

County of Monroe Growth Management Division

Office of the Director

2798 Overseas Highway
Suite #400
Marathon, FL 33050
Voice: (305) 289-2517
FAX: (305) 289-2854



Board of County Commissioners

Mayor Heather Carruthers, Dist. 3
Mayor Pro Tem David Rice, Dist. 4
Kim Wigington, Dist. 1
George Neugent, Dist. 2
Sylvia Murphy, Dist. 5

We strive to be caring, professional and fair

January 13, 2011

Ray Eubanks, Administrator Plan Review & Processing
Division of Community Planning
Florida Department of Community Affairs
2555 Shumard Oak Boulevard
Tallahassee, Florida 32399-2100

RE: Monroe County Year 2010 Comprehensive Plan (Amendment 10-CIE1)

Dear Mr. Eubanks:

Pursuant to your letter December 28, 2010 and Chapter 163.3187, Florida Statutes and Chapter 9J-11.006, Florida Administrative Code, the Monroe County Planning Department, acting within the jurisdiction of the Florida Keys Area of Critical State Concern, hereby submits two additional complete packages of above referenced adopted plan amendment to the Monroe County Year 2010 Comprehensive Plan. This amendment was adopted at a Regular Meeting of the Board of County Commissioner on November 17, 2010 and is being resubmitted to allow your department to conduct a compliance review, make a compliance determination and issue the appropriate notice of intent. This amendment is exempt from the twice per calendar year submission pursuant to Section 163.3187(1)(f).

Copies of the entire amendment are also being provided, pursuant to Rule 9J-11.009(6) F.A.C., to the South Florida Regional Planning Council, Florida Bureau of Historic Preservation, Florida Fish and Wildlife Conservation Commission, Department of Agriculture and Consumer Services, City of Key Colony, Village of Islamorada, City of Key West, City of Marathon, City of Layton, South Florida Water Management District, Florida Department of Transportation, United States Navy (Boca Chica Naval Air Station), and the Florida Department of Environmental Protection.

To publish the Notice of Intent pursuant to Section 163.3184(8)(b) and 163.3184(15)(e) for this amendment package, please contact the following:

Key West Citizen

Attn: Marsha Kirkwood (email: legals@keysnews.com) (phone (305) 292-7777 Ext219)

3420 Northside Drive

Key West, Florida 33040

Pursuant to Rule 9J-11.011(4), attached is a copy of the Citizen Courtesy Information List depicting one speaker on this subject.

Thank you in advance for your timely review of these materials. Should you have any questions about the proposed amendment, please contact Kathy Grasser at (305) 289-2500.

Sincerely,

A handwritten signature in black ink, appearing to read 'CH' followed by a stylized signature that includes the letters 'BY MT'.

Christine Hurley,
Division Director

CH/mt

Enclosures

cc: Ron Demes, United States Navy, Boca Chica Naval Air Station
Richard Ogburn, South Florida Regional Planning Council
P.K. Sharma, South Florida Water Management District
Aileen Boucle, Florida Department of Transportation
Jim Quinn, Florida Department of Environmental Protection
Linda Harless, Department of Agriculture and Consumer Services
Susan Harp, Bureau of Historic Preservation
Brian Barnett, Florida Fish and Wildlife Conservation Commission
Edward Koconis, Village of Islamorada
Vickie Bollinger, City of Key Colony Beach
Planning Director, City of Key West
Norman Anderson, City of Layton
George Garrett, City of Marathon
Board of County Commissioners (w/o enclosures)
Suzanne Hutton, County Attorney (w/o enclosures)
Roman Gastesi, County Administrator (w/o enclosures)
Townesley Schwab, Director of Planning and Environmental Resources

ORDINANCE NO 036- 2010

AN ORDINANCE BY THE MONROE COUNTY BOARD OF COUNTY COMMISSIONERS AMENDING TABLE 4.1 FIVE-YEAR SCHEDULE OF CAPITAL IMPROVEMENTS OF THE MONROE COUNTY YEAR 2010 COMPREHENSIVE PLAN; PROVIDING FOR SEVERABILITY; DIRECTING THE DIRECTOR OF PLANNING TO FORWARD A COPY TO THE FLORIDA DEPARTMENT OF COMMUNITY AFFAIRS; PROVIDING FOR FILING WITH THE SECRETARY OF STATE; PROVIDING FOR INCORPORATION INTO THE COMPREHENSIVE PLAN; PROVIDING FOR AN EFFECTIVE DATE

WHEREAS: The Monroe County Board of County Commissioners makes the following Findings:

1. Pursuant to Chapter 163.3177 (3)(a)6.(b)1 F.S., the capital improvements element shall be reviewed on an annual basis and modified as necessary in order to maintain a financially feasible five (5) - year schedule of capital improvements; and
2. Pursuant to Chapter 163.3177 (3)(a)6.(b)1 F.S., an amendment to the comprehensive plan is required to update the schedule on an annual basis or to eliminate, defer, or delay the construction for any facility listed in the five (5) - year schedule; and
3. Pursuant to Chapter 163.3177 (3)(a)6.(b)1 F.S., a local government may not amend its future land use map, except for plan amendments to meet new requirements under this part and emergency amendments after December 1, 2010, and every year thereafter, unless and until the local government has adopted the annual update to the Five (5) -Year Schedule of Capital Improvements and it has been transmitted to the state land planning agency; and
4. Pursuant to Chapter 163.3177 (3)(a)6.(c) F.S., if the local government does not adopt the required annual update to the schedule of capital improvements or the annual update is found not in compliance, the state land planning agency must notify the Administration Commission that the local government has a demonstrated lack of commitment to meeting its obligations identified in the capital improvements element and may be subject to sanctions by the Administration Commission; and

5. Pursuant to Chapter 163.3177 (3)(a)6.(b)2 F.S., capital improvements element amendments adopted after the effective date of this act shall require only a single public hearing before the governing board which shall be an adoption hearing; and
6. Pursuant to Chapter 164.3177 (b) 1 F. S., Monroe County Capital Improvements Plan is not required to be financially feasible until December 1, 2011.
7. Rule 9J-5 of the Florida Administrative Code requires that the Five (5) - Year Schedule of Capital Improvements (CIP) be reviewed and updated annually.
8. Objective 1401.1 of the Year 2010 Comprehensive Plan mandates Monroe County to provide the capital improvements necessary to correct existing deficiencies, to accommodate projected future growth, and to replace obsolete and worn-out facilities, in accordance with an adopted Capital Improvements Program; and
9. Policy 1401.1.1 of the Year 2010 Comprehensive Plan mandates Monroe County to revise the existing County Capital Improvements Program to incorporate the improvements identified in the Five-Year Schedule of Capital Improvements included in Table 4.1 of Capital Improvements Implementation; and
10. Policy 1401.1.2 mandates Monroe County to annually update the Comprehensive Plan Five-Year Schedule of Capital Improvements, and further provides that revisions to the schedule shall be incorporated into the Capital Improvements Program on an annual basis; and
11. Monitoring and Evaluation Procedures 5.0 (1) and (2) of the Comprehensive Plan requires that the Five-Year Schedule of Capital Improvements (CIP) be reviewed and updated annually, in order to allocate financial resources to implement the Plan; and
12. The amendment furthers Principal (a) of the Principals for Guiding Development in the Florida Keys Area of Critical State Concern: To strengthen local government capabilities for managing land use and development so that local government is able to achieve these objectives without the continuation of the area of critical state concern designation; and
13. The amendment furthers Principal (h) of the Principals for Guiding Development in the Florida Keys Area of Critical State Concern: To protect the value, efficiency, cost-effectiveness, and amortized life of existing and proposed major public investments, including: water supply facilities; sewage collection and disposal facilities; solid waste collection and disposal facilities; transportation facilities; parks, recreation facilities, and other publicly owned properties; and

14. Annually updating the Five-Year Schedule of Capital Improvements to provide and maintain adequate public facilities for transportation, solid waste removal, sanitary sewers and storm water treatment and, cultural and recreational facilities protects and promotes the public health, safety, and welfare of both existing and future citizens of Monroe County.
15. The improvements listed in Table 4.1 Five-Year Schedule of Capital Improvements further the public health, safety, and welfare of both existing and future citizens of Monroe County.
16. At a regularly scheduled meeting held on the 16th day of November, 2010, the Monroe County Planning Commission reviewed this matter and recommended that the Board of County Commissioners adopt the amendments to Table 4.1 Five-Year Schedule of Capital Improvements Fiscal Year 2010 through 2015 of the Year 2010 Comprehensive Plan.

NOW THEREFORE, BE IT ORDAINED BY THE BOARD OF COUNTY COMMISSIONERS OF MONROE COUNTY, FLORIDA:

- Section 1.** The preceding recitals support the Monroe County Board of County Commissioners' decision to adopt the following amendments to Table 4.1 Five-Year Schedule of Capital Improvements Fiscal Year 2010 through 2015 of the Year 2010 Comprehensive Plan.
- Section 2.** The amended Table 4.1 Five-Year Schedule of Capital Improvements Fiscal Year 2010 through 2015 of the Year 2010 Comprehensive Plan of the Capital Improvements Implementation Element is hereby adopted and attached hereto as Exhibit A. Amendments are presented in underline (Exhibit A) to indicate additions to text and ~~strike through~~ (Exhibit A1) to indicate deletions. All other words, characters, and language of the comprehensive plan remain unchanged.
- Section 3.** If any section, subsection, sentence, clause, item, change, or provision of this ordinance is held invalid, the remainder of this ordinance shall not be affected by such invalidity.
- Section 4.** This ordinance shall be transmitted by the Director of Planning to the Department of Community Affairs pursuant to Chapter 163 and 380, Florida Statutes.
- Section 5.** This ordinance shall be filed in the Office of the Secretary of the State of Florida but shall not become effective until a notice is issued by the Department of Community Affairs or Administration Commission finding the amendment in compliance with Chapter 163, Florida Statutes after applicable appeal periods have expired.

Section 6. This amendment shall be incorporated into the Monroe County Year 2010 Comprehensive Plan.

PASSED AND ADOPTED by the Board of County Commissioners of Monroe County, Florida, at a regular meeting held on the 17th day of November, 2010.

Mayor Heather Carruthers	<u>Yes</u>
Mayor <i>pro tem</i> David Rice	<u>Yes</u>
Commissioner George Neugeant	<u>Yes</u>
Commissioner Sylvia Murphy	<u>Yes</u>
Commissioner Kim Wigington	<u>Yes</u>

BOARD OF COUNTY COMMISSIONERS
OF MONROE COUNTY, FLORIDA

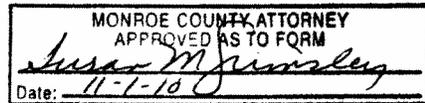
BY *Sylvia J. Murphy*
Mayor Heather Carruthers



APPROVED BY L. KOLHAGE, CLERK

Camille Hancock

DEPUTY CLERK



FILED FOR RECORD
2010 DEC 13 PM 12:34
DANIEL KOLHAGE
CLERK
MONROE COUNTY, FLORIDA

5-Year Schedule of Capital Improvements

Community Name: **Monroe County**
 Fiscal Year: **10/10-9/15**

Infrastructure Category:	Project Cost (Total Budget)	Start FY	Finish FY	Prior Year Expense	Funding Source	2011	2012	2013	2014	2015
						Committed Funds	Committed Funds	Committed Funds	Committed Funds	Planned Funds
WASTEWATER										
REVENUE										
Fund 310 - Big Coppitt		FY 08	FY 11		310	2,463,324	-	-	-	-
Fund 304 - Big Coppitt		FY 07	FY 08		304	4,906,913	-	-	-	-
Big Coppitt Total	\$ 36,770,400			29,400,163						
Fund 311 - Duck Key		FY 08	FY 12		311	8,144,315	3,050,000	-	-	-
Fund 304 - Duck Key		FY 07	FY 08		304	1,500,000	-	-	-	-
Duck Key Total	\$ 16,428,500			3,734,185						
Fund 308 - Key Largo		FY 08	FY 11			553,411	-	-	-	-
Fund 304 - Key Largo		FY 05	FY 08		304	7,054,202	-	-	-	-
Key Largo Total	\$ 20,000,000									
TOTAL Revenues	76,898,900					20,432,776	3,050,000			
EXPENDITURES										
Duck Key		FY 07	FY 12		311	8,144,315	3,050,000	-	-	-
Big Coppitt		FY 07	FY 11		310	2,463,324	-	-	-	-
Key Largo		FY 08	FY 11		308	2,864,813	-	-	-	-
Cudjoe Regional		FY 09	FY 11			553,411	-	-	-	-
TOTAL Expenditures						14,025,863	3,050,000			
ANNUAL BALANCE						6,406,913				
5 YEAR PLANNING PERIOD BALANCE						6,406,913				

