

Florida Keys Reasonable Assurance Documentation Update



FKRAD Program

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Prepared for

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

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Executive Summary

SUMMARY

The Florida Keys Reasonable Assurance Documentation (FKRAD) was approved by the Florida Department of Environmental Protection (FDEP or Department) for Nutrients in 2008 and provided to the Environmental Protection Agency (EPA) in February 2009. This document provides an update to the FKRAD (“Update”) for two major reasons: to provide the status of the management activities defined in the original RAD and to address dissolved oxygen (DO) impairments for some segments (WBIDs). It is expected that the Nutrient FKRAD will support placement of the Florida Keys in category 4b for nutrients (i.e., impaired but no TMDL is required because the waterbody will attain the narrative nutrient criterion as a result of completed or proposed measures as part of an approved Reasonable Assurance) and support placement of the DO impaired segments in category 4e (i.e., impaired but recently completed or ongoing management activities are underway to restore the water body).

MANAGEMENT ACTIVITIES STATUS

Since 2008, a total of 68 projects have been completed. The status of each project along and a list of new projects are provided in Attachment 1 of the FKRAD Update. Project status is provided for each stakeholder: Monroe County, Key West, Marathon, Key Colony Beach, Layton, Islamorada, Key Largo Wastewater Treatment Authority, US Navy, FDOT and Florida Park Service. It should be noted that the original FKRAD was based partly on compliance with Chapter 99-395, Laws of Florida, which mandated compliance with wastewater treatment requirements by June 2010. However, in 2010, Chapter 2010-205, Laws of Florida (LOF) extended the compliance date to December 2015 (a full summary of Chapter 2010-205, LOF, is provided in the Update).

DO REASONABLE ASSURANCE

FDEP has identified 10 WBIDs that are impaired for DO, based on exceedance of the marine DO standards (i.e., ambient DO average not less than 5 mg/l in a 24-hour period and not lower than 4 mg/l). For each segment, the ambient biochemical oxygen demand (BOD), total nitrogen (TN) and total phosphorus (TP) do not exceed the estuarine thresholds for each parameter; therefore, FDEP could not identify a causative pollutant. Since the management activities identified in the FKRAD including wastewater and stormwater projects will result in reduced discharges of nutrients and other pollutants to the nearshore waters, it is expected that the ambient DO will also improve. Therefore, the Update provides the needed information to include the 10 WBIDs as category 4e. Information includes identification of DO impaired segments, description of the DO standard, definition of the potential effects of the management activities, schedule to achieve water quality targets, and summary of ongoing monitoring.



Section 1.0 **BACKGROUND**

1.1 PURPOSE OF THE DOCUMENT

The purpose of this document is to provide an update to the Florida Keys Reasonable Assurance Plan to document actions taken by stakeholders since 2008 (date of plan acceptance) to return the area's near shore water quality to the targets set for total nitrogen (TN) and total phosphorus (TP). This document also addresses the dissolved oxygen (DO) impairment identified by the Florida Department of Environmental Protection (Department) in some of the water segments for the Florida Keys.

This Florida Keys Reasonable Assurance Plan for the Florida Keys (see **Figure 1-1**) was developed by the Department in cooperation with local governments, state agencies, and federal agencies within the Florida Keys to set forth and accelerate the actions that have been taken or were planned to be taken to reduce nutrient loadings to near shore waters throughout the Florida Keys so that water quality standards are met and beneficial uses are restored. The plan was reviewed and accepted by the Department in 2008 and was sent to EPA for review and comment in February 2009. The Florida Keys Reasonable Assurance Plan was divided into several documents (listed below) and can be found at <http://www.dep.state.fl.us/water/watersheds/bmap.htm>:

1. Florida Keys Reasonable Assurance Documentation (FKRAD) Northern Report
2. FKRAD Central Keys Report
3. FKRAD South Central Report
4. FKRAD Southern Report
5. Technical Reference Document



Figure 1-1 Florida Keys

In accordance with Section 62-303.600, F.A.C., the FKRAD provided reasonable assurance that stakeholders in the Florida Keys have



provided or would implement sufficient control mechanisms to return the area's impaired waters to the water quality targets for nutrients.

To provide reasonable assurance, the following elements were included:

- Description of the Impaired Water
- Description of the Water Quality and Aquatic Ecological Goals
- Description of the Proposed Management Actions to Be Undertaken
- Estimate or Projection of Time When Water Quality Target(s) Met
- Description of Procedures for Monitoring and Reporting Results
- Description of Proposed Corrective Actions

The Florida Keys is a chain of islands approximately 220 miles long, extending from the end of the Florida peninsula curving southwest toward the Dry Tortugas. Consisting of 822 islands, of which about 30 are inhabited, the Florida Keys are traversed by U.S. Highway 1 (a.k.a., US 1 or Overseas Highway) with 19 miles of bridges. The Keys are entirely within Monroe County and includes the municipalities of Islamorada, Key Colony Beach, Layton Marathon and Key West. Key West represents about 34 percent (24,650 people) of the population of Monroe County, which, according to the 2010 Census, is about 73,090 people.

The Florida Keys is unique in that local runoff is not focused and pollutants are dispersed in the Gulf of Mexico and Straits of Florida. Soils are such that infiltration and percolation are relatively enhanced, moving infiltrated runoff and its pollutants to nearshore waters quickly, yielding little or no nutrient entrapment or treatment in the soils matrix. The limited size of the land area limits the ability to place land intensive stormwater BMPs (such as detention or retention ponds). Also unique to the Florida Keys is the degree to which external farfield pollutants circulating in marine waters impact local waters. Due to the soils, high water table and tides, onsite sewage treatment and disposal systems (OSTDSs), also commonly referred to as aerobic treatment units (ATUs) or septic tanks, have limited treatment capability and "regional" wastewater treatment systems are historically limited to small package plants. Finally, pollutant sources outside of the control of the local governments provide the dominant influence on the receiving waters of the area. In this case, unconventional approaches to pollutant controls are required. Additionally, the Florida Keys have been the subject of significant regional, State and Federal scrutiny and regulatory oversight with most aspects of growth and development reviewed at all levels of government.

The nutrient impaired waters (impaired for TN and TP) include Halo zone waters surrounding the Florida Keys that are up to 500 meters offshore and nearshore waters up to 12,100 meters offshore; these waters are Class III (Recreation, Propagation and Maintenance of a Healthy, Well Balanced Population of Fish and Wildlife) and Outstanding Florida Waters (OFW). Waters were originally listed as impaired for nutrients on the 1998 303(d) List. Water Body Identification (WBID) numbers include the following:



- Northern Keys: WBIDs 6019, 6017, 6009, 6006A, 6006B, 6006C, and 6005EB, which are the Halo Zone WBIDs surrounding the islands of Lower Matecumbe Key, Upper Matecumbe Key, Windley Key, Plantation Key and Largo Key.
- Central Keys: WBIDs 6010, 6011A, 6011B, 6011C, 6012E, and 6016, which are the Halo Zone WBIDs surrounding Marathon, Key Colony Beach, Duck Key and Layton/Long Key.
- South Central Keys: WBIDs include 6014C, 6013A, 6013B, 6013C, 6013D, 6012A, 6012B, 6012C, 6012D, 6012E, 6010, and 6018, which are the Halo Zone WBIDs surrounding the islands of Boca Chica Key, Saddlebunch Key, Sugarloaf Key, Cudjoe Key, Summerland Key, Ramrod Key, Big Torch Key, Big Pine Key, Long Beach, No Name Key and Bahia Honda Key.
- Southern Keys: WBIDs include 6014A and 6014B which are the Halo Zone WBIDs surrounding the islands of Key West and Stock Island.

The WBID boundaries in the near shore waters of the Florida Keys have gone through a series of changes over time. Historically, the WBIDs were identified by a 8000-series number and were very large. In early 2000, WBIDs were redrawn by local interests to closely surround each island (about 200 meters, 0.12 miles, from the shore) and were represented by a 6000-series number. These “bubbles” around the islands were termed Bubble WBIDs. For the purposes of the FKRAD, the near shore waters include the Bubble WBIDs and other coastal waters out to about 12,000 meters (7.5 miles) from the shore.

The applicable water quality standard applied to the impaired waters was the narrative nutrient criteria defined in Chapter 62-302.530(47)(b):

“In no case shall nutrient concentrations of a water body be altered so as to cause an imbalance of natural populations of flora and fauna.”

At the time the FKRAD was submitted to FDEP in 2008, there were no scientifically supported nutrient thresholds that had been defined for aquatic resources in the area. Since that time, using more recent data and research, the Environmental Regulation Commission (ERC) has adopted numeric nutrient standards for the Florida Keys nearshore waters that are generally based on maintaining existing conditions. As noted in the FKRAD, the planned management activities are expected to improve ambient nutrient concentrations once the activities are fully completed. Therefore, the FKRAD and recently adopted Florida numeric nutrient standards should be consistent. Presuming the nutrient standards are eventually approved by EPA, this consistency will be reviewed during the next assessment cycle.

Two sets of nutrient targets were originally supported in the FKRAD. Since the farfield sources dominate the nutrient concentrations in nearshore waters, the first target was defined to be an insignificant increase in concentration at 500 meters above natural background, with “insignificant” defined as less than 10 µg/l for TN and 2 µg/l for TP and with “background” defined as the Halo Zone condition in the absence of anthropogenic loads. A second target was set based on the OFW designation, with the target set at the



average of values measured at the nearshore ambient nutrient concentrations at 500 meters during the year (1985) the Florida Keys was designated as an OFW.

A stakeholder process was implemented during the preparation of the FKRAD. The stakeholder process provided an opportunity for local, regional, state and federal governments (as well as other third party interest) to: understand the reasonable assurance process; provide data and research input into the development of the FKRAD documentation; and confirm that the FKRAD reasonably expresses the committed activities of the stakeholders. The list of completed and proposed management actions in the FKRAD included wastewater projects, stormwater programs and regulatory requirements committed by the stakeholders. The management actions specified in the FKRAD were projected to provide the following nutrient load reductions as shown in **Table 1-1**:

Table 1-1: FKRAD Pollutant Load Summary

Nutrient	Anthropogenic Loading (lbs/yr)	Loading After Management Actions (lbs/yr)	% Loading Reduction
Total Nitrogen	965,724	360,939	63%
Total Phosphorus	246,368	67,840	73%

Water quality targets (OFW condition restoration and insignificant increase above farfield concentrations) are expected to be achieved by 2020. All committed wastewater and stormwater management activities will be completed by 2015. Monitoring will be completed via a number of ongoing ambient water quality and biological assessment stations throughout the Florida Keys; monitoring will be implemented by the Department, the South Florida Water Management District (SFWMD), and the Florida Keys National Marine Sanctuary (FKNMS); results are reported to the FKNMS Sanctuary Advisory Council with studies by the Florida Marine Research Institute (FMRI) and the Florida International



Figure 1-2 Planning Units



University (FIU) via the Water Quality Protection Program (WQPP). Monitoring will be reported to the FKNMS Steering Committee.

This document provides an update to the Florida Keys Reasonable Assurance Plan and addresses the DO impairment identified by the Department for the Upper, Middle and Lower Keys planning units (**Figure 1-2**). **Section 2** and **Section 3** describe the DO impairment and water quality standards for DO. **Section 4** provides an update on the proposed management actions. **Section 5** provides a schedule to achieve water quality targets and **Section 6** describes monitoring efforts.

For the purpose of this document, the stakeholders include the Village of Islamorada, Key Largo Wastewater Treatment District for unincorporated Monroe County, City of Marathon, City of Key Colony Beach, City of Layton, City of Key West, Monroe County, US Navy, Florida Department of Transportation (FDOT) District VI, and Florida State Parks Service.

1.2 Activities since the Florida Keys Reasonable Assurance Documentation Adoption

Since the time that the 2008 FKRAD was accepted by the Department, a number of activities have occurred. These are described in general terms and are further discussed in more detail throughout the document. Since 2008, implementation of activities to reduce nutrient loadings to near shore waters has been successful. In addition to the progress reported prior to FKRAD implementation, a total of 68 projects have been completed. Many are still ongoing and are anticipated to be complete between 2011 and 2015. The majority of the completed projects are wastewater related although there are several stormwater projects that have been completed as well.

