

Port and Waterfront Use Compatibility Analysis

Study Area:
Key West Bight

August 21, 2008

STUDY LOCATION



Data:

Data from the Monroe County Property Appraiser’s Office, Monroe County Clerk’s Office, and City of Key West were used in this study.

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KEY WEST BIGHT

HISTORY:

Key West's natural deep water harbor originally made the island an important port in the United States fight against piracy. Over time development of the port made Key West the wealthiest town in Florida. The Bight served as an international trade port for the wrecking industry, the shipping industry between the United States and Cuba, the natural resource harvest industry, the US Military, and the yachting community.

The Port transitioned from a sailing port to steam engines and eventually to petroleum powered vessels. Today the Bight is a recreational and commercial working waterfront catering to locals, tourists and the yachting community.

The last of the non-military heavy industrial uses were eliminated as a result of changing market forces in the 1970s. In the mid '80s the Bight property went up for sale, the City of Key West purchased the property and has guided the redevelopment of the Bight to the mixed use, high intensity commercial oriented district it is today.

The port has been home to a wide variety of simultaneous uses since its inception. The varied land uses and conditions have coexisted in relative proximity to each other in a stable fashion. The primary impact on the port's indigenous mix of uses has been economic forces. No use or condition was found to have unduly negatively impacted directly or indirectly another use or condition in the port.

ANALYSIS:

In the City of Key West, approximately 174 acres around the Key West Bight were studied (containing approximately 88 acres of upland and 86 acres of bay bottom). The

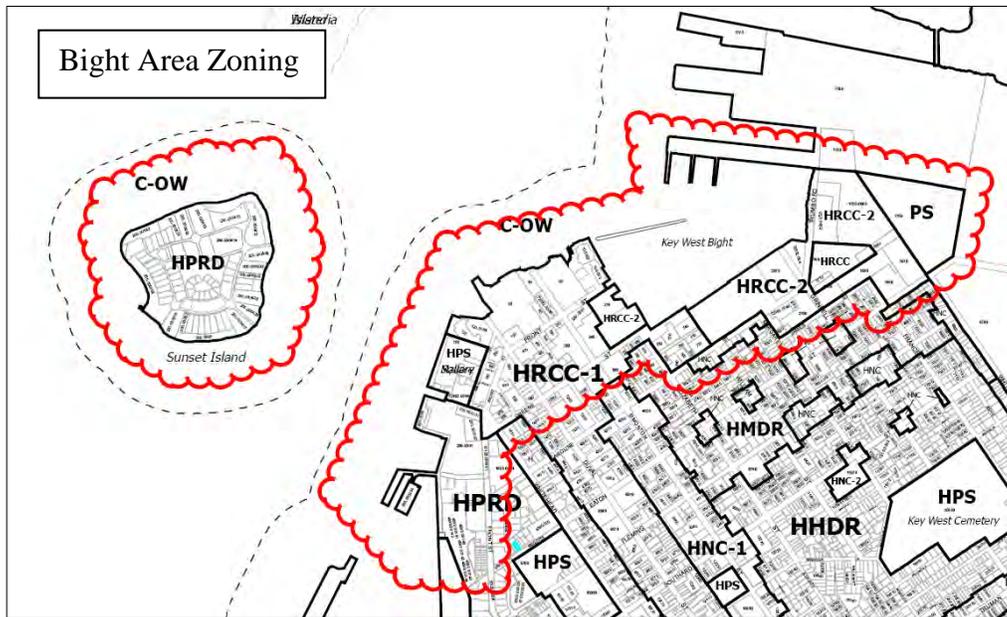


Bight is a mixed use area consisting of the following: heavy industrial military installations; vessel dockage/ marinas (commercial, recreational, institutional and live aboard); marina-related and non-marina-related hotels, commercial (retail, restaurant, service), and non-transient housing (affordable and market-rate). The area of focus for this study consists of the Bight area proper and its adjacent properties (as depicted below).

Zoning:

The Bight study area spans 10 zoning districts:

- Conservation – Open Water (“C-OW”)
- Military (“M”)
- Historic Residential Commercial Core (“HRCC”)
- Historic Residential Commercial Core - 1 (“HRCC-1”)
- Historic Residential Commercial Core - 2 (“HRCC-2”)
- Historic Medium Density Residential (“HMDR”)
- Historic Planned Redevelopment (“HPRD”)
- Historic Public Service (“HPS”)
- Public Service (“PS”)
- Historic Neighborhood Commercial (“HNC”)



Permitted Uses:

- Adult entertainment establishments
- Business and professional offices
- Cemeteries
- Commercial retail low and medium intensity
- Commercial retail high intensity
- Community centers, clubs, and lodges
- Educational institutions and day care
- Group homes
- Hospitals and extensive care
- Hotels, motels, and transient lodging
- Medical services
- Multiple-family residential dwellings

- Nursing homes, rest homes and convalescent homes
- Parking lots and facilities
- Parks and recreation, active and passive
- Places of worship
- Restaurants, excluding drive-through
- Single-family and two-family residential dwellings
- Veterinary medical services

Existing Uses:

The existing uses within the Bight area consist of the following:



- Adult entertainment establishments
- Affordable Housing
- Bars & Lounges
- Business and professional offices



- Commercial retail low and medium intensity
- Commercial retail high intensity
- Community centers, clubs, and lodges
- Educational institutions and day care
- Ferries & Ferry Terminals
- Fuel Stations
- Transient lodging

- Luxury Waterfront Condos
- Marinas
- Military Industry
- Multiple-family residential dwellings
- Parking lots and facilities
- Parks and recreation - active and passive
- Restaurants
- RV Park (Military)
- Single-family and two-family residential dwellings



Density (units per acre)

The Bight area has the highest permitted and actual densities in the city. The permitted density varies between 22 units per acre and zero units per acre. The actual average density of residentially used, or mixed use parcels is 44 units per acre; with spikes as high as 96 and 69 units per acre.



Residential uses are permitted uses in all zoning districts that make up the Bight area. 85% (864 units) of the residential units are transient; all the transient units are located within hotels/ resorts, 76% of which are associated with publicly accessible marinas and/ or waterfront. 12% of the units are affordable (125 units) and the remaining 24 units are market-rate condos and apartments.

Intensity (Floor Area Ratio “FAR”)

The maximum FAR for the bight area is 1.0. The range of FAR is between 0.5 (HRCC district) and 1.0 (HRCC-1 district). The average actual FAR in the Bight area is 0.7, with spikes as high as 2.8 and 1.9.



Existing Development Threshold “EDT”

The EDT is measured as a ratio of the cumulative percentage of the actual density and intensity developed on a site versus the permitted density and intensity. If the ratio is less than 100%, there is development potential on the site. If the EDT exceeds 100%, then the site exceeds its maximum permitted density and intensity.

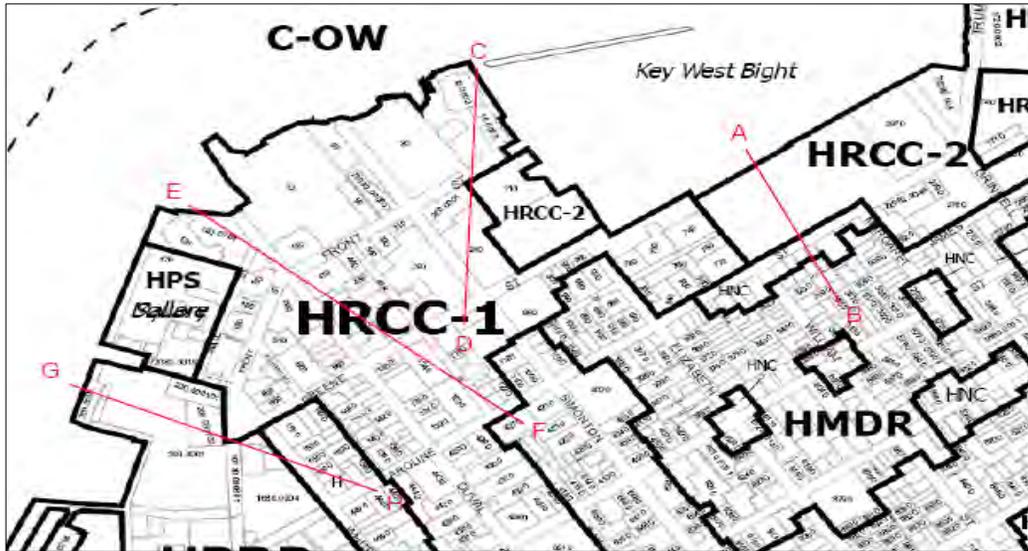


The average existing EDT at the Bight is 272%¹. That is the average level of development rights exercised at the Bight which exceeds the level allowed under current code by 172%. There are individual properties that exceed permitted development thresholds by as much as 1,336%.

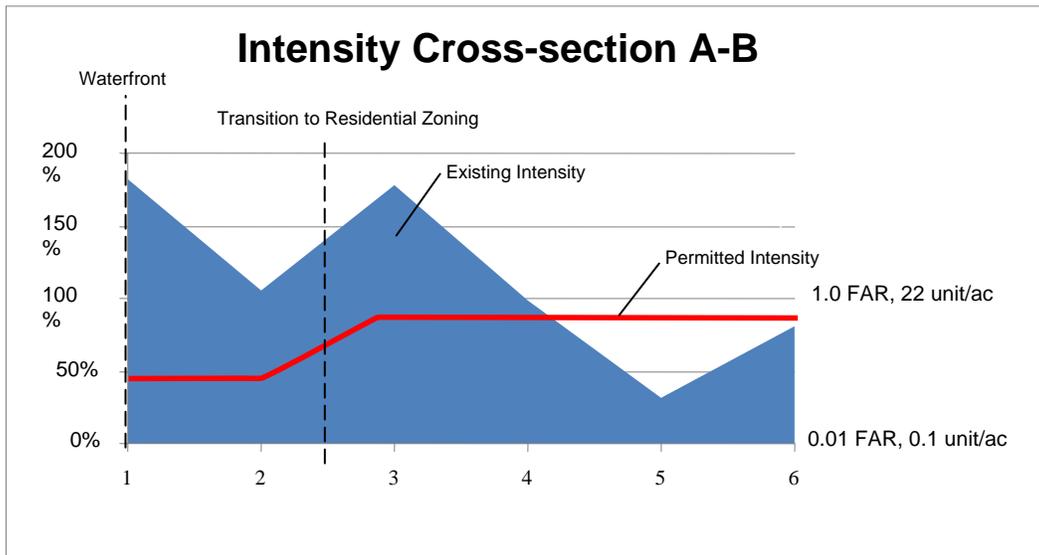
¹ Excluding the Porter Place Housing Project. Porter Place exceeds density by approximately 9,000% and thus severely skews the results.

Intensity Transects

Transects were analyzed in terms of density and intensity. The base analysis is the permitted intensity under the respective zoning districts. The transect data was displayed in following charts. The existing intensity reflects the actual intensity of the properties through which the transect moves. The transects reveal that the intensity of the Bight area is highest adjacent to the waterfront and decreases dramatically with the increase in distance from the waterfront.



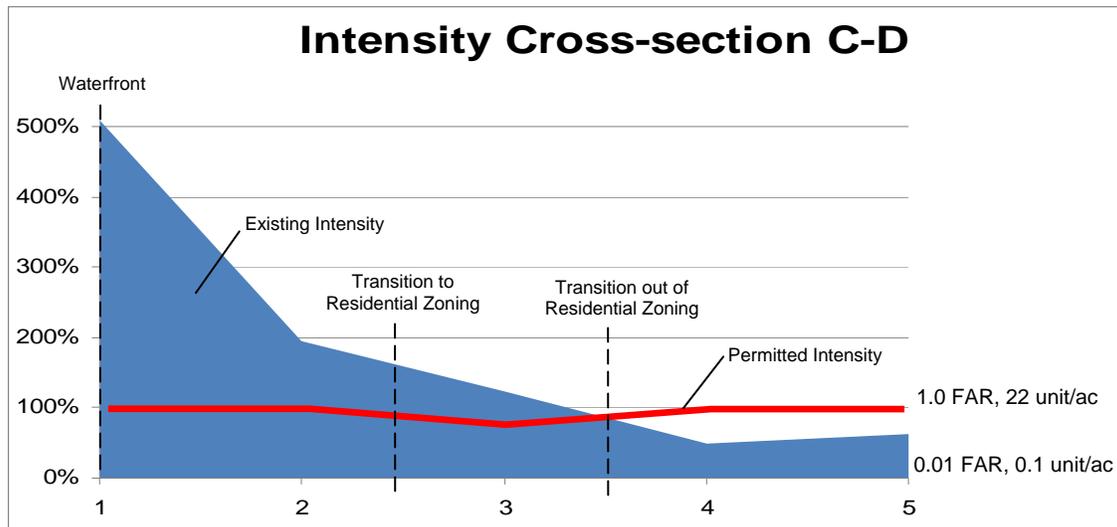
The A-B transect stretches from the waterfront at Waterfront Market to the edge of the study area and into the residential district. The transect passes through six properties and three zoning districts and various uses (waterfront oriented commercial, neighborhood commercial, and residential). The following chart shows the actual change in intensity from point “A” at the waterfront to point “B” in the residential district, and the change in permitted intensity along the same line.



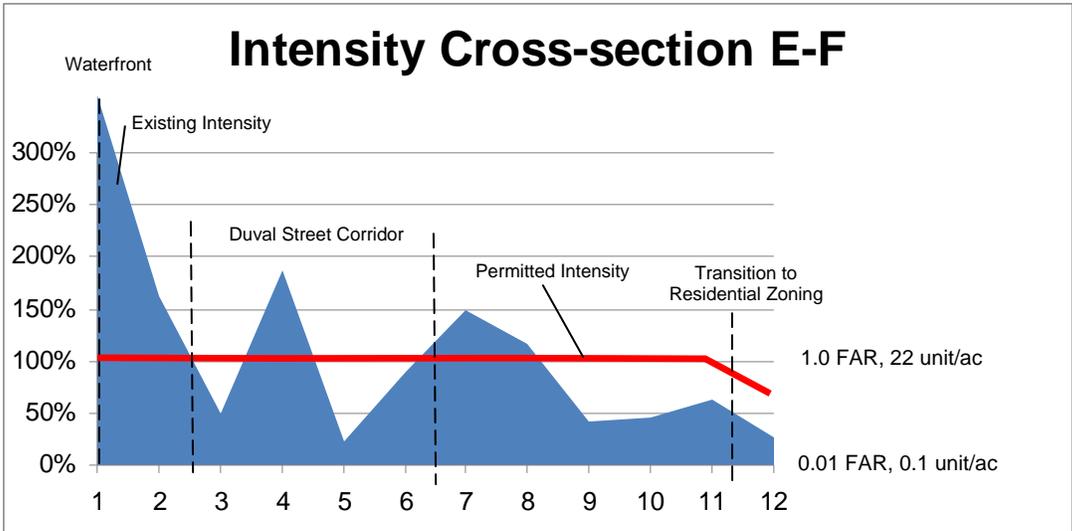
Transect A-B shows marked decrease in intensity as it moves away from the waterfront. The intensity at the waterfront is approximately 300% of that which is permitted by the current code. As the distance from the water increases, the intensity decreases dramatically until eventually dropping below the maximum permitted levels.

Transect C-D stretches from the waterfront at the Galleon to the edge of the study area. The transect passes through five properties, two zoning districts, hotels, restaurants, bars, and retail. The following chart shows the change in actual intensity from point “C” at the waterfront to point “D” at Greene Street, as well as the change in permitted intensity along the same line.

Transect C-D again reveals the pattern of high intensity adjacent to the waterfront (in the case exceeding permitted intensity by 400%). As the transect moves away from the water intensity decrease nearly linearly until eventually dropping well below the maximum permitted intensity.

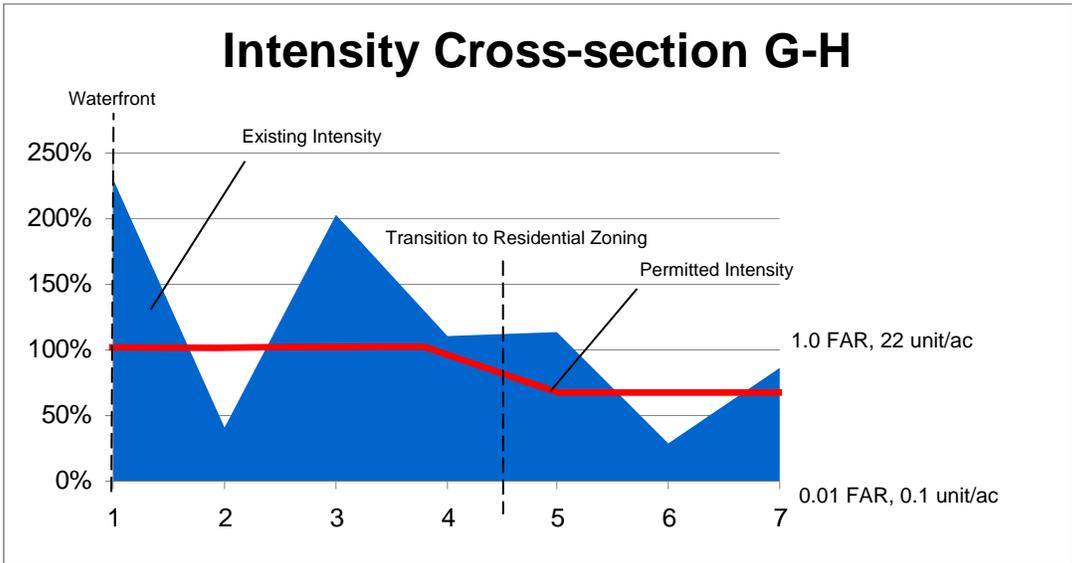


Transect E-F stretches from the waterfront at the Ocean Key House to the edge of the study area. The transect passes through twelve properties, two zoning district, hotels restaurants, bars, retail, government offices, and residential. The following chart shows the change in actual intensity from point “E” at the waterfront to point “F” in the residential area, as well as the change in permitted intensity along the same line.