REVENUE										
EKAA						49,802,000	50,759,000	51,692,000	52,725,840	53,780,357
EKAA Revenues TOTAL						49,802,000	50,759,000	51,692,000	52,725,840	53,780,357
EXPENDITURES										
J. Robert Dean Floridan Wells						2,415,000	-	-	-	-
J. Robert Dean RO Facility						-	-	1,836,400	-	-
J. Robert Dean New Storage Tank						-	4,855,000	-	-	-
Key Largo Booster Pump Station						-	-	-	-	251,850
Plantation Key Booster Pump Station						-	4,209,000	4,209,000	-	-
Marathon Transmission Main Replacements						-	-	300,000	-	-
Marathon Booster Pump Station						-	-	-	-	-
Ramrod Booster PS						-	-	-	-	104,000
Upsize Mains						2,500,000	2,500,000	2,500,000	250,000	2,500,000
Ocean Reef Storage Tank						-	-	860,000	860,000	-
Lake Surprise Pub Station and Storage Tank						-	-	-	-	1,126,500
Rockharbor Pump Station Replacement						-	538,000	538,000	-	-
Rock Harbor Storage Tank						-	405,000	405,000	-	-
Tavernier Pump Station Replacement & Storage Tank						1,318,500	-	-	-	-
Tavernier Water Lines						722,000	722,000	-	-	-
Vaca Cut Storage Tank						810,000	-	-	-	-
33rd Street Storage Tank Replacement						-	1,138,000	-	-	-
Stock Island Pump Station Replacement						-	2,070,000	-	-	-
EKAA Expenditures TOTAL						7,765,500	16,437,000	10,648,400	1,110,000	3,982,350
ANNUAL BALANCE						42,036,500	34,322,000	41,043,600	51,615,840	49,798,007
5 YEAR PLANNING PERIOD BALANCE						218,815,947				

5-Year Schedule of Capital Improvements
 Monroe County

Community Name: _____
 Fiscal Year: 10/10-9/15

Infrastructure Category:	Project Cost (Total Budget)	Start FY	Finish FY	Prior Year Expense	Funding Source	2011	2012	2013	2014		2015	
						Committed Funds	Committed Funds	Committed Funds	Committed Funds	Planned Funds	Committed Funds	Planned Funds
DRAINAGE												
REVENUE												
						-	-	-	-	-	-	-
						-	-	-	-	-	-	-
						-	-	-	-	-	-	-
TOTAL Revenues						-	-	-	-	-	-	-
EXPENDITURES												
						-	-	-	-	-	-	-
						-	-	-	-	-	-	-
TOTAL Expenditures						-	-	-	-	-	-	-
ANNUAL BALANCE						-	-	-	-	-	-	-
5 YEAR PLANNING PERIOD BALANCE						-	-	-	-	-	-	-

REVENUE												
						-	-	-	-	-	-	-
						-	-	-	-	-	-	-
TOTAL Revenues						-	-	-	-	-	-	-
EXPENDITURES												
						-	-	-	-	-	-	-
						-	-	-	-	-	-	-
TOTAL Expenditures						-	-	-	-	-	-	-
ANNUAL BALANCE						-	-	-	-	-	-	-
5 YEAR PLANNING PERIOD BALANCE						-	-	-	-	-	-	-

PARKS AND REC												
REVENUE												
<i>County</i>												
Fund District 1 Parks and Rec.					131	117,165	47,165	47,165	-	47,165	-	47,165
Fund District 2 Parks and Rec.					131	216,581	179,581	179,581	-	179,581	-	179,581
Fund District 3 Parks and Rec.					131	46,195	46,195	46,195	-	46,195	-	46,195
County Revenues						379,941	272,941	272,941	-	272,941	-	272,941
FDOT Revenues									-		-	
TOTAL Revenues						379,941	272,941	272,941	-	272,941	-	272,941
EXPENDITURES												
<i>County</i>												
District 1 Parks and Rec. Projects	235,825				131	47,165	47,165	47,165	-	47,165	-	47,165
District 2 Parks and Rec. Projects	897,905				131	179,581	179,581	179,581	-	179,581	-	179,581
District 3 Parks and Rec. Projects	230,975				131	46,195	46,195	46,195	-	46,195	-	46,195
Palm Village Park	25,000				131	25,000	-	-	-	-	-	-
Watson Field	12,000				131	12,000	-	-	-	-	-	-
Bay Point Park	50,000				131	50,000	-	-	-	-	-	-
Big Coppitt Park	20,000				131	20,000	-	-	-	-	-	-
County Expenditures	1,471,705					379,941	272,941	272,941	-	272,941	-	272,941

TRANSPORTATION												
REVENUE												
<i>County</i>												
Road and Bridge Fund County Capital Proj.					102	1,427,404	1,933,488	1,933,488	-	1,933,488	-	1,933,488
Bike / Shared Used path					130	1,800,000	-	-	-	-	-	-
Key Colony Beach Roadway Project					130	32,102	32,102	32,102	-	32,102	-	32,102
Truman Pedestrian Bridge						430,000	-	-	-	-	-	-
County Revenues						3,689,506	1,965,590	1,965,590	-	1,965,590	-	1,965,590
FDOT Revenues									-		-	
TOTAL Revenues						3,689,506	1,965,590	1,965,590	-	1,965,590	-	1,965,590

Community Name:				
Fiscal Year:				
Infrastructure Category:	Project Cost Budget		2015	
		2014		
	Planned Funds	Committed Funds	Planned Funds	
EXPENDITURES				
Property Acquisition in Key West ACSC	-	-	-	-
Property Acquisition in FL Keys ACSC	-	-	-	-
ROGO Reserve	-	-	-	-
Contingency	-	-	-	-
TOTAL Expenditures	-	-	-	-
ANNUAL BALANCE	-	-	-	-
5 YEAR PLANNING PERIOD BALANCE				

REVENUE				
Property Taxes	349	-	-	-
1/2 cents sales surtax	000	-	-	-
TOTAL Revenues	349	-	-	-
EXPENDITURES				
Plantation Key School Renovation	-	-	-	-
Horace O'Bryant Middle Renovation	4	3,200,000	-	-
TOTAL Expenditures	-	3,200,000	-	-
ANNUAL BALANCE	349	(3,200,000)	-	-
5 YEAR PLANNING PERIOD BALANCE				

Table 4.1
Five-Year Schedule of Capital Improvements

Project	Funding Source	FY 92	FY 93	FY 94	FY 95	FY 96
Transportation						
Good Sound Road	Impact fees, toll	5,500,000	5,500,000			
Other County Roads (1)	Gas taxes	1,928,870	1,223,050	1,980,780	1,184,700	925,100
Port Related County Road Projects	Gas taxes		30,000			
KWIA Terminal Building	FAA, FDOT, Airport Revenue		1,000,000	1,000,000		
KWIA Other Improvements	FAA, FDOT, Airport Revenue	720,000	40,000	160,000	50,000	260,000
Marathon Airport Terminal	FAA, FDOT, Airport Revenue		2,235,000	2,235,000		
Marathon Airport Other Improvements (2)	FAA, FDOT, Airport Revenue	480,000	1,340,000		140,000	400,000
Solid Waste						
Sludger/Sludge Treatment Facility (3)	Infrastructure taxes, DEM enterprise funds	3,000,000	(3)			
Alternate Disposal Technologies	Infrastructure taxes, DEM enterprise funds	(3)	(3)	(3)		
Sanitary Sewer / Drainage						
Sanitary Wastewater/Stormwater Management Master Plans	DEM enterprise funds	935,000	995,000	995,000		
Future Sanitary Wastewater Projects	DEM enterprise funds					
Future Drainage Projects	Stormwater Utility general funds (4)				(5)	(5)
Recreation						
Park Acquisition/Development	Ad valorem taxes, infrastructure taxes, recreation impact fees, Land Authority	807,500	185,000	185,000	165,000	165,000
Upper Keys	Ad valorem taxes, infrastructure taxes, recreation impact fees, Land Authority					
Middle Keys	Ad valorem taxes, infrastructure taxes, recreation impact fees, Land Authority	27,500	68,730	68,730	68,730	68,730
Lower Keys	Ad valorem taxes, infrastructure taxes, recreation impact fees, Land Authority	1,952,500	75,825	75,825	75,825	75,825
TOTAL (5)		14,849,170	12,012,425	6,620,155	1,604,075	1,894,475

(1) See table 4.27 of the Technical Document for a detailed listing of these roadway improvements.
 (2) See Table 6.4 of the Technical Document for a detailed listing of these improvements.
 (3) The estimated costs of a sludge, seepage, and/or leachate treatment and disposal facility on Crum Key and any facilities required to support alternative solid waste management technologies will be determined by January 1, 1993 based upon an evaluation by Monroe County DEM. A preliminary figure of \$3 million has been budgeted for the Crum Key facility.
 (4) A Stormwater Utility to fund future drainage projects will be evaluated as part of the combined Sanitary Wastewater/Stormwater Management Master Plan.
 (5) The estimated costs of future sanitary wastewater and drainage projects will be determined based upon the results of the combined Sanitary Wastewater/Stormwater Management Master Plan.



MEMORANDUM
MONROE COUNTY PLANNING & ENVIRONMENTAL RESOURCES DEPARTMENT
We strive to be caring, professional and fair

To: Christine Hurley, AICP, Growth Management Director

Through: Townsley Schwab, Sr. Planning Director, Planning and Environmental Resources

From: Kathy Grasser, Comprehensive Planner

Date: October 25, 2010

Subject: Request for an Amendment to the Year 2010 Monroe County Comprehensive Plan to amend Table 4.1 Five-Year Schedule of Capital Improvements

Meeting: November 17, 2010

1 **PURPOSE:**

2 The principal purpose of this element is to determine the cost of any major County public facility
3 improvements recommended in the various elements of the 2010 Comprehensive Plan for
4 implementation during the five year period of Fiscal Years 2010-2015 and demonstrate the
5 ability to fund those improvements. The Capital Improvements Element is required to be
6 updated annually.

7
8 **PROPOSED AMENDMENT:**

9 Staff is requesting the Monroe County Board of County Commissioners adopt an amendment to
10 the Year 2010 Monroe County Comprehensive Plan amending Table 4.1 Five-Year Schedule of
11 Capital Improvements (Exhibit A). A single public hearing is required (F.S. 163.3177).

12
13 **PROCESS**

14 Pursuant to F.S. Sec. 163.3177(3)(a) and 163.3177(3)(b) the capital improvements element must
15 be reviewed on an annual basis and modified as necessary in accordance with F.S. Sec. 163.3187
16 or F.S. Sec. 163.3189 in order to maintain a financially feasible five-year schedule of capital
17 improvements. Corrections and modifications concerning costs; revenue sources; or acceptance
18 of facilities pursuant to dedications which are consistent with the plan may be accomplished by
19 ordinance and shall not be deemed to be amendments to the local comprehensive plan. Capital
20 improvements element amendments adopted after the effective date of this act shall require only
21 a single public hearing before the governing board which shall be an adoption hearing as
22 described in F.S. Sec. 163.3184(7). A copy of the ordinance shall be transmitted to the state land
23 planning agency. An amendment to the comprehensive plan is required to update the schedule on
24 an annual basis or to eliminate, defer, or delay the construction for any facility listed in the 5-
25 year schedule. All public facilities must be consistent with the capital improvements element.

26

1 Monroe County must become financially feasible by December 1, 2011 as stated in Florida
2 Statutes Ch. 163.3177 (b)1:

3 *The capital improvements element must be reviewed on an annual basis*
4 *and modified as necessary in accordance with s. 163.3187 or s. 163.3189*
5 *in order to maintain a financially feasible 5-year schedule of capital*
6 *improvements. Corrections and modifications concerning costs; revenue*
7 *sources; or acceptance of facilities pursuant to dedications which are*
8 *consistent with the plan may be accomplished by ordinance and shall not*
9 *be deemed to be amendments to the local comprehensive plan. A copy of*
10 *the ordinance shall be transmitted to the state land planning agency. An*
11 *amendment to the comprehensive plan is required to update the schedule*
12 *on an annual basis or to eliminate, defer, or delay the construction for any*
13 *facility listed in the 5-year schedule. All public facilities must be consistent*
14 *with the capital improvements element. The annual update to the capital*
15 *improvements element of the comprehensive plan need not comply with the*
16 *financial feasibility requirement until December 1, 2011. Thereafter, a*
17 *local government may not amend its future land use map, except for plan*
18 *amendments to meet new requirements under this part and emergency*
19 *amendments pursuant to s. 163.3187(1)(a), after December 1, 2011, and*
20 *every year thereafter, unless and until the local government has adopted*
21 *the annual update and it has been transmitted to the state land planning*
22 *agency.*

23
24
25 **RELEVANT PRIOR COUNTY ACTIONS**

26 The Planning Commission adopted Resolution 34-10 on November 16, 2010 recommending the
27 BOCC adopt the new Capital Improvements Implementation element Table 4.1.