In addition to stakeholder activities, a number of related regulatory actions have occurred. In the FKRAD, enforcement and oversight by the Florida Department of Health (FDOH) provided reasonable assurance for achieving non-voluntary wastewater management actions on the private facility level. Chapter 99-395, Laws of Florida (LOF) requires FDOH to conduct enforcement actions against private owners of cesspits and non-complying OSTDSs that have failed. Cesspit elimination is mandated by Chapter 99-395, LOF as part of the Keys-wide initiative to improve Halo Zone water quality. Non-complying on-site systems also require that their owners undertake action to avoid violating Chapter 99-395, LOF. Since the FKRAD was initially approved by the FDEP, this law has been amended. Specific changes to this law and its impact on reasonable assurance activities are discussed in Section 4.

Since acceptance of the FKRAD in 2008, the Department has completed the Draft Cycle 2 Assessment of Impaired Waters for Group 5 (which includes the Florida Keys). As part of the draft assessments, the Department has identified several WBIDs in the Florida Keys as impaired for DO. These WBIDs are currently assigned to Assessment Category 4e, which represents waterbodies that have been identified as impaired applying the Impaired Waters Rule; however, there are on-going or recently completed activities to restore the waterbody. The Department will not verify waterbodies as impaired or develop TMDLs for waters that will attain water quality standards in the future and reasonable progress towards attainment will be made prior to the next assessment cycle (Rule 62-303.100(5), F.A.C.). Waterbodies



that meet this condition are placed into category 4a, and waters where ongoing restoration activities should restore the designated uses of the waterbody are placed in Category 4e. It is anticipated that this final list of impaired waters will be adopted by Secretarial Order in January 2012.





Section 2.0

IDENTIFICATION OF DISSOLVED OXYGEN IMPAIRED WATERS

2.1 UNDERSTANDING OF IMPAIRMENT IN THE FLORIDA KEYS

This section provides a description of the impaired waters, recent information showing the DO impaired waters, and a consideration of the pollutants and suspected sources.

2.1.1 Problem Definition

The Bubble WBID and nearshore waters within the Florida Keys are designated Class III (Recreation, Propagation and Maintenance of a Healthy, Well-Balanced Population of Fish and Wildlife) and, except for interior canals, Outstanding Florida Waters (OFW). The operative criteria are listed in Chapter 62-302.530(47), F.A.C. (criteria for Class III) and Chapter 62.4-242(2), F.A.C. (criteria for OFW). The 1998 303(d) List of Impaired Surface Waters records “the Florida Keys” as impaired for nutrients, with no other specificity. The Florida Keys Reasonable Assurance Plan for the Florida Keys addressed nutrient impairment, specifically TN and TP, for the Florida Keys nearshore waters. Since that time the Department has identified multiple WBIDs as being impaired for DO. As defined in Chapter 62-302.530(30), F.A.C., the ambient DO in marine waters is not to average less than 5.0 mg/l in a 24-hour period and not be less than 4.0 mg/l.

2.1.2 Impaired Waters

The Department has determined that DO is impaired for multiple WBIDs (See **Table 2-1** below) in the Florida Keys based on exceedance/sample size ratio meeting the verification requirements in Chapter 62-303.420, F.A.C., of the Impaired Waters Rule (IWR).

Table 2-1: Florida Keys WBIDs in category 4e for DO

Planning Unit	WBID	Water Segment Name	Verified Period Assessment Data ¹
Upper Keys	6006A	South Key Largo	21/92
Upper Keys	6006C	North Key Largo	5/19
Upper Keys	6009	Plantation Key	12/31
Middle Keys	6010	Long Key	6/24
Middle Keys	6011A	Vaca Key	185/369
Middle Keys	6011C	Grassy Key	8/20
Lower Keys	6012A	Big Pine Key	9/31
Lower Keys	6012C	No Name Key	3/4
Upper Keys	6017	Upper Matecumbe Key	8/28
Upper Keys	6019	Lower Matecumbe Key	5/17

¹ This column shows the number of DO exceedances over the sample size



As part of the DO assessment, the Department evaluates available biological data, calculates regressions, and is required to identify a causative pollutant TN, TP, or biochemical oxygen demand (BOD) in order to place a waterbody on the verified list. The thresholds used to assist in identifying a causative pollutant (TN, TP, or BOD) for DO are based on the 70th percentile of data collected statewide. For WBIDs that fall within the Everglades and South region of the state (including the Florida Keys) FDEP uses the threshold values in **Table 2-2** below. **Figures 2-1, 2-2, and 2-3** below show the sampling locations for each impaired WBID for the Lower Keys, Upper Keys and Middle Keys, respectively.

Table 2-2: Threshold Values for Nutrient Parameters by Waterbody Type

WATER TYPE	BOD	TN	TP
Lake	2.9	1.7	0.11
Coastal	2.1	1.0	0.19
Estuary	2.1	1.0	0.19
Spring	2.0	1.6	0.22
Stream	2.0	1.6	0.22
Blackwater	2.0	1.6	0.22

In the case of the 10 WBIDs listed in Table 2-1, the Department could not identify a causative pollutant for the DO impairments because the TN, TP, and BOD medians were below the estuarine threshold values. Furthermore, when DO is impaired and a causative pollutant cannot be determined, the Department typically would consider placing the waterbody in assessment category 4d (no causative pollutant) for further investigation. However, the restoration activities set forth in the FKRAD to address nutrient impairments are expected to have an ancillary benefit of reducing the anthropogenic pollutant loads impacting DO, thus the Department has placed these WBIDs in assessment category 4e (Ongoing Restoration Activities). These ancillary benefits are discussed in more detail in Section 4.



