS4 | 0.01% | 0.0 | 0.0 |
| Kinder Morgan Port Manatee | Point Source - Material Losses | | 0.3 | 0.2 |
| Piney Point Facility* | Point Source - Piney Point | | 0.9 | 0.9 |

*Interim Allocation, as identified in the 2009 RA Addendum and 2012 RA Update



Appendix 7: Remainder of Lower Tampa Bay allocation assessment for the 2012-2016 Reasonable Assurance period.

| Entity | Source | % Allocation (Based on Percentage of Remaining Load) | Allocated TMDL Load (tons/yr) | Mean 2012-2016 Loads (tons/yr), Entities/Facilities with % Allocations Hydrologically Normalized BASIN |
|---------------------------------|---------------------------------------|--|----------------------------------|---|
| City of Bradenton | Point Source - Bradenton SW | | 18.6 | 17.0 |
| | Point Source - Bradenton RE | | 0.6 | 1.9 |
| | MS4 | 1.82% | 10.8 | 7.0 |
| | TOTAL | | 30.0 | 25.8 |
| City of Gulfport | MS4 | 0.37% | 2.2 | 1.3 |
| Greyhawk Landing | MS4 | 0.14% | 0.8 | 0.8 |
| Harbourage at Braden River | MS4 | 0.00% | 0.0 | 0.1 |
| Heritage Harbour | MS4 | 0.14% | 0.8 | 0.8 |
| Heritage Harbour Marketplace | MS4 | 0.02% | 0.1 | 0.1 |
| Lakewood Ranch | MS4 | 1.47% | 8.7 | 6.2 |
| Lexington | MS4 | 0.02% | 0.1 | 0.1 |
| Manatee County | Point Source - Southeast RE | | 2.7 | 7.5 |
| | MS4 | 21.95% | 130.2 | 78.7 |
| | TOTAL | | 132.9 | 86.2 |
| Pinellas County | MS4 | 0.18% | 1.1 | 0.7 |
| City of Palmetto | Point Source - Palmetto SW | | 2.2 | 1.2 |
| | Point Source - Palmetto RE | | 1.0 | 0.6 |
| | MS4 | 0.77% | 4.6 | 3.7 |
| | TOTAL | | 7.7 | 5.5 |
| Sarasota County | MS4 | 1.38% | 8.2 | 4.4 |
| City of St. Petersburg Beach | MS4 | 0.21% | 1.2 | 0.8 |
| City of St. Petersburg | Point Source - St. Pete Facilities RE | | 1.6 | 1.3 |

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| Entity | Source | % Allocation (Based on Percentage of Remaining Load) | Allocated TMDL Load (tons/yr) | Mean 2012-2016 Loads (tons/yr), Entities/Facilities with % Allocations Hydrologically Normalized BASIN |
|------------------|-----------------------------|--|----------------------------------|---|
| | MS4 | 1.27% | 7.5 | 5.4 |
| | TOTAL | | 9.1 | 6.7 |
| Tara | MS4 | 0.18% | 1.1 | 0.6 |
| University Place | MS4 | 0.11% | 0.6 | 0.4 |
| Waterlefe | MS4 | 0.10% | 0.6 | 0.4 |
| Tropicana* | Point Source - Tropicana SW | | 9.1 | 0.0 |

*Interim Allocation, as identified in the 2009 RA Addendum and 2012 RA Update

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