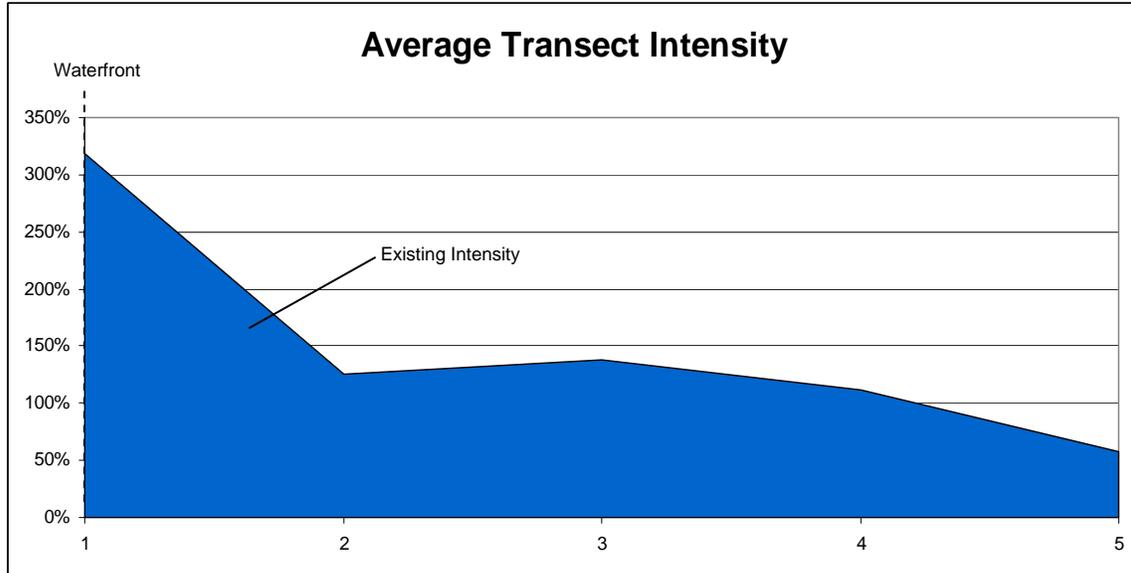
Transect E-F again shows high intensity adjacent to the waterfront. This transect crosses Duval Street which is also revealed to have high intensity, though not nearly as high as the waterfront. The intensity then drops off as the transect moves into the residential district.

Transect G-H stretches from the waterfront at the Westin Resort to the edge of the study area. The transect passes through seven properties, two zoning districts, hotels, retail, and residential. The following chart show the change in actual intensity from point “g” at the waterfront to point “H”, as well as the change in permitted intensity.



Transect G-H continues to demonstrate the overall trend we have seen in the above transects. Intensity is highest adjacent to the waterfront, many times that which is permitted by current code, and overall intensity decreases as distance from the water increases.

The following graph demonstrates the average intensity of all transects. The average clearly demonstrates the high intensity adjacent to the waterfront and the decrease related to distance from the water.



Regulatory Review

32% of the Bight study area properties analyzed in this report have been the recipient of recent City of Key West and Department of Community Affairs (“DCA”) reviews and approvals for various activities including Development Plan approvals, shoreline and Coastal Construction Control Line variances, and settlement agreements. One project resulted in permanent housing adjacent to the waterfront. The project required a Comprehensive Plan Amendment, Zoning Amendments, and development plan approvals, all of which were reviewed and approved by the DCA².



Compatibility

The Key West Bight is a vibrant activity center with heavy pedestrian traffic. The mixed use nature permits the maximum activity opportunity with minimum transportation needs. Within the bight area residents and visitors are able to moor vessels, park vehicles, lodge in adjacent establishments, purchase fuel, groceries and fresh seafood, perform banking, legal and other professional business operations, engage in tourist activities, dine and drink in adjacent restaurants and bars, obtain minor vessel repairs, parts and service.



Economy of Scale

The existing level of densities and intensities permits an economy of scale that creates synergistic effects between the uses. Seemingly incompatible uses such as commercial fishing and high end dining establishments actually complement each other. We found tourists and locals gathering around the commercial fisherman as they unloaded catch or cleaned fish along the docks. The tourists found the processes interesting and the resulting waterside activity when fish remains were fed to Tarpon, Snapper, Permit and Mullet that were fascinating to the onlookers. Diners commented how fresh the seafood they were eating was, as they watched catch being unloaded and transported into restaurants and grocers.

² Railway Apartments and The Steam Plant

The economy of scale has also allowed the Bight to be sewage-free for many years, prior to most other Keys ports. All the docks provide pump to state of the art sewage treatment, drastically improving water quality.

Spatial Segregation

Compatibility is also promoted through spatial segregation and gradation of various uses. The Military Industrial activities occurring in the Bight are spatially segregated from the civilian activities, on both land- and water-side. Larger commercial vessels (ferries & tug boats) are also segregated from the smaller scale commercial and recreational vessels. The large commercial vessels (ferries) are docked most closely to the Military operations, with the landside public boardwalks and walkways partially obstructed to insure transportation security. At the points of obstruction, the walkways are diverted around the secure areas and allowed to resume on the other side.



Other uses are segregated to enhance compatibility. The more upscale yachting-type docks are often access restricted to prevent non-boat owners and guests from accessing the actual vessel dockage. In these cases the boardwalk proceeds unobstructed, but the docking piers permit only authorized persons to access them. In this way, the general public may have full access to the waterfront, but not have access to individual vessels. Additionally, there is the large center pier for public access whereon the historic turtle kraals and the turtling museum is located. Access to this pier allows the non-boat owning visitors to not only access the water-side of the bight, but to also view the Bight's land-side from the water.

Educational Opportunities

The scale and variety of uses combined at the waterfront creates significant educational opportunities for the public. The Bight has educational signage and exhibitions for commercial and recreational fishing, near shore water quality, storm water management, marine safety, environmental awareness, reef protection and restoration, boater safety, sea grass protection and restoration, Transportation Safety Administration, manatee protection, historical significance of the Bight, and historic seafood harvesting. The many complementary and synergistic uses create spatial relationships that the educational and regulatory agencies exploit to educate the Bight visitors about critical issues. If the economy of scale and



variety of uses were not located at the Bight the effectiveness of these educational opportunities would be drastically less effective.

Other Considerations:

During this study of the Key West Bight, two other issues emerged: The loss of transient units and the need for affordable housing.

Loss of Transient Units

The Key West Bight is a microcosm of the Keys as a whole and like the Keys, the Study area has lost a significant number of transient units. Of the several hundred transient units located within the Bight Study Area the Bight lost 96 units in the last six years. The 96-unit Jabours RV Park was taken offline for redevelopment approximately 5 years ago. The park consisted of hotel-type units, RV spaces, and camp sites. The redevelopment plan was approved for 38 units. The project has run into financial issues and all work has subsequently stopped. If the project is completed the Bight Study area will lose 58 transient units, however, as of today the Bight study area has lost 96 transient units.

Transient unit loss at the Bight is symptomatic of the loss occurring throughout the Keys. According to Monroe County Tourist Development Council studies, the Keys have experienced a loss of 2,530 units due to abandonment, disasters, nonconformity clauses in the Comprehensive Plans, and redevelopment³.

Affordable Housing

Several affordable housing projects exist in and around the Bight. There is public housing, small individual workforce units above shops and offices, and the most recent project, the Railway Apartments, is adjacent to the waterfront and was completed in May, 2008. It had only two vacancies by the end of June. The rapid construction and occupation of the affordable units demonstrates the tremendous need for such housing in and around the employment centers and in this case within the Bight area itself.

According to the 2007 Florida International University study⁴ “Monroe County, Florida Affordable Housing Needs Assessment” Monroe County has lost 5% (2,024) of its workforce since 2000 due to a lack of available affordable housing. At the same time the County lost 16% (2,058) of its rental units primarily to the second home market.

According to the study, the highest demand for housing exists in and adjacent to Key West. By placing workforce housing in the same location as employment and entertainment, the cost of living is further reduced by eliminating travel costs.

Given the mixed use nature of the Bight and the trip generation effects the Bight has as a destination, tourist and workforce accommodations within the Bight have a synergistic

³ “Transient Unit Loss in the Florida Keys”, a 2008 study by Trepanier & Associates

⁴ Please see attached.

effect. They put the customers and the workers of the destination in the destination, thereby reducing trip generation and congestion.

Key West Bight Conclusions

The Bight has a wide variety of uses which are made compatible through specific strategies of spatial segregation and gradation. Uses are segregated according to the relative impacts and security requirements. All uses are visually accessible with no apparent segregation. The segregation and gradation allows what may appear to be incompatible uses to not only be compatible but synergistic. The varied land uses and conditions were found to coexist in relative proximity to each other in a stable fashion over time such that no use or condition is unduly negatively impacted directly or indirectly by another use or condition, as defined in 9J-5.003(23) of the Florida Administrative Code.

The Bight has average density and intensity levels double that of the highest permitted level in the City. Most properties have exercised their full residential density rights as well as their full commercial floor area rights. These are indigenous developments created prior to existing zoning. These high density-intensity levels promote an economy of scale that is not only commercially, visually and socially appealing but is also heavily exploited by educational and regulatory agencies for educational and environmental quality improvement purposes.

This highly dense and intense waterfront has become the jewel of the City. The publicly accessible waterfront boardwalks provide visitors and locals alike unprecedented opportunities to enjoy the natural and cultural assets that make Key West special.

Appendix - Study Area Data

Map ID	Name	Location	RE#	Zoning	Site Size (sf)	Floor Area (sf)	FAR Existing	FAR Permitted	Units	Type	Density Existing	Density Permitted	Dev Pot	Uses	Waterfront	Marina Related	Public Waterfront Access	Development Oversight	Res. No.	DCA Review
1	Porter Place	301 White St.	00001780-000000	PS	388,119	0	0.0	0.8	87	A	9.76	0	##### ###	Residential - Affordable	No	No	No	City Owned Public Housing Project		
2	Railway	250 Trumbo Rd	00001720-0002	HRC C	67,320	0	0.0	0.5	38	A	24.59	12	205%	Residential - Affordable	No	No	No	Comp Plan and Development Plan review and approval (City & DCA)		y
3	Steam Plant	281 Trumbo Rd	00001740-000000	HRC C	127,630	1,000	0.0	0.5	19	M	6.48	12	56%	Residential - Market Rate	Yes	No	No	Comp Plan and Development Plan review and approval (City & DCA)		y
4	Co. School Board	201 Trumbo Rd	0000172-0003	PS	209,959	96,950	0.5	0.8	0		-	-	58%	Public Service	Yes	No	No	School District Property		
5	U.S. Navy	Trumbo	1750	MI	1,089,000		-		0		-	-		Military	Yes	Yes	No	Unknown		
6	Dante's Compound	951 Caroline St.	00002970-000000	HRC C-2	108,464	47,093	0.4	0.5	0		-	8	87%	Retail/ Restaurant/ Bar	Yes	Yes	Yes	Development Plan review and approval (City & DCA)		y
7	Parking Garage	300 Grinnell St	00002780-000000	HRC C-2	48,003	133,221	2.8	0.5	0		-	8	555%	Parking Complex	No	No	No	Development Plan review and approval (City & DCA)		y
8	Ferry Terminal	201 Grinnell St	00072082-004000	HRC C-2	12,853	9,269	0.7	0.5	0		-	8	144%	Public Service/ Retail/ Restaurant	Yes	Yes	No	Development Plan review and approval (City & DCA)		y
9	Turtle Kraals	Margaret St	00072082-004400	HRC C-2	12,225	13,725	1.1	0.5	0		-	8	225%	Retail/ Restaurant/ Bar	Yes	Yes	Yes	City Owned property		
10	Margaret St. Plaza	Margaret St	00072082-004300	HRC C-2	5,793	5,176	0.9	0.5	0		-	8	179%	Retail	Yes	No	No	City Owned property		
11	Dive Shop	Margaret St	00072082-004502	HRC C-2	2,100	1,536	0.7	0.5	0		-	8	146%	Retail	No	Indirectly	No	City Owned property		
12	Tackle Shop	Margaret St	00072082-004503	HRC C-2	2,321	1,782	0.8	0.5	0		-	8	154%	Retail	No	Indirectly	No	City Owned property		

13	Half Shell Raw Bar	End Margaret St	000720 82- 004500	HRC C-2	9,155	7,887	0.9	0.5	0		-	8	172%	Retail/Restaurant/Bar	Yes	Yes	Yes	City Owned property		
14	Waterfront Market	201 William St	000720 82- 004200	HRC C-2	27,610	25,140	0.9	0.5	0		-	8	182%	Grocery Store/Restaurant	Yes	Yes	Yes	City Owned property		
15	Schooner Wharf	202 Williams St	000720 82- 003900	HRC C-1	5,850	2,196	0.4	0.1	0		-	22	375%	Retail/ Restaurant/ Bar	Yes	Yes	Yes	City Owned property		
16	Harbor House	233 Elizabeth St	000007 20- 000000	HRC C-1	91,419	10,000	0.1	0.1	96	T	45.74	22	317%	Residential (96 units associated with site)	Yes	No	No	Developm ent Plan review and approval (City & DCA)		y
17	Harbor walk Shops	Lazy Way Ln	000720 82- 003903	HRC C-1	1,479	1,219	0.8	0.1	0		-	22	824%	Retail	Yes	No	No	City Owned property		
18	Conch Farm	613 Greene St	000720 82- 003800	HRC C-1	38,005	19,633	0.5	0.1	0		-	22	517%	Retail/Restaurant/B ar	Yes	Yes	Yes	City Owned property		
19	Commodore/A&B	700 Front St	000002 10- 000000	HRC C-1	53,432	32,791	0.6	0.1	0		-	22	614%	Retail/Restaurant/B ar	Yes	Yes	Yes	Developm ent Plan and Shoreline setback variance review and approval (City and DCA)		
20	The Galleon	617 Front St	000000 10- 000300	HRC C-1	97,947		-	0.1	112	T	49.81	22	226%	Restaurant/Bar/Resi dential	Yes	Yes	Yes	Developm ent Plan & Variance approvals; Settlemen t agreement (City & DCA)		y
21	Hyatt	601 Front St	000000 30- 000000	HRC C-1	105,415	46,764	0.4	0.1	120	T	49.59	22	669%	Retail/Hotel/Restaur ant/Bar	Yes	Yes	Yes	Unknown		
22	Pier House	1 Duval St	000000 70- 000000	HRC C-1	176,418	73,247	0.4	0.1	120	T	29.63	22	550%	Retail/Hotel/Restaur ant/ Bar	Yes	No	Yes	Shoreline and Coastal Constructi on Control Line variance review & approval (City & DCA)		y
23	Caribbean Spa	527 Front St	000000 90- 000000	HRC C-1	10,000	10,000	1.0	0.1	22	T	95.83	22	1436%	Retail	Yes	No	Yes	Shoreline and Coastal Constructi on Control Line variance review & approval (City & DCA)		y
24	Ocean Key House	0 Duval St	000001 20- 000000	HRC C-1	63,598	27,572	0.4	0.1	100	T	68.49	22	745%	Retail/Hotel/Restaur ant/Bar	Yes	Yes	Yes	Unknown		