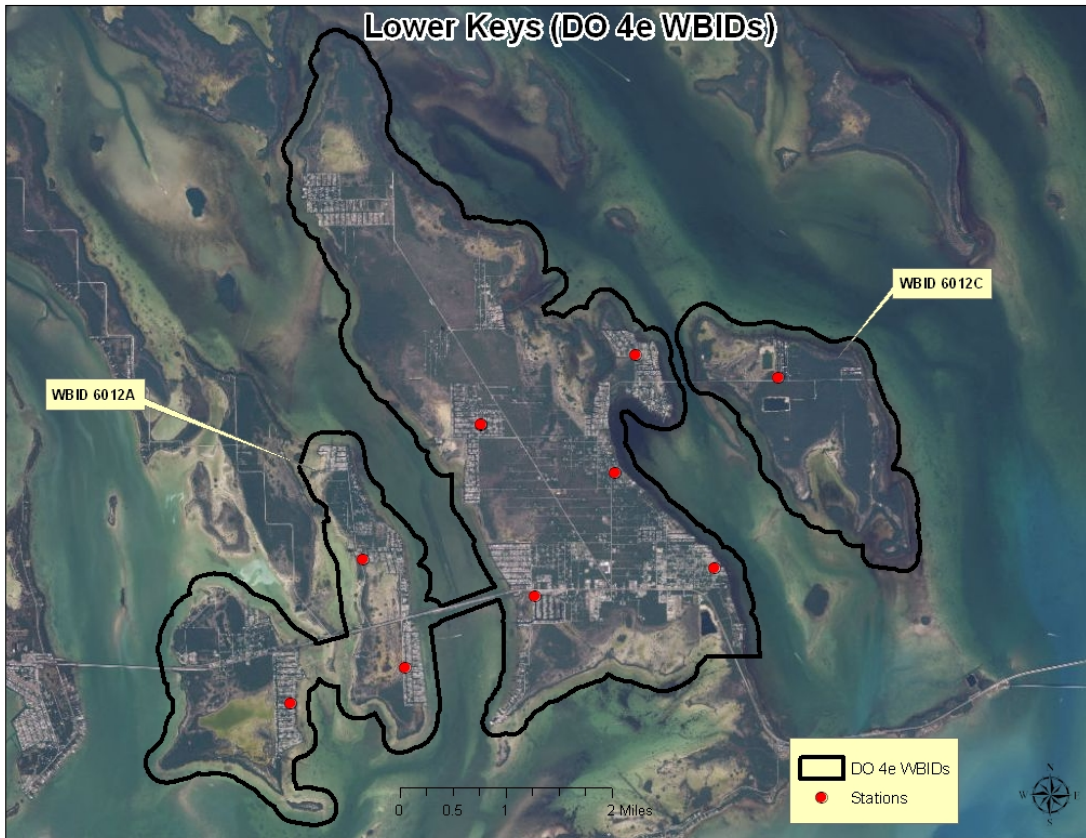


Figure 2-1 – Lower Keys WBID's

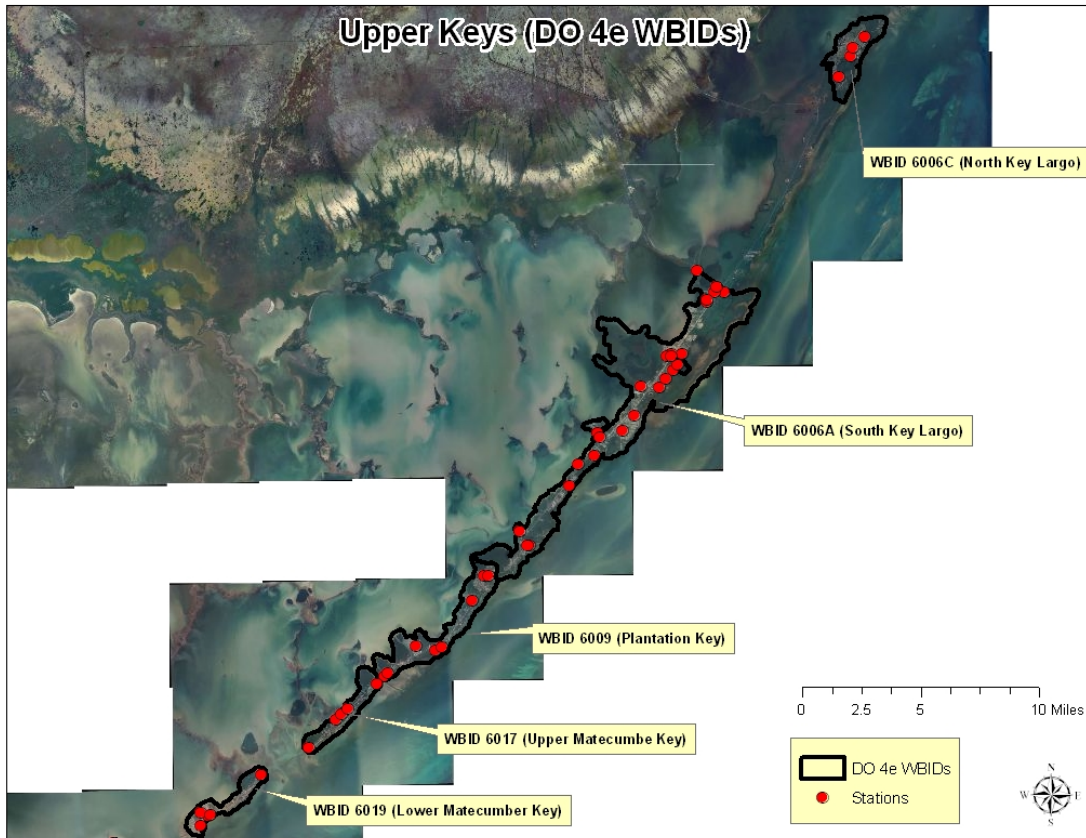


Figure 2-2 – Upper Keys WBID's

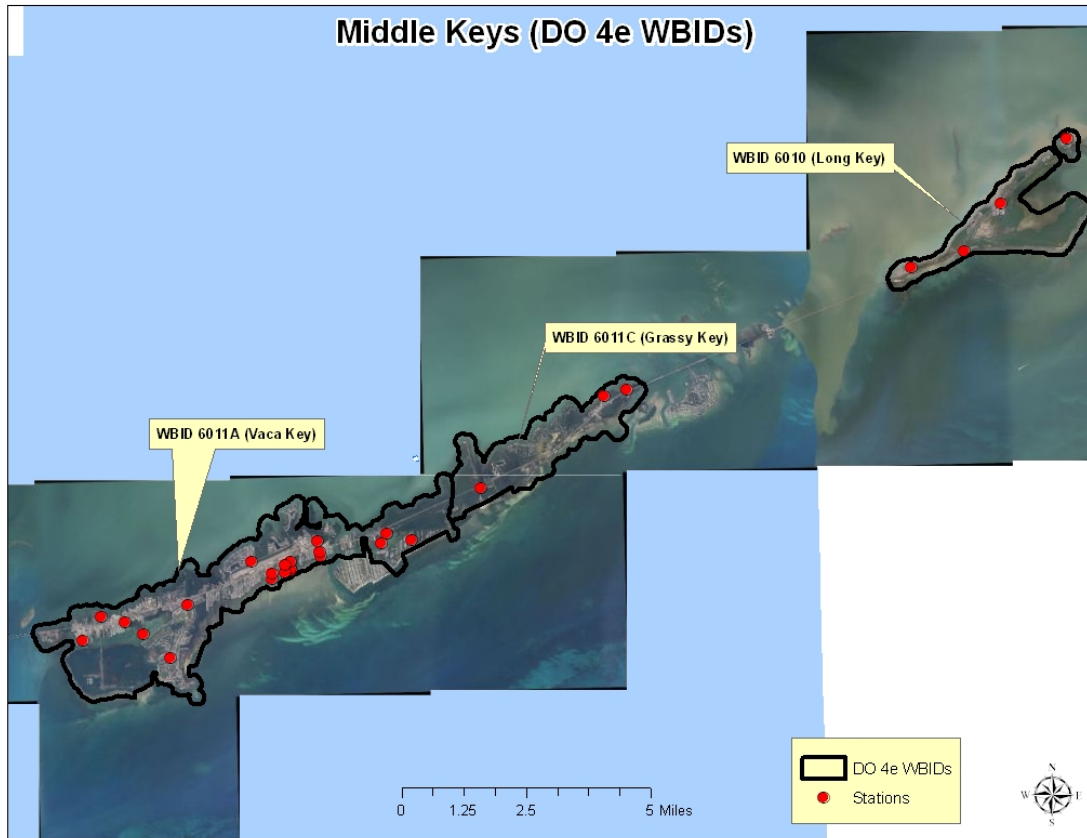


Figure 2-3 – Middle Keys WBID



Section 3.0

DESCRIPTION OF WATER QUALITY STANDARDS FOR DISSOLVED OXYGEN

3.1 WATER QUALITY STANDARDS

This section defines the water quality standards used to evaluate the degree to which management activities result in the attainment of the water quality criterion. The applicable water quality standards, resource targets and selected targets are discussed below.

3.1.1 Florida Water Quality Standards – Dissolved Oxygen

The nearshore waters in the Florida Keys are classified as Class III (Recreation, Propagation and Maintenance of a Healthy, Well-Balanced Population of Fish and Wildlife), and have been designated as an OFW. These designations are discussed further in the 2008 Technical Reference Document, Appendix A, completed as part of the FKRAD.

For these waters, the applicable water quality standard is Chapter 62-302.530(30), F.A.C., which states that DO in Class III marine waters:

“Shall not average less than 5.0 milligrams/liter in a 24-hour period and shall never be less than 4.0 milligrams/liter. Normal daily and seasonal fluctuations above these levels shall be maintained.”

3.1.2 Antidegradation

Antidegradation policies are intended to maintain the existing uses and the level of water quality necessary to protect those uses. The policies that discuss antidegradation are contained within Chapters 62-302.300 and 62-4.242, F.A.C. As discussed in these sections, a new or existing discharge may be permitted if: the discharge will not lower water quality below the established classification; degradation is necessary or desirable under federal standards and under circumstances which are clearly in the public interest; and if all other Department requirements are met.

In determining whether a proposed discharge, which results in water quality degradation, is necessary or desirable under federal standards and under circumstances which are clearly in the public interest, the Department shall consider and balance the following factors:

1. Whether the proposed project is important to and is beneficial to the public health, safety, or welfare; and
2. Whether the proposed discharge will adversely affect conservation of fish and wildlife, including endangered or threatened species, or their habitats; and
3. Whether the proposed discharge will adversely affect the fishing or water-based recreational values or marine productivity in the vicinity of the proposed discharge; and



4. Whether the proposed discharge is consistent with any applicable Surface Water Improvement and Management Plan (SWIM) that has been adopted by a Water Management District and approved by the Department.

3.2 RESTORATION OF THE DESIGNATED USES OF THE IMPAIRED WATERS – DISSOLVED OXYGEN

The resulting water quality in the canals, after the completion of the management activities identified in the FKRAD, is unknown. The Department expects that the conditions in the canals will improve for both nutrients as well as DO. However, due to the varying nature of the canals with poor circulation, weed wrack, organic sediments and water depth, the Department also recognizes that the ambient DO concentrations in the canals will likely not achieve Class III marine DO standards even after the management activities have been completed. As a result, the Department intends to continue to work with the FKNMS in the study of potential improvements to the canals, beyond the management activities listed herein, and evaluate whether reclassification of the canals to Class III-Limited is appropriate.





Section 4.0

DESCRIPTION OF PROPOSED MANAGEMENT ACTIONS TO BE UNDERTAKEN

4.1 NAMES OF THE RESPONSIBLE PARTICIPATING ENTITIES

There are a total of ten stakeholders participating in the FKRAD documentation process including:

- Key Largo Wastewater Treatment District (WBIDs 6006A and 6006B)
- Islamorada, Village of Islands (WBIDs 6009, 6017 and 6019)
- City of Key Colony Beach (WBID 6011B)
- City of Layton (WBID 6010)
- City of Marathon (WBIDs 6011A and 6011C)
- City of Key West (WBID 6014A)
- Monroe County (WBIDs 6006B, 6006C, 6010, 6016 6012A/B/C/D/E, 6013A/B/C/D, 6014B,6014C, and 6018)
- Florida Department of Transportation, District VI (WBIDs 6006A, 6006B, 6006C, 6009, 6010, 6011A, 6011B, 6011C, 6012A/B/C/D, 6013A/B/C/D, 6014A, 6014B,6014C, 6016, 6017, 6018 and 6019)
- Florida State Parks System (WBIDs 6016, 6017 and 6018)
- United States Navy (WBIDs 6014A, 6014C)

4.2 UPDATE OF PROPOSED MANAGEMENT ACTIVITIES DESIGNED TO ADDRESS NUTRIENTS

As previously discussed, the Florida Keys are unlike any other watershed in Florida in terms of the relationship of watersheds to receiving waterbodies, dispersion versus concentration of nutrients, and the predominance of farfield sources on local water quality. Consequently, there are a number of important concepts that were presented in the FKRAD relative to the management actions in the Florida Keys:

- Water quality in the nearshore waters is dominated by farfield sources that are a combination of naturally occurring nutrient loads and anthropogenic sources located outside of the Florida Keys.
- Farfield sources are not within the control of the residents of the Florida Keys.
- Water quality in the Halo Zone waters (the area from the beach to line approximately 500 meters off the shoreline) are incrementally affected by a combination of natural



stormwater discharges originating on undeveloped areas and anthropogenic discharges from developed land with loads attributable to wastewater and stormwater management practices from developed properties.

- Water quality in the Halo Zone waters are also incrementally affected, though to a much lesser degree, by nutrients discharged via stormwater from existing natural areas.
- Management actions proposed in the FKRAD focused specifically on the reduction or elimination of the anthropogenic nutrient loads being discharged to the Halo Zone waters in the defined “bubble” WBIDs.
- No attempt to reduce farfield impacts was incorporated into the FKRAD as these strategies are outside to the implementation abilities of the governments of the Florida Keys.

Management activities were classified into three different categories: wastewater management practices; stormwater management practices; and regulatory programs. The implemented and anticipated management actions are summarized in **Table 4-1**.

Table 4-1: General Management Actions

Wastewater Management Practices	Stormwater Management Practices	Regulatory Programs
<ul style="list-style-type: none"> ▪ Elimination of Cesspits ▪ Centralized Wastewater Services ▪ Upgraded Privately Owned Wastewater Systems ▪ Class V Deep Injection Well for Disposal of Wastewater Effluent (Replacing Existing Ocean Outfall) ▪ Marine Pump-Out Service for Moored Boats to Reduce Illicit Discharges 	<ul style="list-style-type: none"> ▪ Retrofitting Existing Drainage Systems with Stormwater Treatment prior to Outfall to Halo Zone Waters ▪ Retrofitting Existing Drainage Systems with Stormwater Treatment and Stormwater Disposal Wells (No Direct Outfall to Halo Zone) ▪ Incorporation of Treatment Components in New Transportation Projects 	<ul style="list-style-type: none"> ▪ Designation as an “Area of Critical State Concern” ▪ Local Development and Redevelopment Regulations ▪ Enforcement of Chapter 99-395, LOF (amended as Chapter 2010-205, LOF) Requirements by FDEP and FDOH ▪ Chapter 62, F.A.C., including OFW (Chapter 62-302.700, F.A.C.)

The collective effect of the wastewater and stormwater management actions proposed in the FKRAD represented a significant effort for removing the 1999 baseline anthropogenic stormwater nutrient load that was identified for the Florida Keys. Continued application of proposed management actions will also limit the additional nutrient loading associated with the anticipated future new growth and redevelopment within the Florida Keys.

Baseline nutrient loading and future nutrient loading estimates provided in the FKRAD are generally shown in **Table 4-2**.



Table 4-2: Estimated Nutrient Loadings in the Florida Keys

	Total Anthropogenic Nutrient Load	
	Total Nitrogen (lbs/year)	Total Phosphorus (lbs/year)
1999 Baseline Condition	965,724	246,368
July 1, 2015	363,605	68,249

** Excludes anticipated but as yet unquantified reductions from existing and anticipated stormwater management practices*

Documentation of the estimated pollutant load reduction and other benefits anticipated from implementation of individual management actions by stakeholders were documented in the FKRAD. The stakeholders felt confident that the FKRAD provided reasonable assurance that water quality targets will be met in the watershed because the plan specifically removed/reduced the known anthropogenic sources of the pollutants of concern.

As part of this addendum, stakeholders were contacted and requested to provide an update on the status of the proposed future management projects originally outlined in the Stakeholder Agreements contained within Exhibit 1 of the FKRAD. Stakeholders provided feedback on the implementation status of each project and actual dates of completion. If a project had been delayed or substituted for any reason, an explanation and a revised date of implementation were provided. This information is provided in **Attachment 1** and is organized by Florida Keys region (e.g., northern, central, south central and southern). Management practices already implemented at the time of original FKRAD development are not included in Attachment 1.

In general, many of the projects have been completed by the stakeholders. Several projects are ongoing while funding is still being pursued for some projects. Wastewater projects that are still pursuing funding are anticipated to be completed no later than December 2015 when entities are required to comply with discharge standards. Information was provided by the Florida Division of Recreation & Parks (FDRP) and the FDOT, District VI on many completed and proposed projects that were not previously included in the Stakeholder Agreements of the original FKRAD. For the FDRP, these included: the conversion of standard septic tanks to Florida Department of Health (FDOH) ATU septic tank systems and abandonment of State Park wastewater treatment facilities and using the local utility provider at several State Parks throughout the Florida Keys. For FDOT, District VI, projects consisted mainly of road improvements, drainage projects and drainage improvements. Additionally, the City of Layton met all of its project commitments at the time that the 2008 FKRAD was accepted and therefore does not have any projects listed in Attachment 1.



4.3 ANTICIPATED BENEFITS TO ADDRESS THE DISSOLVED OXYGEN IMPAIRMENT

The physical and operational nature of the implemented and soon-to-be completed management actions will provide additional benefits, beyond reduction of nutrient concentrations. Along with the reduction of nutrients, it is anticipated that ongoing restoration activities will address the anthropogenic pollutant loads impacting DO. However, it should be noted that even with restorative activities in place, these waterbodies may not meet the applicable DO criteria due to the physical structure of the canal system. Other anticipated benefits of restoration activities include:

- Ancillary reduction of other (non-nutrient) pollutants;
- Trash collection/removal;
- Leaf collection and net pollutant load reduction
- Potential reduction of Inflow to the wastewater collection system;
- Improvement of ambient Halo Zone water quality; and,
- Improvement of ambient Canal water quality.

4.4 AGREEMENTS COMMITTING PARTICIPANTS TO THE MANAGEMENT ACTIONS

Copies of the written agreements committing participants to the management actions are contained in the Stakeholders Agreement. These can be found in Exhibit 1 of the original FKRAD reports for the Northern, Central, South-Central and Southern Keys.

