

**Florida Keys Wastewater Treatment and Management
June 2009**

Background

Florida’s Administration Commission (the Cabinet) designated the Florida Keys an Area of Critical State Concern in 1975 (subsequently removing Key West from this designation in 1981). The Administration Commission, through rules that ultimately became effective in 1997, promoted a comprehensive, relatively centralized wastewater system strategy for the Keys, consistent with master planning efforts underway in Monroe County at the time. The strategy involves construction of local government wastewater facilities, higher levels of treatment, better methods of disposal, and elimination (through connection to the central systems) of small, older wastewater plants and most septic tanks and cesspits. At the direction of the Administration Commission, the Department of Community Affairs worked with the local governments in the Keys to adopt “Work Program” actions and schedules along a number of fronts, including wastewater. The Administration Commission rules require fulfillment of the Work Program commitments. The Commission has reviewed progress—or lack of progress—several times since rule adoption and has gone on record repeatedly that Monroe County local governments must achieve established measures of success or continue to face development restrictions.

In order to bolster the actions of the Administration Commission, and based on significant evidence that poor water quality in the Keys was related to haphazard wastewater management, the Legislature passed Section 6 of chapter 99-395, Laws of Florida, as amended, to require all sewage facilities in Monroe County, including septic tanks and cesspits, to comply with the treatment standards in Table 1 by **July 1, 2010**. All local governments, private utilities, private business, or homeowners that own these facilities are bound by this obligation. The treatment standards reflect readily available, cost-effective technologies that, in the case of wastewater treatment plants, are commonly employed throughout Florida. There also are other areas in Florida, including Tampa Bay and the Indian River Lagoon, which have long had similar, statutorily mandated global treatment and disposal requirements for wastewater facilities.

Table 1 – Wastewater treatment standards in the Florida Keys: Best Available Treatment (BAT) and Advanced Wastewater Treatment (AWT)

Effluent (treated wastewater) concentration in milligrams per liter (mg/L) as an annual average (mg/l is equal to 1 part per million)	BOD	TSS	TN	TP
BAT standards apply to facilities with design capacities less than 100,000 gallons/day (generally, septic tanks and “package plants”).	10	10	10	1
AWT standards apply to facilities with design capacities equal to or greater than 100,000 gallons/day (central wastewater treatment systems)	5	5	3	1

BOD = Biochemical Oxygen Demand; TSS = Total suspended solids; TN = Total nitrogen; TP = Total phosphorus.

Most private entities with small wastewater facilities (“package plants”) and homeowners with septic tanks are relying on connecting to as yet mostly unfinished local government systems as their means of complying with the July 1, 2010 deadline. They are doing so because, as already noted, local government systems (Monroe County, Islamorada, Marathon, and Key Largo in particular) have been identified as the solution for wastewater management in the Keys since well before the chapter 99-395

requirements took effect a decade ago. Package plant owners and homeowners, quite reasonably, do not want to spend thousands of dollars or more to upgrade their systems and then, when local government systems finally become operational, be forced by local ordinance to abandon their investment and pay even more money to connect to the local government system. There are approximately 225 package plants in the Keys that fall under Department of Environmental Protection (DEP) jurisdiction along with thousands of remaining septic tanks that fall under Department of Health jurisdiction. There are also 10 larger centralized wastewater treatment plants permitted by the DEP operating the Florida Keys.

Current Status of Wastewater Systems

As of today, many local government facilities remain incomplete, with some still in the planning and design stages. Table 2 identifies the general status of project completion in each local government. Many facilities will not meet the July 1, 2010 deadline; however, over the last two years, more progress has been made toward meeting the chapter 99-395 treatment and disposal requirements than in the previous decade.