28
29 **DATA AND ANALYSIS**

30 Table 4.1, Five-Year Schedule of Capital Improvements (Fiscal Years 2010-2011, 2011-2012,
31 2012-2013, 2013-2014, and 2014-2015), lists the public facilities which Monroe County will
32 provide in order to reduce existing deficiencies, provide for necessary replacements, and meet
33 the future demand identified by the Comprehensive Plan. In accordance with Rule 9J-5 of the
34 Florida Administrative Code, the schedule includes the following public facility types for the
35 five years subsequent to plan adoption.

36
37 The public facilities types are:

- 38 1. Transportation facilities
- 39 2. Potable Water
- 40 3. Wastewater
- 41 4. Drainage and Storm Water
- 42 5. Solid Waste
- 43 6. Parks and Recreation

44
45 Additionally, the Growth Management Division, The Monroe County Land Authority and The
46 School Board have capital improvement projects in their budget.

1 **TRANSPORTATION FACILITIES**

2 The revenue for transportation projects comes from Funds 102 and 130. The Road and Bridge
3 Fund County Capital Projects, the bike / shared use path, Key Colony Beach Roadway Project
4 and the Truman Pedestrian Bridge Projects have expenditures totalling \$3,689,506. FDOT
5 revenues for these projects total \$30,589,000. The following are FDOT's construction projects
6 and associated expenditures. Exhibit A contains all of FDOT's projects, including resurfacing.

1. SR 5/BIG COPPITT KEY FROM ROCKLAND CHNL BRIDGE TO OLD BOCA CHICA CHANNEL Turn Lanes Construction 69,000
2. SR 5/BIG COPPITT KEY FROM ROCKLAND CHNL BRIDGE TO OLD BOCA CHICA CHANNEL 20,000
3. SR A1A/S. ROOSEVELT FROM BERTHA STREET TO SR 5/US-1 Flexible Pavement Construction: ROW 4,986,000
4. SR A1A/S. ROOSEVELT FROM BERTHA STREET TO SR 5/US-1 Flexible Pavement Construction: Construction 20,877,000
5. Bike Path Trail SR 5/N. ROOSEVELT FROM EISENHOWER DRIVE TO SR 5/US-1: Construction 1,073,000
6. SR 5/US-1/LONG KEY V-PIERS REPL. & DEVIATION BLOCK REPAIRS: Prelim Eng. 20,000
7. SR 5/OVRSEAS HRT.TRL FROM MM 15-BAY POINT TO MM 16.5-SUGARLOAF KEY: Construction 883,000
8. SR 5/OVRSEAS HRT.TRL AT MM 106 (NEW TRAILHEAD) BTWN US-1 & CARD SOUND RD (bike path and trail) construction 2,620,000
9. SR 5/OVRSEAS HRT.TRL KEMP CHANNEL BRIDGE (MM 23.6) LAP: Construction 1,350,000
10. SR 5/OVRSEAS HRT.TRL (WINDLEY KEY) FROM MM 83.5 TO MM 84.8" Bike Path Construction 825,000
11. SR 5/OVRSEAS HRT.TRL AT SPANISH HARBOR HISTORIC BRIDGE (MM 33): Bike Path Construction 1,300,000
12. SR 5/OVRSEAS HRT.TRL AT SOUTH PINE CHANNEL HISTORIC BRIDGE (MM 29): Bike Path Construction 920,000
13. SR 5/OVRSEAS HRT.TRL FROM MM 15 TO MM 16.5 (LOWER SUGARLOAF) Bike path construction 900,000
14. SR 5/OVRSEAS HRT.TRL FROM MM 96 TO MM 106 (KEY LARGO) Bike path construction 1,400,000
15. SR 5/OVRSEAS HWY FROM N. PINE CHL(MM 29.5) TO SPANISH HRBR CHL(MM33) ROW ACQ 1,795,000
16. SR 5/OVRSEAS HRT.TRL AT MM 47 (KNIGHTS KEY) PEDESTRIAN UNDERPASS/ADA Bike Path 1,150,000
17. SR 5/OVRSEAS HRT.TRL FROM MM 54.5 TO MM 60 (GRASSY KEY) Bike Path 1,635,000
18. SR 5/OVRSEAS HRT.TRL & SCENIC HWY - VISTAS AT VARIOUS LOCATIONS Bike Path 1,225,000
19. SR 5/OVRSEAS HRT.TRL ALL AMERICAN ROAD MM 0 TO MM 106 Bike Path 1,020,000

20. FDOT Expenditures

\$44,068,000

1 Roads are one of the four critical public facilities identified for annual assessment in the Monroe
2 County Land Development (LDC). Regulations require all segments of U.S. 1 to remain at a
3 LOS C or higher and all county roads are to remain at a LOS D or higher.
4

5 This section of the report investigates the current capacity of the transportation network in
6 Monroe County. The analysis includes changes in traffic volumes, the U.S. 1 level of service
7 (LOS), the reserve capacity of the highway and county roads, and the Florida Department of
8 Transportation Five-Year Work Program for Monroe County. All data and analysis was obtained
9 from the 2009 U. S. 1 Arterial Travel Time and Delay Study' prepared by URS Corporation
10 Southern, 3343 W. Commercial Blvd., Suite 100, Fort Lauderdale, Florida 33309.
11

12 **LEVEL OF SERVICE (LOS)**

13 **OVERALL LEVEL OF SERVICE ON U.S. 1**

14 The overall level of service or capacity of the entire length of U.S. 1 is measured in the average
15 speed of a vehicle traveling from one end to the other of U.S. 1. Both Monroe County and the
16 Florida Department of Transportation have adopted a LOS C standard for the overall length of
17 U.S. 1. In other words, a vehicle traveling from Mile Marker 4 to Mile Marker 112 (or vice
18 versa) must maintain an average speed of at least 45 mph to achieve the LOS C standard.
19

20 The median overall speed during the 2009 study was 46.6 mph, which is 0.2 mph higher than the
21 2008 median speed of 46.2 mph. The mean operating speed was 46.3 mph with a 95%
22 confidence interval of plus or minus 0.7 mph. The mean and median speeds correspond to LOS
23 C conditions. The highest overall speed recorded in the study was 48.4 mph (similar to the 2008
24 highest overall speed of 48.2 mph), which occurred on Thursday, March 5, 2009 between 3:15
25 p.m. and 5:45 p.m. in the southbound direction. The lowest overall speed recorded was 42.6
26 mph (4.1 mph higher than the 2008 lowest overall speed of 38.5 mph) which occurred on
27 Monday, March 2, 2009 between 9:45 a.m. and 12:40 p.m. in the southbound direction.
28

29 **LEVEL OF SERVICE ON U.S. 1 SEGMENTS**

30 The Land Development Code requires each segment of the highway to maintain a LOS of C or
31 better. The LOS criteria for segment speeds on U.S. 1 in Monroe County depend on the flow
32 characteristics and the posted speed limits within the given segment. Flow characteristics relate
33 to the ability of a vehicle to travel through a particular segment without being slowed or stopped
34 by traffic signals or other devices. Segments with a series of permanent traffic signals or other
35 similar traffic control devices in close proximity to each other are considered to be "Interrupted
36 Flow Segments" and are expected to have longer travel times due to the delays caused by these
37 signals or control devices. Roadway segments without a series of signals or control devices are
38 considered to be "Uninterrupted Flow Segments". Uninterrupted segments may have one or
39 more traffic signals, but they are not in close proximity to one another as in the interrupted
40 segment case. The methodology used to determine median speed and level of service on a
41 particular segment is based upon that segment's status as an interrupted or uninterrupted flow
42 segment.
43
44
45
46

<u>Interrupted Flow</u>	<u>Uninterrupted Flow</u>
LOS A \geq 35 mph	LOS A 1.5 mph above speed limit
LOS B \geq 28 mph	LOS B 1.5 mph below speed limit
LOS C \geq 22 mph	LOS C 45 mph below speed limit
LOS D \geq 17 mph	LOS D 7.5 mph below speed limit
LOS E \geq 13 mph	LOS E 13.5 mph below speed limit
LOS F < 13 mph	LOS F more than 13.5 mph below speed limit

1
2 Compared to last year's (2008) study results, there is level of service changes to eight segments –
3 three (3) resulted in positive level of service changes while five (5) resulted in negative level of
4 service changes.

5
6 The Boca Chica segment (Segment 2) increased from LOS 'B' to LOS 'A'
7 The Big Pine (Segment 10) increased from LOS 'D' to LOS 'C'
8 The Cross segment (Segment 24) increased from LOS 'E' to LOS 'A'
9 The Big Coppitt (Segment 3) decreased from LOS 'C' to LOS 'D'
10 The Cudjoe segment (Segment 6) decreased from LOS 'A' to LOS 'B'
11 The Duck segment (Segment 15) decreased from LOS 'B' to LOS 'C'
12 The Long Key segment (Segment 16) decreased from LOS 'B' to LOS 'C'
13 The Plantation segment (Segment 21) decreased from LOS 'B' to LOS 'C'
14

15 Compared to 2008, the median segment speeds increased in ten (10) of the 24 segments ranging
16 between 0.4 mph to 13.8 mph. Fourteen segments experienced a decrease in median speeds,
17 ranging from 0.1 mph to 3.4 mph, compared to last year's data. The biggest difference in speed
18 change was observed for Segment 24, the level of service changed from LOS 'E' to LOS 'A'
19 because most of the construction work has been completed and the bascule bridge was replaced
20 with a fixed-span bridge.

21 22 DELAY EVENTS

23 A delay event occurs whenever the speed of the test vehicle fell below 5 mph. The delay event
24 continues until the test vehicle's speed rose to 15 mph. During the study, the observers
25 encountered a total of 123 separate delay events (a 10% increase compared to the 2008 study).
26 Six of these delay events at 20 minutes and 50 seconds were excluded from the overall travel
27 times. The excluded delay events were caused by non-recurring congestion events such as
28 accidents, school bus, roadside construction. In addition to these six delay events, the 6
29 drawbridge delay events were also excluded from the segment travel times (41 minutes and 51
30 seconds). The mean delay per trip is the total delay recorded for a given sources divided by the
31 study's 28 one-way trips. The mean delay per trip is found to be 5 minutes and 19 seconds (a 1
32 minute and 51 second increase in delay compared to the 2008 data).
33

34 SIGNAL DELAYS

35 The largest single delay source along U.S. 1 in Monroe County is the traffic signal. During the
36 2009 study, 99 (80%) out of 123 delay events were caused by signals which is 5% higher than
37 the 2008 study. The signal delays accounted for 1 hour 19 minutes and 43 seconds (53% of total
38 delays).

1
2 The mean delay per event for signals in segments 5, 10, 13, 14, 21 and 22 are higher than the
3 LOS C threshold value of 25 seconds, which is the signal impact discount in the methodology.
4 The signal on Big Pine Key segment (Segment 10) caused 18 (18%) signals delay events
5 accounting for 31 minutes and 22 seconds.

6
7 Key Deer Boulevard signal was the most significant delay causing 18 signal delay events
8 accounting for 31 minutes and 22 seconds (39% of the total signal delays). The mean delay per
9 event at Key Deer Boulevard signal was higher than the threshold of 25 seconds at 1 minute and
10 45 seconds. The mean delay per trip was also higher than the threshold of 25 seconds at 1
11 minute and 7 seconds.

12
13 The signals on the Marathon segment (Segment 13) were the second most significant causing 36
14 signal delay events account for 20 minutes and 2 seconds (25% for the total signal delays). The
15 mean delay per event at the Marathon signals was higher than the 25 seconds threshold at 22
16 seconds. The mean delay per trip was higher than the 25 seconds threshold at 43 seconds.

17 18 ACCIDENT DELAY

19 The accident delays were the third largest delay events during the 2009 study. There were three
20 (3) accident delays recorded during the 2009 study accounting for 16 minutes and 47 seconds.
21 The accident delays account for 11% of the total delays. No accident delays were recorded
22 during the 2008 study. The drawbridge delays were excluded from the overall travel time.

23 24 TURNING VEHICLE DELAY

25 There were 7 left-turn delays amounting to 2 minutes and 35 seconds during this year's study.
26 The total delay time related to turns increased compared to last year's turn delays of 58 seconds.