4.5 CHANGES TO CHAPTER 99-395, L.O.F.

On June 18, 1999, Governor Bush approved Chapter 99-395, LOF. A portion of Chapter 99-395 provides requirements for wastewater facilities and OSTDSs in Monroe County. In general, provisions are given for monitoring at sewage treatment facilities for TN and TP beginning on October 1, 1999; elimination of existing water discharges before July 1, 2006; and compliance of existing sewage facilities that discharge to areas other than surface waters to cease discharge or meet specified standards by July 1, 2010.

On June 4, 2010, Governor Christ approved Chapter 2010-205, LOF. A portion of Chapter 2010-205 includes amendments to specific sections of the Florida Statutes (FS) as well as repealing of portions of Chapter 99-395 – these amendments and repeals are summarized below.

- Section 215.619, Florida Statutes (FS), was amended and provides clarification on bonding capacity and the purposes for which the bond proceeds may be expended. This includes the issuance of bonds to be used to finance the



management of sewage facilities in the Florida Keys Area of Critical State Concern.

- Section 380.0552, FS, was amended to revise legislative intent relating to the designation of the Florida Keys as an Area of Critical State Concern. It revises conditions and procedures for removing the designation, Area of Critical State Concern, from the Florida Keys including reporting requirements beginning on November 30, 2010 by the Division of Community Planning. This amendment authorizes the Administration Commission to review the report and determine whether the designation should be removed. Also, this amendment revises compliance requirements for reviewing comprehensive plan amendments.
- Section 381.0065 FS was amended to change the compliance dates for certain activities. OSTDSs must cease discharge by December 31, 2015, or comply with new discharge standards including monitoring for total nitrogen and total phosphorus concentrations. It requires disinfection standards for OSTDSs discharging to an injection well. It requires that on or after July 1, 2010, all new, modified, or repaired OSTDSs comply with discharge standards; however, if a property is scheduled for central sewer connection by December 31, 2015, and the owner has paid an assessment or connection fee, the owner will be required to meet minimum standards for the OSTDSs until connection to the central sewer. Land application of septage is prohibited effective January 1, 2016.
- Section 381.00656 FS was created to provide for a low-income grant program for septic tank maintenance and replacement.
- Section 381.0066 FS was amended to authorize the FDOH to collect an evaluation report fee and for the report fee to be revenue neutral.
- Section 403.086 FS was amended to require the Department to submit a report on the effects of reclaimed water use, clarifying reuse requirements for domestic wastewater facilities that discharge through ocean outfalls, clarifying reuse requirements for domestic wastewater facilities that divert wastewater from facilities discharging through ocean outfalls, providing legislative findings and discussing discharge requirements for wastewater facilities in Monroe County. By December 31, 2015, Monroe County, each municipality and those special districts established for the purpose of collection, transmission, treatment, or disposal of sewage in Monroe County must complete the wastewater collection, treatment, and disposal facilities designated as hot spots in the Monroe County Sanitary Master Wastewater Plan, dated June 2000. Domestic wastewater facilities located outside local government and special district service areas must meet treatment and disposal requirements by December 31, 2015. Also, all wastewater treatment facilities in operation after December 31, 2015, must comply with the treatment and disposal requirements of Section 403.086 and Department rules.
- Sections 5 and 6 of Chapter 99-395, LOF were repealed because these sections were superseded with the approval of Chapter 2010-205.



Section 5.0

SCHEDULE TO ACHIEVE WATER QUALITY TARGETS

5.1 ACHIEVING WATER QUALITY TARGETS – DISSOLVED OXYGEN

As previously discussed, the nutrient concentrations in the Halo Zone and nearshore waters are dominated by farfield effects and anthropogenic sources of nutrients in the Florida Keys. Water quality in the halo zone waters are incrementally affected by a combination of natural stormwater discharges originating on undeveloped areas and anthropogenic discharges from developed land with loads attributable to wastewater and stormwater management practices from developed areas. The management activities discussed in Section 4 will help to reduce or eliminate anthropogenic nutrient loads to the halo zone waters. An ancillary benefit of the management activities is improved DO in the inland canals. It is expected that the ambient DO in the inland canals will improve but may not achieve Class III marine DO standards. The exact condition of the canals after the completion of the management activities is unknown but, as stated before, is expected to be better (i.e., increased ambient DO) than the baseline condition.

As discussed in Section 3, the nearshore waters are classified as Class III and have been designated an OFW. By returning to an OFW condition, this restoration is consistent with OFW requirements.

5.2 SCHEDULE TO ACHIEVE TARGETS – DISSOLVED OXYGEN

The management actions discussed herein, to be completed by the signatories, will be completed in 2015. It is expected that the effects of these actions will be seen and will achieve the TN and TP water quality targets in the Halo Zone waters for all of the Florida Keys in 2020. As it relates to the inland canals, it is expected that the conditions of these canals will improve for both nutrients as well as DO during this timeframe.





Section 6.0

MONITORING RESULTS

6.1 SUMMARY OF EXISTING MONITORING

Monitoring and reporting activities provides the basis for establishing the water quality improvements that will be achieved through implementation of the management actions described in Section 4. Monitoring, including both the sampling of water quality in the receiving waters and the oversight of management action implementation and operation, provides the data and information required to assess improvements and compliance with the plan. Reporting activities maintain a continuous flow of performance information that supports adaptive management efforts as may be required to achieve the anticipated benefits.

The primary network of interest for the Florida Keys is the FKNMS Water Quality Monitoring Program network, operated by the Florida International University (FIU) Southeastern Environmental Research Center (SERC). The central portion of this network includes “local” stations that have been sampled quarterly since 1995. These stations can be used to define long-term nutrient concentration trends in the waters that are most immediate to the WBIDs of interest, including the Halo Zone and the more immediate nearshore waters. There are 95 stations within this network that are within the Florida Keys TMDL Planning Units as shown in **Figure 6-1**.

The *2009 Annual Report of the Water Quality Monitoring Project for the Water Quality Protection Program of the Florida Keys National Marine Sanctuary* (FIU, 2010) summarizes the period of record from March 1995 through December 2009 and includes data from 58 quarterly sampling events at 155 stations within the FKNMS and southwest Florida shelf, including the Dry Tortugas National Park. Field parameters measured at each station include salinity (practical salinity scale), temperature (°C), dissolved oxygen (DO, mg/l), turbidity (NTU), relative fluorescence, and light attenuation (K_d , m^{-1}). Water quality variables include the dissolved nutrients nitrate (NO_3^-), nitrite (NO_2^-), ammonium (NH_4^+), dissolved inorganic nitrogen (DIN), and soluble reactive phosphate (SRP). Total unfiltered concentrations include those of nitrogen (TN), organic nitrogen (TON), organic carbon (TOC), phosphorus (TP), silicate (SiO_2) and chlorophyll a (CHLA, $\mu g/l$).

The EPA developed Strategic Targets for the Water Quality Monitoring Project which state that beginning in 2008 through 2011, they shall annually maintain the overall water quality of the near-shore and coastal waters of the FKNMS according to 2005 baseline. For all monitoring sites in FKNMS, dissolved inorganic nitrogen should be less than or equal to 0.75 micromolar (0.01 mg/l) and TP should be less than or equal to 0.2 micromolar (0.077 mg/l). **Table 6-1** provides a summary of the compliances with EPA targets over time.

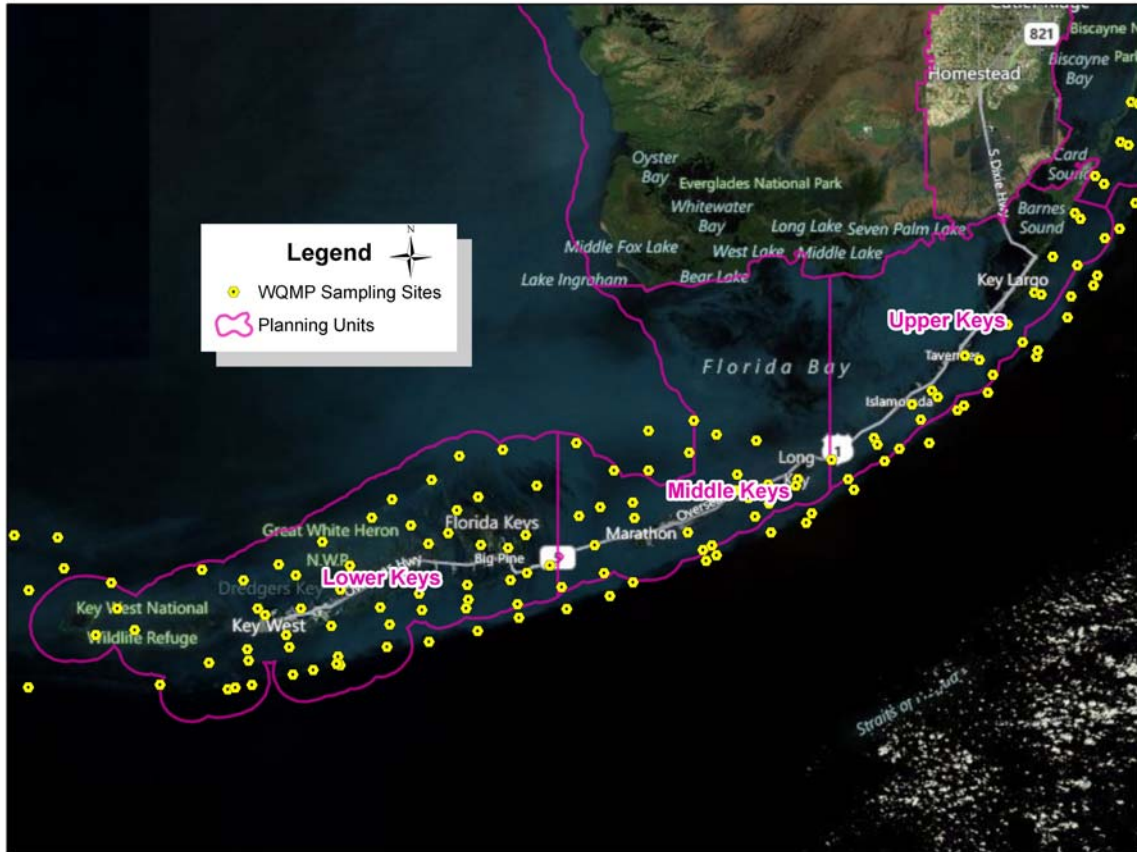


Figure 6-1 FKNMS WQMP Sampling Sites

Table 6-1: EPA WQPP Water Quality Targets*

Year	DIN \leq 0.75 μM^{**} (0.010 mg/l)	TP \leq 0.25 μM^{**} (0.0077 mg/l)
1995-05	7923 of 10254 (76.3%)	8304 of 10267 (80.9%)
2006	432 of 990 (43.7%)	312 of 995 (31.3%)
2007	556 of 993 (60.0%)	608 of 941 (64.7%)
2008	836 of 1,000 (83.6%)	685 of 1,004 (68.2%)
2009	909 of 1,101 (82.5%)	889 of 1,102 (80.7%)

* Taken from 2009 Annual Report of the Water Quality Monitoring Project for the Water Quality Protection Program of the Florida Keys National Marine Sanctuary (FIU, 2010)

** Values in green are those years with % compliance greater than 1995-2005 baseline. Values in yellow are those years with % compliance less than 1995-2005 baseline.



Table 6-1 shows that, although the TP results have not met the percent compliance target for the 1995-2005 baseline, the results have been significantly improving since 2006. The 2009 results were just shy of the 1995-2005 baseline target of 80.9 percent. DN results show that the compliance target was met in 2008 and 2009. It is important to note that these results represent data from all the sampling stations in the FKNMS (including southwest Florida shelf and the Dry Tortugas National Park), and is just not representative of the Florida Keys themselves.

The study also noted that for 2009, in all regions of the FKNMS, water quality has returned to conditions prior to 2005 hurricane season.

Summary statistics for all water quality variables for all 58 sampling events were reported as the median, minimum, maximum and number of samples. On this coarse scale, the FKNMS exhibited very good water quality with median NO₃⁻, NH₄⁺, TP, and SiO₂ concentrations of 0.001, 0.003, 0.006, and 0.009 mg/ l, respectively. Summary statistics for TN and TP for the 2009 period of record are provided in **Table 6-2**.