Table 2 – Estimated completion dates by service area as of May 2009

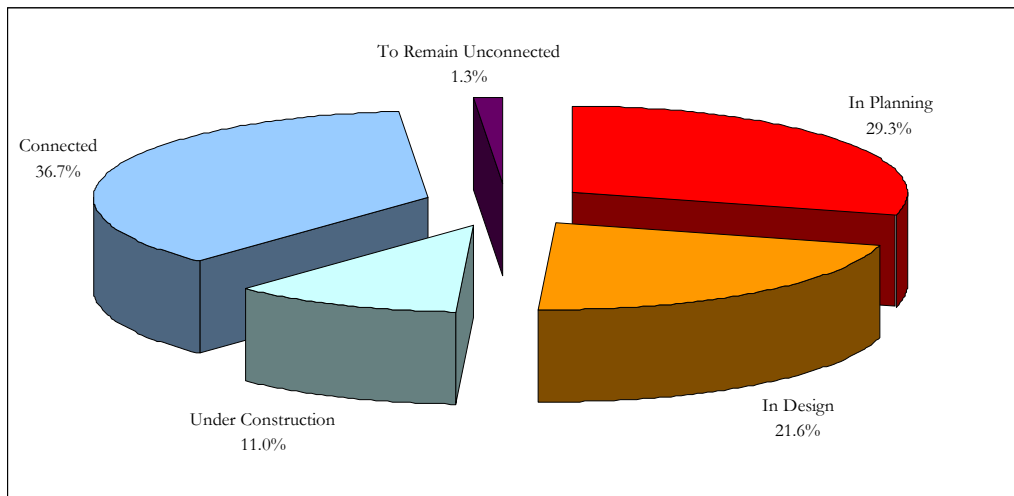
Service Area	Ownership	Estimated Construction Completion, including sewer connections, Based on Draft Administration Commission Work Program Schedule	Notes
Islamorada	Village of Islamorada	July 31, 2014	Connections are proceeding for North Plantation Key. North Plantation Phase II will go online within the next three months. A design engineer has been selected to do preliminary design for the rest of Islamorada.
Key Colony Beach	Key Colony Beach	Complete	Ongoing maintenance only
Key Largo	Key Largo Wastewater Treatment District	July 31, 2013	Treatment plant upgrades and the entire northern portion of the collection system are under construction and should be complete by 2010 or earlier. The construction of the deep injection well has been completed. The southern part of the collection system is underway and design of the southern transmission main is nearly complete.
Key West	Key West	Complete	Various repairs, maintenance and upgrades are being implemented.
Layton	City of Layton	Complete	

Marathon	City of Marathon	July 31, 2012,	Service areas 4, 5, and 6 are under construction; service area 3 is being bid. Service areas 1, 2, and 7 are small and construction could be completed by 2010. Sewer connections will continue into 2012.
Monroe County, Cudjoe Regional Service Area	Monroe County	July 31, 2014.	The preliminary design of the Cudjoe Key Regional Wastewater Treatment Plant is 85% complete. Final design and permitting is scheduled to be complete by February 2010.
Monroe County – Bay Point	Monroe County	Essentially Complete	Approximately 95% of all EDU have been connected.
Monroe County – Big Coppitt Area	Monroe County	July 31, 2012	Construction of the Big Coppitt Wastewater Collection and Treatment System is 90% complete.. Construction of the System should be completed by October 2009. Sewer connections will continue into 2012.
Monroe County – Conch Key	Monroe County	July 31, 2011	Collection system is complete and 90% of EDU's have been connected.
Monroe County – Duck Key	Monroe County	July 31, 2013	Collection system design is complete and ready to bid..
Monroe County – Hawk's Cay	Monroe County	July 31, 2010 (plant upgrade only)	Final design and permitting scheduled to be complete in June 2009.
Stock Island	Private Utility in cooperation with Monroe County	Service is currently available; plant upgrades to AWT are in progress.	Construction of AWT upgrade has been completed and the new facility is undergoing testing. Approximately 56% of the sewer connections have been completed.

While progress is being made, especially in Marathon and Key Largo, as noted, the July 2010 deadline will not be met in most instances. In each case where a local government does not begin operation of the projected facilities by July 1, 2010, or chooses not to build some facilities, those private package plant owners and homeowners who are depending on connecting to the local government systems will be in violation of the law on that date. Whether any local government will itself be in violation depends on the compliance of any facilities it has in service at the time.

According to the November 2007 “Keys Wastewater Plan,” there were originally 74,995 “equivalent dwelling units” (EDU) to be served by wastewater projects necessary to meet the July 1, 2010 deadline. As of the end of 2007, construction had been completed to serve 27,542 (37%) of the EDU. Key West, which is no longer in the Area of Critical State Concern, represents almost 88% of the EDU currently served. (Key West has managed to finance the majority its wastewater construction with local funds.) Another 3,467 EDU have been connected, including those associated with two completed areas, Key Colony Beach and Layton. Of the 47,453 EDU remaining at the end of 2007, 21,954 (46.3%) were associated with projects in the planning stage; 16,223 (34.2%) were under design; and only 8,282 (17.5%) were addressed by projects under construction. (A relatively small percentage of EDU would remain un-served by wastewater facilities and, presumably, would be addressed by compliant onsite systems.) A graphic summary of the latest status as reported by the County of EDU connections appears below. While there have been changes in the number of EDUs moving from the planning to design phase, and design to construction phase, the number of those connected has remained relatively static. With infrastructure projects nearing completion in Key Largo and Marathon, however, we anticipate these numbers to increase substantially before the deadline. It remains true that the majority of EDU outside of Key West have not yet been connected as the deadline approaches.