27 28 DRAW BRIDGE DELAY

29 There is one drawbridge along the length of U.S. 1 in Monroe County, across Snake Creek. This
30 year drawbridge delays were the second largest delay events. The Snake Creek Draw Bridge
31 (between Segments 20 and 21) created six (6) drawbridge related delay during this year's travel
32 time runs, totally 41 minutes and 51 seconds. The drawbridge delay events and total time were
33 significantly higher in the 2009 study compared to the 2008 study accounting for only 4 minutes
34 and 21 seconds. The drawbridge delays were excluded from the segment travel time but are
35 included in the overall travel time.

36 37 CONGESTION DELAY

38 The delays caused by congestion were not that significant during 2009. In previous years,
39 congestion delays were caused by events such as the Kid's Carnival (MM 34) and the Islamorada
40 Flea Market. In 2009, the largest congestion delay occurred at Segment 20 at Snake Creek
41 Bridge. The congestion delay events contributed an average of 8 seconds per trip, a significant
42 decrease compared to last year's average delay per trip of 57 seconds. Four congestion delay
43 events amounted to 3 minutes and 37 seconds during the 2009 study.

1 CONSTRUCTION DELAY

2 The construction delay was the fourth largest delay. During the 2009 study there was on-going
3 construction at the following segments:

- 4 1. Stock Island (Segment 1)
- 5 2. Big Coppitt (Segment 3)
- 6 3. Duck (Segment 15)
- 7 4. Snake Creek Bridge (Segment 21)
- 8 5. Cross (Segment 24)

9
10 The construction delay events accounted for 4 minutes and 3 seconds in 2009. This is a
11 significant decrease from 2008 construction delays accounting for 12 minutes and 1 second.
12 During years 2007 and 2008 construction delays occurred mostly along Cross segment (Segment
13 24). The construction of a high level fixed bridge has been completed along Cross segment and
14 speeds along the approach sections of the segment that are still under construction were observed
15 to be above the posted speed limit.

16
17 SPEED LIMIT

18 The posted speed limit affects both the segment and the overall LOS. For instance, a lower
19 speed limit could benefit a segment's LOS by reducing the difference between the travel speed
20 and the posted speed limit. The reduction in the speed limit negatively impacts the overall LOS
21 because motorists tend to travel at reduced speeds to comply with the speed limits, whereas the
22 overall LOS C threshold is set at 45 mph regardless of the speed limits changes. For these
23 reasons, the posted speed limit is an important component in this study.

24
25 In Big Pine Key, due to the Key Deer habitat, the speed limit is strictly enforced with additional
26 signs and frequent police presence. The travel speeds in this segment were observed to be near
27 the posted speed limit, unless impeded by delays created by the signal.

28
29
30
31
32
33
34
35
36 THIS SPACE LEFT BLANK INTENTIONALLY
37
38

FIGURE 2.7

US 1 SEGMENTS STATUS, MEDIAN SPEEDS AND CHANGE 2008-2009

#		Segment	2009 LOS	2008 LOS	2009 Median Speed	2008 Median Speed	Numeric Change
1	4-5	Stock Island	B	B	34.2	31.7	2.5
2	5-9	Boca Chica	A	B	56.7	55.5	1.2
3	9-10.5	Big Coppitt	D	C	42.3	45.7	-3.4
4	10.5-16.5	Saddlebunch	C	C	52.4	51.6	0.8
5	16.5-20.5	Sugarloaf	D	D	46.8	47.2	-0.4
6	20.5-23	Cudjoe	B	A	47.0	47.7	-0.7
7	23-25	Summerland	B	B	44.7	46.4	-1.7
8	25-27.5	Ramrod	A	A	47.6	47.7	-0.1
9	27.5-29.5	Torch	A	A	47.9	46.6	1.3
10	29.5-33	Big Pine	C	D	37.9	35.7	2.2
11	33-40	Bahia Honda	B	B	51.7	52.3	-0.6
12	40-47	7-Mile Bridge	B	B	55.4	56.1	-0.7
13	47-54	Marathon	A	A	38.2	37.3	0.9
14	54-60.5	Grassy	C	C	50.3	50.7	-0.4
15	60.5-63	Duck	C	B	51.3	54.4	-3.1
16	63-73	Long	C	B	51.3	52.3	-1.0
17	73-77.5	L. Matecumbe	C	C	51.4	51.0	0.4
18	77.5-79.5	Tea Table	D	D	48.5	50.0	-1.5
19	79.5-84	U. Matecumbe	C	C	40.8	42.1	-1.3
20	84-86	Windley	A	A	42.2	43.8	-1.6
21	86-91.5	Plantation	C	B	39.6	41.9	-2.3
22	91.5-99.5	Tavernier	A	A	48.2	47.6	0.6
23	99.5-106	Largo	A	A	46.0	44.4	1.6
24	106-112.5	Cross	A	E	52.1	38.3	13.8
Overall			C	C	46.6	46.4	0.2

Due to construction in 2009 the posted speed limit was changed from 45 mph to 35 mph in some sections of the following segments:

1. Stock Island (Segment 1)
2. Bog Coppitt (Segment 3)
3. Duck (Segment 15)
4. Snake Creek Bridge (Segment 21)
5. Cross (Segment 24)

This caused these segments' medium speed to decrease since year 2008. In Segment 15 and Segment 21, this action caused the LOS to decrease.

A large part of the traffic in Monroe County consists of tourist travelers, who generally tend to have a leisurely driving style. The traffic also tends to include a large number of recreational vehicles. Combined with some slow moving heavy vehicles, the travel speeds tend to go below the speed limits when there are no opportunities for faster moving vehicles to pass. Such impacts are evident on 16 of the 24 segments operating below the posted speed limits.

1 **RESERVE CAPACITIES**

2 The difference between the median speed and the LOS C standard gives the reserve speed, which
3 in turn can be converted into an estimated reserve capacity of additional traffic volume and
4 corresponding additional development using mathematical formulas. The median overall speed
5 of 46.6 mph compared to the LOS C standard of 45 mph leaves an overall reserve speed of 1.6
6 mph. The reserve speed is then converted into an estimated number of reserve trips. The
7 estimated reserve capacity is then converted into an estimated capacity for additional residential
8 development, assuming balanced growth of other land uses. Applying the formula for reserve
9 volume to each of the 24 segments of U.S. 1 individually gives maximum reserves volumes for
10 all segments totally 86,707 trips. These individual reserve volumes may be unobtainable, due to
11 constraint imposed by the overall reserve volume.

12
13 County regulations and FDOT policy allow segments that fail to meet LOS C standards to
14 receive an allocation not to exceed five percent (5%) below the LOS C standard. The flexibility
15 allows a limited amount of additional land development to continue until traffic speeds are
16 measured again next year or until remedial actions are implemented. These segments are
17 candidates for being designated either 'backlogged' or 'constrained' by FDOT.

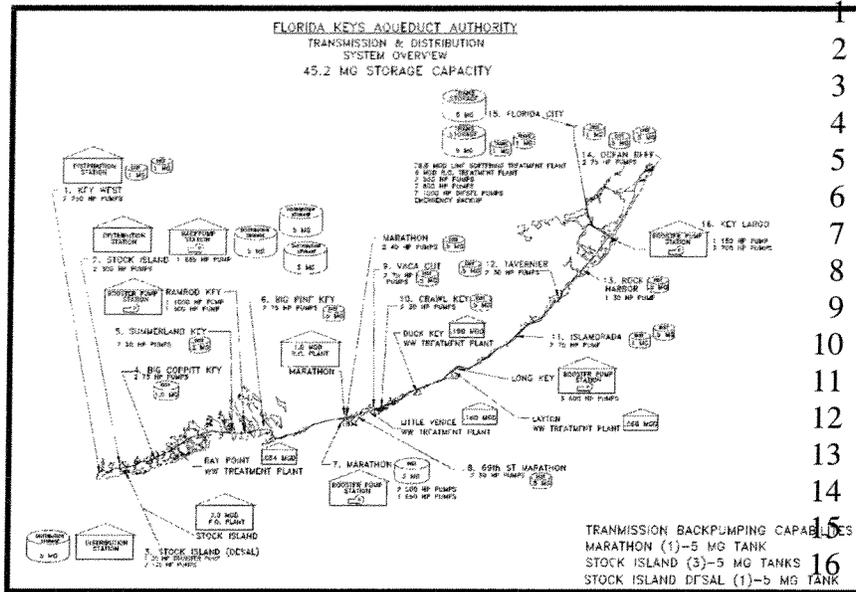
18
19 **LEVEL OF SERVICE ANALYSIS**

20 Based on this year's results, Big Coppitt (Segment 3), Sugarloaf (Segment 5) and Tea Table
21 (Segment 18) are below the LOS C threshold. However, Sugarloaf and Tea Table have reserve
22 capacity within the 5% allocation and Big Coppitt segment is under construction. Segments that
23 have used-up the 5% reserve trips are restricted from new development or redevelopment, except
24 where redevelopment has no net increase in trips.

25
26 **POTABLE WATER**

27 Monroe County does not own or maintain a potable water supply or distribution and treatment
28 system. FKAA is the County's provider / supplier and ensures that sufficient supply and
29 distributional capacity is available to serve the current and projected potable water needs in the
30 county.

31
32 The Florida Keys Aqueduct Authority (FKAA) is the sole provider of potable water in the
33 Florida Keys. The Biscayne Aquifer is a shallow groundwater source and FKAA's primary
34 water supply. The FKAA's wellfield is located in a pineland preserve west of Florida City in
35 south Miami-Dade County. The FKAA's wellfield contains some of the highest quality
36 groundwater in the State, meeting all regulatory standards prior to treatment. Laws protect the
37 wellfield from potential contamination from adjacent land uses. Beyond the County's
38 requirements, FKAA is committed to comply with and surpass all federal and state water quality
39 standards and requirements.



1 The groundwater from the
 2 wellfield is treated at the
 3 FKAA's Water Treatment
 4 Facility in Florida City,
 5 which currently has a
 6 maximum water treatment
 7 design capacity of 29.8
 8 million gallons per day
 9 (MGD). The primary water
 10 treatment process is a
 11 conventional lime
 12 softening/filtration water
 13 treatment plant and is
 14 capable of treating up to
 15 23.8 MGD from the
 16 Biscayne Aquifer. The
 17 secondary water treatment

18 process is the newly constructed Reverse Osmosis water treatment plant and is capable of
 19 producing 6 MGD from the brackish Floridian Aquifer. The product water from these treatment
 20 processes is then disinfected and fluoridated. The FKAA treated water is pumped 130 miles
 21 from Florida City to Key West supplying water to the entire Florida Keys. Including
 22 overlapping coverage, the FKAA maintains 187 miles of transmission main at a maximum
 23 pressure of 250 pounds per square inch. The transmission pipeline varies in diameter from 36
 24 inches to 12 inches. The FKAA distributes the treated water through 690 miles of distribution
 25 piping ranging in size from 3/4-inch to 12 inches in diameter.

26
 27 The FKAA maintains storage tank facilities which provide an overall storage capacity of 45.2
 28 million gallons system wide. The sizes of tanks vary from 0.2 to 5.0 millions gallons. These
 29 tanks are utilized during periods of peak water demand and serve as an emergency water supply.
 30 Since the existing transmission line serves the entire Florida Keys (including Key West), and
 31 storage capacity is an integral part of the system, the capacity of the entire system must be
 32 considered together, rather than in separate service districts.

33
 34 Also, the two (2) saltwater Reserve Osmosis (RO) plants, located on Stock Island and Marathon,
 35 are available to produce potable water under emergency conditions. The RO desalination plants
 36 have design capacities of 2.0 and 1.0 MGD of water, respectively.

37
 38 At present, Key West and Ocean Reef are the only areas of the County served by a flow of
 39 potable water sufficient to fight fires. Outside of Key West, firefighters rely on a variety of
 40 water sources, including tankers, swimming pools, and salt water either from drafting sites on the
 41 open water or from specially constructed fire wells. Although sufficient flow to fight fires is not
 42 guaranteed in the County, new hydrants are being installed as water lines are replaced to make
 43 water available for fire-fighting purposes and pump station/tank facilities are being upgraded to
 44 provide additional fire flow and pressure.