25	Restaurant Store	1111 Eaton	000016 70- 000000	HRC C-2	69260	1116 7	0.2	0.5	0	-	8	32%	Retail/ Industrial	No	No	No	Developm ent Plan review and approval (City & DCA)	y	
26	Strunk Lumber	1101 Eaton	000016 60- 000000	HRC C-2	51836	2521 4	0.5	0.5	0	-	8	97%	Retail	No	No	No	Developm ent Plan review and approval (City & DCA)	y	
27	Manley-DeBoer	1109 Eaton	000016 80- 000000	HRC C-2	68824. 8	4325 8	0.6	0.5	0	-	8	126%	Retail	No	No	No	Developm ent Plan review and approval (City & DCA)	y	
28	KEYS Energy	1001 James St	000017 00- 000000	HRC C	34600	2165 6	0.6	0.5	0	-	12	125%	Public Service	No	No	No	Unknown		
29	Fast Buck Freddie's	920 Caroline	000027 90- 000000	HRC C-2	5000	3724	0.7	0.5	0	-	8	149%	Retail	No	No	No	Unknown		
30	Electric Supply	311 Margaret	000028 10- 000100	HRC C-2	8200	4800	0.6	0.5	0	-	8	117%	Retail/ Service	No	No	No	Unknown		
31	Convenience Store	900 Caroline	000028 10- 000101	HNC	2295	2149	0.9	1.0	0	-	16	94%	Retail	No	No	No	Unknown		
32	Harpoon Harry's	832 Caroline	000031 00- 000000	HNC	3158	3984	1.3	1.0	5	M	68.97	16	557%	Restaurant/ Bar	No	No	No	Unknown	
33	Retail	830 Caroline	000031 00- 000100	HNC	1340	854	0.6	1.0	0	-	16	64%	Retail	No	No	No	Developm ent Plan review and approval (City & DCA)	y	
34	KW Marine Supply	818 CAROLINE ST	000031 40- 000100	HRC C-1	12166	6036	0.5	1.0	0	-	22	50%	Retail	No	No	No	Unknown		
35	Gallery	812 CAROLINE ST	000031 50- 000000	HRC C-1	2232	1176	0.5	1.0	0	-	22	53%	Retail	No	No	No	Unknown		
36	Mallory Square		000001 70- 000000	HRC C-1	11075 1	1030	0.0	1.0	0	-	22	1%	Parking/ retail/ restaurant	Yes	No	Yes	Unknown		
37	Old Town Square	425 - 431 FRONT ST	000001 50- 000000	HRC C-1	11199	6291	0.6	1.0	0	-	22	56%	Retail	No	No	No	Unknown		
38	OLD HARBOR HOUSE	423 FRONT STREE T	000001 60- 000000	HRC C-1	4700	9024	1.9	1.0	0	-	22	192%	Retail	No	No	No	Unknown		
39	Red Fish Blue Fish	407 FRONT ST	000001 80- 000000	HRC C-1	10300	8246	0.8	1.0	0	-	22	80%	Restaurant/Bar/Reta il	No	No	No	Unknown		
40	CLINTON SQUARE MARKE T	291 FRONT ST	000002 00- 000101	HPR D	19070	2745 1	1.4	1.0	0	-	22	144%	Retail	No	No	No	Unknown		

41	Westin RESORT & MARINA	231 - 279 FRONT ST	000002 00-000100	HPR D	172,933	54256	0.3	1.0	174	T	43.83	22	231%	Public Lodging/Retail	Yes	Yes	Yes	Development Plan review and approval (City & DCA)	y
42	CUSTOMS HOUSE	281 FRONT ST	000002 00-000102	HPR D	24999	10164	0.4	1.0	0		-	22	41%	Retail	No	No	No	Unknown	
43	HISTORIC TOURS OF AMERICA	201 FRONT STREET	000002 00-000104	HPR D	26750	23418	0.9	1.0	0		-	22	88%	Retail/Commercial	No	No	No	Unknown	
44	Sunset Harbor (Hyatt)	601 FRONT ST	000002 00-000112	HPR D	172933	0	-	1.0	120	T	30.23	22	137%	Public Lodging/Retail	Yes	No	Yes	Unknown	
45	Mel Fisher	200 GREENE ST	000016 30-000300	HPR D	15377	31280	2.0	1.0	0		-	22	203%	Commercial	No	No	No	Unknown	
46	Caroline Court	202-238 FRONT ST	000016 30-000400	HPR D	13068	0	-	1.0	19		63.33	22	288%	Residential	No	No	No		
47	Little White House	281 FRONT ST	000002 00-000102	HPR D	24999	10164	0.4	1.0	2	T	3.48	22	56%	Museum/ Transient rental	No	No	No		
48	Kelly's	301 WHITEHEAD STREET	000044 70-000000	HRO	3120	5807	1.9	1.0	0		-	16	186%	Restaurant	No	No	No		
49	Residential	305 WHITEHEAD STREET	000045 20-000000	HRO	1676	3120	-	1.0	3		77.97	16	487%						
	Morgan Law Office	317 WHITEHEAD STREET	000044 80-000100	HRO	13300	8029	0.6	1.0	4	T	13.10	16	142%						
	AUDUBON HOUSE	205 WHITEHEAD STREET	000015 10-000000	HRO	13769	2352	0.2	1.0	0		-	22	17%	Art Gallery	No	No	No		
	Kite Shop	408 GREENE ST	000015 00-000000	HRO	4556	1078	0.2	1.0	0	T	-	22	24%	Retail	No	No	No		
	Residential	212 TELEGRAPH LN	000015 20-000000	HRO	2584	0	-	1.0	1		16.86	16	105%	Residential	No	No	No		
	LAURA MAR LIMITED PARTNERSHIP	218 WHITEHEAD STREET	000016 30-000700		6970	7755	1.1	1.0	0		-	16	111%						

Transect A-B

Map ID	Name	Location	RE#	Zoning	Site Size (sf)	Floor Area (sf)	FAR Existing	FAR Permitted	Units	Type	Density Existing	Density Permitted	Dev Pot	Uses	Waterfront	Marina Related	Public Waterfront Access	Development oversight
1	Waterfront Market	201 William St	00072082-004200	HRCC-2	27,610	25,140	0.9	0.5	0			8	182%	Grocery Store/ Restaurant	Yes	Yes	Yes	City Owned property
2	Red Barn Gallery	812 CAROLINE ST	00003150-000000	HRCC-2	2232	1176	0.5	0.5	0			8	105%	Retail	No	No	No	
3	Single Family Residential	813 Sawyer's Alley	00003210-000100	HMDR	2484	1690	0.7	1.0	1	M	17.54	16	178%	Single Family Residential	No	No	No	

4	Single Family Residential	810-814 Sawyer's Alley	00003180-000100	HMDR	4550	1786	0.4	1.0	1	M	9.57	16	99%	Single Family Residential	No	No	No	
5	Single Family Residential	313 Williams St	00003190-000000	HMDR	9573	2994	0.3	1.0	0			16	31%	Single Family Residential	No	No	No	
6	Single Family Residential	309 CARABALLO LN	00003350-000000	HMDR	3083	2498	0.8	1.0	0			16	81%	Single Family Residential	No	No	No	

Transect C-D

Map ID	Name	Location	RE#	Zoning	Site Size (sf)	Floor Area (sf)	FAR Existing	FAR Permitted	Units	Type	Density Existing	Density Permitted	Dev Pot	Uses	Waterfront	Marina Related	Public Waterfront Access	Development oversight
1	The Galleon	617 Front St	00000010-000300	HRCC-1	43,560		-	1.0	112	T	112.00	22	509%	Restaurant/Bar/Residential	Yes	Yes	Yes	Development Plan & Variance approvals; Settlement Agreement (City & DCA)
2	The Galleon Real Estate	617 FRONT ST	00000010-000500	HRCC-1	2400	4665	1.9	1.0			-	22	194%	Commercial	No	No	No	
3	Commodore/A&B	700 Front St	00000210-000000	HRCC-2	53,432	32,791	0.6	0.5	0		-	8	123%	Retail/Restaurant/Bar	Yes	Yes	Yes	Development Plan and Shoreline setback variance review and approval (City and DCA)
4	Historic Tours Depot	119-135 SIMONTON ST	00000240-000000	HRCC-1	52385	18447	0.4	1.0	4	M	3.33	22	50%	Commercial/Residential	No	No	No	
5	Paradise Corner	540 GREENE ST	00001160-000000	HRCC-1	6638	4189	0.6	1.0	0		-	22	63%	Retail	No	No	No	

Transect E-F

8	Scooter/Retail Shops	501 - 505 GREENE ST	00000520-000000	HRCC-1	8,434	5,859	0.7	1.0	2	T	10.33	22	116%	Retail/Transient Units	No	No	No	
9	Old City Hall	510 GREENE ST	00001240-000000	HRCC-1	Site Size 713	Floor Area 9,590	FAR Existing 0.4	FAR Permitted 1.0			Density Existing	Density Permitted 22	Dev Pot 42%	City Government Uses	Waterfront	Marina Related	Public Waterfront Access	Development oversight
10	Single Family Residential	223 ANN ST	00001210-000000	HRCC-1	2,354	1,101	0.5	1.0				22	47%	Single Family	No	No	No	Shoreline and Coastal Construction Control Line variance review & approval (City & DCA)
11	Ocean Key Single Family Residential	9 Duval St	00000120-000000	HRCC-1	63,587	27,572	0.4	1.0	100	T	68.49	22	355%	Retail/Hotel/Restaurant/Bar/Single Family	Yes	No	Yes	
12	Wachovia Single Family Residential	42 DUVAL ST	00000140-000000	HRCC-1 INC 1	5,185	8,396	1.6	1.0			-	22	162%	Commercial/Retail/Bar/Single Family	No	No	No	
3	Sunset Plaza	101 Duval ST	00000470-000000	HRCC-1	20,952	10,242	0.5	1.0			-	22	49%	Retail	No	No	No	
4	Aloha of Key West	109 DUVAL ST	00000500-000000	HRCC-1	1,815	3,416	1.9	1.0			-	22	188%	Retail	No	No	No	
5	Duval Village	111 DUVAL ST	00000490-000000	HRCC-1	3,991	910	0.2	1.0			-	22	23%	Retail	No	No	No	
6	Bagatelle	115 DUVAL ST	00000490-000100	HRCC-1	4,371	3,894	0.9	1.0			-	22	89%	Restaurant/Bar	No	No	No	
7	Jungle Paradise	117 DUVAL ST	00000530-000000	HRCC-1	6,102	9,140	1.5	1.0			-	22	150%	Retail	No	No	No	

Transect G-H

Map ID	Name	Location	RE#	Zoning	Site Size (sf)	Floor Area (sf)	FAR Existing	FAR Permitted	Units	Type	Density Existing	Density Permitted	Dev Pot	Uses	Waterfront	Marina Related	Public Waterfront Access	Development oversight
1	Westin RESORT & MARINA	231 - 279 FRONT ST	00000200-000100	HPRD	172,933	54256	0.3	1.0	174	T	43.83	22	231%	Public Lodging/Retail	Yes	Yes	Yes	Development Plan review and approval (City & DCA)
2	(CUSTOM HOUSE)	281 FRONT ST	00000200-000102	HPRD	24999	10164	0.4	1.0	0		-	22	41%	Commercial	No	No	No	Unknown
3	Mel Fisher	200 GREENE ST	00001630-000300	HPRD	15377	31280	2.0	1.0	0		-	22	203%	Commercial	No	No	No	Unknown
4	LAURA MAR LIMITED PARTNERSHIP	218 WHITEHEAD ST	00001630-000700	HPRD	6970	7755	1.1	1.0	0		-	22	111%	Commercial	No	No	No	
5	Transient Rental Units	219 WHITEHEAD ST	00001600-000000	HRO	7120	2637	0.4	1.0	2	T	12.24	16	114%	Rental Units	No	No	No	
6	Single Family Residential	407 CAROLINE ST	00001590-000000	HRO	2380	702	0.3	1.0	0		-	16	29%	Single Family	No	No	No	
7	Non Transient Rental Unit	409 CAROLINE ST	00001580-000000	HRO	4012	723	0.2	1.0	1	M	10.86	16	86%	Non Transient Unit	No	No	No	



FORM #0299
Rev. 5/03

**SOUTH FLORIDA WATER MANAGEMENT DISTRICT
WATER USE PERMIT NO. RE-ISSUE 13-00005-W
(NON - ASSIGNABLE)**

Date Issued: 13-MAR-2008

Expiration Date: March 13, 2028

Authorizing: THE CONTINUATION OF AN EXISTING USE OF GROUND WATER FROM THE BISCAYNE AQUIFER AND FLORIDAN AQUIFER SYSTEM FOR PUBLIC WATER SUPPLY USE WITH AN ANNUAL ALLOCATION OF 8750.84 MILLION GALLONS.

Located In: Miami-Dade County, S26/T57S/R38E

Issued To: FLORIDA KEYS AQUEDUCT AUTHORITY FKA
(FLORIDA KEYS AQUEDUCT AUTHORITY)
1100 KENNEDY DR
KEY WEST. FL 33401

This Permit is issued pursuant to Application No.050329-23 , dated March 29, 2005, for the Use of Water as specified above and subject to the Special Conditions set forth below. Permittee agrees to hold and save the South Florida Water Management District and its successors harmless from any and all damages, claims or liabilities which may arise by reason of the construction, maintenance or use of activities authorized by this permit. Said application, including all plan and specifications attached thereto, is by reference made a part hereof.

Upon written notice to the permittee, this permit may be temporarily modified, or restricted under a Declaration of Water Shortage or a Declaration of Emergency due to Water Shortage in accordance with provisions of Chapter 373, Fla. Statutes, and applicable rules and regulations of the South Florida Water Management District.

This Permit may be permanently or temporarily revoked, in whole or in part, for the violation of the conditions of the permit or for the violation of any provision of the Water Resources Act and regulations thereunder.

This Permit does not convey to the permittee any property rights nor any privileges other than those specified herein, nor relieve the permittee from complying with any law, regulation, or requirement affecting the rights of other bodies or agencies.

Limiting Conditions are as follows:

SEE PAGES 2 - 7 OF 7 (35 LIMITING CONDITIONS).

South Florida Water Management
District, by its Governing Board

On March 13, 2008
By [Signature]
Deputy Clerk

LIMITING CONDITIONS

1. This permit shall expire on March 13, 2028.
2. Application for a permit modification may be made at any time.
3. Water use classification:

Public water supply

4. Source classification is:

Ground Water from:
Biscayne Aquifer
Floridan Aquifer System

5. Annual allocation shall not exceed 8751 MG.

Maximum monthly allocation shall not exceed 809.0088 MG.

The following limitations to annual withdrawals from specific sources are stipulated:
Biscayne Aquifer-: 6,492 MG.

6. Pursuant to Rule 40E-1.6105, F.A.C., Notification of Transfer of Interest in Real Property, within 30 days of any transfer of interest or control of the real property at which any permitted facility, system, consumptive use, or activity is located, the permittee must notify the District, in writing, of the transfer giving the name and address of the new owner or person in control and providing a copy of the instrument effectuating the transfer, as set forth in Rule 40E-1.6107, F.A.C.

Pursuant to Rule 40E-1.6107 (4), until transfer is approved by the District, the permittee shall be liable for compliance with the permit. The permittee transferring the permit shall remain liable for all actions that are required as well as all violations of the permit which occurred prior to the transfer of the permit.

Failure to comply with this or any other condition of this permit constitutes a violation and pursuant to Rule 40E-1.609, Suspension, Revocation and Modification of Permits, the District may suspend or revoke the permit.

This Permit is issued to:

Florida Keys Aqueduct Authority
1100 Kennedy Drive
Key West, Florida 33401

7. Withdrawal facilities:

Ground Water - Existing:

- 2 - 24" X 60' X 2000 GPM Wells Cased To 35 Feet
- 3 - 24" X 56' X 2000 GPM Wells Cased To 36 Feet
- 1 - 20" X 60' X 2100 GPM Well Cased To 20 Feet
- 2 - 24" X 57' X 2000 GPM Wells Cased To 37 Feet
- 1 - 24" X 60' X 1400 GPM Well Cased To 24 Feet
- 1 - 20" X 1300' X 2000 GPM Well Cased To 880 Feet
- 1 - 24" X 60' X 1400 GPM Well Cased To 20 Feet

Ground Water - Proposed:

4 - 17" X 1300' X 2000 GPM Wells Cased To 880 Feet

8. Permittee shall mitigate interference with existing legal uses that was caused in whole or in part by the permittee's withdrawals, consistent with the approved mitigation plan. As necessary to offset the interference, mitigation will include pumpage reduction, replacement of the impacted individual's equipment, relocation of wells, change in withdrawal source, or other means.

Interference to an existing legal use is defined as an impact that occurs under hydrologic conditions equal to or less severe than a 1 in 10 year drought event that results in the:
 - (1) Inability to withdraw water consistent with provisions of the permit, such as when remedial structural or operational actions not materially authorized by existing permits must be taken to address the interference; or
 - (2) Change in the quality of water pursuant to primary State Drinking Water Standards to the extent that the water can no longer be used for its authorized purpose, or such change is imminent.
9. Permittee shall mitigate harm to existing off-site land uses caused by the permittee's withdrawals, as determined through reference to the conditions for permit issuance. When harm occurs, or is imminent, the District will require the permittee to modify withdrawal rates or mitigate the harm. Harm caused by withdrawals, as determined through reference to the conditions for permit issuance, includes:
 - (1) Significant reduction in water levels on the property to the extent that the designed function of the water body and related surface water management improvements are damaged, not including aesthetic values. The designed function of a water body is identified in the original permit or other governmental authorization issued for the construction of the water body. In cases where a permit was not required, the designed function shall be determined based on the purpose for the original construction of the water body (e.g. fill for construction, mining, drainage canal, etc.)
 - (2) Damage to agriculture, including damage resulting from reduction in soil moisture resulting from consumptive use; or
 - (3) Land collapse or subsidence caused by reduction in water levels associated with consumptive use.
10. Permittee shall mitigate harm to the natural resources caused by the permittee's withdrawals, as determined through reference to the conditions for permit issuance. When harm occurs, or is imminent, the District will require the permittee to modify withdrawal rates or mitigate the harm. Harm, as determined through reference to the conditions for permit issuance includes:
 - (1) Reduction in ground or surface water levels that results in harmful lateral movement of the fresh water/salt water interface,
 - (2) Reduction in water levels that harm the hydroperiod of wetlands,
 - (3) Significant reduction in water levels or hydroperiod in a naturally occurring water body such as a lake or pond,
 - (4) Harmful movement of contaminants in violation of state water quality standards, or
 - (5) Harm to the natural system including damage to habitat for rare or endangered species.
11. If any condition of the permit is violated, the permit shall be subject to review and possible modification, enforcement action, or revocation.