Table 6-2: FKNMS Summary Statistics*

Variable	Depth	Median	Min.	Max.	n
TN (mg/l)	Surface	0.173	0.036	0.584	722
	Bottom	0.159	0.019	0.948	382
TP (mg/l)	Surface	0.006	0.001	0.038	722
	Bottom	0.005	0.001	0.020	380

** Taken from 2009 Annual Report of the Water Quality Monitoring Project for the Water Quality Protection Program of the Florida Keys National Marine Sanctuary (FIU, 2010)*

6.2 METHODS FOR EVALUATING PROGRESS TOWARDS GOALS

Procedures to be used in the Florida Keys for monitoring implementation progress and water quality improvements focus on the elimination of substandard wastewater treatment practices (pursuant to Chapter 99-395 and Chapter 2010-205) and corresponding changes in ambient water quality in the canals, halo zone and nearshore waters. The monitoring program for the Florida Keys primarily requires the efforts of the central wastewater system operators and the operators of the existing FKNMS and Florida Bay ambient water quality monitoring networks.

The monitoring program proposed in the FKRAD focused upon immediate measurement of the benefits being produced by implementation of the proposed management activities outlined below. Given the DO impairment for the Florida Keys, monitoring should also include reporting of this parameter. Review of the FKNMS WQPP indicates that this parameter is already being sampled on a quarterly basis via these three items that are listed here and discussed below: 1) Total Wastewater Service Level; 2) Ambient Bubble WBID Water Quality Trends; and 3) Nearshore Water Quality Trends.

1. Total Wastewater Service Level. This is the basic measure of net nutrient reductions being achieved in the Florida Keys via capital projects.



2. Ambient Bubble WBID Water Quality Trends. These are measured in the Halo Zone WBID waters and the more immediate nearshore waters (at distances up to 5,600 meters off the shoreline), which demonstrate localized water quality improvement in the “backyard” of the Florida Keys. Specific measures of progress include quarterly measurement of TN, TP and DO concentrations at the existing stations in the existing FKNMS and Florida Bay monitoring networks (currently operated by FIU/SERC) that are generally located inside of the Halo Zone WBIDs and nearshore waters at distances up to 5,600 meters off the shoreline.

3. Nearshore Water Quality Trends. These are measured in the existing FKNMS and Florida Bay nearshore waters monitoring stations located in the nearshore waters (at distances greater than 5,600 meters off the shoreline). These trends generally indicate the water quality changes in the marine environment outside the general impact of Keys discharges are attributable to changing farfield loadings. Specific measures of progress include quarterly measurement of TN, TP and DO concentrations at the existing stations in the existing FKNMS and Florida Bay monitoring networks (currently operated by FIU/SERC) that are generally located outside of the halo zone WBIDs at distances greater than 5,600 meters off the shoreline.

A comprehensive update of the wastewater and infrastructure improvements were summarized in Section 4 while a summary of existing ongoing water quality monitoring was previously provided in Subsection 6.1.

The Department will continue to use water quality data results from the networks previously described, as available and appropriate, to evaluate the progress of the implemented management actions toward meeting water quality management goals. Aggregated data will be interpreted using graphical and statistical methodologies.





ATTACHMENT 1

Summary of Status of Completion for Proposed Management Practices



Attachment 1
SUMMARY OF STATUS OF COMPLETION FOR
PROPOSED MANAGEMENT PRACTICES

WBID	Management Action	FKRAD Reported Actual or Anticipated Operational Date	Updated Actual or New Anticipated Operational Date	Comments
NORTHERN KEYS PROPOSED FUTURE MANAGEMENT PRACTICES				
6009	Construction of the North Plantation Key Phase II central wastewater collection system, to be connected to the existing North Plantation Key AWT treatment facility and shallow Class V effluent disposal well serving approximately 1,100 EDUs [Islamorada]	August 2008	October 2009	Project completed.
6009	Construction of the South Plantation Key central wastewater collection system, 0.300 MGD AWT treatment facility and shallow Class V effluent disposal well serving approximately 1,900 EDUs [Islamorada]	December 2010	December 2015	Islamorada, Village of Islands is pursuing construction of a central wastewater collection and treatment system for the entire Village (outside of the existing North Plantation Key Phase I and Phase II service areas) through a Design Build Operate Finance (DBOF) process. Per the issued Request for Proposals, central wastewater shall be available throughout the entire Village by December 1, 2015. Construction phasing will be the responsibility of the selected DBOF firm.
6019	Construction of the Lower Matecumbe Key central wastewater collection system, 0.250 MGD AWT treatment facility and shallow Class V effluent disposal well serving approximately 1,600 EDUs [Islamorada]	December 2012	December 2015	Islamorada, Village of Islands is pursuing construction of a central wastewater collection and treatment system for the entire Village (outside of the existing North Plantation Key Phase I and Phase II service areas) through a Design Build Operate Finance (DBOF) process. Per the issued Request for Proposals, central wastewater shall be available throughout the entire Village by December 1, 2015. Construction phasing will be the responsibility of the selected DBOF firm.



WBID	Management Action	FKRAD Reported Actual or Anticipated Operational Date	Updated Actual or New Anticipated Operational Date	Comments
6006A	Construction of 2.3 MGD AWT treatment facility with disposal in a deep Class V effluent disposal well [KLWTD]	May 2009	October 2010	Project completed.
6006A	Construction of the Basin A central wastewater collection system serving 1,323 EDUs with subsequent connection to the 2.3 MGD AWT treatment facility with finished effluent disposal in a deep Class V well [KLWTD]	May 2009	September 2010	Project completed.
6006A	Construction of the Basin B central wastewater collection system serving 1,861 EDUs with subsequent connection to the 2.3 MGD AWT treatment facility with finished effluent disposal in a deep Class V well [KLWTD]	May 2009	September 2010	Project completed.
6006A	Construction of the Basin D central wastewater collection system serving 2,548 EDUs with subsequent connection to the 2.3 MGD AWT treatment facility with finished effluent disposal in a deep Class V well [KLWTD]	May 2009	September 2010	Project completed.
6006A	Construction of the Basin C central wastewater collection system serving 1,207 EDUs with subsequent connection to the 2.3 MGD AWT treatment facility with finished effluent disposal in a deep Class V well [KLWTD]	October 2009	October 2010	Project completed.



WBID	Management Action	FKRAD Reported Actual or Anticipated Operational Date	Updated Actual or New Anticipated Operational Date	Comments
6017	Construction of the North Upper Matecumbe Key central wastewater collection system, to be connected to the proposed Upper Matecumbe Key AWT treatment facility and shallow Class V effluent disposal well serving approximately 1,100 EDUs [Islamorada]	December 2012	December 2015	Islamorada, Village of Islands is pursuing construction of a central wastewater collection and treatment system for the entire Village (outside of the existing North Plantation Key Phase I and Phase II service areas) through a Design Build Operate Finance (DBOF) process. Per the issued Request for Proposals, central wastewater shall be available throughout the entire Village by December 1, 2015. Construction phasing will be the responsibility of the selected DBOF firm.
6017	Construction of the South Upper Matecumbe Key central wastewater collection system, 0.600 MGD AWT treatment facility and shallow Class V effluent disposal well serving approximately 2,700 EDUs [Islamorada]	December 2012	December 2015	Islamorada, Village of Islands is pursuing construction of a central wastewater collection and treatment system for the entire Village (outside of the existing North Plantation Key Phase I and Phase II service areas) through a Design Build Operate Finance (DBOF) process. Per the issued Request for Proposals, central wastewater shall be available throughout the entire Village by December 1, 2015. Construction phasing will be the responsibility of the selected DBOF firm.
6006A	Construction of the Basin E (Phase II) central wastewater collection system serving 999 EDUs with subsequent connection to the 2.3 MGD AWT treatment facility with finished effluent disposal in a deep Class V well [KLWTD]	October 2009	September 2010	Project completed.
6006A	Construction of the Basin F central wastewater collection system serving 1,111 EDUs with subsequent connection to the 2.3 MGD AWT treatment facility with finished effluent disposal in a deep Class V well [KLWTD]	June 2010	September 2010	Project completed.



WBID	Management Action	FKRAD Reported Actual or Anticipated Operational Date	Updated Actual or New Anticipated Operational Date	Comments
6006A	Construction of the Basin G central wastewater collection system serving 1,625 EDUs with subsequent connection to the 2.3 MGD AWT treatment facility with finished effluent disposal in a deep Class V well [KLWTD]	September 2010	2011	G1, G2, G5 (Mar-11); G3 (Jul-11); G4 (Apr-11)
6006A	Construction of the Basin H central wastewater collection system serving 737 EDUs with subsequent connection to the 2.3 MGD AWT treatment facility with finished effluent disposal in a deep Class V well [KLWTD]	January 2011	March 2011	Project completed.
6006A	Initial connection of John Pennekamp State Park to KLWTD central wastewater collection system serving 167 EDUs in Basins A-C [KLWTD]	June 2010	June 2010	The John Pennekamp Coral Reef State Park WWTP was decommissioned, abandoned and removed in 2010 and the entire Park's wastewater flows are now being transmitted, received and handled by the KLWTD AWT (see <i>Florida State Parks</i> entry for WBID 6006B).
6009	Construction of the Windley Key central wastewater collection system, 0.140 MGD AWT treatment facility and shallow Class V effluent disposal well serving 900 EDUs [Islamorada]	March 2011	December 2015	Islamorada, Village of Islands is pursuing construction of a central wastewater collection and treatment system for the entire Village (outside of the existing North Plantation Key Phase I and Phase II service areas) through a Design Build Operate Finance (DBOF) process. Per the issued Request for Proposals, central wastewater shall be available throughout the entire Village by December 1, 2015. Construction phasing will be the responsibility of the selected DBOF firm.
6006A	Final connection of John Pennekamp State Park to KLWTD central wastewater collection system serving 43 EDUs in Basins C-H [KLWTD]	January 2011	June 2010	The John Pennekamp Coral Reef State Park WWTP was decommissioned, abandoned and removed in 2010 and the entire Park's wastewater flows are now being transmitted, received and handled by the KLWTD AWT (see <i>Florida State Parks</i> entry for WBID 6006B).



WBID	Management Action	FKRAD Reported Actual or Anticipated Operational Date	Updated Actual or New Anticipated Operational Date	Comments
6006A	Construction of the Basin K central wastewater collection system serving 1,080 EDUs with subsequent connection to the 2.3 MGD AWT treatment facility with finished effluent disposal in a deep Class V well [KLWTD]	July 2011	N/A	Basin K was merged with Basin J. Basin "JK" consists of 9 phases.
6006A	Construction of the Basin I central wastewater collection system serving 1,910 EDUs with subsequent connection to the 2.3 MGD AWT treatment facility with finished effluent disposal in a deep Class V well [KLWTD]	October 2011	2010/2011	Oceanside (Jan-11) ; Bayside (Nov-10); I5 (Jul-11)
6006A	Construction of the Basin J central wastewater collection system serving 893 EDUs with subsequent connection to the 2.3 MGD AWT treatment facility with finished effluent disposal in a deep Class V well [KLWTD]	December 2011	2011	JK2, JK6, JK7, JK9, (Jul-11); JK-1, JK-4 (Aug-11); JK3, JK5 (Sept-11); JK8 (Nov-11)
6006C	Ocean Reef Club AWT and Shallow Well [North Key Largo Utility Corp.]	NI	May, 2011	AWT was completed and is fully operational. Anglers Club is also served by Ocean Reef Club's sanitary sewer system. Additionally, three (3) private buildings were taken off of septic systems in 2008 and are served by Ocean Reef Club's system. Ocean Reef Club is now entirely served by sanitary sewer.