1 **DEMAND FOR POTABLE WATER**
2

Annual Water Withdrawals 1980 to 2009				
Year	Annual Withdrawal (MG)	% Change	WUP Limit (MG)	WUP Annual Allocation (MG) +/-
1980	2,855	-	N/A	N/A
1981	3,101	8.60%	N/A	N/A
1982	3,497	12.80%	N/A	N/A
1983	3,390	-3.10%	N/A	N/A
1984	3,468	2.30%	4,450	983
1985	4,139	19.40%	4,450	311
1986	4,642	12.10%	5,110	469
1987	4,795	3.30%	5,110	315
1988	4,820	0.50%	5,110	290
1989	4,936	2.40%	5,110	174
1990	4,404	-10.80%	5,560	1156
1991	4,286	-2.70%	5,560	1274
1992	4,461	4.10%	5,560	1099
1993	5,024	12.60%	5,560	536
1994	5,080	1.10%	5,560	480
1995	5,140	1.20%	5,778	638
1996	5,272	2.60%	5,778	506
1997	5,356	1.60%	5,778	422
1998	5,630	5.10%	5,778	148
1999	5,935	5.40%	5,778	-157
2000	6,228	10.60%	5,778	-450
2001	5,627	-9.70%	5,778	151
2002	6,191	10.03%	7,274	1083
2003	6,288	1.57%	7,274	986
2004	6,461	2.74%	7,274	813
2005	6,471	0.16%	7,274	803
2006	6,310	-2.49%	7,274	964
2007	5,846	-7.35%	7,274	1428
2008	5,960	1.95%	8,751	2791
2009	5,966	0.09%	8,751	2785

Source: Florida Keys Aqueduct Authority, 2009

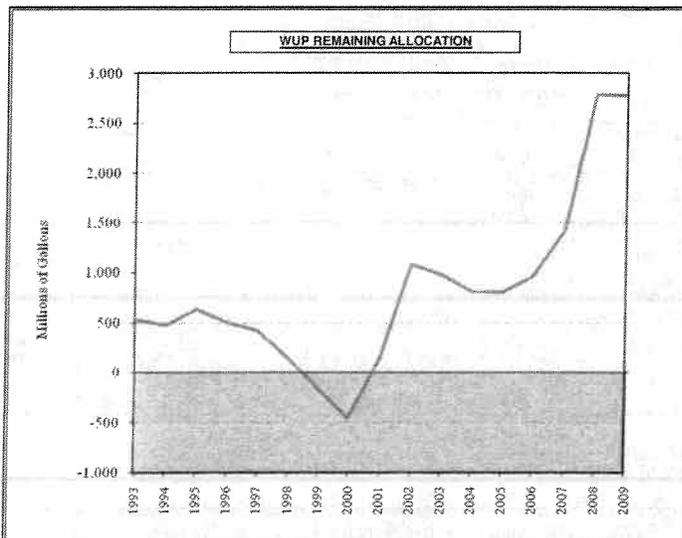
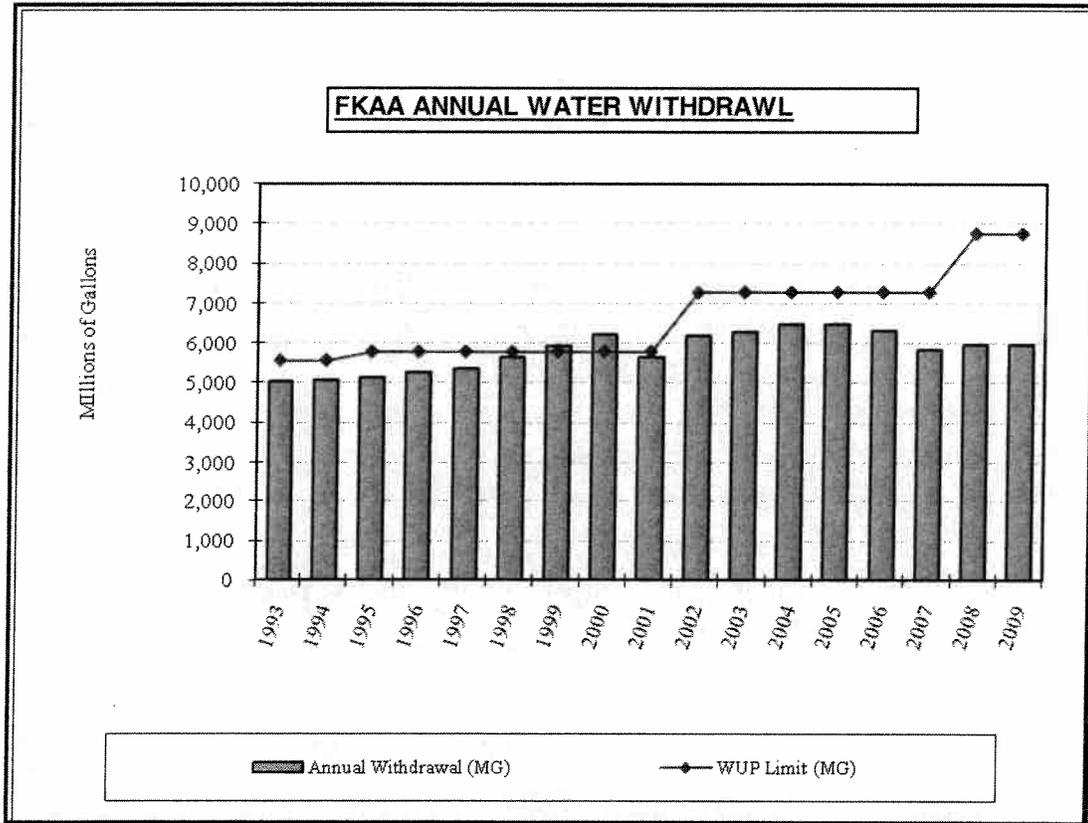
The chart and two tables below provide a historical overview of the water demands in the FKAA service area, Water Use Permit (WUP) allocation limits, yearly percent change, and water allocation remaining.

In March 2008, South Florida Water Management District (SFWMD) approved the FKAA's modification of WUP 13-00005-5-W for a 20-year allocation from the Biscayne and Floridian Aquifers. The WUP provides an annual allocation of 8,751 Million Gallons (MG) or 23.98 MGD and a maximum monthly allocation of 809 MG with a limited annual withdrawal from the Biscayne Aquifer of 6,492 MG or 17.79 MGD and an average dry season (December 1st-April 30th) of 17.0 MGD.

In order to meet the requirements of this limitation, the FKAA constructed a new Floridian Aquifer Reverse Osmosis (RO) water treatment system. This RO water treatment system is designed to withdraw brackish water from the Floridian Aquifer, an alternative water source, which

41 is approximately 1,000 feet below the ground surface, and treated to drinking water standards.
42 The new RO water treatment plant provides added capability to limit Biscayne aquifer
43 withdrawals and is designed to meet current and future water demands. The RO water treatment
44 system provides an additional 6.0 MGD of potable water.
45
46

1 Along with the new RO water treatment plant, compliance with withdrawal limits can also be
 2 accomplished by using other alternative water sources (blending of the Floridian Aquifer,
 3 reclaimed water and operation of the RO desalination plants), pressure reduction, public
 4 outreach, and assistance from municipal agencies in enforcing water conservation ordinances
 5 (i.e. irrigation ordinance).



Demand for potable water is influenced by many factors, including the number of permanent residents, seasonal populations and day visitors, the demand for commercial water use, landscaping practices, conservation measures, and the weather. In 2009, the FKAA distributed an annual average day of 16.35 MGD and a dry season average day of 17.34 MGD as shown in Figure 3.5.

The maximum monthly water demand of 562 MG shown in Figure 3.5 occurred in March of 2009. Preliminary

1 figures and projections for 2010 indicate a slight increase to an annual average daily demand to
 2 16.58 MGD and an increase in maximum monthly demand to 564.78 MG as compared to 2009
 3 figures. Also, Figure 3.5 provides the water treatment capacities of the RO plants. The RO
 4 plants do not require a WUP because the water source is seawater. However, the RO plants are
 5 available for emergency water supply.
 6

Projected Water Demand in 2010 (in MG)			
	FKAA Permit Thresholds	2009 Pumpage	2010 Water Demand Projected
Annual Allocation			
Average Daily Withdrawal	23.98	16.35	16.58
Maximum Monthly Withdrawal	809.01	562.62	564.78
Annual Withdrawal	8,751	5,966.00	6,051.00
Biscayne Aquifer Annual Allocation/Limitations			
Average Daily Withdrawal	17.79	15.9	15.47
Average Dry Season Withdrawal*	17	17.34	16.08
Annual Withdrawal	6,492	5,801.68	5,645.46
Emergency RO WTP Facilities			
Kermit L. Lewin Design Capacity	2.00 (MGD)	2.78 (MGY)	0
Marathon RO Design Capacity	1.00 (MGD)	0.00 (MGY)	0
<i>All figures are in millions of gallons</i>			
<i>*Dry Season is defined as December thru April</i>			
Source: Florida Keys Aqueduct Authority, 2010			

7
 8 The chart below indicates the amount of water available on a per capita basis. Based on
 9 Functional Population and permitted water withdrawal from Biscayne Aquifer, the average water
 10 available is above 100 gallons per capita (person). The 100 gallons per person per day standard is
 11 commonly accepted as appropriate, and reflected in Policy 701.1.1 of the Year 2010
 12 Comprehensive Plan. The Per Capita Water Availability Table by KFAA projects a functional
 13 per capita water demand of 158.73.
 14
 15

Per Capita Water Availability					
Year	Functional Population ¹	Average Available Daily Withdrawal (gallons) ²	Average Water Available Per Capita (gallons) ²	Actual Average Daily Withdrawal (gallons) ^{2,3}	Actual Average Water Use Per Capita (gallons) ^{2,3}
1998	151,163	15,830,000	104.72	15,424,657	102.04
1999	151,396	15,830,000	104.56	16,260,274	107.4
2000	153,080	15,830,000	103.41	17,063,014	111.46
2001	153,552	15,830,000	103.09	15,416,438	100.4
2002	154,023	19,930,000	129.4	16,961,644	110.12
2003	154,495	19,930,000	129	17,227,397	111.51
2004	154,966	19,930,000	128.61	17,701,370	114.23
2005	151,227	19,930,000	131.79	17,728,767	117.23
2006	151,189	19,930,000	131.82	17,287,671	114.34
2007	151,151	19,930,000	131.85	16,016,438	105.96
2008	151,114	23,975,000	158.66	16,328,767	108.06
2009	151,076	23,975,000	158.69	16,345,205	108.19
2010	151,039	23,975,000	158.73	16,345,210	108.22
Source: 1. Projected Permanent and Seasonal County-wide Population Update (1990-2015)- Monroe County Planning Department, 2007					
2. Florida Keys Aqueduct Authority, 2010					
3. Projected Actual Withdrawal and Per Capita for 2010					

1
2 **Projected Population**
3 **Permanent Population**
4 The MCPD permanent population projections include the most appropriate and applicable
5 information and are viewed as the basis of future projections in this Plan. From 1990 through
6 1995, the permanent population of Monroe County increased from 78,856 to 79,200 (0.4
7 percent); from 1995 through 2000, it increased from 79,200 to 79,589 (0.5 percent); and from
8 2000 through 2005, it increased from 79,589 to 81,701 (2.7 percent). The MCPD data in the
9 USACE Carrying Capacity Study (USACE, 2003) project a permanent population of 79,589 for
10 2000; 81,701 in 2005; 83,400 in 2010; 83,799 in 2015; 84,200 in 2020; and 84,603 in 2025.
11 Exhibit 2-1 summarizes the MCPD permanent population projections. The permanent population
12 is projected to grow at an overall average rate of 1.2 percent for each 5-year period from 2005
13 through 2025, with a higher rate (2.1 percent from 2005 to 2010) and a lower rate (0.5 percent)
14 thereafter as Monroe County nears build-out.

15
16 **Seasonal Population**
17 The MCPD seasonal population projections in the USACE Carrying Capacity Study (USACE,
18 2003) also were used to project the seasonal population for Monroe County. Although there are

1 no exact counts of the seasonal population, the MCPD developed historical seasonal population
2 projections for 1990, 1995, and 2000. The MCPD projected that the 1990 seasonal population of
3 70,493 increased by 1.1 percent to a 1995 population of 71,266, and further increased by 3.1
4 percent to a 2000 seasonal population of 73,491. The MCPD continues these seasonal population
5 projections in 5-year increments starting with a seasonal population of 73,737 in 2005; 74,533 in
6 2010; 74,712 in 2015; 74,891 in 2020; and 75,071 in 2025. The seasonal population is projected
7 to increase at an overall average rate of 0.4 percent for each 5-year period from 2005 through
8 2025, with a 1.1 percent increase between 2005 and 2010 and a 0.24 percent increase from 2010
9 through 2025.

10
11 **Functional Population**

12 The term “functional population” is a concept that incorporates three elements of population:
13 permanent residents, seasonal visitors, and day visitors. Because of the unique nature of the
14 Keys, which has an economy based on seasonal tourism, it is appropriate to use one “population”
15 number that incorporates these three separate population components. In 2004 and 2005, CH2M
16 HILL developed population projections for the FCAA service area. The population projections
17 were based on those developed by the Monroe County Planning Department, and combined the
18 permanent population with the seasonal population to form a “functional population” that was
19 used to estimate water demand.