Connection of Equivalent Dwelling Units (EDU) in the Florida Keys, November 2007



Based on the chapter 99-395 July 1, 2010 deadline, DEP has notified all owners of wastewater facilities in the Keys that compliance is required and that failure to comply will subject them to enforcement. However, DEP has developed a strategy, through discussions with the package plant owners and local governments, which will enable ultimate compliance with the law in a practical and manageable way relying on the good faith efforts of all parties.

Wastewater Facility Compliance Strategy

The July 1, 2010 deadline and the actions of the Administration Commission have both motivated local governments finally to move forward on building the facilities necessary to give Keys citizens reliable wastewater service and a sustainable environment. This fact has allowed DEP to establish a reasonable, fair and clear mechanism for assuring ultimate compliance with the wastewater treatment and disposal requirements of the law. The approach has been discussed with package plant owners and the local

governments and involves the use of settlement agreements and consent orders authorized by state law and commonly used to resolve enforcement issues under a wide range of circumstances.

In the Keys, the intention is to have package plant owners that will not or cannot meet the July 1, 2010 deadline, and the local government where they are located, enter into a three-way settlement agreement with DEP to establish a legally binding schedule for connection of the package plant to the local government facility. These schedules will extend beyond the 2010 deadline given current construction realities, but each package plant owner and the relevant local government must provide DEP with a date certain for connection to the central system and specific milestones along the way to completion. The settlement agreements must be signed no later than July 1, 2010. Once signed, the agreement is binding and enforceable, with potential penalties for not meeting the newly established schedules. (A consent order can be used for a package plant owner who will upgrade rather than connect to another system in order to meet the required treatment standards, but who cannot do so by the legal deadline.)

DEP has met with representatives of each local government and many of the package plant owners to discuss the compliance strategy and on January 27, 2009 made a public presentation on the subject in the Keys. A summary of the status of settlement agreement/consent order negotiations is included below:

Islamorada: The Village Manager and staff are currently working with DEP staff to finalize a draft settlement agreement to establish a connection schedule for package plants located in the Village of Islamorada. The Department has attended at least two public meetings with the Village and with some of the package plant owners and has revised the original draft settlement agreement to address comments that were received from the package plant owners and from the Village staff. It is important to note that the Village Council has not yet approved the draft settlement agreement and it is not yet clear whether they will support this effort. During recent Council meetings at least two of the Council members said they are not willing to move forward to complete municipal wastewater projects without financial assistance from the State or federal Governments.

Key Largo Wastewater Treatment District (KLWTD): The DEP and the KLWTD met to discuss the use of settlement agreements for Key Largo package plants on March 6, 2009. On April 22, 2009, the KLWTD sent a letter to DEP declining the DEP's offer to enter into the settlement agreement process, because of concerns of liability and stipulated penalties that could be imposed for failure to meet the deadlines in the settlement agreement. However, more recently, the KLWTD Manager informed the DEP Marathon Office that they will consider the settlement agreements in order to assist package plant owners who may not be connected by the July 1, 2010 deadline. The KLWTD is planning to connect the majority of the package plants by July 1, 2010, but some of the facilities located in the South end of Key Largo may not be connected to the KLWTD before the required deadline. The DEP staff is drafting a settlement agreement to assist the Key Largo package plant owners and will send it to the KLWTD for review as soon as possible.

Marathon: On February 24, 2009 the City of Marathon Council approved a resolution to support the settlement agreement process proposed by DEP to establish a legally binding schedule to connect package plant facilities to the City of Marathon municipal wastewater system. The City of Marathon is currently constructing the City's municipal wastewater system and is sending notifications to their

residents requiring them to connect as the sewer connections become available. The DEP and the City of Marathon staff met on May 13, 2009 to discuss the use of the proposed settlement agreements to assist The package plant owners who will not be connected to the City sewers by July 1, 2010. The DEP staff also provided a draft copy of the settlement agreement to the Marathon staff for review and we are waiting for their comments.