WBID	Management Action	FKRAD Reported Actual or Anticipated Operational Date	Updated Actual or New Anticipated Operational Date	Comments
6009	Construction of the Middle Plantation Key central wastewater collection system, 0.250 MGD AWT treatment facility expansion at North Plantation Key AWT treatment facility and shallow Class V effluent disposal well serving approximately 1,600 EDUs [Islamorada]	December 2010	December 2015	Islamorada, Village of Islands is pursuing construction of a central wastewater collection and treatment system for the entire Village (outside of the existing North Plantation Key Phase I and Phase II service areas) through a Design Build Operate Finance (DBOF) process. Per the issued Request for Proposals, central wastewater shall be available throughout the entire Village by December 1, 2015. Construction phasing will be the responsibility of the selected DBOF firm.
6006B	Dagny Johnson Key Largo Hammock Botanical State Park - Assistant Manager Residence (BL015054), 1013 Atlantic Blvd. (Garden Cove), future to utility provider, KLWTD [Florida State Parks]	NI	December 2015	This system's design, permitting and construction are dependent upon the availability of the service connection to the utility provider, KLWTD [Florida State Parks]. At this time the KLWTD indicates they will not provide the needed service extension for this residence connection. Based upon this indication the Department intends to pursue funding to construct an OSTDS – ATU (Performance Based) as originally planned.
6006B	Dagny Johnson Key Largo Hammock Botanical State Park - Ranger Residence (BL190002), 127 Valois Blvd. (Ocean Reef Shores), future to utility provider, KLWTD [Florida State Parks]	NI	December 2015	This system's design, permitting and construction are dependent upon the availability of the service connection to the utility provider, KLWTD [Florida State Parks]. At this time the KLWTD indicates they will not provide the needed service extension for this residence connection. Based upon this indication the Department intends to pursue funding to construct an OSTDS – ATU (Performance Based) as originally planned. (Performance Based) as originally planned.
6006B	Dagny Johnson Key Largo Hammock Botanical State Park - Ranger Residence (BL190009), 203 Charlemagne Blvd. (Ocean Reef Shores), future to utility provider, KLWTD [Florida State Parks]	NI	December 2015	This system's design, permitting and construction are dependent upon the availability of the service connection to the utility provider, KLWTD [Florida State Parks]. At this time the KLWTD indicates they will not provide the needed service extension for this residence connection. Based upon this indication the Department intends to pursue funding to construct an OSTDS – ATU (Performance Based) as originally planned.



WBID	Management Action	FKRAD Reported Actual or Anticipated Operational Date	Updated Actual or New Anticipated Operational Date	Comments
6006B	Dagny Johnson Key Largo Hammock Botanical State Park - Ranger Residence (BL190010), 207 Charlemagne Blvd. (Ocean Reef Shores), future to utility provider, KLWTD [Florida State Parks]	NI	December 2015	This system's design, permitting and construction are dependent upon the availability of the service connection to the utility provider, KLWTD [Florida State Parks]. At this time the KLWTD indicates they will not provide the needed service extension for this residence connection. Based upon this indication the Department intends to pursue funding to construct an OSTDS – ATU (Performance Based) as originally planned.
6006B	Dagny Johnson Key Largo Hammock Botanical State Park - Ranger Residence (BL 190011), 211 Charlemagne Blvd. (Ocean Reef Shores), future to utility provider, KLWTD[Florida State Parks]	NI	December 2015	This system's design, permitting and construction are dependent upon the availability of the service connection to the utility provider, KLWTD [Florida State Parks]. At this time the KLWTD indicates they will not provide the needed service extension for this residence connection. Based upon this indication the Department intends to pursue funding to construct an OSTDS – ATU (Performance Based) as originally planned.
6006B	Dagny Johnson Key Largo Hammock Botanical State Park - Ranger Residence/Office (BL 190012), 3 Lacroix (Ocean Reef Shores), future to utility provider, KLWTD [Florida State Parks]	NI	December 2015	This system's design, permitting and construction are dependent upon the availability of the service connection to the utility provider, KLWTD [Florida State Parks]. At this time the KLWTD indicates they will not provide the needed service extension for this residence connection. Based upon this indication the Department intends to pursue funding to construct an OSTDS – ATU (Performance Based) as originally planned.
6006B	Dagny Johnson Key Largo Hammock Botanical State Park - Ranger Residence (BL 190009), 203 Charlemagne Blvd. (Ocean Reef Shores), future to utility provider, KLWTD [Florida State Parks]	NI	December 2015	This system's design, permitting and construction are dependent upon the availability of the service connection to the utility provider, KLWTD [Florida State Parks]. At this time the KLWTD indicates they will not provide the needed service extension for this residence connection. Based upon this indication the Department intends to pursue funding to construct an OSTDS – ATU (Performance Based) as originally planned.
6006B	Dagny Johnson Key Largo Hammock Botanical State Park - Ranger Residence/Office (BL 190024), 265 Charlemagne Blvd. (Ocean Reef Shores), future to utility provider, KLWTD [Florida State Parks]	NI	December 2015	This system's design, permitting and construction are dependent upon the availability of the service connection to the utility provider, KLWTD [Florida State Parks]. At this time the KLWTD indicates they will not provide the needed service extension for this residence connection. Based upon this indication the Department intends to pursue funding to construct an OSTDS – ATU (Performance Based) as originally planned.



WBID	Management Action	FKRAD Reported Actual or Anticipated Operational Date	Updated Actual or New Anticipated Operational Date	Comments
6006B	John Pennekamp Coral Reef State Park - Park Manager Residence (BI015043) to utility provider, KLWTD [Florida State Parks]	NI	June 2010	The John Pennekamp Coral Reef State Park WWTP was abandoned in 2007 and this Residence's wastewater flows are now being transmitted, received and handled by the KLWTD AWT.
6006B	John Pennekamp Coral Reef State Park - Mobile Home Ranger Residence (BI015053) to utility provider, KLWTD [Florida State Parks]	NI	June 2010	The John Pennekamp Coral Reef State Park WWTP was abandoned in 2007 and this Residence's wastewater flows are now being transmitted, received and handled by the KLWTD AWT.
6006B	John Pennekamp Coral Reef State Park - Ranger Residence_1023 Gibraltar Road (BI015028) to utility provider, KLWTD [Florida State Parks]	NI	June 2010	The John Pennekamp Coral Reef State Park WWTP was abandoned in 2007 and this Residence's wastewater flows are now being transmitted, received and handled by the KLWTD AWT.
6006B	John Pennekamp Coral Reef State Park - Ranger Residence_1026 Gibraltar Road (BI015005) to utility provider, KLWTD [Florida State Parks]	NI	June 2010	The John Pennekamp Coral Reef State Park WWTP was abandoned in 2007 and this Residence's wastewater flows are now being transmitted, received and handled by the KLWTD AWT.
6006B	John Pennekamp Coral Reef State Park - Ranger Residence_1053 Alhambra Drive (BI015001) to utility provider, KLWTD [Florida State Parks]	NI	June 2010	The John Pennekamp Coral Reef State Park WWTP was abandoned in 2007 and this Residence's wastewater flows are now being transmitted, received and handled by the KLWTD AWT.
6006B	John Pennekamp Coral Reef State Park - Park WWTP, I.D. # FLA015030 (Plant Decommissioned, Abandoned & Removed) [Florida State Parks]	NI	June 2010	The John Pennekamp Coral Reef State Park WWTP was decommissioned, abandoned and removed in 2010 and the entire Park's wastewater flows are now being transmitted, received and handled by the KLWTD AWT.
8078	Lignumvitae Key State Park - PM Residence (BL097002) Standard Septic Tank System To DOH ATU [Florida State Parks]	NI	June 2010	This new DOH ATU septic tank system was constructed in June 2010 to meet the B.A.T. for this residence. There are no other improvements anticipated at this time.



WBID	Management Action	FKRAD Reported Actual or Anticipated Operational Date	Updated Actual or New Anticipated Operational Date	Comments
8078	Lignumvitae Key State Park - Matheson House Area RR Standard Septic Tank System Abandoned [Florida State Parks]	NI	June 2009	This wastewater system for this structure was closed for public use. It is no longer generating wastewater bio-solids.
8078	Lignumvitae Key State Park - Land Based Shop Bldg, DOH Composting Toilet Unit [Florida State Parks]	NI	December 2015	This shop building's collection/transmission system design, permitting and construction are dependent upon the availability of the service connection to the utility provider, Village of Islands [Florida State Parks]. At this time the shop's DOH Composting Toilet Unit is planned to eventually be replaced with a collection/transmission system connection to the Village of Islands AWT. This service connection is anticipated to become available sometime after December 2015 as indicated by the Village of Islands. This composting toilet unit is still active and open for public use.
8078	Lignumvitae Key State Park - Land Based Residence DOH ATU Septic Tank System [Florida State Parks]	NI	December 2015	This residence's collection/transmission system design, permitting and construction are dependent upon the availability of the service connection to the utility provider, Village of Islands [Florida State Parks]. At this time the residence's DOH ATU system is planned to eventually be replaced with a collection/transmission system connection to the Village of Islands AWT. This service connection is anticipated to become available sometime after December 2015 as indicated by the Village of Islands.
8084	Windley Key Fossil Reef State Park - Visitor Center (BL206001) Standard Septic Tank System To DOH ATU [Florida State Parks]	NI	December 2015	This visitor center's existing DOH ATU system is planned to eventually be replaced with a collection/transmission system connection to the Village of Islands AWT. This service connection is anticipated to become available sometime after December 2015 as indicated by the Village of Islands.



WBID	Management Action	FKRAD Reported Actual or Anticipated Operational Date	Updated Actual or New Anticipated Operational Date	Comments
CENTRAL KEYS PROPOSED FUTURE MANAGEMENT PRACTICES				
6011A	Installation of central wastewater collection system serving Service Area 2 and provision of AWT treatment with disposal in a shallow effluent disposal well serving 33 EDUs [City of Marathon]	June 2009	N/A	Service Area 2 suspended since the closure and removal of Boot Key Bridge. Only one developed property, currently unoccupied. The owner will be responsible for the installation of a compliant wastewater/stormwater system when and if the site is redeveloped. The owner has been notified of his responsibility in this regard.
6011A	Installation of central wastewater collection system serving Service Area 1 and provision of AWT treatment with disposal in a shallow effluent disposal well serving 312 EDUs [City of Marathon]	November 2009	September 2011	Collection System complete. A force main is currently being completed to the Service area 3 wastewater treatment plant (WWTP) instead of the construction of an Area 1 WWTP and will be available for service by March 2012. The City has abandoned the concept of acquiring property and of constructing a WWTP within Area 1. A force main has been approved and a contract awarded to construct the transmission system to the Area 3 wastewater treatment plant (WWTP).
6011A	Installation of stormwater interception and treatment system serving approximately 81 acres in conjunction with the central wastewater collection system serving Service Area 1 [City of Marathon]	November 2009	September 2011	Project complete. 100% Road resurfacing complete (not a patch).
6011A	Installation of central wastewater collection system serving Service Area 6 and provision of AWT treatment with disposal in a shallow effluent disposal well serving 1,014 EDUs [City of Marathon]	May 2009	May 2009	Project complete/operational and in service. 80% connection to system complete.
6011B	Installation of central wastewater collection system serving Service Area 6 and provision of AWT treatment with disposal in a shallow effluent disposal well serving 14 EDUs [City of Marathon]	May 2009	May 2009	Project complete/operational and in service. 80% connection to system complete.



WBID	Management Action	FKRAD Reported Actual or Anticipated Operational Date	Updated Actual or New Anticipated Operational Date	Comments
6011A	Installation of stormwater interception and treatment system serving approximately 390 acres in conjunction with the central wastewater collection system serving Service Area 6 [City of Marathon]	May 2009	May 2009	Project complete.
6011A	Installation of central wastewater collection system serving Service Area 3 and provision of AWT treatment with disposal in a shallow effluent disposal well serving 1,565 EDUs [City of Marathon]	October 2009	September 2011	Collection system 85% complete. Will be complete by December 25, 2011. Area 3 WWTP 97% complete. Will be available by 9/20/2011. Residents and businesses within the completed portion of the project will be requested to connect to the wastewater system effective 9/20/2011. As the remainder of the collection system is completed, residences and businesses in that area will be asked to connect. No later than 12/25/2011.
6011A	Installation of stormwater interception and treatment system serving approximately 248 acres in conjunction with the central wastewater collection system serving Service Area 3 [City of Marathon]	October 2009	September 2011	100% complete. 85% road re-surfacing complete (not a patch). Remaining re-surfacing will be done as collection system completed.
6011A	Installation of central wastewater collection system serving Service Area 4 and provision of AWT treatment with disposal in a shallow effluent disposal well serving 2,283 EDUs [City of Marathon]	October 2009	October 2009	Complete/operational and in-service. 85% connection to system complete
6011A	Installation of stormwater interception and treatment system serving approximately 1,010 acres in conjunction with the central wastewater collection system serving Service Area 4 [City of Marathon]	October 2009	October 2009	Complete. 100% road re-surfacing complete (not a patch).