20
21 FCAA serves three distinct populations: permanent residents, seasonal residents (those residing
22 in the Keys for 6 months or less), and day visitors. The term “functional population” is a concept
23 that incorporates these three elements of population. Because of the unique nature of the Keys,
24 which has an economy based on seasonal tourism, it is appropriate to use one “population”
25 number that incorporates these three separate population components. For this Plan, the
26 functional population value is used in all per capita calculations and estimates. There are
27 approximately 3.6 people per customer account within FCAA’s service area using functional
28 population as the basis. Population projections developed by the Monroe County Planning
29 Department (MCPD) indicate that the permanent population for the Florida Keys in 2005 was
30 81,701, and the seasonal population was 73,737. The term “functional population” is a concept
31 that incorporates permanent residents, seasonal residents, and day visitors. The functional
32 population for Monroe County in the year 2005 was 155,438. By 2025, Monroe County is
33 expected to have a permanent population of 84,603, a seasonal population of 75,071, and a
34 functional population of 159,674.

35
36
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38
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1 **Projected Water Demand**

2 The maximum day projected finished water demands in the FKAA service area are expected to
 3 increase from 22.39 mgd in 2005 to 25.09 mgd in 2010, 27.60 mgd in 2015, 29.26 mgd in 2020,
 4 and 29.85 mgd in 2025. Projected maximum-day and peak hour demand were also calculated
 5 using peaking factors of 1.25 and 1.35, respectively.
 6

POPULATION		FINISHED WATER DEMANDS		
YEAR	FUNCTIONAL	PER CAPITA (gpcd)	MAX.DAY (mgd)	AVG. DAY (mdg)
2005	155,438	114.08	22.39	17.73
2010	157,933	127.08	25.09	20.07
2015	158,511	139.30	27.60	22.08
2020	159,091	147.15	29.26	23.41
2025	159,674	149.55	29.85	23.88

7
 8 **Water Supply Recommendations**

9 Because of recent regulatory trends, it is unlikely that FKAA will be able to rely on the Biscayne
 10 Aquifer, its historical source of potable water, to meet its future needs for additional water. The
 11 South Florida Water Management District's (SFWMD's) Lower East Coast (LEC) Regional
 12 Water Supply Plan (RWSP) (SFWMD, 2005) advocates the use of the Floridan aquifer as an
 13 alternative water supply, either for ASR or for direct withdrawals for blending or reverse
 14 osmosis (RO).
 15

16 **IMPROVEMENTS TO POTABLE WATER FACILITIES**

17 FKAA has a 20-year Water System Capital Improvement Master Plan for water supply, water
 18 treatment, transmission mains and booster pump stations, distribution mains, facilities and
 19 structures, information technology, reclaimed water systems, and Navy water systems. The
 20 master plan was revised in 2009 to include the critical projects such as:

PROJECT	CONST. COST	TOTAL CONSTRUC- TION COST	CONSULT, ADMIN, LEGAL	CONT.	TOTAL PROJECT COST	TIMING
J. Robert Dean WTP Phase I and Phase II RO Facility, Floridan Wells Construction Cost						
Floridan Water Supply Well - Phase I 4.5 mgd WTP Three 2mgd wells and one standby	\$5,913,044	\$5,913,044	\$1,182,609	\$1,064,348	\$8,160,000	2007-2009
Floridan Water Supply Well - Phase II adding 1.5 mgd for a total of 6 mgd WTP One additional 2 mgd well	\$1,750,000	\$1,750,000	\$350,000	\$315,000	\$2,415,000	2013
ASR (Cost per FKAA for FY 2007 only)	\$1,000,000	\$1,000,000			\$1,000,000	2007
Project Total					\$11,575,000	

1 The table above shows the schedule and costs projected for the capital improvements to the
2 potable/alternative water systems planned by the FKAA. The total cost of the scheduled
3 improvements is approximately \$49 million over the next 5 years. These projects are to be
4 funded by the water rate structure, long-term bank loans, and grants.
5

6 In 1989 FKAA embarked on the Distribution System Upgrade Program to replace approximately
7 190 miles of galvanized lines throughout the Keys. FKAA continues to replace and upgrade its
8 distribution system throughout the Florida Keys and the schedule for these upgrades is reflected
9 in their long-range capital improvement plan. The FKAA's Water Distribution System Upgrade
10 Plan calls for the upgrade or replacement of approximately 20,000 feet of water main during
11 fiscal year 2010.
12

13 Additionally, significant improvements have been completed at the water treatment plant and
14 ongoing improvements continue on the transmission and distribution water mains and pump
15 stations. Most notably in 2009 was the completion of the new state of the art reverse osmosis
16 (RO) facility at the Florida City Water Treatment Plant.
17

18 **SUMMARY**

19 In summary, with the construction of the new water supply wells and RO water treatment facility
20 that will provide an additional capacity of 6.0 MGD, the new reclaimed systems, and the ability
21 to operate the 3.0 MGD RO desalination plants during emergency situations, there is an adequate
22 supply of water to meet current and future demand.
23

24 Also, the continued implementation of conservation measures and the continued system
25 distribution and transmission upgrades will help to minimize the projected increase in water
26 demand. A 1.4% increase in demand is projected in 2010.
27

28 The following projects are funded through the Florida Keys Aqueduct Authority.
29 FKAA's revenues are 53,780,357. The total cost for all FKAA projects for the five fiscal years
30 is \$79,886,500.
31
32

1. J. Robert Dean Floridan Wells
2. J. Robert Dean RO Facility
3. J. Robert Dean New Storage Tank
4. Key largo Booster Pump Station
5. Plantation Key Booster Pump Station
6. Marathon Transmission Main Replacements
7. Marathon Booster Pump Station
8. Ramrod Booster PS
9. Upsize Mains
10. Ocean Reef Storage Tank
11. Lake Surprise Pub Station and Storage Tank
12. Rockharbor Pump Station Replacement
13. Rock Harbor Storage Tank
14. Tavernier Pump Station Replacement & Storage Tank

- 15. Tavernier Water Lines
- 16. Vaca Cut Storage Tank
- 17. 33rd Street Storage Tank Replacement
- 18. Stock Island Pump Station Replacement

SOLID WASTE

Monroe County's solid waste facilities are managed by the Solid Waste Management Department, which oversees a comprehensive system of collection, recycling, and disposal of solid waste. Prior to 1990 the County's disposal methods consisted of incineration and land filling at sites on Key Largo, Long Key, and Cudjoe Key. Combustible materials were burned either in an incinerator or in an air curtain destructor. The resulting ash was used as cover on the landfills. Non-combustible materials were deposited directly in the landfills.

In accordance with County-approved franchise agreements, private contractors perform collection of solid waste. Residential collection takes place three times a week (2 garbage/trash, 1 recycling); nonresidential collection varies by contract. The four (4) contractors currently serving the Keys are:

SOLID WASTE CONTRACTORS		
Upper Keys	Middle Keys*	Lower Keys
Keys Sanitary Service & Ocean Reef Club, Inc.	Marathon Garbage Service, Inc.	Waste Management of Florida, Inc.
Source: Monroe County Solid Waste Management Department, 2009		
*Veolia ES (Onyx) currently serves the Village of Islamorada.		

MONROE COUNTY'S LANDFILL AND INCINERATORS			
Site	Incinerators	Landfills	Reserve Capacity (cubic yards)
Key Largo	Closed 12/31/90	No Longer Active	0
Long Key	Closed 1/7/91	No Longer Active	0
Cudjoe			
Old Site	Closed 2/25/91	No Longer Active	0
Unused Site	None	Currently Inactive	45,000

The County's landfills and incinerators are no longer in operation. The landfill sites are now used as transfer stations for wet garbage, yard waste, and construction debris collected throughout the Keys by the four curbside contractors and prepared by WMI for shipment out of the Keys. However, it is important to note that a second, unused site on Cudjoe Key may be opened if necessary.

Household hazardous waste is collected at the Long Key and Cudjoe Key Transfer Stations and the Key Largo Recycling Yard. Hazardous waste from small quantity generators is collected once a year as part of an Amnesty Days program. An electronics recycling program is conducted in cooperation with the Household Hazardous Waste collections. Recycling transfer centers have

1 been established in the Lower, Middle, and Upper Keys. There are three (3) drop off locations:

- 2
- 3 • Cudjoe Key Transfer Station, MM 21.5
- 4 • Long Key Transfer Station, MM 68
- 5 • Waste Management Recycling Center MM 100.2
- 6

7 **DEMAND FOR SOLID WASTE FACILITIES**

8 For solid waste accounting purposes, the County is divided into three districts which are similar,
9 but not identical to the service areas outlined in Section 114-2(b)(2) of the LDC. The main
10 difference is Windley Key is located in the upper keys, but for solid waste accounting, is in the
11 middle keys district. Layton and Key Colony Beach are incorporated, but included in the middle
12 keys accounting.

13
14 Demand for solid waste facilities is influenced by many factors, including the size and income
15 levels of resident and seasonal populations, the extent of recycling efforts, household
16 consumptive practices, landscaping practices, land development activities, and natural events
17 such as hurricanes and tropical storms.

18
19 The Department of Agriculture has suspended the County's mulching program indefinitely due to
20 the presence of Citrus Canker in the Florida Keys. This is a highly contagious bacterial disease
21 for citrus trees.

22
23 The following chart summarizes the past 8 years of solid waste generated by each district. The
24 totals for each district are a combination of four categories of solid waste: garbage, yard waste,
25 bulk yard waste and other (includes construction and demolition debris).

26

SOLID WASTE GENERATION BY DISTRICT					
Year	Key Largo	Long Key	Cudjoe Key	Total	% Change
2000	32,635	30,079	33,420	96,134	-1.65%
2001	29,663	29,367	31,166	90,196	-6.18%
2002	31,018	31,217	30,700	92,935	3.04%
2003	31,529	31,889	30,385	93,803	0.93%
2004	32,193	31,583	33,762	97,538	3.98%
2005	36,035	32,257	35,290	103,582	6.20%
2006	35,211	33,704	36,168	105,083	1.45%
2007	37,423	30,759	30,999	99,001	-6.14%
2008	33,996	28,402	29,190	91,589	-7.00%

27
28
29 A decline shown in 2000 and 2001 is due to a reduction in construction and demolition debris
30 being brought to the County transfer stations following the implementation of the Specialty
31 Hauler ordinances. Solid Waste Generation continues to rise again from 2002 through 2005 with
32 a 6.2% increase between 2004 and 2005. "A" very active hurricane season in 2005 could have
33 caused increased generation. Yearly fluctuations are expected to continue due to increasing
34 storm activity and seasonal population changes. The dramatic decrease in solid waste generation

1 could be explained by the downturn of the economy forcing residents to move out of the county
2 and the decrease in tourism.

3
4 **LEVEL OF SERVICE FOR SOLID WASTE FACILITIES**

5 Section 114-2(a)(2) of the Land Development Code requires that the County maintain sufficient
6 capacity to accommodate all existing and approved development for at least three (3) years. The
7 regulations specifically recognize the concept of using disposal sites outside Monroe County.