Monroe County: On April 16, 2009 DEP and DCA staff met with Monroe County and other local government officials to discuss the implementation of wastewater projects including the Cudjoe Key Regional Wastewater system proposed by the County and Florida Keys Aqueduct Authority (FKAA) to serve the Lower Keys. The FKAA and County officials stated that this project could cost approximately \$20,000 per EDU and that it must receive the necessary funding before they can move forward. They also stated that this project is in the planning and design stages and that it will not be completed by the July 2010 deadline. The DEP staff explained the proposed settlement agreement process that would provide a reasonable extension of time, after July 2010, to allow package plants to connect to the County's regional central system when it becomes available. However, for this to be viable option, Monroe County must provide a date certain for completion of the regional wastewater system and the sewer connections and must be willing to enter into the settlement agreement with DEP and the package plant owners. Monroe County has not, to date, expressed interest in this cooperative approach. The County has indicated in a number of venues that it will not move forward without additional state or federal funding. (See below for information on costs and financing.) If the County continues to take this position, DEP will have to resolve the inevitable non-compliance of package plants in the unincorporated county differently, likely through individual consent orders with the owners of those plants. Such a resolution begs the question of what Monroe County would require of the package plant owners if the county subsequently completes central systems.

Costs and Financing

The responsibility for financing construction or upgrade of a wastewater management facility or septic tank system resides with the owner—local government, private utility, business, or homeowner. This is true in the Florida Keys just as it is everywhere else in Florida. The most recent overall estimate of the remaining costs of the wastewater facilities necessary to meet the 2010 requirements, *provided by Keys local governments in late 2007*, was more than \$600 million. That 2007 document (“Keys Wastewater Plan,” dated November 2007) also estimated that the local governments in Monroe County had developed financing mechanisms, or plans, to fund something over \$300 million of the remaining costs, leaving what Monroe County referred to as a “funding gap” of more than \$330 million.

As of January 2009, DEP estimates that some \$167 million in wastewater projects have been completed or are under construction contract. Because the Keys plan submitted by the county in 2007 did not document the available or proposed local financing measures and did not prioritize remaining construction, it must be regarded with some skepticism. What is clear, however, is that the plan does not propose detailed local financing plans or other measures to address the so-called “funding gap.”

The plan suggests that external sources—presumably state and federal funding—are expected to cover the gap.¹ That said, Marathon and Key Largo, and even Islamorada of late, have been pushing ahead with the planning, design and construction of facilities as well as the establishment of local financing mechanisms to pay for them, while they also pursue potential state funding options (see below). Monroe County continues to express its reluctance to move forward without up-front commitments of substantial external assistance.

Since 1999, DEP has administered more than \$44 million in direct appropriations from the Florida Legislature for local governments in Monroe County along with another \$4.3 million in federal construction grant funds. DEP also has awarded \$43.4 million in low interest State Revolving Fund (SRF) loans to Key Largo (\$23.6 million); Marathon (\$15.2 million); and Islamorada (\$4.6 million); as well as \$7.9 million in loans to Key West and Key Colony Beach, two communities that are already in compliance with chapter 99-395 requirements. (Keys communities have also received wastewater funding through the DCA, the Federal Emergency Management Agency and the Army Corps of Engineers estimated at \$26 million.)

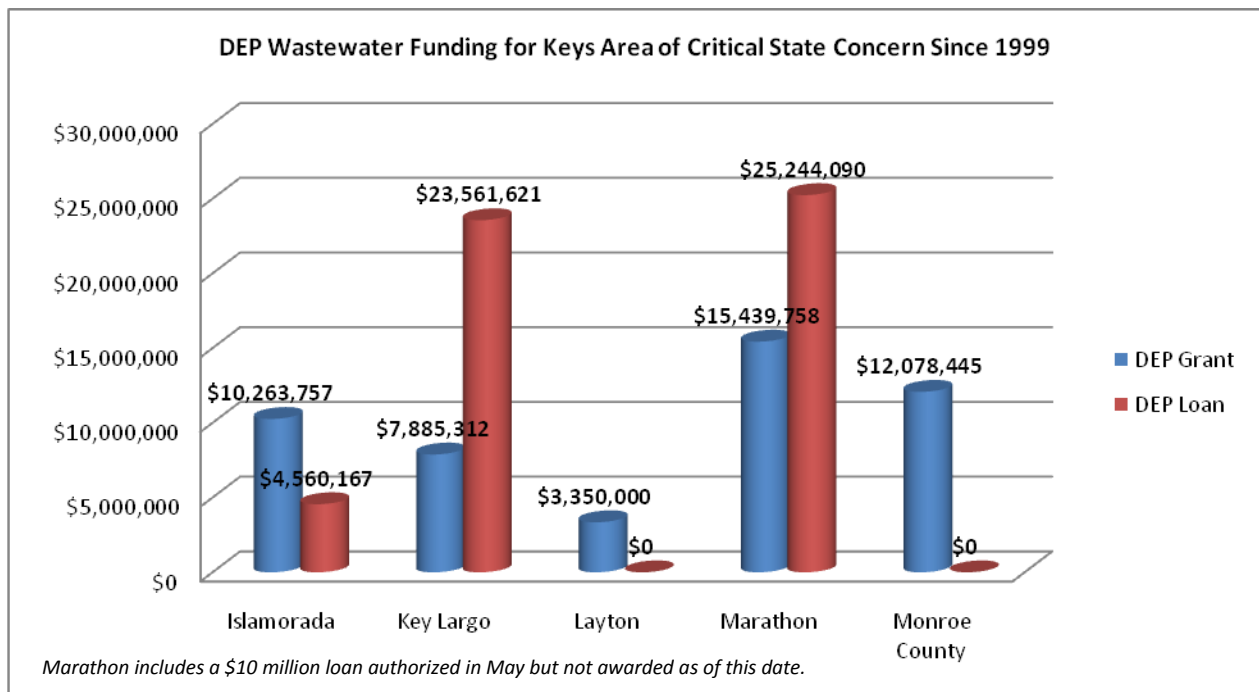
As a result of the American Reinvestment and Recovery Act, federal stimulus funds enabled DEP, in May, to approve another \$10 million to increase Marathon's ongoing SRF loan. Federal stimulus monies approved through the Army Corps of Engineers will provide \$6.35 million each for Islamorada, Key Largo Marathon, and Key West.