12. Authorized representatives of the District shall be permitted to enter, inspect, and observe the permitted system to determine compliance with special conditions.
13. The Permittee is advised that this permit does not relieve any person from the requirement to obtain all necessary federal, state, local and special district authorizations.
14. The permit does not convey any property right to the Permittee, nor any rights and privileges other than those specified in the Permit and Chapter 40E-2, Florida Administrative Code.
15. Permittee shall submit all data as required by the implementation schedule for each of the limiting conditions to: S.F.W.M.D., Supervising Hydrogeologist - Post-Permit Compliance, Water Use Regulation Dept. (4320), P.O. Box 24680, West Palm Beach, FL 33416-4680.
16. In the event of a declared water shortage, water withdrawal reductions will be ordered by the District in accordance with the Water Shortage Plan, Chapter 40E-21, F.A.C. The Permittee is advised that during a water shortage, pumpage reports shall be submitted as required by Chapter 40E-21, F.A.C.
17. Prior to the use of any proposed water withdrawal facility authorized under this permit, unless otherwise specified, the Permittee shall equip each facility with a District-approved operating water use accounting system and submit a report of calibration to the District, pursuant to Section 4.1, Basis of Review for Water Use Permit Applications.

In addition, the Permittee shall submit a report of recalibration for the water use accounting system for each water withdrawal facility (existing and proposed) authorized under this permit every five years from each previous calibration, continuing at five-year increments.

18. Monthly withdrawals for each withdrawal facility shall be submitted to the District quarterly. The water accounting method and means of calibration shall be stated on each report.
19. The Permittee shall notify the District within 30 days of any change in service area boundary. If the Permittee will not serve a new demand within the service area for which the annual allocation was calculated, the annual allocation may then be subject to modification and reduction.
20. Permittee shall implement the following wellfield operating plan:
The Biscayne Aquifer wellfield shall be operated according to the restrictions outlined in Limiting Conditions 5, 25, 26, and 27 of this permit. Upon completion and operation of the Reverse Osmosis system, pursuant to the schedule outlined in Limiting Condition 30, the Floridan Aquifer wellfield will be operated to provide the balance of the demands beyond those restrictions.
21. Permittee shall determine unaccounted-for distribution system losses. Losses shall be determined for the entire distribution system on a monthly basis. Permittee shall define the manner in which unaccounted-for losses are calculated. Data collection shall begin within six months of Permit issuance. Loss reporting shall be submitted to the District on a yearly basis from the date of Permit issuance.
22. Permittee shall maintain an accurate flow meter at the intake of the water treatment plant for the purpose of measuring daily inflow of water.
23. The Permittee shall continue to submit monitoring data in accordance with the approved saline water intrusion monitoring program for this project.
24. The Water Conservation Plan required by Section 2.6.1 of the Basis of Review for Water Use Permit Applications within the South Florida Water Management District, must be implemented in accordance with the approved implementation schedule.
25. In addition to the allocation specified in Limiting Condition 5, the permittee may apply a Special Event Peaking Factor Ratio of 1.3:1 to compensate for temporary increased demand during seasonal and Special Events up to a maximum daily withdrawal of 33.57 MG. The source limitations imposed by

Limiting Conditions 5 and 26 apply to the Special Event Peaking Factor Ratio. The permittee must notify the District in writing no less than 24 hours prior to applying this Special Event Peaking Factor Ratio and must specify the proposed duration of the use of the Special Event Peaking Factor Ratio. The use of the Special Event Peaking Factor Ratio shall be noted on the monthly pumpage reports.

26.

In addition to the allocations specified in Limiting Conditions 5 and 25, during the dry season (December 1 to April 30), FCAA shall limit their average day withdrawals from the Biscayne Aquifer to 17 MGD, calculated on a monthly basis. The remaining dry season demands shall be provided by the reverse osmosis system. During the remainder of the year from May 1 to November 30, the withdrawals from the Biscayne Aquifer shall be limited to the Base Condition water use for the Biscayne Aquifer of 6,492 MGY, or an average day of 17.79 MGD. Demands in excess of these volumes shall be provided by the Floridan Aquifer System wells and the emergency desalination facilities.

27.

Prior to the availability of the Floridan Aquifer reverse osmosis system, dry season demand in excess of the Biscayne Aquifer pumpage limitations specified in Limiting Condition 26 shall be obtained from emergency sources pursuant to Limiting Condition 29.

28.

In addition to the monthly reporting required in Limiting Condition 18, and prior to the operation of the Reverse Osmosis system, on the 15th day of each month during and immediately following the dry season extending from December 1 to April 30, FCAA shall file a written report with the District ("mid-month report") evaluating the following: 1) the daily pumpage to date during the last 30 days; and 2) any daily pumpage distribution for the remainder of the dry season as necessary to comply with the 17 MGD Biscayne Aquifer average dry season limitation. Such report shall also identify any remedial actions necessary to ensure compliance that through the remainder of the dry season the applicable Biscayne Aquifer pumpage limitations described above will be met. This report shall replace the other reports required by the Consent Agreement (including the June 15 post-dry season report and the February 15th mid-dry season additional demand report). Such mid-month report shall be evaluated by District staff and revised by the District as necessary to achieve compliance with the above. Upon completion and operation of the Reverse Osmosis system, pursuant to the schedule outlined in Limiting Condition 30, this report requirement shall cease and the monthly Biscayne Aquifer withdrawals shall be reported as required by Limiting Condition 18 of this permit.

29.

In order to reduce the potential for violating the 17 MGD Biscayne Aquifer average monthly withdrawal limitation during the dry season, FCAA must to the greatest extent practical utilize the emergency desalination facilities FCAA owns and operates at Stock Island and Marathon, which are potentially capable of treating saline water at rates up to 3.0 MGD. The FCAA shall use these two emergency desalination facilities as an alternative source of water in order to assist in limiting its dry season Biscayne Aquifer withdrawals. The FCAA's ability to use, and extent of use, of these emergency desalination facilities shall be subject to not causing (i) significant adverse affects to FCAA's water treatment or distribution system; or (ii) a violation of any applicable primary or secondary drinking water standards.

30.

The permittee shall adhere to the following schedule for the construction and operation of the Floridan Aquifer System reverse osmosis wellfield and treatment facility:

Florida Keys Aqueduct Authority - Schedule for Construction and Operation of Floridan Aquifer Production Well, Floridan Aquifer Reverse Osmosis Treatment Facility, and Demineralized Concentrate Disposal Well

--Reverse osmosis water treatment plant expansion
Award Contract - September 30, 2007
Complete Construction - December 31, 2009

- Deep Injection Well
 - Obtain FDEP Permit - March 31, 2008
 - Award Contract - 152 days after receiving FDEP Underground Injection Control Permit
 - Complete Drilling and Testing - 1 year and 30 days after receiving FDEP Underground Injection Control Permit
- Complete reverse osmosis water treatment plant system
 - Begin and Stabilize Operation - 2 years and 60 days after receiving FDEP Underground Injection Control Permit

31.

In the event that a milestone specified in the alternative water supply schedule and plan contained in Limiting Condition 30 is going to be missed, the permittee shall notify the Executive Director of the District in writing explaining the nature of the delay, actions taken to bring the project back on schedule and an assessment of the impact the delay would have on the rates of withdrawals from the Everglades water bodies and associated canals as defined in District CUP rules. The District will evaluate the situation and take actions as appropriate which could include: a) granting an extension of time to complete the project (if the delay is minor and doesn't affect the Everglades Waterbodies or otherwise violates permit conditions), b) take enforcement actions including consent orders and penalties, c) modify allocations contained in this permit from the Biscayne Aquifer including capping withdrawal rates until the alternative water supply project(s) are completed (in cases where the delay would result in violations of permit conditions) or d) working with the Department of Community Affairs to limit increase demands for water until the alternative water supply project is completed. In addition, Permittee shall make to the District payment of funds as identified below for non-compliance with any timeline for development of the Floridan Aquifer System production and treatment system as provided in Limiting Condition 30, as follows:

A. Reverse Osmosis Plant construction and operation timelines in Limiting Condition 30

- Award Contract - \$2,000.00 per week
- Complete Construction - \$2,000.00 per week

B. Floridan Deep Injection Well(s) Construction and Operation

- Award Contract - \$2,000.00 per week
- Complete drilling and Testing - \$2,000.00 per week
- Complete reverse Osmosis Water Treatment Plant System - \$2,000.00 per week
- Begin and Stabilize Operation - \$2,000.00 per week

32. Prior to any application to renew or modify this permit, the Permittee shall evaluate long term water supply alternatives and submit a long term water supply plan to the District. Within one year of permit issuance, the Permittee shall submit to the District an outline of the proposed plan. The assessment should include consideration of saline intrusion, wellfield protection, plans for compliance with applicable wellfield protection ordinances, expected frequencies and plans to cope with water shortages or well field failures, and conservation measures to reduce overall stresses on the aquifer.
33. For uses with an annual allocation greater than 10 MGD and a permit duration of 20 years, every five years from the date of permit issuance, the permittee shall submit a water use compliance report for review and approval by District Staff, which addresses the following:

1. The results of a water conservation audit that documents the efficiency of water use on the project site using data produced from an onsite evaluation conducted. In the event that the audit indicates additional water conservation is appropriate or the per capita use rate authorized in the permit is exceeded, the permittee shall propose and implement specific actions to reduce the water use to acceptable levels within timeframes proposed by the permittee and approved by the District.
2. A comparison of the permitted allocation and the allocation that would apply to the project based on current District allocation rules and updated population and per capita use rates. In the event the permit allocation is greater than the allocation provided for under District rule, the permittee shall apply for a letter modification to reduce the allocation consistent with District rules and the updated population and per capita use rates to the extent they are considered by the District to be indicative of long term trends in the population and per capita use rates over the permit duration. In the event that the permit allocation is less than allowable under District rule, the permittee shall apply for a modification of the permit to increase the allocation if the permittee intends to utilize an additional allocation, or modify its operation to comply with the existing conditions of the permit.
34. If at any time there is an indication that the well casing, valves, or controls leak or have become inoperative, repairs or replacement shall be made to restore the system to an operating condition. Failure to make such repairs shall be cause for filling and abandoning the well, in accordance with procedures outlined in Chapters 40E-3 and 40E-30, Florida Administrative Code.
35. It has been determined that this project relies, in part, on the waters from the Central and Southern Florida Project, and as such is considered to be an indirect withdrawal from an MFL water body under recovery (Everglades). The 2005-2006 Lower East Coast Water Supply Plan Update (February, 2007), which is the recovery plan for the Everglades, incorporates a series of water resource development projects and operational changes that are to be completed over the duration of the permit and beyond. If the recovery plan is modified and it is determined that this project is inconsistent with the approved recovery plan, the permittee shall be required to modify the permit consistent with the provisions of Chapter 373, Florida Statutes.



Jeb Bush
Governor

M. Rony Frannis, M.D., M.S.P.H., Ph.D.
Secretary

Lillian Rivera, RN, MSN, Administrator

PERMITTEE:

Florida Keys Aqueduct Authority (FKAA)
C/o Ray M. Shimokubo
PO BOX 1239, Kennedy Drive
Key West, Florida 33041-1239

PERMIT No: 150092-007-WC/04
DATE OF ISSUE: November 14, 2006
EXPIRATION DATE: November 13, 2011
COUNTY: MIAMI-DADE COUNTY
LAT./LONG.: 25°26'25" N / 80°30'33" W
SECTION/TOWNSHIP/RANGE:
PROJECT: Reverse Osmosis (RO) Expansion
Facility, 6.0 MGD Permeate production with
blending options at FKAA J.Robert Dean WTP
Florida City, Dade County

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rule 62-4, 62-550, 62-555 & 62-560. The above named permittee is hereby authorized to perform the work shown on the application, technical specifications approved drawing(s), plans, and other documents attached hereto or on file with the Department and made a part hereof and specifically described as follows:

TO CONSTRUCT: A Reverse Osmosis, (RO) treatment facility with a permeate capacity of up to 6 Million Gallons per Day, (MGD) produced from Phase I, consisting of three (3) 1.5 MGD trains or Phase II, consisting of an additional 1.5 MGD or four (4) 1.5 MGD trains. The RO facility will be fully integrated with the existing lime softening plant.

There will be the option of bypassing a limited amount of pretreated Floridan aquifer water and blending it with RU permeate thus adding alkalinity to the product water and increasing the overall plant "net" recovery. The RO system product water (degasified permeate/blended permeate) will be combined (blended) with existing lime softening plant product and a limited amount of cartridge-filtered Biscayne Aquifer RO bypass water. The blended product water will receive chemical addition and be transferred to existing finished water storage facilities and pumped to distribution with existing high service pumps.

The water treatment plant construction permit application is for 6 MGD RO permeate capacity plus up to 3 MGD cartridge filtered Biscayne Aquifer blend flow and up to 0.576 MGD (400 gpm) pretreated Floridan Aquifer feed water bypass (which blends with RO permeate), and up to 0.7 MGD Floridan Aquifer water which blends with the existing lime softening facility influent Biscayne Aquifer water. The full operation of all the above described facility units could raise the Possible Facility Output Capacity to greater than 23.8 MGD existing permissible, plus 6.0 MGD covered under this permit application.

No other facilities or new wells are part of this permit.

TO SERVE: The Florida Keys Water Distribution System, Monroe County, Florida.



Samir Elmir, M.S., P.E., DEE, Division Director
Miami-Dade County Health Department
Environmental Health and Engineering
1725 N. W. 167th Street, Miami, Florida 33056
Tel: (305) 623-3500 Fax: (305) 623-3502
Email: Samir_elmir@doh.state.fl.us
Website: www.dadehealth.org

"A"

PERMIT NO: 150092-007-WC/04

PERMIT ISSUE DATE: November 14, 2006

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations and restrictions set forth in this permit, are "permit conditions" and are binding and enforceable pursuant to Sections 403.141, 403.727, or 403.859 through 403.861, F.S. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in subsections 403.087(6) and 403.722(5), F.S., the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations. This permit is not a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in this permit.

4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed and used by the permittee to achieve compliance with the conditions of this permit, are required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at reasonable times, access to the premises where the permitted activity is located or conducted to:

- (a) Have access to and copy any records that must be kept under conditions of the permit;
- (b) Inspect the facility, equipment, practices, or operations regulated or required under this permit; and

PERMIT NO: 150092-007-WC/04

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- (c) Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:

- (a) A description of and cause of noncompliance; and
- (b) The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence if the noncompliance. The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Section 403.111 and 403.73, F.S. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance; provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Rule 62-4.120 and 62-30.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

13. This permit also constitutes:

- Determination of Best Available Control Technology (BACT)
- Determination of Prevention of Significant Deterioration (PSD)
- Certification of compliance with state Water Quality Standards (Section 401, PL 92-500)
- Compliance with New Source Performance Standards

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14. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law, which is needed to determine compliance with the permit. If the permittee becomes aware the relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

SPECIFIC CONDITIONS:

1. The applicant is responsible for retaining the engineer of record in the application for supervision of the construction of this project and upon completion, the engineer shall inspect for complete conformity to the plans and specifications as approved.

2. All concrete coatings/admixtures, liners, grouts, hoses, tubings, and protective paints and coatings shall be listed by the National Sanitation Foundation as acceptable for contact with potable water.

3. Bacteriological points depicted on the plans may be modified with Department consent to meet convenient locations where taps would be inserted in the Main for Fire, Metering, Air Release or other connections but not less than 900 foot intervals for new mains. "Additionally, each part or system module shall be Bacteriologically cleared with 2 consecutive days of sampling before being placed in service as well as the final stream going to storage and subsequent service.

4. The Applicant or his designee shall notify The Department at the local DOH office of the start of the study/construction for purposes of allowing Department Personnel to observe the actual process.

5. The owner or permittee is advised that approval is given to the functional aspects of this project on the basis of representation, and data furnished to this division. There may be County, Municipal or other Local Regulations to be complied with by the owner or permittee prior to construction of the facilities represented by the plans referred to above.

6. This construction permit is issued with the understanding that pipe material and appurtenances used in this installation will be in accordance with the latest applicable AWWA & NSF Standards for public water supplies.

7. The applicant Public Water System as a condition of this permit is hereby advised they shall revert to (2) two-six Month periods of standard monitoring for Lead and Copper upon issuance of Clearance to put the facilities into service. If no Lead or Copper exceedance occurs within the 2-6 Month periods, the System may return to annual monitoring.

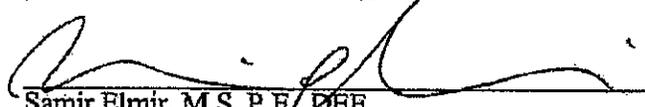
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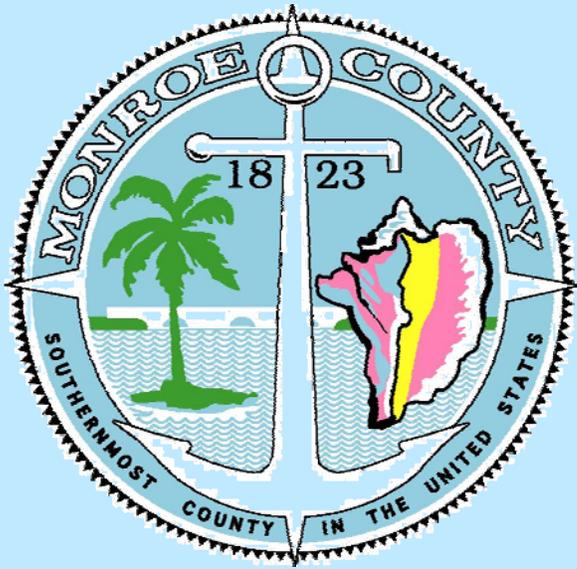
PERMIT ISSUE DATE: November 14, 2006

8. Prior to placing a system into service, the applicant shall submit to the Department, if requested, one set of record drawings of the completed project with completed form DEP 62.555.910(9) [Certification of Construction Completion and Request for a Letter of Clearance to Place a Public Drinking water facility into Service] signed by the engineer of record. Drawings are to be at the same scale and in the same sequence as those submitted and approved for permit. Deviations from the original permitted drawings are to be highlighted and/or noted for the Department's review. Include with the DEP form the bacteriological clearance data, pressure test results and backflow inspection certification (if applicable).