8
9 As of 2009, Waste Management Inc., reports a reserve capacity of approximately 26.91 million
10 cubic yards at their Central Sanitary Landfill in Broward County, a volume sufficient to serve
11 their clients for another seventeen (17) years.
12

REMAINING CAPACITY, CENTRAL SANITARY LANDFILL								
	2002	2003	2004	2005	2006	2007	2008	2009
Remaining Capacity (volume in millions of cubic yards, (yd³))	34.2	32.3	30.5	31.2	26	22.62	26.91	26.91
Remaining Capacity (years)	14	14	14	12	7	6	17	17

13
14
15 Monroe County has a contract with WMI authorizing use of in-state facilities through September
16 30, 2016, thereby providing the County with approximately eight years of guaranteed capacity.
17 Ongoing modifications at the Central Sanitary Landfill are creating additional air space and years
18 of life.
19

20 **WASTEWATER**

21 Monroe County is designing and constructing sanitary sewer facilities in order to comply with
22 Chapter 99-395 of the Laws of Florida which require construction of Advanced Wastewater
23 Treatment systems 2015. The proposed service areas for central sewer are based on the results
24 of the Sanitary Wastewater Master Plan that was completed in June 2000. The level of service
25 for residential and nonresidential flow is 145 gallons per day per EDU.
26

27 Wastewater flow and customer projects were developed from FCAA water use records for the
28 baseline year of 1998 and 10 year (2008) and 20 year (2018) planning horizons. (EXHIBIT 3-6, Sanitary
29 Wastewater Master Plan)
30

1

TOTAL ESTIMATED 1998 WASTEWATER FLOWS	mgd	EDU	gpd/EDU
Total Residential Flow	4.5985	31,847	145
Total Non-Residential Flow	2.5475	17,004	
Total Flow (excludes small contributions from live-aboard flows)	7.1460	48,851	
TOTAL ESTIMATED 2008 WASTEWATER FLOWS	mgd	EDU	gpd/EDU
Total Residential Flow	5.0183	34,613	145
Total Non-Residential Flow	2.6341	17,594	
Total Flow (excludes small contributions from live-aboard flows)	7.6524	52,207	
TOTAL ESTIMATED 2018 WASTEWATER FLOWS	mgd	EDU	gpd/EDU
Total Residential Flow	5.4208	37,343	145
Total Non-Residential Flow	2.7239	18,208	
Total Flow (excludes small contributions from live-aboard flows)	8.1447	55,511	

2
3 There are currently four wastewater projects listed in the capital improvements Table 4.1. They
4 are: Big Coppitt, Duck Key, Key Largo and Cudjoe Key Regional Wastewater projects.
5

6 Big Coppitt Wastewater District consists of the following five service areas: Rockland Gulf,
7 Rockland Ocean, Big Coppitt, Shark Key and Geiger Key. A collection system for each service
8 area will tie into a transmission main along US 1 that conveys the wastewater to the WWTP at
9 MM 8.5. Approximately 80,000 feet of collection system piping, 13,000 feet of transmission
10 main and 25 pump stations will be installed for the project. Total funding for this project is
11 \$36,770,400. Funding for this project is received from Funds 310 and 304. Past expenditures
12 amounted to \$29,400,163. Duck Key total project cost is \$16,428,500. Funds are received from
13 Funds 311 and 304. Prior expenditures amounted to \$3,734,185. Cudjoe Regional's total project
14 cost is \$3,700,000 and comes from Fund 308. Past expenditures amounted to \$3,146,589.
15 Lastly, Key Largo's total project cost is \$20,000,000 and revenues are received from Funds 308
16 and 304. Prior expenditures total \$7,054,202. Total revenues for the four wastewater projects
17 amount to \$76,898,900.
18

19 The Big Coppitt Waste Water Project, Fund 311 received \$2,000,000 from Fund 304. Current
20 revenues for this project contain a DEP Grant, A FRUFC Loan, and Special Assessments. The
21 purpose of the Loan Agreement is to construct the collection systems to service Geiger Key and
22 Rockland Key portions of the Big Coppitt Regional Wastewater Treatment System and the South
23 Lower Keys Regional Wastewater Treatment Plant. The programmed funding was for
24 \$21,000,000. In FY 2011, there is \$150,000 left on the loan. The DEP grant was approved by
25 the BOCC on March 21, 2007. This grant is to provide construction funds for the Big Coppitt
26 Regional Wastewater System project not to exceed \$10,962,000.

1 Special Assessments total \$2,158,324 for FY 2011 only. DEP Grant LP8983 will be used to
 2 fund construction of the wastewater collection system on Geiger and Rockland Keys. On
 3 January 28, 2009, the BOCC approved to execute the Grant. The grant amount was \$100,000
 4 plus \$33,000 grant match for a total project of \$133,000.

6 Duck Key Wastewater's funding is received from Special Assessments and Fund 311. The
 7 special Assessment refunds equal \$5,000 for FY 2011 only. Transfers from Fund 304 of
 8 \$14,100,000, will fund construction of a gravity wastewater collection and transmission system
 9 to serve all of the islands of Duck Key. Addition of capacity to the Hawk's Cay Wastewater
 10 Treatment Plant to service Duck Key, Conch Key and Hawk's Cay flows, and upgrade of
 11 treatment to meet advanced wastewater treatment standards. Fund 311 was created on
 12 11/14/2007. The special assessments amount to \$39,315 for FY 2011 only.

14 Key Largo Wastewater funds are received through Fund 308 for total programmed funding of
 15 \$20,000,000. The project is for a new wastewater system. Payments for this project are made to
 16 the Key Largo WWTD. Fund 308 Project costs for FY 08 & 09 were \$5,853,450. FY 10
 17 expenditure was an estimated \$3,992,349. FY 11 proposed budget is \$3,100,000. For the four
 18 years project costs were \$12,945,799. Fund 304 expenditures were \$7,054,202 from FY 05
 19 through FY 08.

21 The Cudjoe Regional Wastewater project is funded from Fund 308 for a portion of the total
 22 Cudjoe/Summerland Wastewater Project. On May 20, 2009, \$3,700,000 was transferred from
 23 the Public Works Compound Project #CG0803.

25 **SOLID WASTE AND DRAINAGE**

26 There is no drainage or solid waste projects report for the next five fiscal years.

28 **LEVEL OF SERVICE FOR SOLID WASTE FACILITIES**

29 Section 114-2(a)(2) of the Land Development Code requires that the County maintain sufficient
 30 capacity to accommodate all existing and approved development for at least three (3) years. The
 31 regulations specifically recognize the concept of using disposal sites outside Monroe County.

33 As of 2009, Waste Management Inc., reports a reserve capacity of approximately 26.91 million
 34 cubic yards at their Central Sanitary Landfill in Broward County, a volume sufficient to serve
 35 their clients for another seventeen (17) years.

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Remaining Capacity (years)	14	14	14	12	7	6	17	17

1 Monroe County has a contract with WMI authorizing use of in-state facilities through September
2 30, 2016, thereby providing the County with approximately eight years of guaranteed capacity.
3 Ongoing modifications at the Central Sanitary Landfill are creating additional air space and years
4 of life.

5
6 **PARKS AND RECREATION**

7 An annual assessment of parks and recreational facilities is not mandated by Monroe County
8 Code, though it is required for by the Florida Statutes. The following section has been included
9 for informational purposes only. The Level of Service standards for parks and recreational
10 facilities are listed in Policy 1201.1.1 of the Monroe County Year 2010 Comprehensive Plan.
11 However, they are not mentioned in the LDC

12
13 **PARKS AND RECREATIONAL FACILITIES LEVEL OF SERVICE STANDARD**

14 The level of service (LOS) standard for neighborhood and community parks in unincorporated
15 Monroe County is 1.64 acres per 1,000 functional population. To ensure a balance between the
16 provisions of resource- and activity-based recreation areas the LOS standard has been divided
17 equally between these two types of recreation areas. Therefore, the LOS standards are:

- 18
- 19 0.82 acres of resource-based recreation area per 1,000 functional population; and
- 20 0.82 acres of activity-based recreation area per 1,000 functional population
- 21

22 Resource-based recreation areas are established around existing natural or cultural resources of
23 significance, such as beach areas or historic sites. Activity-based recreation areas can be
24 established anywhere there is sufficient space for ball fields, tennis or basketball courts, or other
25 athletic events.

26
27 It is important to note that the subareas used for park and recreational facilities differ from those
28 subareas used in the population projections. For the purpose of park and recreational facilities,
29 the Upper Keys are considered to be the area north of Tavernier (PAEDs 15 through 22). The
30 Middle Keys are considered to be the area between Pigeon Key and Long Key (PAEDs 6 through
31 11). The Lower Keys are the area south of the Seven Mile Bridge (PAEDs 1 through 6).
32 Although the Middle and Lower Keys subareas both contain portions of PAED 6, the population
33 of PAED 6 is located in the Lower Keys subarea.

34
35 An inventory of Monroe County's parks and recreational facilities are listed on Figure 6.1. The
36 facilities are grouped by subarea and are classified according to the principal use (resource or
37 activity). There are currently 97.96 acres of resource-based recreation areas either owned or
38 leased by Monroe County.

39
40 **LEVEL OF SERVICE ANALYSIS FOR ACTIVITY-BASED RECREATION AREAS**

41 The Year 2010 Comprehensive Plan allows activity-based recreational land found at educational
42 facilities to be counted towards the park and recreational concurrency. There is currently a total
43 98.98 acres of developed resourced-based and 118.25 acres of activity-based recreation areas
44 either owned or leased by Monroe County and the Monroe County School Board.

PARKS AND RECREATION FACILITIES SERVING UNINCORPORATED MONROE COUNTY			
Site Name	Facilities	Classification and Size (acres)	
		Resource	Activity
Upper Keys Subarea			
Coral Shores High School	Monroe County School District; baseball field, football field, softball field, five (5) tennis courts, and indoor gym.		10.1
Friendship Park	Two (2) basketball courts, playground, ball field, picnic shelters, public restrooms, and parking.		1.92
Garden Cove	Undeveloped.	1.5	
Harry Harris	Two (2) ball fields, playground, restrooms, picnic shelters, beach, parking (89), and boat ramp.		16.4
Hibiscus Park	Undeveloped.		0.46
Key Largo Community Park	Soccer field, two (2) ball fields, six (6) tennis courts, jogging trail, three (3) basketball courts, roller hockey, volleyball, skate park, playground, picnic shelters, public restrooms, aquatic center, and parking.		14
Key Largo Elementary	Monroe County School District; playground, ball field, running track, and indoor gym.		3.4
Plantation Key Elementary	Monroe County School District; playground, tennis court, basketball court, and ball field.		1.7
Settler's Park	Playground, park benches, trails, and a historic platform.	3	
Sunny Haven	Undeveloped.	0.09	
Sunset Point	Waterfront park with a boat ramp.	1.2	
Subarea Total		5.79	47.98
Middle Keys Subarea			
Marathon High School	Monroe County School District; football field, baseball field, softball field, three (3) tennis courts, three (3) basketball courts, and indoor gym.		7.8
Pigeon Key	Historic structures, research/educational facilities, and a railroad museum.	5	
Switlik Elementary	Monroe County School District; playground, two (2) baseball fields, and shared soccer/football field.		2.5
Subarea Total		5.00	10.3
Lower Keys Subarea			
Baypoint Park	Playground, volleyball, bocchi ball, two (2) tennis courts, and picnic area.		1.58
Bernstein Park	Ball field, soccer, basketball court, track, tennis courts, playground, restrooms, and volleyball.		11
Big Coppitt Fire Department Playground	Playground and benches.		0.75
Big Coppitt Skate Park	One full court skating rink, a single racquetball / handball court, picnic area		0.57
Big Pine Key Community Park	1 baseball/softball field, one large multi-purpose field, one basketball/roller-hockey (combination) court, two tennis courts, one skate park, two multi-purpose (handball) courts, four shuffleboard courts, one playground area, six station fitness trail,		10
Big Pine Leisure Club	Undeveloped.		1.75
Blue Heron Park	Playground, basketball court, youth center, and picnic shelters.		5.5
Boca Chica Beach	Beach area.	6	
Delmar Avenue	Boat ramp.	0.2	
East Martello	Historic structures, teen center, and picnic area.	14.58	
Heron Avenue	Undeveloped.	0.69	
Higgs Beach/Astro City	Five (5) tennis courts, playground, volleyball, picnic shelters, beach area, pier, and public restrooms.		15.5
Lighthouse Museum	Historic structure and museum.	0.77	
Little Duck Key	Picnic shelters, restrooms, boat ramp, and beach area.	25.5	
Little Torch Boat Ramp	Boat ramp.	0.1	
Missouri Key	Undeveloped.	3.5	
Palm Drive cul-de sac	Undeveloped.	0.1	
Palm Villa	Playground and benches.		0.57
Ramrod Key Swim Hole	Swimming area with no facilities.	0.5	
Rockland Hammock	Undeveloped.	2.5	
Sugarloaf Elementary	Monroe County School District; baseball field and playground.		3.1
Sugarloaf School	Monroe County School District; undeveloped.		6.6
Summerland Estates	Undeveloped.	0.13	
Watson Field	Two (2) tennis courts, ball field, playground, and volleyball.		2.4
West Martello	Historic structure.	0.8	
West Summerland	Boat Ramp.	31.8	
Wilhelmina Harvey Children's Park	Two (2) playground areas, a walking trail, and green space.		0.65
	Subarea Total (in acres)	87.17	59.97
	UNINCORPORATED MONROE COUNTY TOTAL (in acres)	97.96	118.25

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FUTURE PARKS AND RECREATION PLANNING

Identifying parks and recreation needs is a part of the on-going Livable CommuniKeys Program. This community based planning initiative looks at all aspects of an area and, among other planning concerns, identifies the parks and recreation desires of the local population. The Livable CommuniKeys Program has been completed on Big Pine Key/No Name Key, Stock Island and Tavernier and partially completed on Key Largo. The LCP from Sugarloaf to Little Torch Key is in process. The Big Pine Key Community Park has been completed.