Key Largo, Islamorada, and Marathon also remain on the SRF priority list for future funding currently estimated at about \$70 million; Monroe County has a single project, Big Coppitt (Lower Keys), on the SRF list for future funding of about \$22 million. However, the potential for any future loans depends on Monroe County local government actions and commitments as well as the overall availability of money in the competitive statewide SRF program, including future bond issues by DEP and federal SRF allotments to Florida, including actions by the Florida Legislature to appropriate the 20% match required to secure available federal funds.

Another potential source of moneys is the bonding authority created in the 2008 Session for Keys projects within the framework of Everglades bonds issued pursuant to s. 215.619, F.S. Under that authority, the Legislature may appropriate debt service necessary to finance up to \$50 million in bonds each year for no more than four years to underwrite wastewater projects in the Keys. DEP requested an appropriation of debt service in its 2009-10 Legislative Budget Request for the first year's repayment of a \$50 million bond issue but the request was not funded.

¹ There are no general estimates for septic tank "upgrade" costs because the majority of septic tanks were slated to be replaced through connection to central facilities. The best information available from the Department of Health, the agency with jurisdiction, is that there were 23,058 septic tanks in 1998; up to 1,085 properties would ultimately remain on onsite systems (low priority, not cost-effective to connect); approximately 20% of the septic tanks had been connected to a wastewater system as of February 2007; and an unknown number of septic tanks had been replaced ("upgraded"). Information on DOH's website for the period 2003-04 to 2005-06 reflects that the Monroe County Health Department permitted 856 new onsite systems, all of which should represent compliant systems. Installation of a BAT onsite system can cost between \$15,000 and \$25,000.

While it has been suggested that the s. 215.619, F.S., bonding language may need to be amended to assure the continuing possibility of up to \$200 million in bonds, the existing language does not appear to preclude that amount of bonding at a maximum of \$50 million each year for four years. At whatever point bonds were issued, of course, debt service would have to be appropriated every year for the life of the bonds, with each additional bond issue up to the \$200 million statutory cap increasing the debt service accordingly. The specific authorization to move forward with issuing bonds would require both the legislative appropriation of debt service and the engagement of the State Board of Administration's Division of Bond Finance to evaluate the fiduciary aspects of any potential bond sale.



This chart reflects \$102.4 million in DEP funding for wastewater projects in the Keys Area of Critical State Concern over the last 10 years.

Federal Funding

Public Law 106554, passed in December 2001 authorized the Army corps of Engineers (ACOE) to spend up to \$100 million dollars to help with waste and storm water projects. The cost is shared with a 35% local match.

help in their efforts. The agency's State Revolving Fund loan program remains a potential resource to the local governments, including Monroe County, for additional funding. There are other resources potentially available, including up to \$200 million of Everglades bonding authority.

However, the ultimate responsibility for complying with state law, as with financing construction and upgrades of wastewater management facilities, lies with the facility owners, including local governments. DEP remains committed to doing everything within its power to work with the local governments and other facility owners to meet the letter and spirit of chapter 99-395, Laws of Florida.