Issued this 30th day of November 2006

STATE OF FLORIDA
DEPARTMENT OF HEALTH


Samir Elmir, M.S., P.E./D.E.E.,
Division Director



2008

MONROE COUNTY PUBLIC FACILITIES CAPACITY ASSESSMENT REPORT

GROWTH MANAGEMENT TRANSPORTATION
POTABLE WATER EDUCATION SOLID WASTE
PARKS AND RECREATION

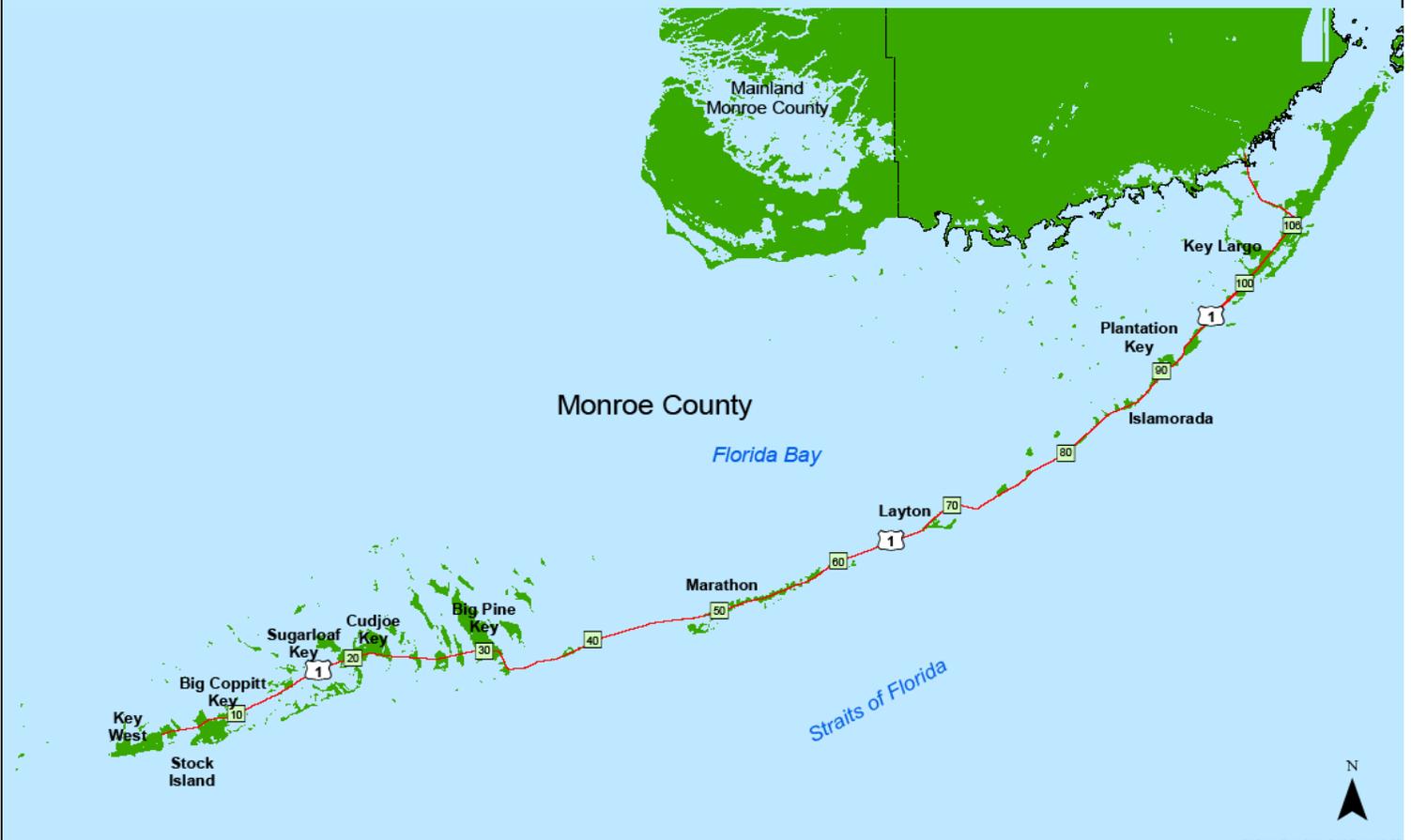


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EXECUTIVE SUMMARY

GROWTH MANAGEMENT

There are two groups that compose the population in Monroe County: the permanent resident population, and the peak seasonal population. The sum of these two groups gives the functional population or the maximum number of people in the Keys on any given evening.

For unincorporated Monroe County in 2008, the seasonal population is estimated to be 35,929 and the functional population is estimated to be 70,386.

A total of 128 single-family residential permits were issued in unincorporated Monroe County in 2007, 249 less than or a 66% decrease from 2006.

The current rate of growth guidelines indicates that unincorporated Monroe County has a total of 197 residential allocations it may award during Residential Rate of Growth Ordinance (ROGO) Year 16.

The Nonresidential Rate of Growth Ordinance (NROGO) was approved and became effective in November 2002. In terms of the number of new non-residential permits, a total of 17,938 square feet of new commercial development was issued in Year 16. The BOCC recommended 35,000 square feet to be allocated for Year 17 (July 2007 through July 2008).

TRANSPORTATION FACILITIES

The overall travel speed on U. S. 1 for 2008 is 0.7 mph higher as compared to the 2007 overall travel speed. The reserve speed is 1.4 mph. Traffic volumes recorded at Big Pine, Marathon and Upper Matecumbe segments have decreased compared to last year. The construction delay was the second largest delay event and the congestion delay was the third most delay event recorded in 2008.

Four segments have exceeded the maximum reserve volume (trips). They are Sugarloaf, Tea Table, Big Pine and Cross Key.

County regulations and FDOT Policy allow segments that fail to meet LOS C standards to receive an allocation not to exceed five percent below the LOS C standard. Sugarloaf Key (LOS D) is still within the 5% allocation for trips below LOS C at 1,308. Tea Table (LOS D) is within the 5% allocation for trips below the LOC C at 858 trips.

Both Big Pine Key and Cross Key have exceeded the maximum reserve volume (trips) and the 5% allocation.

Big Pine Key has dropped down to a LOS "D" from LOS "C". The signal at the Key Deer Boulevard intersection continues to influence the travel speeds on this segment and has experienced 13 delay events this year. Big Pine median speed on average has been declining on about 0.03% since year 2000.

Cross Key has also exceeded the maximum reserve volume (trips) and the 5% allocation and in turn, dropped down to a LOS E.

POTABLE WATER

The Florida Keys Aqueduct Authority's (FKAA) wellfield is located in a pineland preserve west of Florida City in south Miami-Dade County. The groundwater from the wellfield is treated at the J. Robert Dean Water Treatment Facility in Florida City. It currently has a maximum water treatment design capacity of 23.8 millions gallons per day. There are two saltwater Reserve Osmosis plants located on Stock Island and Marathon which are able to produce potable water under emergency conditions.

In March 2008, South Florida Water Management District approved the FKAA's modification of WUP 13-00005-5-W for a 20-year allocation from the Biscayne and Florida Aquifers. This water use permit (WUP) provides an annual allocation of 8,751 million gallons 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 of 17.0 MGD.

The master plan was revised in 2008 to include critical projects and scheduling. The total cost of projects is approximately \$85 million. They are to be funded by the newly revised water rate structure, long-term bank loans and grants.

The average daily water demand is expected to increase to 16.28 MGD due to water shortages and droughts. The construction of the new water supply wells and RO water treatment facility will provide an additional capacity of 6.0 MGD.

EDUCATIONAL FACILITIES

The population of school age children in Monroe County is influenced by many factors, including the size of the resident and seasonal populations, national demographic trends (such as the "baby boom" generation), that result in decreasing household size, economic factors such as military employment, the price and availability of housing, and the movements of seasonal residents.

All schools have adequate reserve capacity to accommodate the impacts of the additional land development activities projected for 2006-2007 school year.

Enrollment figures for the 2008-2009 school year and projected enrollment figures for the 2012-2013 school year, show that none of the schools are expected to exceed their recommended capacity. School facility plans are based on enrollment projections 5 years out for which Figure 4.6 confirms adequate capacity by showing that projected utilization will be between 50 to 100 percent.

SOLID WASTE FACILITIES

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 Waste Management Inc., (WMI) for shipment out of the Keys.

As of 2008, WMI reports a reserve capacity of approximately 26.91 million cubic yards at their Central Sanitary Landfill in Broward County, a volume sufficient to serve their clients for another seventeen (17) years.

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

PARKS AND RECREATION

There are currently 97.96 acres of resource-based recreation areas either owned or leased by Monroe County. The county currently has enough resource-based land to meet the level of service with an extra 40.21 acres of reserve capacity.

There is currently a total of 107.68 acres of developed activity-based recreation areas either owned or leased by Monroe County and the Monroe County School Board. This total represents 47.98 acres in the Upper Keys (including Plantation Key in Islamorada), 10.3 acres in the Middle Keys (including Marathon), and 49.4 acres in the Lower Keys. There is currently a reserve of 19.25, 7.29, and 23.39 acres (Upper, Middle, and Lower) for a total of 49.93 acres of activity-based recreation areas for all of unincorporated Monroe County.

INTRODUCTION

This report is the annual assessment of public facilities capacity mandated by Section 114-2 of the Monroe County Land Development Regulations (hereafter referred to as "the Code"). The State of Florida requires all local jurisdictions to adopt regulations ensuring "concurrency". Concurrency means "that the necessary public facilities and services to maintain the adopted LOS standards are available when the impacts of development occur" (Chapter 9J-5 of the Florida Administrative Code). In other words, local governments must establish regulations to ensure that public facilities and services that are needed to support development are available concurrent with the impacts of development. In Monroe County, these regulations are contained within Section 114-2 of the Code.

Section 114-2, titled Adequate facilities and development review procedures, contains two main sets of requirements: the minimum service standards for the four primary public facilities (roads, solid waste, potable water, schools), and an annual assessment process to determine the available capacity of these public facilities. In addition, Section 114-2 includes an equitable procedure for issuing permits when the rate of growth is likely to outpace the current capacity of these public facilities.

Section 114-2(3) requires the Director of Planning to prepare an annual report to the Board of County Commissioners on the capacity of available public facilities. This report must determine the potential amount of residential and nonresidential growth expected in the upcoming year, and make an assessment of how well the roads, solid waste facilities, water supply, and schools will accommodate that growth. The report considers potential growth and public facility capacity for only the next twelve months. In addition, the report must identify areas of unincorporated Monroe County with only

marginal and/or inadequate capacity for public facilities.

In the event public facilities have fallen or are projected to fall below the LOS standards required by the Code, development activities must conform to special procedures to ensure that the public facilities are not further burdened. The Code clearly states that building permits shall not be issued unless the proposed use is or will be served by adequate public or private facilities.

BOARD ACTION REQUIRED

Section 114-2(b)(4) requires the County Commission to consider this report and approve its findings either with or without modifications. The County Commission cannot act to increase development capacity beyond that demonstrated in this report without making specific findings of fact as to the reasons for the increase, and identifying the source of funds to be used to pay for the additional capacity.

Once approved by the County Commission, this document becomes the official assessment of public facilities upon which development approvals will be based for the next year.

PUBLIC FACILITIES STANDARDS

Section 114-2(a) of the Code pertains to the minimum standards for public facilities. It states, "After February 28, 1988, all development or land shall be served by adequate public facilities in accordance with the following standards:"

(1) Roads:

- a. County Road 905 within three (3) miles of a parcel proposed for development shall have sufficient available capacity to operate at level of service D as measured on an annual average daily traffic (AADT) basis at all intersection and/or roadway segments. U.S. 1 shall have sufficient available capacity to operate at level of service C on an overall basis as measured by the U.S. 1 Level of Service Task Force

Methodology. In addition, the segment or segments of U.S. 1, as identified in the U.S. 1 Level of Service Task Force Methodology, which would be directly impacted by a proposed development's access to U.S. 1, shall have sufficient available capacity to operate at level of service C as measured by the U.S. 1 Level of Service Task Force Methodology.

- b. All secondary roads where traffic is entering or leaving a development or will have direct access shall have sufficient available capacity to operate at level of service D as measured on an annual average daily traffic (AADT) basis.
- c. In areas which are served by inadequate transportation facilities on U.S. 1, development may be approved provided that the development in combination with all other development will not decrease travel speeds by more than five (5) percent below Level of Service C, as measured by the U.S. 1 Level of Service Task Force Methodology.

(2) Solid Waste:

Sufficient capacity shall be available at a solid waste disposal site to accommodate all existing and approved development for a period of at least three (3) years from the projected date of completion of the proposed development or use. The Monroe County Solid Waste and Resource Recovery Authority may enter into agreements, including agreements under section 163.01, Florida Statutes, to dispose of solid waste outside Monroe County.

(3) Potable Water:

Sufficient potable water from an approved and permitted source shall be available to satisfy the projected water needs of a proposed development, or use. Approved and permitted sources shall include cisterns, wells, FCAA distribution systems, individual water condensation systems, and any other

system which complies with the Florida standards for potable water.

(4) Schools:

Adequate school classroom capacity shall be available to accommodate all school age children to be generated by a proposed development or use.

These are the four primary public facilities that must be monitored for adequate capacity according to the Code. The available capacity for each of these facilities may be either sufficient to accommodate projected growth over the next year, marginally adequate, or inadequate. In situations where public facilities serving an area are projected to be only marginally adequate or inadequate over the next year, the Code sets out a review procedure to be followed when issuing development permits in that area.

Pursuant to 114-2(b)(5)b of the Monroe County Code "the county shall not approve applications for development in areas of the county which are served by inadequate facilities identified in the annual adequate facilities (Public Facility Capacity Assessment) report, except the county may approve development that will have no reduction in the capacity of the facility or where the developer agrees to increase the level of service of the facility to the adopted level of service standard." The Code goes on to state that "in areas of marginal facility capacity as identified in the current annual adequate facilities report, the county shall either deny the application or condition the approval so that the level of service standard is not violated."

The determination of an additional development's impact on existing public facilities in areas with marginal or inadequate capacity is determined by a "facilities impact report" which must be submitted with a development application.

SERVICE AREAS

Section 114-2(b)(2) of the Code divides unincorporated Monroe County into three service areas for the purpose of assessing potential growth and how public facilities can accommodate that growth. The boundaries mentioned in the Code have been revised to account for recent incorporations. The map on the following page shows the three service areas of the Keys as they are currently recognized.

The Upper Keys service area includes all unincorporated Monroe County north of the Tavernier Creek Bridge. The Middle Keys includes the area of Unincorporated Monroe County between the Seven-Mile Bridge and the Tavernier Creek Bridge. The Lower Keys is Unincorporated Monroe County south of the Seven Mile Bridge.

Unfortunately, the data available on population, permitting, and public facilities does not always conform to the above boundaries for the Upper, Middle, and Lower Keys. Additionally, due to the incorporation of Islamorada and Marathon (which are excluded from this assessment where specified) the boundaries identified in Section 114-2(b) are no longer valid for unincorporated Monroe County. This report makes use of the best available data, aggregated as closely as possible to the boundaries shown in on the following page.

PREVIOUS BOARD ACTION

Due to unavailability of any reserve capacity for traffic on U.S. 1 on Big Pine Key, in 1995 the County was required to impose a moratorium on any new development on the Key. In December 1997, as a result of a change in the methodology used to determine level of service, the moratorium on Big Pine Key was lifted. However, the results of the 1999 Travel Time and Delay Study indicated that the segment of U.S. 1 through Big Pine Key once again fell below the adopted LOS standard. Due in part to the re-timing of the intersection of U.S. 1 and Key Deer Boulevard, the level of service

on the Big Pine segment of U.S. 1 improved in 2000, but decreased again in 2001 and 2002. Based on the 2003 Arterial Travel Time and Delay Study the LOS had increased to 'C'. Meaning, there was sufficient reserve capacity, and the moratorium on traffic generating development was lifted. The improvement in the LOS is due in part to further re-timing of the intersection and an intersection improvement project, which was completed by FDOT in 2005. It is not anticipated that these improvements will permanently improve the LOS on Big Pine Key, but a 3-laning project is being designed by FDOT to achieve a longer term acceptable level of service. The Planning and Environmental Resources Department has completed a Master Plan for Big Pine Key and No Name Key, which has been adopted and which will address future solutions to traffic problems within the community.

AREAS OF CRITICAL COUNTY CONCERN

At the County Commission's discretion, areas with marginally adequate facilities may be designated as Areas of Critical County Concern (ACCC), pursuant to Sections 106-3 of the Code. The rationale behind this designation is to assure that development in ACCC areas does not impact existing public facilities to the extent that development must be halted in the area.