1 **ACQUISITION OF ADDITIONAL RECREATION AREAS**

2 The Monroe County Year 2010 Comprehensive Plan states in Objective 1201.2 that “Monroe
3 County shall secure additional acreage for use and/or development of resource-based and
4 activity-based neighborhood and community parks consistent with the adopted level of service
5 standards.” The elimination of deficiencies in LOS standards for recreation areas can be
6 accomplished in a number of ways. Policy 1201.2.1 of the Comprehensive Plan provides six (6)
7 mechanisms that are acceptable for solving deficits in park level of service standards, as well as
8 for providing adequate land to satisfy the demand for parks and recreation facilities that result
9 from additional residential development. The six (6) mechanisms are:

- 10
- 11 1. Development of park and recreational facilities on land that is already owned by the
 - 12 county but that is not being used for park and recreation purposes;
 - 13 2. Acquisition of new park sites;
 - 14 3. Interlocal agreements with the Monroe County School Board that would allow for the use
 - 15 of existing school-park facilities by county residents;
 - 16 4. Interlocal agreements with incorporated cities within Monroe County that would allow
 - 17 for the use of existing city-owned park facilities by county residents;
 - 18 5. Intergovernmental agreements with agencies of state and federal governments that would
 - 19 allow for the use of existing publicly-owned lands or facilities by county residents; and
 - 20 6. Long-term lease arrangements or joint use agreements with private entities that would
 - 21 allow for the use of private park facilities by county residents.
- 22

23 To date, the county has employed two of these six mechanisms – acquisition of new park sites
24 and interlocal agreements with the School Board.

25
26 The Parks and Recreation projects are funded with the Impact Fees collected in Fund 131.
27 Current revenues are received from the three park districts. There are currently five projects
28 listed. Bay Point Park, Big Coppitt Park, Palm Villa Park and Watson field are listed on the CIP.
29 Total revenue for the projects is \$379,941.

30
31 **GROWTH MANAGEMENT DIVISION**

32 The Growth Management Division has one (1) capital improvement project. This project is a
33 four year project. Its end purpose is to update the Monroe County Year 2010 Comprehensive
34 Plan. Keith and Schnars, is the consultant for the project. The update of the Year 2010
35 Comprehensive Plan has a project deadline of 2014 and will be funded through ad valorem taxes
36 at \$260,000 for each of the four years.

37
38 **MONROE COUNTY LAND ACQUISITION**

39 The Monroe County Land Acquisition is reports annually on its budget of \$9,817,420.00 for FY
40 2011. The Monroe County Land Authority is funded through property acquisitions. The funding
41 provides for the buying of property for conservation lands.

42
43 **PUBLIC EDUCATION**

44 Subsection 163.3177(12), Florida Statutes, authorizes the Department of Community Affairs to
45 provide a waiver to a county and to the municipalities within the county if (a) the capacity rate
46 for all the schools within the school district is not greater than 100 percent, and (b) the projected

1 5-year capital outlay full-time equivalent student growth rate is less than 10 percent. The data
2 analyzed in The Monroe County School District's Work Plan 2009-2010 capacity rate does not
3 exceed 100 percent and the projected 5-year capital outlay full-time equivalent student growth
4 rate is 0.12%. Pursuant to Florida Statutes Sections 163.3177 (6)(h) 2 and 163.31777, if the
5 local government has failed to adopt the public school facility element and enter into an
6 approved interlocal agreement, amendments which increase residential density may not be
7 adopted. In order for Monroe County to fulfill its requirements, The Board of County
8 Commissioners approved and signed the waiver in 2010 waiving the adoption of a public school
9 facilities element and implementation of school concurrency from the municipalities.

10
11 The Monroe County School Boards annually distributes the 5-Year District Facilities Work
12 Program. The district's facilities work program must be a complete, balanced capital outlay plan
13 that is financially feasible. The School Board's budget for FY 11 is \$21,992,852,537. There are
14 two projects having expenditures of \$1,746,000.

15
16 **RECOMMENDATION**

17 Staff recommends **APPROVAL** to the Board of County Commissioners.

An Assessment of De Minimis Impact (2009) Along US 1 in Monroe County

A “De Minimis Impact” is an assignment of a development’s traffic to a roadway segment that is not greater than 1% of the maximum service volume (100%) at the adopted Level of Service (LOS). A development within “De Minimis Impact” and that does not exceed the maximum service volume will not require a Traffic Concurrency Analysis. However, the cumulative impact cannot exceed 10% of the adopted LOS. Monroe County is required to ensure that the 110% criterion is not exceeded due to the cumulative impact of developments approved within Monroe County.

U.S. 1 (the Overseas Highway) is the only principal arterial serving people and visitors in the Florida Keys. Although the Overseas Highway is predominantly an uninterrupted, two-lane roadway, its uniqueness warrants an alternative LOS evaluation process to that found in the *2000 Highway Capacity Manual*.

The U.S. 1 Arterial Travel Time and Delay Study is conducted annually during peak season to monitor the level of service on U.S. 1 for concurrency management purposes pursuant to Chapter 163, Florida Statutes and Section 9.5-292 of the Monroe County Land Development Regulations. The study utilizes an empirical relationship between the volume-based capacities and the speed-based LOS. This uniform method was developed in 1993 and amended December of 1997 by the *U.S. 1 Level of Service Task Force* to assess the level of service on U.S. 1 in Monroe County. The adopted method considers both the overall level of service from Key West to the mainland, and the level of service on 24 selected segments (see Attachment # 1).

Overall speeds are those speeds recorded over the 108-mile length of the Keys between Key West and Miami-Dade County. Overall speeds reflect the conditions experienced by long distance trips or traffic traveling the entire length of the Keys. Segment speeds are the speeds recorded within individual links of U.S. 1. The segments were defined by the Task Force to reflect roadway cross-sections, speed limits, and geographical boundaries. Segment speeds reflect the conditions experienced during local trips. Both Monroe County and the FDOT have adopted a LOS C Standard for U.S. 1. Further, 45 mph has been adopted as the corresponding speed of LOS C Standard for the entire length of U.S. 1, regardless of the posted speed limits. Whereas the weighted average posted speed limit, presence of signalized intersections and the traffic flow conditions (free-flow vs. interrupted flow) within a segment dictates the LOS C standard for that particular segment.

The LOS records for individual roadway segments of US 1 established through the speed based procedure is used to support the “De Minimis Reporting Requirements” for U.S. 1 in Monroe County. The ‘2009 U.S. 1 Arterial Travel Time and Delay Study’ establishes the most recent LOS record. The ‘2009 LOS and Reserve Capacity’ table is included as Attachment # 1. Out of the 24 segments 3 segments have exceeded the LOS C standards. They are:

- Big Coppitt
- Sugarloaf
- Tea Table

The empirical relationship between the LOS and speed is non-linear. Therefore, the speed based methodology for determining LOS uses the following formula to establish the 10% threshold. A negative trip allocation indicates that the segment has exceeded the 10% threshold.

$$10\% \text{ Allocation} = \frac{(\text{median speed} - 90\% \text{ of LOS C}) \times 1656 \times \text{Length}}{\text{Trip Length}}$$

Roadway Segment	Median Speed (MPH)	LOS C Speed (MPH)	Segment Length (Miles)	Trip Length (Miles)	10% Allocation (# of Trips)
Big Coppitt	42.3	45.2	1.5	10	+402
Sugarloaf	46.8	47.6	4.0	10	+2,623
Tea Table	48.5	50.1	2.2	10	+1,242

The Big Coppitt, Sugarloaf, and Tea Table segments are within the 110% criterion. It should be noted that although the Big Coppitt segment had exceeded the LOS C standards, there is on-going construction along this segment during the 2009 evaluation. The travel speeds along the Big Coppitt segment was affected by the construction activities. Upon completion the travel speeds, hence the LOS along the Big Coppitt segment is expected to improve.

We conclude that U.S. 1 in Monroe County meets the De Minimis Concurrency exception.

2009 LEVEL OF SERVICE AND RESERVE CAPACITY

SEGMENT	LENGTH (miles)	FACILITY TYPE	POSTED SPEED Limits (mph)	Average (mph)	ADJ. FOR SIGNAL (mph)	ADJUSTED LOS C CRITERIA (mph)	MEDIAN TRAVEL SPEED (mph)	LOS	RESERVE SPEED (mph)	2009		2008	
										MAXIMUM RESERVE VOLUME (trips)	5% ALLOCATION BELOW LOS C (trips)	MAXIMUM RESERVE VOLUME (trips)	5% ALLOCATION BELOW LOS C (trips)
1 Stock Island (4.0 - 5.0)	1.1	4-L/D	30/35/45	38.3	N/A	22.0	34.2	B	12.2	2,222	N/A	1,767	N/A
2 Boca Chica (5.0- 9.0)	3.9	4-L/D	55/45	54.1	N/A	49.6	56.7	A	7.1	4,585	N/A	3,810	N/A
3 Big Coppitt (9.0- 10.5)	1.5	2-L/U	45/55	49.7	N/A	45.2	42.3	D	-2.9	0	0	124	N/A
4 Saddlebunch (10.5- 16.5)	5.8	2-L/U	45/55	54.1	N/A	49.6	52.4	C	2.8	2,689	N/A	1,921	N/A
5 Sugarloaf (16.5- 20.5)	4.0	2-L/U	45/55	52.1	N/A	47.6	46.8	D	-0.8	0	1023	0	1308
6 Cudjoe (20.5- 23.0)	2.5	2-L/U	45/55	45.5	N/A	41.0	47.0	B	6.0	2,484	N/A	2,774	N/A
7 Summerland (23.0- 25.0)	2.2	2-L/U	45	45.0	N/A	40.5	44.7	B	4.2	1,530	N/A	2,149	N/A
8 Ramrod (25.0- 27.5)	2.3	2-L/U	45	45.0	N/A	40.5	47.6	A	7.1	2,704	N/A	2,742	N/A
9 Torch (27.5- 29.5)	2.1	2-L/U	45	45.0	N/A	40.5	47.9	A	7.4	2,573	N/A	2,121	N/A
10 Big Pine (29.5- 33.0)	3.4	2-L/U	45	45.0	3.2	37.3	37.9	C	0.6	338	N/A	0	0
11 Bahia Honda (33.0- 40.0)	7.0	2-L/U (70%) 4-L/D (30%)	45/50/55	52.1	N/A	47.6	51.7	B	4.1	4,753	N/A	5,448	N/A
12 7-Mile Bridge (40.0- 47.0)	6.8	2-L/U	55	55.0	N/A	50.5	55.4	B	4.9	5,518	N/A	6,306	N/A
13 Marathon (47.0- 54.0)	7.3	2-L/U (13%) 4-L/D (87%)	35/45	42.2	N/A	22	38.2	A	16.2	19,584	N/A	18,496	N/A
14 Grassy (54.0- 60.5)	6.4	2-L/U	45/55	54.4	N/A	49.9	50.3	C	0.4	424	N/A	848	N/A
15 Duck (60.5- 63.0)	2.7	2-L/U	55	55.0	N/A	50.5	51.3	C	0.8	358	N/A	1,744	N/A
16 Long (63.0- 73.0)	9.9	2-L/U	55/45	53.5	N/A	49	51.3	C	2.3	3,771	N/A	5,410	N/A
17 L Matecumbe (73.0- 77.5)	4.5	2-L/U	55	55.0	N/A	50.5	51.4	C	0.9	671	N/A	373	N/A
18 Tea Table (77.5- 79.5)	2.2	2-L/U	55/45	54.6	N/A	50.1	48.5	D	-1.6	0	322	0	858
19 U Matecumbe (79.5- 84.0)	4.1	2-L/U	45	45.0	N/A	40.5	40.8	C	0.3	204	N/A	1,086	N/A
20 Windley (84.0- 86.0)	1.9	2-L/U	45	45.0	7.7	32.8	42.2	A	9.4	2,958	N/A	3,681	N/A
21 Plantation (86.0- 91.5)	5.8	2-L/U	45	45.0	2.0	38.5	39.6	C	1.1	1,057	N/A	3,458	N/A
22 Tavernier (91.5- 99.5)	8.0	4-L/D	45/50	47.1	2.1	40.5	48.2	A	7.7	10,201	N/A	9,406	N/A
23 Key Largo (99.5- 106.0)	6.8	4-L/D	35/45	44.4	2.3	37.6	46.0	A	8.4	9,459	N/A	7,432	N/A
24 Cross (106.0- 112.5)	6.2	2-L/U	35/45/65	48.2	N/A	43.7	52.1	A	8.4	8,624	N/A	0	0
Overall	108.4					45.0	46.6	C	1.6				