WBID	Management Action	FKRAD Reported Actual or Anticipated Operational Date	Updated Actual or New Anticipated Operational Date	Comments
6011A	Installation of centralized cluster wastewater collection system serving Service Area 7 and provision of secondary treatment with disposal in a shallow effluent disposal wells serving 360 EDUs [City of Marathon]	April 2010	February 2012	Treatment is AWT not BAT. 82% Complete. Will be complete by 2/28/2012. No longer cluster system, now a small pipe grinder basin system to WWTP on US 1.
6011C	Installation of centralized cluster wastewater collection system serving Service Area 7 and provision of secondary treatment with disposal in a shallow effluent disposal wells serving 1,237 EDUs [City of Marathon]	April 2010	February 2012	Treatment is AWT not BAT. 82% Complete. Will be complete by 2/28/2012. No longer cluster system, now a small pipe grinder basin system to WWTP on US 1.
6011A	Installation of stormwater interception and treatment system serving approximately 1,672 acres in conjunction with the central wastewater collection system serving Service Area 7 [City of Marathon]	April 2010	February 2012	Complete. Area 7 is a more sparsely populated area & has only been completed in designated problem areas. 100% road re-surfacing to be completed (not a patch) in FY 2011-2012.
6011A	Installation of central wastewater collection system serving Service Area 5 and provision of AWT treatment with disposal in a shallow effluent disposal well serving 2,668 EDUs [City of Marathon]	December 2010	December 2011	Complete for expansion area (60th to 90th Streets; area behind Marathon Airport). Phase I & II Completed in 2002/2003 (90th Street to Vaca Cut (117th Street)).



WBID	Management Action	FKRAD Reported Actual or Anticipated Operational Date	Updated Actual or New Anticipated Operational Date	Comments
6011A	Installation of stormwater interception and treatment system serving approximately 1,135 acres in conjunction with the central wastewater collection system serving Service Area 5 [City of Marathon]	December 2010	December 2011	Complete for expansion area (60th to 90th Streets; area behind Marathon Airport). Phase I & II Stormwater Retrofit (90th Street to Vaca Cut (117th Street)) in progress; to be complete by December 2011.
6011B	Completion of Phase IV Stormwater Treatment System serving approximately 17 acres including the construction of treatment BMPs and two 120-foot deep 24-inch diameter Class V stormwater injection wells serving 5 drainage basins and eliminating direct discharges to Halo Zone waters at 3 outfalls and [City of Key Colony Beach]	September 2008	2010	Project completed. The City completed the following stormwater improvements: 2008 - Five wells were installed and four outfalls closed; 2009 - Seven wells were installed and two outfalls closed; 2010 - Six wells were installed and one outfall closed.
6011B	Conversion of existing membrane filter WWTP to full AWT operations [City of Key Colony Beach]	May 2010	June 2015	The City's WWTP is fully AWT compliant. It is not currently operating at that level since the date for operational compliance was revised to June 2015.
6010	Long Key State Park - Ranger Station (BL00021) to Municipal Sewer [Florida State Parks]	NI	June 2007	The Long Key State Park WWTP was abandoned in 2007 and this Ranger Station's wastewater flows are now being transmitted, received and handled by the City of Layton AWT.
6010	Long Key State Park - Manager Residence (BL00020) to Municipal Sewer [Florida State Parks]	NI	June 2007	The Long Key State Park WWTP was abandoned in 2007 and this Residence's wastewater flows are now being transmitted, received and handled by the City of Layton AWT.
6010	Long Key State Park - Assistant Manager Residence (BL0006) to Municipal Sewer [Florida State Parks]	NI	June 2007	The Long Key State Park WWTP was abandoned in 2007 and this Residence's wastewater flows are now being transmitted, received and handled by the City of Layton AWT.



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6010	Long Key State Park - Shop Building (BL), Future To Municipal Sewer[Florida State Parks]	NI	December 2015	The new wastewater collection/transmission system serving the shop building is currently being designed and permitted for bidding and construction. This sewer system will be connected to the City of Layton AWT dependent upon funding approval. At this time it is anticipated the sewer connection will be completed by December 2015.
6010	Long Key State Park - Boardwalk RR Building (BL00010) to Municipal Sewer [Florida State Parks]	NI	June 2007	The Long Key State Park WWTP was abandoned in 2007 and this Restroom Building's wastewater flows are now being transmitted, received and handled by the City of Layton AWT. The collection/transmission system became operational during June 2007.
6010	Long Key State Park - Ranger Compound Area to Municipal Sewer [Florida State Parks]	NI	June 2007	The Long Key State Park WWTP was abandoned in 2007 and this Area's wastewater flows are now being transmitted, received and handled by the City of Layton AWT. The collection/transmission system became operational during June 2007.
6010	Long Key State Park - Campground Bathhouse # 1 (BL00003) to Municipal Sewer [Florida State Parks]	NI	June 2007	The Long Key State Park WWTP was abandoned in 2007 and this Bathhouse's wastewater flows are now being transmitted, received and handled by the City of Layton AWT. The collection/transmission system became operational during June 2007.
6010	Long Key State Park - Campground Bathhouse # 2 (BL00022) to Municipal Sewer [Florida State Parks]	NI	June 2007	The Long Key State Park WWTP was abandoned in 2007 and this Bathhouse's wastewater flows are now being transmitted, received and handled by the City of Layton AWT. The collection/transmission system became operational during June 2007.
6010	Long Key State Park - Campground Bathhouse # 3 (BL00023) to Municipal Sewer [Florida State Parks]	NI	June 2007	The Long Key State Park WWTP was abandoned in 2007 and this Bathhouse's wastewater flows are now being transmitted, received and handled by the City of Layton AWT. The collection/transmission system became operational during June 2007.
6010	Long Key State Park - Day Use RR Building (BL00008/09) to Municipal Sewer [Florida State Parks]	NI	June 2007	The Long Key State Park WWTP was abandoned in 2007 and this Restroom Building's wastewater flows are now being transmitted, received and handled by the City of Layton AWT. The collection/transmission system became operational during June 2007.
6010	Long Key State Park - Park WWTP, I.D. # Fla015025 (Plant Decommissioned, Abandoned & Removed) [Florida State Parks]	NI	June 2007	The Long Key State Park WWTP was abandoned in 2007 and the entire Park's wastewater flows are now being transmitted, received and handled by the City of Layton AWT. The collection/transmission system became operational during June 2007.



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6011A	Curry Hammock State Park - Ranger Station (BL228009) to Municipal Sewer [Florida State Parks]	NI	September 30, 2012	A new wastewater collection/transmission system serving the Park is currently being designed for permitting by our contracted consultant, George McDonald of McDonald Group International, Inc. This sewer system's construction and connection to the City of Marathon's AWT is dependent upon the AWT's construction completion and funding approval. At this time it is anticipated the sewer construction and connection will be completed by September 2012. The Ranger Station DOH ATU Septic Tank system will eventually be replaced with a collection/transmission system and its wastewater flows will be transmitted to the City of Marathon, Florida AWT.
6011A	Curry Hammock State Park - Manager Residence (BL228011) to Municipal Sewer [Florida State Parks]	NI	September 30, 2012	A new wastewater collection/transmission system serving the Park is currently being designed for permitting by our contracted consultant, George McDonald of McDonald Group International, Inc. This sewer system's construction and connection to the City of Marathon's AWT is dependent upon the AWT's construction completion and funding approval. At this time it is anticipated the sewer construction and connection will be completed by September 2012. The Residence's standard septic tank system will eventually be replaced with a collection/transmission system and its wastewater flows will be transmitted to the City of Marathon, Florida AWT.
6011A	Curry Hammock State Park - Ranger Residence (BL228001) to Municipal Sewer [Florida State Parks]	NI	September 30, 2012	Same as above.
6011A	Curry Hammock State Park - Shop Building (BL228012, Future) to Municipal Sewer [Florida State Parks]	NI	September 30, 2012	A new wastewater collection/transmission system serving the Park is currently being designed for permitting by our contracted consultant, George McDonald of McDonald Group International, Inc. This sewer system's construction and connection to the City of Marathon's AWT is dependent upon the AWT's construction completion and funding approval. At this time it is anticipated the sewer construction and connection will be completed by September 2012. The Residence's standard septic tank system will eventually be replaced with a collection/transmission system and its wastewater flows will be transmitted to the City of Marathon, Florida AWT. The new Shop Building's wastewater flows will be collected and transmitted to the City of Marathon, Florida AWT.



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6011A	Curry Hammock State Park - Picnic Area RR Building (BL228010) to Municipal Sewer [Florida State Parks]	NI	September 30, 2012	A new wastewater collection/transmission system serving the Park is currently being designed for permitting by our contracted consultant, George McDonald of McDonald Group International, Inc. This sewer system's construction and connection to the City of Marathon's AWT is dependent upon the AWT's construction completion and funding approval. At this time it is anticipated the sewer construction and connection will be completed by September 2012. The Picnic Area Day Use Restroom Building's DOH ATU Septic Tank system will be replaced with a collection/transmission system and its wastewater flows will be transmitted to the City of Marathon, Florida AWT.
6011A	Curry Hammock State Park - Camping Area Bathhouse (BL228003) to Municipal Sewer [Florida State Parks]	NI	September 30, 2012	A new wastewater collection/transmission system serving the Park is currently being designed for permitting by our contracted consultant, George McDonald of McDonald Group International, Inc. This sewer system's construction and connection to the City of Marathon's AWT is dependent upon the AWT's construction completion and funding approval. At this time it is anticipated the sewer construction and connection will be completed by September 2012. The Camp Area Bathhouse's DOH ATU Septic Tank & Composting Toilet systems will be replaced with a collection/transmission system and its wastewater flows will be transmitted to the City of Marathon, Florida AWT.
6016	Gravity Collection; 0.2 MGD WWTP upgrade to AWT [Monroe County]	No later than June 2010	October 2011	The Notice to Proceed for the expansion and upgrade of the Duck Key WWTP was issued on March 16, 2010 with a Final Completion Date of August 27, 2011. Field conditions required the contract extension of approximately 60 days.
6018	Bahia Honda State Park - Ranger residence (BL005059) septic tank system to DOH ATU [Florida State Parks]	NI	February 2010	This septic tank system was abandoned and the residence's effluent discharge combined and transmitted to the newly constructed DOH ATU Septic Tank system. This ATU serves both the Manager's and Ranger residences. The system became operational early in 2010.
6018	Bahia Honda State Park - Manager residence (BL005070) septic tank system to DOH ATU [Florida State Parks]	NI	February 2010	This residence's effluent discharge was combined and transmitted to the newly constructed DOH ATU Septic Tank system. This ATU serves both the Ranger and Manager residences. The system became operational early in 2010.
6018	Bahia Honda State Park - Ranger residence (BL005047) to SAND SPUR #3 AWT [Florida State Parks]	NI	November 2009	This residence's effluent discharge was continued to the SAND SPUR #3 AWT. The modified plant became operational during November 2009.



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6018	Bahia Honda State Park - Ranger residence (bl005048) to SAND SPUR #3 AWT [Florida State Parks]	NI	November 2009	This residence's effluent discharge was continued to the SAND SPUR #3 AWT. The modified plant became operational during November 2009.
6018	Bahia Honda State Park - Ranger station (BL 005044) septic tank system to SAND SPUR #3 AWT [Florida State Parks]	NI	November 2009	This septic tank system was abandoned and the Station's effluent discharge is being transmitted to the Park's AWT. The modified plant became operational during November 2009.
6018	Bahia Honda State Park - Sand Spur day use RR (BL 005068) ATU septic tank system to SAND SPUR #3 AWT [Florida State Parks]	NI	November 2009	This septic tank system was abandoned and the Restroom Building's effluent discharge is being transmitted to the Park's AWT. The modified plant became operational during November 2009.
6018	Bahia Honda State Park - Sand Spur Campground Bath House (BI005062) Septic Tank System To SAND SPUR #3 AWT [Florida State Parks]	NI	November 2009	This septic tank system was abandoned and the Bathhouse Building's effluent discharge is being transmitted to the Park's AWT.
6018	Bahia Honda State Park - Loggerhead Beach Area – South Composting Toilet Restroom Bldg. (BL005066). [Florida State Parks]	NI	November 2009	This composting toilet unit was abandoned and closed for public use. It is no longer generating wastewater bio-solids.
6018	Bahia Honda State Park - Loggerhead Beach Area – North Composting Toilet Restroom Bldg. (BL005067). [Florida State Parks]	NI	November 2009	This composting toilet unit was abandoned and closed for public use. It is no longer generating wastewater bio-solids.
6018	Bahia Honda State Park - SAND SPUR WWTP, I.D. # FLA015032 (Modified to AWT) [Florida State Parks]	NI	November 2009	This WWTP was modified and converted to an AWT to meet BAT. The modified plant became operational during November 2009.
6018	Bahia Honda State Park - SAND SPUR #4 WWTP, I.D. # FLA015033 (Plant Decommissioned, Abandoned & Removed) [Florida State Parks]	NI	November 2009	This WWTP was abandoned and decommissioned.