Should the Board initiate the ACCC designation process, the Development Review Committee and Planning Commission must review the proposed designation. Section 106-3(3) requires the designation to include "Specific findings regarding the purpose of the designation, the time schedule for the planning effort to be implemented, identification of the sources of funding for the planning and potential implementing mechanisms, delineation of a work program, a schedule for the work program and the appointment of an advisory committee, if appropriate."

I. GROWTH MANAGEMENT

This section of the report examines the growth of Monroe County over the last year. This analysis considers the changes in population, the number of residential building permits issued, and the amount of nonresidential floor area permissible. Growth trends will be examined for both the unincorporated as well as the incorporated portions of the County.

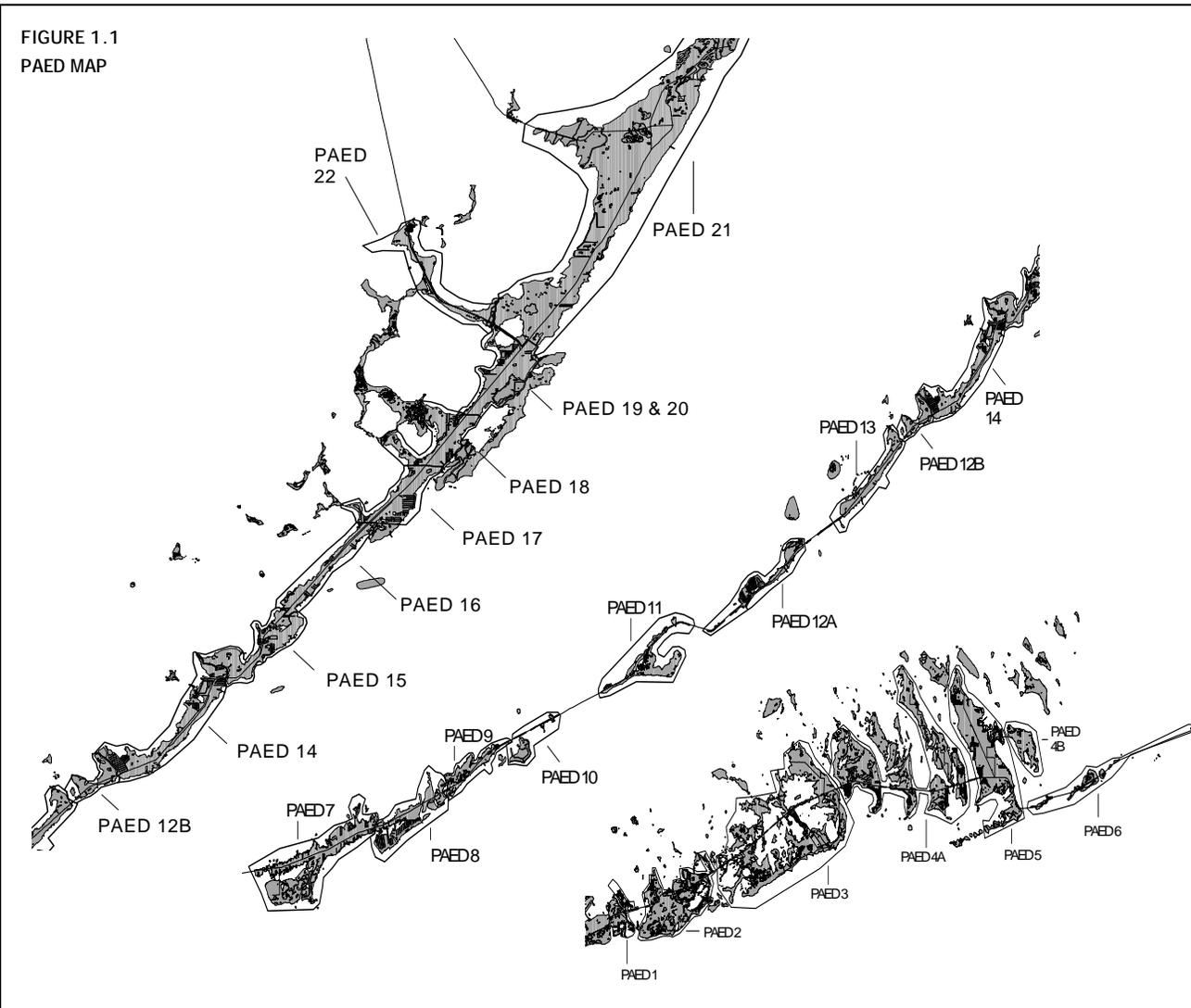
PLANNING AREA ENUMERATION DISTRICTS (PAEDS)

PAEDs, or Planning Area Enumeration Districts, are the basic unit of geographical analysis used by the Planning and Environmental Resources Department (Figure 1.1).

The PAEDs are a combination of the “planning areas” utilized by the Planning Department in the early 1980s and the US Census Bureau’s “enumeration districts”. These two levels of analysis were combined in 1987 for ease of use. Since most PAEDs follow island boundaries, they can be aggregated to match most service districts for public facilities.

Table 1.2 shows the individual PAEDs by their mile marker ranges and islands included within a particular PAED’s boundary.

There are a total of twenty-two (22) PAEDs in Unincorporated Monroe County. The City of Key West (including northern Stock Island) is not contained within any PAED boundaries.



The City of Key Colony Beach is contained within the geographic area of PAED 8, but is not included with the PAED population figures. The City of Marathon encompasses PAEDs 7, 8, & 9. The City of Layton falls within PAED 11. Both cities have been removed from the unincorporated Monroe County population analysis. The Village of Islamorada occupies PAEDs 12A, 12B, 13, & 14, and has its own population figures starting in 1998. PAEDs 19 and 20 are the last PAEDs before the “bend” in U.S. 1, and have been grouped together in this report because of data constraints.

PAED	ISLANDS	MILE MARKER RANGE
1	Stock Island	4-6
2	Boca Chica, East Rockland, Big Coppitt, Geiger, Shark	7-12.4
3	Saddlebunch Keys, Lower Sugarloaf, Upper Sugarloaf	12.5-20.5
4a	Cudjoe, Summerland, Ramrod, Big-Middle-Little Torch	20.6-29
4b	No Name Key	N/A
5	Big Pine Key	29.5-33
6	W. Summerland, Spanish Harbor, Bahia Honda, Ohio, Missouri, Little Duck, Pigeon Key	34.5-46
7	Knight, Hog, Vaca, Boot, Stirrup (Marathon)	47.5-53.2
8	Fat Deer, Little Crawl, Crawl #5, (Marathon) & (Key Colony Beach)	53.3-56.4
9	Grassy Key (Marathon)	56.5-60
10	Duck Key, Little Conch Key, Conch Key	61-64
11	Long Key, Fiesta Key, (Layton)	65-71
12a	Craig Key, Lower Matecumbe (Islamorada)	72-78
12b	Windley Key (Islamorada)	83.5-85.5
13	Teatable Key, Upper Matecumbe (Islamorada)	79-83.4
14	Plantation Key (Islamorada)	85.6-91
15	Key Largo (Tavernier area)	91.1-94.5
16	Key Largo	94.6-98
17	Key Largo (Rock Harbor)	98.1-100.6
18	Key Largo	100.7-103.5
19-20	Key Largo	103.6-107.5
21	Key Largo (North Key Largo, Ocean Reef, Card Sound area)	N/A
22	Cross Key (18 Mile Stretch area)	107.6-112

Source: Monroe County Planning Department

Section 114-2(b)(2) of the Land Development Regulations (LDRs) divides Monroe County into three service areas. The Lower Keys service area is composed of PAEDs 1 through 6 from Mile Marker 4 to 47.4. The Middle Keys includes PAEDs 7 through 13 (Mile Marker 47.5 to 83.4), and the Upper Keys service area includes PAEDs 12B through 22, or the area from Mile Marker 83.5 to 112.

POPULATION COMPOSITION

There are three different measurements of population in Monroe County: the functional population, the permanent population, and the seasonal population. The capacity of most public facilities is designed based on potential peak demand. To help assess peak demand, the permanent and seasonal populations are often combined to give a "functional" population, or the maximum population demanding services.

Projected permanent residents spend most or all of the year in the County, while the seasonal population includes seasonal residents and the tourist population. Seasonal population can be derived from hotels, motels, campsites, recreational vehicles, live aboard vessels; those staying with friends and relatives, and vacation rentals. The vacation rentals are accounted for within the census data under housing units, more specifically designated as "vacant" and "for seasonal, recreational, or occasional use".

It is important to remember that permanent population figures are for the entire calendar *year*, while the seasonal population figures used here are the number of seasonal residents and visitors in the Keys on any given *evening*.

Seasonal population figures are not the total number of seasonal residents or visitors in the county over the calendar year, but the estimated number who stay on any given night. Peak seasonal population figures represent the number of people who could stay on any given evening based upon peak occupancy rates, and therefore represent the peak demand which could be placed on public facilities from seasonal visitors on any given evening. When the peak seasonal population figures are combined with the permanent resident population, the result is the functional population.

The projected permanent population was

initially based on a methodology created by The Department of Planning and Environmental Resources and was based on 1990 Census data. Since then the permanent population model has been updated to report 2000 Census data and 2005 estimated Census data. The reason for the update in the permanent population figures is due to new trends that were reflected in 2000 Census data and again in the 2005 Estimates which are showing a declining permanent population. Using the 1990 Census as the base for the model showed that by year 2000 the number of permanent residents had been overestimated by 6,033, the gap continued to widen and by 2005 the overestimation had grown to 11,976. By updating the model with the 2000 year as the base year the population estimates are more accurate. The updated projections for permanent population in unincorporated Monroe County were estimated at 77,490 residents in 2005 with a continuing decrease to 76,506 residents in 2010 (Table 1.3).

County-Wide			
Year	Functional Population	Numerical Change	Percentage Change
2005	151,227	*	*
2010	151,039	-188	-0.12%
2015	150,101	-938	-0.62%

Source: Monroe County Planning Department

Until better data becomes available, the Planning and Environmental Resources Department is using the document titled "Monroe County Population Estimates and Forecasts 1990-2015" to estimate seasonal population and permanent population. For the year 2008, the seasonal population is estimated to be 35,929. The functional population for unincorporated Monroe County in 2008 is estimated to be 70,386 (Table 1.4).

The Tourist Development Council indicates that Monroe County hosts around three million visitors a year, however not all of these people are in the Keys on the same evening.

TABLE 1.4
FUNCTIONAL POPULATION OF UNINCORPORATED MONROE COUNTY

	2000 ⁽¹⁾	2005 ⁽¹⁾	2006	2007	2008	2009	2010
Permanent ⁽²⁾	36,036	34,979	34,804	34,630	34,457	34,285	34,113
Seasonal ⁽³⁾	34,696	35,518	35,659	35,802	35,929	36,040	36,135
Functional	70,732	70,497	70,463	70,432	70,386	70,325	70,248

⁽¹⁾2000 and 2005 permanent population are from U.S. Census.
⁽²⁾There is a decrease of approximately .05%/year between 2000 and 2005, this decline is used to interpolate permanent population figures until the next Census or until better data becomes available.
⁽³⁾Seasonal population are from "Monroe County Population Estimates and Forecasts 1990 to 2015".
 Estimates prepared by Monroe County Planning Department

FUNCTIONAL POPULATION

The functional population is the sum of the number of permanent residents and the peak seasonal population. Table 1.5 shows the functional population for all of Monroe County (including the incorporated areas), excluding Mainland Monroe County and the population in the Dry Tortugas. The functional population of Monroe County is projected to decrease from 151,039 to 150,101, a decrease of 938, from 2010 to

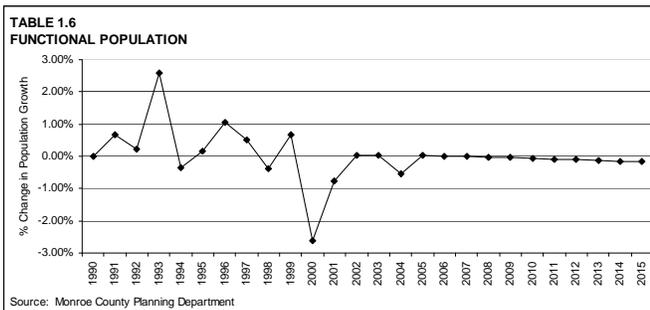
TABLE 1.5
PROJECTED PERMANENT AND SEASONAL COUNTY-WIDE POPULATION

	1990	2000	2005	2010	2015
Seasonal Population	70,493	73,491	73,737	74,533	74,712
Permanent Population	78,024	79,589	77,490	76,506	75,389
Functional Population	148,517	153,080	151,227	151,039	150,101

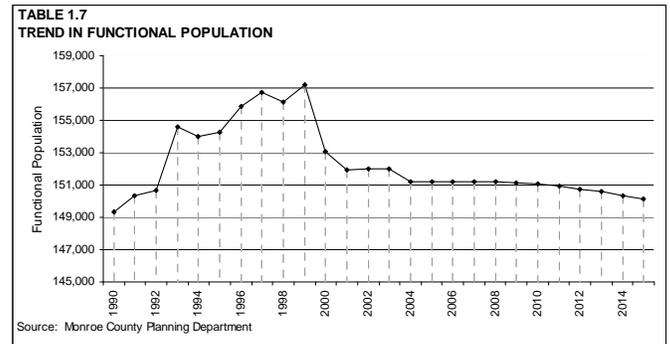
Source: Monroe County Planning Department

2015. This represents a decrease of (.62%) over the ten year period. As better data becomes available for permanent and seasonal population, projections for functional population will be adjusted accordingly.

Figure 1.6 shows the trend in Functional Population Changes from 1990 to 2015. One will notice a dip in the chart in 2000 which is due to updated permanent population figures provided by the U.S. Census Bureau.



The numerical and percent change columns show that the *rate* of decrease will be steady over the same time period (Figure 1.7).



PROJECTED PERMANENT AND SEASONAL POPULATION

The total permanent resident population in Monroe County is projected to decrease from 78,024 people in 1990 to a potential 75,389 people in 2015, a decrease of 3.37% over the twenty-five year period. The projected permanent resident population as a percentage of the functional population fluctuates between 50% and 52% from 1990 to 2015. The years 1991 and 1993 were the only years in which the county-wide permanent resident growth rate exceeded one percent (1%) per year.

The peak seasonal population in Monroe County is projected to grow from 70,493 people in 1990 to 74,712 people by 2015, an increase of six percent (6%) over the twenty-five year period. The peak seasonal population as a percentage of the functional population fluctuates between 47% in 1990 to 49% by 2015. The county-wide peak seasonal population growth rate exceeded four percent (4%) in 1993. Growth rates

fluctuated between -1.7% and 1.9% for the remainder of the years under study, and are expected to continue to decline (Table 1.3).

The incorporation of Islamorada and Marathon has created substantial reductions in both permanent and seasonal population for the Upper and Middle Keys service areas. The Upper Keys service area lost 12% of its functional population due to the incorporation of Islamorada, and the Middle Keys service area lost 87% of its functional population as a result of the incorporation of the City of Marathon.

2000 CENSUS POPULATION

The projected County-wide population data (both permanent and seasonal populations) through 2015 was updated using the 2000 census data. As stated previously, the seasonal population uses projections from the "Monroe County Population Estimates & Forecasts 1990-2015".

Housing units per the Census bureau are broken down into occupied and vacant units. Occupied housing units form the basis for population projections. In 1990, 72.67% of housing units were occupied and in 2000, decreased to 67.97% (Table 1.8).

NUMBER OF RESIDENTIAL PERMITS

History

The second major component of the Growth Analysis Section is the number of residential permits issued. The majority of the new residential permits issued are for permanent residential use. However, some of the permits issued for permanent dwellings are used by the seasonal population.

One issue to remember when considering growth based upon building permits is the time lapse that occurs between when a permit for a new residence is issued and when that residence is ultimately occupied. As a result, there are many dwellings in the Keys that have permits but are not yet fully constructed or are only partially complete. Based upon this time lapse the number of residential permits issued overstates the actual number of new residential dwellings that currently require public facilities.

On June 23, 1992, the Monroe County Board of County Commissioners adopted Ordinance #016-92, thereby implementing the Residential Dwelling Unit Allocation System (Rate of Growth Ordinance or ROGO). The Ordinance became effective on July 13, 1992, and has been amended from time to time. The number of dwelling units (permanent and seasonal), which can be

permitted in Monroe County, has been controlled by ROGO since July of 1992. ROGO was developed as a response to the inability of the road network to accommodate a large-scale hurricane evacuation in a timely fashion. A series of complex models developed during the first evacuation study identified an approximate number of additional dwelling

Housing Units by Type	1990 # of Units	1990 Percent	2000 # of Units	2000 Percent	10 Year Percent Change
Occupied	33,583	72.67%	35,086	67.97%	-4.69%
Vacant	12,632	27.33%	16,531	32.03%	4.69%
For Rent	2,010	15.91%	1,716	10.38%	
For Sale Only	943	7.47%	668	4.04%	
Rented or sold, not occupied	560	4.43%	358	2.17%	
Seasonal, recreational or occasional use	7,928	62.76%	12,332	74.60%	11.84%
For Migrant Workers	6	0.05%	46	0.28%	
Other	1,185	9.38%	1,411	8.54%	
Total Housing Units	46,215	100.00%	51,617	100.00%	11.69%

Source: U.S Census Bureau and Monroe County Planning Department

units which could be permitted and which would not have a detrimental effect on the amount of time needed to evacuate the Keys. The ROGO system was developed as a tool to equitably distribute the remaining number of permits available both geographically and over time.