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SOUTH CENTRAL KEYS PROPOSED FUTURE MANAGEMENT PRACTICES				
6014C-N	Construction of the South Lower Keys central sanitary sewer system to serve 936 EDUs on with an AWT (5-5-3-1) treatment facility and nominal 90-foot effluent disposal well [Monroe County/FKAA]	2009	TBD	One treatment facility is designed to reduce water quality impacts from the following WBIDs: 6014C-N, 6014C-S, 6013B-N, 6013C-N, 6013C-S, 6013D-N, 6012A-N, 6012A-S, 6012C-N, 6012D-S, and 6012E-N. Project is ready to bid and will be 30% funded by system development fees levied as assessments; Monroe County plans to complete project using its portion of the \$200 million in bonds authorized under Section 215.619 F.S. Monroe County Resolution 086-2011 requested issuance of the first year annual portion of \$50 million. In attempt to create another revenue stream, Monroe County requested approval in 2010 from the Florida Legislature to seek additional sales tax revenue for this project. Subsequent to request denial, Monroe County is planning a referendum for continuation of the existing infrastructure sales tax on the 2012 general election ballot. The Monroe County Sanitary Wastewater Master Plan recommended construction of three wastewater treatment plants to address the nutrient loading for WBIDs 6014C-N, 6014C-S, 6013B-N, 6013C-N, 6013C-S, 6013D-N, 6012A-N, 6012A-S, 6012C-N, 6012D-S, and 6012E-N. Value Engineering study recommended siting one facility as a more cost effective solution. The service area has been expanded to include some properties formerly considered "cold spots" (areas not included in the central service area). An EPA Grant has been secured by the Florida Keys Aqueduct Authority to provide on-site wastewater nutrient reduction systems to many former cold spots.
6014C-S	Construction of the South Lower Keys central sanitary sewer system to serve 686 EDUs on with an AWT (5-5-3-1) treatment facility and nominal 90-foot effluent disposal well [Monroe County/FKAA]	2009	TBD	Same as above



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6013B-N	Construction of the Middle Lower Keys central sanitary sewer system to serve 66 EDUs on with an AWT (5-5-3-1) treatment facility and nominal 90-foot effluent disposal well [Monroe County/FKAA]	June 2009	TBD	Same as above
6013C-N	Construction of the Middle Lower Keys central sanitary sewer system to serve 565 EDUs on with an AWT (5-5-3-1) treatment facility and nominal 90-foot effluent disposal well [Monroe County/FKAA]	June 2009	TBD	Same as above
6013C-S	Construction of the Middle Lower Keys central sanitary sewer system to serve 2,860 EDUs on with an AWT (5-5-3-1) treatment facility and nominal 90-foot effluent disposal well [Monroe County/FKAA]	June 2009	TBD	Same as above
6013D-N	Construction of the Middle Lower Keys central sanitary sewer system to serve 9 EDUs on with an AWT (5-5-3-1) treatment facility and nominal 90-foot effluent disposal well [Monroe County/FKAA]	June 2009	TBD	Same as above
6012A-N	Construction of the North Lower Keys central sanitary sewer system to serve 2,815 EDUs on with an AWT (5-5-3-1) treatment facility and nominal 90-foot effluent disposal well [Monroe County/FKAA]	December 2010	TBD	Same as above



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6012A-S	Construction of the North Lower Keys central sanitary sewer system to serve 813 EDUs on with an AWT (5-5-3-1) treatment facility and nominal 90-foot effluent disposal well [Monroe County/FKAA]	December 2010	TBD	Same as above
6012C-N	Construction of the North Lower Keys central sanitary sewer system to serve 24 EDUs on with an AWT (5-5-3-1) treatment facility and nominal 90-foot effluent disposal well [Monroe County/FKAA]	December 2010	TBD	Same as above
6012D-S	Construction of the North Lower Keys central sanitary sewer system to serve 43 EDUs on with an AWT (5-5-3-1) treatment facility and nominal 90-foot effluent disposal well [Monroe County/FKAA]	December 2010	TBD	Same as above
6012E-N	Construction of the North Lower Keys central sanitary sewer system to serve 94 EDUs on with an AWT (5-5-3-1) treatment facility and nominal 90-foot effluent disposal well [Monroe County/FKAA]	December 2010	TBD	Same as above
6014C-N	Upgrading existing secondary WWTP to AWT processes with discharge of effluent to shallow effluent disposal well or contracting with FKAA/Monroe County for wastewater treatment services for Boca Chica Field.	No Later Than July 1, 2010	December 31, 2015	On June 22, 2010, the Navy submitted a request to have the permit modified to extend the construction completion date for converting the WWTP to sequencing batch Reactor (SBR) until December 31, 2015. It is the Navy's intent to meet the 2015 deadline. The Navy is still pursuing both options, but has not yet developed a schedule. An update was provided to the DEP and DCA earlier this year



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SOUTHERN KEYS PROPOSED FUTURE MANAGEMENT PRACTICES				
6014A-N	Construction of 3 baffle boxes and 3 stormwater disposal wells (1 per year) [City of Key West]	2008- 2010	2008- 2010	Seventeen (17) baffle boxes and wells installed completed.
6014A-S	Construction of 3 baffle boxes and 3 stormwater disposal wells (1 per year) [City of Key West]	2008- 2010	2008- 2010	Fifteen (15) baffle boxes and wells installed completed.
6014A-N	Incremental collections of marine pump-out program (above the 2007 levels) of sanitary boat wastes serving enforced by police boat sweeps [City of Key West]	2007- 2010	2007- 2010	Pumpout collections (294,220 gal/yr avg) & boats serviced (4,485 avg). Second pumpout boat added to service anchorages, mooring field and marinas.
6014A-S	Installation of stormwater treatment systems for Existing Roadway [FDOT/City of Key West]	Jul 2005	2008- 2010	Six (6) baffle boxes and pollution control devices completed.
6014A-N	Installation of stormwater treatment systems for Existing Roadway [FDOT/City of Key West]	Jul 2005	2008- 2010	Four (4) baffle boxes and pollution control devices completed.
6014A-N	Incremental collections of marine pump-out program (above the 2010 levels) of sanitary boat wastes serving enforced by police boat sweeps [City of Key West]	2011- 2020	2011- 2020	Pumpout boats will remain in service for anchorages, Key West mooring field and marinas (city & private). Sanitary connection stations will be installed on all transient docks (87 boat slips)
6014A-N	Construction of 10 baffle boxes and 10 stormwater disposal wells (1 per year) [City of Key West]	2011- 2020	2011- 2020	Two (2) baffle boxes and wells installed completed (2011).
6014A-S	Construction of 10 baffle boxes and 10 stormwater disposal wells (1 per year) [City of Key West]	2011- 2020	2011	One (1) baffle box and well installed completed (2011).



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6014A	Ft. Zachary Taylor State Park - Concession (BL125008) and beach bathroom (BL125002) DOH ATU septic tank system to municipal sewer [Florida State Parks]	NI	November 2011	Initially an ATU septic tank system was planned to replace the conventional septic tank system. Instead the septic tank system is presently being decommissioned and its effluent discharge will be transmitted to the City of Key West WWTP. Anticipated completion of the municipal sewer connection is November 19, 2011.
6014A	Ft. Zachary Taylor State Park - Park manager's residence (BL125015) & assistant park manager's residence (BL125014) standard septic tank system to municipal sewer [Florida State Parks]	NI	November 2011	Initially an ATU septic tank system was planned to replace the conventional septic tank system. Instead the septic tank system is presently being decommissioned and its effluent discharge will be transmitted to the City of Key West WWTP. Anticipated completion of the municipal sewer connection is November 19, 2011.
6014A	Ft. Zachary Taylor State Park - Fort bathroom (BL125007) standard septic tank system to municipal sewer [Florida State Parks]	NI	November 2011	Initially an ATU septic tank system was planned to replace the conventional septic tank system. Instead the septic tank system is presently being decommissioned and its effluent discharge will be transmitted to the City of Key West WWTP. Anticipated completion of the municipal sewer connection is November 19, 2011.
6014A	Ft. Zachary Taylor State Park - Shop and volunteer village (BL125009) standard septic tank system to municipal sewer [Florida State Parks]	NI	November 2011	Initially an ATU septic tank system was planned to replace the conventional septic tank system. Instead the septic tank system is presently being decommissioned and its effluent discharge will be transmitted to the City of Key West WWTP. Anticipated completion of the municipal sewer connection is November 19, 2011.
6014A	Ft. Zachary Taylor State Park - Entrance station standard septic tank system to municipal sewer [Florida State Parks]	NI	December 30, 2015	The new entrance station will be constructed within the near future. The final portion of the sewer system's construction and connection is dependent upon the City & DRP executed easement agreement for the park's new proposed entrance and construction funding approval. At this time it is anticipated the new park entrance and the sewer connection will be completed by December 2015.
FLORIDA DEPARTMENT OF TRANSPORTATION PROPOSED FUTURE MANAGEMENT PRACTICES				
N/A	Jewfish Creek Bridge - SR 5/US 1/Jewfish Creek Bridge from Abaco Rd at Key Largo to north of Jewfish Creek - Construct Bridge - High Level.	2004-2009	2010	Project complete.



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N/A	Big Coppitt Key -From Shark Channel Bridge to Old Boca Chica Channel, (add turn lanes)	2006-2009	2010	Project complete.
N/A	Card Sound Road/CR-905 Intersection Conversion - PD&E/EMO Study	2006-2012	2009	Project complete.
N/A	Key West, United Street - Stormwater Mitigation (LAP Agreement) Master Drainage Plan	2008-2009	2009	Project complete.
N/A	SR 5/ Overseas Highway - Resurfacing from MM 33.8/Spanish Harbor Channel to MM 35.3/Big Spanish Channel	2009-2010	2009	Project complete.
N/A	SR5/US 1/Overseas Hwy - Resurfacing from MM 86.8/S of East Ridge Road to MM 90/ Royal Poinciana Boulevard	2007-2009	2009	Project complete.
N/A	SR 5/ Overseas Highway - Resurfacing from MM 103.2 Hialeah Lane to MM 106.6 Reef Drive	2006-2010	2012	Work on this project is ongoing, completion date extended until 2012.
	SR 5/Overseas Highway - Resurfacing from MM 93 to MM 97	2006-2011	2013	The scope of this project has been expanded to include swale drainage improvements, thus the anticipated completion date has been extended to 2013.
N/A	SR 5/ Overseas Highway - Resurfacing from SR A1A to 320 ft. north of Cross Street	2007-2009	2009	Project complete.
N/A	SR 5/ Overseas Highway - Resurfacing from 2000 ft. south of MM100 to 2580 ft. south of MM 97	2006-2010	2012	Work on this project is ongoing, completion date extended until 2012.



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N/A	SR 5/ Overseas Highway - Resurfacing from MM 49.1/north of 37th St. to MM 53.1/Bridge over Vaca Cut	2006-2012	2012	Anticipated completion is 2012.
N/A	SR 5/ Overseas Highway - Resurfacing from MM 99.7/south of Laguna Avenue to MM 103.1/Hialeah Lane	2006-2011	2012	Work on this project is ongoing, completion date extended until 2012.
N/A	SR 5/ Overseas Highway - Resurfacing from 500 ft north of Cut Throat Drive to 500 ft. north of Spanish Drive	2008-2011	2009	Project complete.
N/A	City of Marathon, Little Venice Road Improvements at Various Locations; the south ends of 95 th , 96 th and 105 West Streets	NI	2010	Project complete.
N/A	Monroe Countywide Drainage Pushbutton Projects	NI	2011-2016	
N/A	SR5/Overseas Highway from MM59 to Grassy Key Drainage Improvements	NI	2012	
N/A	SR5/Overseas Highway from Caribbean Drive/MM24.5 to W. Shore Drive MM25.0 Drainage Improvements	NI	2014	

TBD = To Be Determined

N/A = Not Available

NI = Not included in original FKRAD