On March 15, 2006, the Board of County Commissioners adopted Ordinance 009-2006 to implement the Tier System, and subsequently, it was challenged by Florida Keys Citizens Coalition, Inc. and Protect Key West and the Florida Keys, Inc., d/b/a Last Stand. Thomas G. Pelham, Secretary, Department of Community Affairs signed the final order deciding the challenge on September 26, 2007.

The Tier System, also a Rate of Growth Ordinance, made changes such as subarea boundary districts for allocation distribution, basis of scoring applications, and administrative relief. Tier Ordinance 009-2006 provides vesting provisions and allows for a total annual unit cap of 197.

SUB-DISTRICTS

Sub-districts are as follows: A) Lower Keys Subarea (Lower and Middle Keys combined) and Upper Keys subarea and B) Big Pine/No Name Key subareas, The Ocean Reef area of north Key Largo is exempted from the ROGO system due to its proximity to Card Sound Road, an alternate evacuation route.

Area	Service Areas		Permit Office	
	PAEDs Included	Mile Marker Range	PAEDs Included	Mile Marker Range
Upper Keys	12B-22	83.5-112	12A-22	71-112
Middle Keys	7-13	47.5- 83.4	7-13	47.5-70.9
Lower Keys	1-6	4-47.4	1-6	4-47.4

Source: Monroe County Building Department

Table 1.9 compares the boundaries. Basically, the service areas from the Monroe County Code breaks at Whale Harbor Channel and does not include Upper and Lower

Matecumbe in the Upper Keys. The permitting records break at Channel Five and include Upper and Lower Matecumbe in the Upper Keys.

BIG PINE AND NO NAME KEYS

In 1998, the Florida Department of Transportation, Monroe County, the Florida Department of Community Affairs, the U.S. Fish and Wildlife Service and the Florida Fish and Wildlife Conservation Commission signed a Memorandum of Agreement to develop a Habitat Conservation Plan (HCP) for the Key Deer and other protected species in the project area.

On August 18, 2004 under Ordinance 029-2004, The Livable CommuniKeys Program (LCP), Master Plan for Future Development of Big Pine Key and No Name Key was adopted. The LCP envisioned the issuance of 200 residential dwelling units over 20 year horizon at a rate of roughly 10 per year. A minimum of twenty percent (20%) of the 10 units per year are to be set aside for affordable housing development. Based on the revised 2010 Comprehensive Plan and the Master Plan for Big Pine Key and No Name Key adopted maps; these two keys are now evaluated as their own subarea.

On September 22, 2005, the Monroe County Board of Commissioners adopted Ordinance 025-2005 which revised ROGO to utilize the Tier overlay as the basis for the competitive point system to implement Goal 105 of the 2010 Comprehensive Plan. The ordinance became effective on February 5, 2006.

On June 9, 2006, a Federal Incidental Take Permit (#TE083411-0) from the Federal Fish and Wildlife Commission was issued to Monroe County Growth Management Division, Florida Department of Transportation, and the Florida Department of Community Affairs (the permittees) to ensure that development bears its fair share

of the required mitigation and that the take of the covered species is minimized and mitigated.

On November 14, 2007, the Board of County Commissioners adopted Ordinance 044-2007 deferring residential and non-residential allocations on Big Pine/No Name Key until a mitigation ordinance is adopted or for two months from December 1, 2007. Ordinance 044-2007 has expired. On May 6, 2008, the Planning Commission made a recommendation not to approve the Big Pine/No Name Key Mitigation Ordinance and forwarded their recommendation to the Board of County Commissioners for review. On August 20, 2008, the Growth Management Division withdrew the proposed Big Pine / No Name Key Mitigation Ordinance from the Board of County Commissioners' agenda. The Growth Management Division is exploring the concept of regulatory conservation to meet or exceed requirements in the Incidental Take Permit.

NEW RESIDENTIAL PERMITS ANALYSIS

Figure 1.10 shows the breakdown of new residential permits issued for unincorporated Monroe County since 1997. The data presented in the table does not include permits issued in Key West, Key Colony Beach, Layton, or Islamorada. Also, the boundaries between the Upper and Middle Keys service areas and the boundaries used for this data are slightly different. According to Building Department records 2,918 residential permits were issued from 1997 to 2007, with 77% (2,242) being issued to single family residences. Only 13% (390) of the residential permits were issued to duplex, multifamily, or mobile home projects.

A total of 128 single-family residential permits were issued in unincorporated Monroe County in 2007, a 66% decrease from 2006. There were no duplex or multi-family permits issued in 2007. Additionally, there is a moratorium on transient units which is regulated by Ordinance 003-2008 which

states "new transient residential units, such as hotel or motel rooms, or campground, recreational vehicle or travel trailer spaces, shall not be eligible for residential ROGO allocations until December 31, 2008 or until new Land Development Regulations are adopted to permit new transient units."

NONRESIDENTIAL SQUARE FOOTAGE

Nonresidential permitting also plays a role in growth analysis. Nonresidential permits include everything that is not residential, such as industrial, commercial, nonprofit and public buildings, and replacement or remodeling of existing nonresidential structures. Also included are vested and ROGO exempt hotels, motels, campgrounds, marinas and other commercial facilities.

With very little industrial and agricultural activity in the Keys, the predominant form of nonresidential development is commercial. In Monroe County, there are two primary types of commercial development: retail trade and services (which includes tourism-related development such as marinas and restaurants). Therefore, the impact of nonresidential development on public facilities varies significantly based on the type of commercial use.

Nonresidential and residential developments tend to fuel each other. Residential populations provide markets for nonresidential activities. Nonresidential development, in turn, helps to drive population growth by providing services and employment. Certain types of nonresidential development also concentrate the demand for public facilities within certain locations and during peak periods.

Figure 1.10 - New and Replacement Residential and Seasonal Units Permitted by Year for Unincorporated Monroe County

		Single	Duplex	Multi-Family	Mobile	Hotel/Motel	Total
1997	Upper Keys	89	0	12	0	0	101
	Middle Keys	27	4	0	0	77	108
	Lower Keys	73	0	0	0	0	73
	<i>Subtotal</i>	<i>189</i>	<i>4</i>	<i>12</i>	<i>0</i>	<i>77</i>	<i>282</i>
1998	Upper Keys	78	0	0	3	0	81
	Middle Keys	13	0	0	0	110	123
	Lower Keys	66	0	0	0	0	66
	<i>Subtotal</i>	<i>157</i>	<i>0</i>	<i>0</i>	<i>3</i>	<i>110</i>	<i>270</i>
1999	Upper Keys	138	0	0	2	0	140
	Middle Keys	20	0	0	24	63	107
	Lower Keys	87	0	0	0	1	88
	<i>Subtotal</i>	<i>245</i>	<i>0</i>	<i>0</i>	<i>26</i>	<i>64</i>	<i>335</i>
2000	Upper Keys	67	0	35	0	0	102
	Middle Keys	4	0	0	0	34	38
	Lower Keys	75	0	0	0	0	75
	<i>Subtotal</i>	<i>146</i>	<i>0</i>	<i>35</i>	<i>0</i>	<i>34</i>	<i>215</i>
2001	Upper Keys	62	0	13	7	1	83
	Middle Keys	9	0	0	10	0	19
	Lower Keys	80	0	0	38	0	118
	<i>Subtotal</i>	<i>151</i>	<i>0</i>	<i>13</i>	<i>55</i>	<i>1</i>	<i>220</i>
2002	Upper Keys	75	0	0	14	0	89
	Middle Keys	111	0	25	22	0	158
	Lower Keys	7	0	0	45	0	52
	<i>Subtotal</i>	<i>193</i>	<i>0</i>	<i>25</i>	<i>81</i>	<i>0</i>	<i>299</i>
2003	Upper Keys	72	0	0	17	0	89
	Middle Keys	138	0	0	22	0	160
	Lower Keys	25	0	0	5	0	30
	<i>Subtotal</i>	<i>235</i>	<i>0</i>	<i>0</i>	<i>44</i>	<i>0</i>	<i>279</i>
2004	Upper Keys	41	0	0	37	0	78
	Middle Keys	83	0	0	9	0	92
	Lower Keys	2	0	0	1	0	3
	<i>Subtotal</i>	<i>126</i>	<i>0</i>	<i>0</i>	<i>47</i>	<i>0</i>	<i>173</i>
2005	Upper Keys	81	0	0	15	0	96
	Middle Keys	183	0	0	10	0	193
	Lower Keys	31	0	0	4	0	35
	<i>Subtotal</i>	<i>295</i>	<i>0</i>	<i>0</i>	<i>29</i>	<i>0</i>	<i>324</i>
2006	Upper Keys	147	0	2	5	0	154
	Middle Keys	26	0	0	1	0	27
	Lower Keys	204	0	0	8	0	212
	<i>Subtotal</i>	<i>377</i>	<i>0</i>	<i>2</i>	<i>14</i>	<i>0</i>	<i>393</i>
2007	Upper Keys	38	0	0	0	0	38
	Middle Keys	26	0	0	0	0	26
	Lower Keys	64	0	0	0	0	64
	<i>Subtotal</i>	<i>128</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>128</i>
TOTAL		2,242	4	87	299	286	2,918

Source: Monroe County Building Department

The Monroe County Building Department tracks the number of nonresidential permits by subdistrict in unincorporated Monroe County. In addition to the number of permits, the Building Department tracks the amount of square footage affected in each nonresidential building permit issued.

Since residential development is constrained through the Rate of Growth Ordinance and the Permit Allocation System, it was thought that nonresidential (commercial) development should also be constrained in the interest of maintaining a balance of land uses.

To assure that balance was maintained, the Comprehensive Plan proposed Policy 101.3.1 which states:

“Monroe County shall maintain a balance between residential and non-residential growth by limiting the square footage of non-residential development to maintain a ratio of approximately 239 square feet of new non-residential development for each new residential unit permitted through the Residential Permit Allocation System.”

In other words, the Comprehensive Plan limits the square footage of new commercial development that may be permitted. The commercial square footage allocation is 239 square feet for each (1) new residential permit issued. This equates to around 37,762 square feet of new commercial development per year throughout unincorporated Monroe County.

BIG PINE AND NO NAME KEYS

The Tier System made changes such as separate districts for allocation distribution, basis of scoring applications, and administrative relief. The new subareas for NROGO are: A) Lower Keys (Middle Keys are not included in the Lower Keys) and Upper Keys and B) Big Pine / No Name Key.

The Livable CommuniKeys Plan (LCP), Master

Plan for Future Development of Big Pine Key and No Name Key was adopted on August 18, 2004 under Ordinance 029-2004. The LCP envisioned 47,800 square feet of non-residential floor area over the next twenty years from adoption to be used for infill and expansion of existing businesses. Development is limited to Tier III disturbed and scarified uplands. Based on the above non-residential area square footage envisioned to be released over the twenty year horizon, approximately, 2,390 square feet of floor area could be made available per year. The LCP states new floor area is to be used for redevelopment and expansion of existing businesses and that it would be more than adequate to accommodate future expansions. Action Item 5.1.2 limits floor area allocation to 2,500 square feet per organization per year. Year 15 and Year 16 had 5,000 and 3,809 square feet of non-residential floor area allocated, respectively.

NROGO ANALYSIS

Table 1.11 shows the trends in nonresidential permitting from 1997 to 2007. The subdistricts shown in the chart do not directly correspond to the service areas mandated in section of 114-2(b)(2) of the Land Development Regulations. Refer to the boundary descriptions found in Table 1.9 to compare the two areas. There were ten (10) non-residential permits issued for commercial construction in the Lower / Upper subareas and two (2) in the Big Pine / No Name Keys subareas. The number of permits and corresponding square footage refer only to new non-residential development permits and the corresponding square footage.

YEAR 16 (JULY 2007 - JULY 2008)

On October 17, 2007 the Board of County Commissioners adopted Resolution 410-2007 and approved 35,000 square feet of floor area to be made available for Year 16 with the first allocation of 17,500 square feet in January 2007 and the second allocation of 2,500 in July 2008. There was 17,938 square

feet of non-residential floor area awarded in Year 16. Including 3,809 square feet

awarded in the Big Pine / No Name Key subarea.

TABLE 1.11		
NEW NONRESIDENTIAL PERMITS BY YEAR*		
	# of Permits Issued	Floor Area (Sq. Ft.)
1997	Upper Keys	14
	Middle Keys	83
	Lower Keys	2
	<i>Subtotal</i>	99
1998	Upper Keys	4
	Middle Keys	73
	Lower Keys	1
	<i>Subtotal</i>	78
1999	Upper Keys	8
	Middle Keys	68
	Lower Keys	1
	<i>Subtotal</i>	77
2000	Upper Keys	8
	Middle Keys	68
	Lower Keys	5
	<i>Subtotal</i>	81
2001	Upper Keys	31
	Middle Keys	1
	Lower Keys	4
	<i>Subtotal</i>	36
2002	Upper Keys	3
	Middle Keys	0
	Lower Keys	26
	<i>Subtotal</i>	29
2003	Upper Keys	7
	Middle Keys	37
	Lower Keys	0
	<i>Subtotal</i>	44
2004	Lower/Upper	2
	BP/NN Keys	2
	<i>Subtotal</i>	4
2005	Lower/Upper	3
	BP/NN Keys	2
	<i>Subtotal</i>	5
2006	Lower/Upper Keys	Unk.
	BP/NN Keys	5,000
	<i>Subtotal</i>	0
2007	Lower/Upper Keys	Unk.
	BP/NN Keys	3,809
	<i>Subtotal</i>	0
TOTALS	453	831,409
Source: Monroe County Building Department		
*Heading changed in 2005 to indicate only "new" previously stated "new and redevelopment". In addition the numbers only reflect new commercial structures.		

YEAR 17 (JULY 14, 2008 THROUGH JULY 13, 2009)

The BOCC recommended 35,000 square feet to be allocated for Year 17. At the present time there is approximately 187,757 square feet of non-residential floor area available in the Lower / Upper Keys area and approximately 36,810 square feet of non-residential floor area available in Big Pine / No Name Keys area.

The first allocation, in January 2009 was for 15,000 square feet with the remainder held in reserve for the second allocation of July 2009 for the Lower / Upper Keys area. For the Big Pine / No Name Keys subarea there is a total of 5,000 square feet available. Twenty-five hundred square feet is available for the first allocation date and the remainder is held in reserve for the second allocation date.

Although the amount of commercial floor area for Year 17 has not been determined, there is approximately 27,000 square feet of new non-residential floor area under review or approved through the conditional use process. Applicants are requesting between 1,200 and 7,300 square feet.

II. TRANSPORTATION FACILITIES

This section of the report investigates the current capacity of the transportation network in Monroe County. This analysis includes changes in traffic volumes, the level of service on U.S. 1, the reserve capacity of the highway and county roads, and the Florida Department of Transportation Five Year Work Program for Monroe County.

Roads are one of the four critical public facilities identified for annual assessment in the Land Development Regulations. In fact, roads are the only public facility with clear and specific standards for level of service measurements identified in the Land Development Regulations and Comprehensive Plan. The regulations require all segments of U.S. 1 to remain at a LOS of 'C' or higher, and all County roads to remain at a level of service 'D' or higher.

EXISTING ROADWAY FACILITIES

Monroe County's roadway transportation system is truly unique. Nowhere else is there a chain of islands over 100 miles long connected by 42 bridges along a single highway. This single highway, the Overseas Highway (U.S. 1), functions as a collector, an arterial, and the "Main Street" for the Keys. U.S. 1 is a lifeline for the Keys from both economic and public safety perspectives. Each day it carries food, supplies, and tourists from the mainland. In the event of a hurricane, it is the only viable evacuation route to the mainland for most of Monroe County.

U.S. 1 in Monroe County is predominantly a two-lane road. Of its 112 total miles, approximately 80 miles (74%) are two-lane segments that are undivided. The four-lane sections are located on Key Largo, Tavernier (MM 90 to 106), the Marathon area (MM 48 to 54), Bahia Honda (MM 35 to 37), and from Key West to Boca Chica (MM 2 to 9).

In addition to U.S. 1, there are 450 miles of

County (secondary) roads with 38 bridges. U.S. 1 and the County (secondary) roads have a combined total of approximately 340 intersections in the Keys. The Monroe County Division of Public Works is charged with maintaining and improving secondary roads which are located within the boundaries of unincorporated Monroe County. The Florida Department of Transportation (FDOT) is responsible for maintaining U.S. 1.

Table 2.1 identifies the traffic signals in operation along the U.S. 1 corridor (excluding those found on the island of Key West).

Mile Marker	Key	Street
4.4	Stock Island	College Road
4.6	Stock Island	Cross Street
4.8	Stock Island	MacDonald Avenue
19.5	Upper Sugarloaf	Crane Boulevard
30.3	Big Pine Key	Key Deer Blvd.
48.5	Marathon	33rd Street/School Crossing
50	Marathon	Sombrero Beach Blvd.
52.4	Marathon	107th Street
52.5	Marathon	109th Street
53	Marathon	Pedestrian Crossing
53.5	Fat Deer Key	Key Colony Causeway
54	Fat Deer Key	Coco Plum Drive
90	Plantation Key	Woods Avenue/School Crossing
90.5	Plantation Key	Sunshine Road
91.5	Tavernier	Ocean Boulevard
99.5	Key Largo	Atlantic Boulevard
101	Key Largo	Tradewinds
105	Key Largo	Pedestrian Crossing

Source: 2008 U. S. 1 Arterial Travel Time and Delay Study

TRAFFIC VOLUMES

Traffic counts can be very useful in assessing the capacity of the road network and help determine when capacity improvements need to be made. The two primary measurements for determining traffic volumes are the average daily traffic (ADT) in an area and the annual average daily traffic (AADT). ADT counts are collected from both directions over seven twenty-four hour periods which usually include a weekend. The amount of traffic counted over the week is then divided by five or seven to yield the average daily traffic for a particular location. The "5-day ADT" measurement considers only weekdays and the "7-day ADT" includes the weekend. The ADT information can then be used in a formula called a "weekly factor" to estimate

	2007	2008	% Change
Big Pine Key (MM 30)			
5-Day ADT	25,235	21,495	-14.82%
7-Day ADT	25,550	20,612	-19.33%
AADT	20,215	16,308	-19.33%
Marathon (MM 50)			
5-Day ADT	36,742	34,414	-6.34%
7-Day ADT	34,811	31,731	-8.85%
AADT	27,542	25,106	-8.84%
Upper Matecumbe (MM 84)			
5-Day ADT	27,933	23,416	-16.17%
7-Day ADT	28,410	23,024	-18.96%
AADT	23,455	19,008	-18.96%
Source: 2008 U. S. 1 Arterial Travel Time and Delay Study			

A detailed historical comparison of the AADT traffic counts at all three locations for the period from 2003 TO 2008 is shown in Table 2.3.

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Big Pine Key	19,866	20,843	21,774	19,991	19,364	20,115	19,894	19,844	18,095	20,215	16,308
Marathon	28,651	30,750	29,017	28,340	31,285	31,763	32,274	30,102	27,521	27,542	25,106
Upper Matecumbe	21,301	22,103	22,410	21,819	23,369	23,404	24,328	22,927	19,951	23,455	19,008
Source: 2008 U. S. 1 Arterial Travel Time and Delay Study											

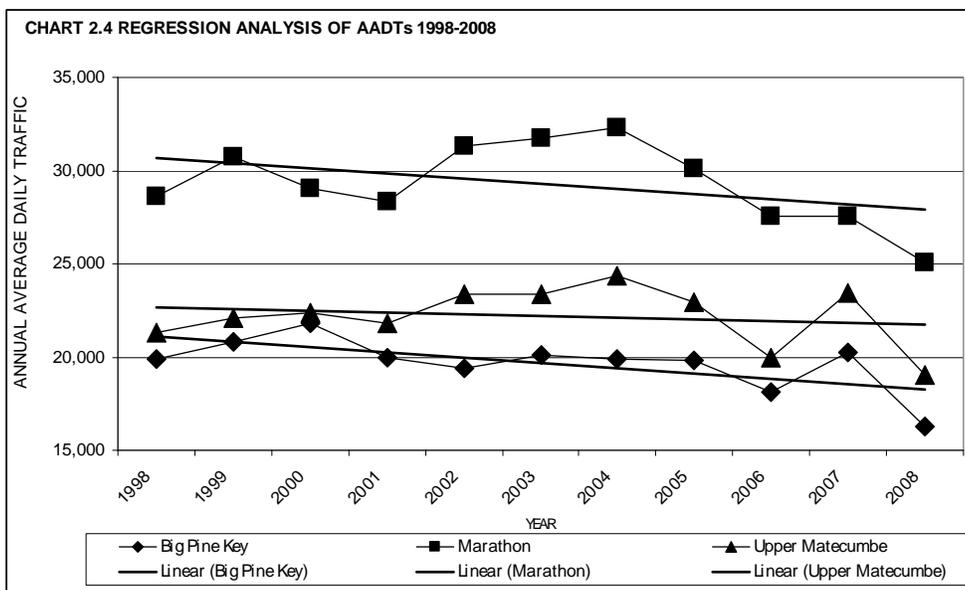
the annual average daily traffic which is an estimate of the average amount of traffic at a particular location on any given day of the year.

In Monroe County, traffic counts have been conducted in the same locations since 1992. These counts occur at Mile Marker 84 on Upper Matecumbe, Mile Marker 50 in Marathon, and Mile Marker 30 on Big Pine Key. The counts are usually performed during the six-week peak tourist season which begins in the second week of February. This year's counts were completed between February 28 and March 12, 2008. Figure 2.2 compares the traffic counts for 2008 with those for 2007.

Figure 2.2 shows that the average weekday (5-Day ADT) and the average weekly (7-Day ADT) traffic volumes compared to last year's data at Marathon, Upper Matecumbe and Big Pine Key, traffic volumes have decreased in 2008. The AADT when compared to last year has decreased in all three segments.

Marathon location consistently records the highest traffic volumes throughout the period with counts generally in the upper 20,000 to 30,000 range. The AADT counts for Big Pine hover in the low 20,000 range over the period over the 10 year period. Meanwhile Upper Matecumbe had been gradually increasing from 1998 to 2004 from a range of 20,000 up to around 25,000. Since then Upper Matecumbe has been increased to over 22,000 in years 2005 and 2007 and decreased to fewer than 20,000 in years 2006 and 2007.

U.S. 1 historic traffic growth is depicted in a regression analysis graph in Figure 2.4. Big Pine/No Name Key, Marathon and Upper Matecumbe segments have a negative growth rate.



OVERALL LEVEL OF SERVICE ON U.S. 1

For the purposes of this study, overall speeds are those speeds recorded over the 108-mile length of US 1 in the Keys between Key West and Dade County. Overall speeds reflect the conditions experienced during long distance or through trips. Given that U.S. 1 is the only principal

arterial in Monroe County, the movement of through traffic is an important consideration.

LEVEL OF SERVICE BACKGROUND

Monroe County has conducted travel time and delay studies of U.S. 1 on an annual basis since 1991. The primary objective of the U.S. 1 Arterial Travel Time and Delay Study is to monitor the level of service on U.S. Highway 1 for concurrency management purposes pursuant to Chapter 163, Florida Statutes and Section 114-2(a) of the Land Development Regulations. The study utilizes an empirical relationship between the volume-based capacities and the speed-based level of service methodology developed by the U.S. 1 Level of Service Task Force.

The U.S. 1 Level of Service Task Force is a multi-agency group with members from Monroe County, the Florida Department of Transportation and the Florida Department of Community Affairs. A uniform methodology was developed in 1993 and amended December 1997. The methodology adopted considers both the overall level of service from Key West to the mainland, and the level of service on 24 selected segments. The methodology was developed from basic criteria and principles contained in Chapters 7 (Rural Multilane Highways), Chapter 8

The overall level of service or capacity of the entire length of U.S. 1 is measured in the average speed of a vehicle traveling from one end to the other of U.S. 1. The level of service (LOS) criteria for overall speeds on U.S. 1 in Monroe County, as adopted by the U.S. 1 Level of Service Task Force, is as follows:

LOS A	51.0 mph or above
LOS B	50.9 mph to 48 mph
LOS C	47.9 mph to 45 mph
LOS D	44.9 mph to 42 mph
LOS E	41.9 mph to 36 mph
LOS F	below 36 mph

Both Monroe County and the Florida Department of Transportation have adopted a LOS 'C' standard for the overall length of U.S. 1. In other words, a vehicle traveling from Mile Marker 4 to Mile Marker 112 (or vice versa) must maintain an average speed of at least 45 mph to achieve the level of service 'C' standard.

The median overall speed during the 2008 study was 46.4 mph which is 0.7 mph higher than the 2007 median speed of 45.7 mph. The mean operating speed was 45.6 mph

with a 95% confidence interval of plus or minus 0.7 mph. The mean and median speeds correspond to LOS 'C' conditions. The highest overall speed recorded in the study was 48.2 mph (similar to the 2007 highest overall speed of 48.3 mph), which occurred on Saturday, March 9, 2007 between 10:15 a.m. and 12:46 p.m. in the northbound direction. The lowest overall speed recorded was 38.5 mph (2.6 mph higher than the 2007 lowest overall speed of 41.1 mph) which occurred on Saturday March 1, 2007 between 9:30 a.m. and 12:36 p.m. in the southbound direction.

also be assessed annually. There are a total of twenty four (24) segments of U.S. 1 from Mile Marker 4 to Mile Marker 112. The segments were defined by the U.S. 1 Level of Service Task Force to reflect roadway cross sections, speed limits, and geographical boundaries (Table 2.6).

Table 2.5 shows that the overall median speed for U.S. 1 has remained between 45.3 mph and 47.8 from 1992 to the present steadily decreasing from 2002 through 2005 and then beginning to climb back up in 2006. Should the overall median speed ever fall below 45 mph (the minimum LOS C standard) then the U.S. 1 capacity would be considered inadequate.

Year	Median Speed	Level of Service	Numeric Change in Speed
1992	46.9	C	-
1993	47.4	C	0.5
1994	47.3	C	-0.1
1995	47.8	C	0.5
1996	47.1	C	-0.7
1997	46.5	C	-0.7
1998	45.7	C	-0.8
1999	46.7	C	1
2000	46.4	C	-0.3
2001	46.9	C	1
2002	47.1	C	-0.2
2003	46.1	C	-1
2004	45.4	C	-0.7
2005	45.3	C	-0.1
2006	45.9	C	0.6
2007	45.7	C	0.2
2008	46.4	C	0.7

Source: 2008 Arterial and Travel Time/ Delay Study, URS Inc.

LEVEL OF SERVICE ON U.S. 1 SEGMENTS

In addition to a determination of the overall capacity throughout the entire 108 mile length of U.S. 1 between Mile Marker 4 and Mile Marker 112, Section 114-2 of the Land Development Regulations requires that the capacity of portions or "segments" of U.S. 1

TABLE 2.6						
DESCRIPTION OF US 1 ROADWAY SEGMENTS						
Segment Number	Mile Marker Range		Control Points		Key(s)	Approx. PAED
	Begin	End	Begin	End		
1	4	5	Cow Key Bridge (N)	Key Haven Boulevard	Stock Island, Key Haven	1
2	5	9	Key Haven Boulevard	Rockland Drive	Boca Chica, Rockland	2
3	9	10.5	Rockland Drive	Boca Chica Road	Big Coppitt	2
4	10.5	16.5	Boca Chica Road	Harris Channel Bridge (N)	Shark, Saddlebunch	3
5	16.5	20.5	Harris Channel Bridge (N)	Bow Channel Bridge (N)	Lower & Upper Sugarloaf	3
6	20.5	23	Bow Channel Bridge (N)	Spanish Main Drive	Cudjoe	4A
7	23	25	Spanish Main Drive	East Shore Drive	Summerland	4A
8	25	27.5	East Shore Drive	Torch-Ramrod Bridge (S)	Ramrod	4A
9	27.5	29.5	Torch-Ramrod Bridge (S)	N. Pine Channel Bridge (N)	Little Torch	4A
10	29.5	33	N. Pine Channel Bridge (N)	Long Beach Drive	Big Pine	5
11	33	40	Long Beach Drive	7- Mile Bridge (S)	W. Summerland, Bahia Honda, Ohio	6
12	40	47	7- Mile Bridge (S)	7- Mile Bridge (N)	7-Mile Bridge	6
13	47	54	7- Mile Bridge (N)	Cocoa Plum Drive	Vaca, Key Colony Beach	7
14	54	60.5	Cocoa Plum Drive	Toms Harbor Ch Bridge (S)	Fat Deer Crawl, Grassy	8
15	60.5	63	Toms Harbor Ch Bridge (S)	Long Key Bridge (S)	Duck, Conch	10
16	63	73	Long Key Bridge (S)	Channel #2 Bridge (N)	Long, Fiesta, Craig	11
17	73	77.5	Channel #2 Bridge (N)	Lignumvitae Bridge (S)	Lower Matecumbe	12A
18	77.5	79.5	Lignumvitae Bridge (S)	Tea Table Relief Bridge (N)	Fill	12A
19	79.5	84	Tea Table Relief Bridge (N)	Whale Harbor Bridge (S)	Upper Matecumbe	13
20	84	86	Whale Harbor Bridge (S)	Snake Creek Bridge (N)	Windley	12B
21	86	91.5	Snake Creek	Ocean Boulevard	Plantation	14
22	91.5	99.5	Ocean Boulevard	Atlantic Boulevard	Tavernier	15 & 16
23	99.5	106	Atlantic Boulevard	C-905	Key Largo	17 - 20
24	106	112.5	C-905	County Line Sign	Key Largo, Cross Key	22

NOTE: (N) and (S) refer to the north and south side of the bridges respectively

Source: 2008 Arterial and Travel Time/ Delay Study, URS Inc.

Segment speeds reflect the conditions experienced during local trips. Given that U.S. 1 serves as the "main street" of the Keys, the movement of local traffic is also an important consideration on this multipurpose highway. However, the determination of the median speed on a segment is a more involved process than determining the overall level of service since different segments have different conditions. Segment conditions depend on the flow characteristics and the posted speed limits within the given segment.

For all "uninterrupted" segments containing isolated traffic signals the travel times were reduced by 25 seconds per signal to account for lost time due to signals. The Marathon and the Stock Island segments are considered "interrupted" flow facilities. Therefore, no adjustments were made to travel times on these segments.

The Land Development Regulations require each segment of the highway to maintain a LOS of 'C' or better. The level of service criteria for segment speeds on U.S. 1 in Monroe County depends on the flow characteristics and the posted speed limits within the given segment. Flow characteristics relate to the

ability of a vehicle to travel through a particular segment without being slowed or stopped by traffic signals or other devices. Segments with a series of permanent traffic signals or other similar traffic control devices in close proximity to each other are considered to be "Interrupted Flow Segments", and are expected to have longer travel times due to the delays caused by these signals or control devices. Roadway segments without a series of signals or control devices are considered to be "Uninterrupted Flow Segments". Uninterrupted segments may have one or more traffic signals, but they are not in close proximity to one another as in the interrupted segment case. The methodology used to determine median speed and level of service on a particular segment is based upon that segment's status as an interrupted or uninterrupted flow segment. The criteria listed by type of flow characteristic are explained in Table 2.7.

Level of Service	Interrupted Flow Segment	Uninterrupted Flow Segment
A	>= 35 mph	>= 1.5 mph above speed limit
B	>= 28 mph	1.4 mph above to 1.5 mph below speed limit
C	>= 22 mph	1.6 mph below to 4.5 mph below speed limit
D	>= 17 mph	4.6 mph below to 7.5 mph below speed limit
E	>= 13 mph	7.6 mph below to 13.5 mph below speed limit
F	< 13 mph	> 13.5 mph below speed limit

Source: 2008 Arterial and Travel Time/ Delay Study, URS Inc.

The segment limits, the median travel speeds, and the 2007 and the 2008 LOS are presented in Table 2.8.

- The Long Key segment (Segment 16-17) increased from LOS 'C' to LOS 'B'
- The Boca Chica segment (Segment 2) decreased from LOS 'A' to LOS 'B'
- The Bahia Honda segment (Segment 11) decreased from LOS 'A' to LOS 'B'
- The Sugarloaf segment (Segment 5) decreased from LOS 'C' to LOS 'D'
- The Big Pine (Segment 10) decreased from LOS 'C' to LOS 'D'

#	Segment	2008 LOS	2007 LOS	2008 Median Speed	2007 Median Speed	Numeric Change
1	Stock Island	B	B	31.7	34.6	2.9
2	Boca Chica	B	A	55.5	57.9	2.4
3	Big Coppitt	C	C	45.7	45.2	-0.5
4	Saddlebunch	C	C	51.6	52.2	0.6
5	Sugarloaf	D	C	47.2	47.8	0.6
6	Cudjoe	A	A	47.7	48.5	0.8
7	Summerland	B	B	46.4	45.6	-0.8
8	Ramrod	A	A	47.7	48.1	0.4
9	Torch	A	A	46.6	47.1	0.5
10	Big Pine	D	C	35.7	39.0	3.3
11	Bahia Honda	B	A	52.3	54.1	1.8
12	7-Mile Bridge	B	B	56.1	55.1	-1.0
13	Marathon	A	A	37.3	37.7	0.4
14	Grassy	C	C	50.7	50.9	0.2
15	Duck	B	C	54.4	52.9	-1.5
16	Long	B	C	52.3	51.3	-1.0
17	L. Matecumbe	C	C	51.0	51.1	0.1
18	Tea Table	D	D	50.0	49.8	-0.2
19	U. Matecumbe	C	C	42.1	41.4	-0.7
20	Windley	A	A	43.8	42.4	-1.4
21	Plantation	B	B	41.9	41.8	-0.1
22	Tavernier	A	A	47.6	49.9	2.3
23	Largo	A	A	44.4	45.7	1.3
24	Cross	E	E	38.3	37.1	-1.2
	Overall	C	C	46.4	45.3	-1.1

Source: 2008 Arterial and Travel Time/ Delay Study, URS Inc.

Compared to 2007, the medium segment speeds increased in ten of the 24 segments ranging between 0.1 mph to 2.4 mph. Fourteen segments experienced a decrease in medium speeds, ranging from 0.1 to 3.3 mph, compared to last year's data. For segment 245, the level of service was maintained at LOS 'E'

because the construction work for this segment is still ongoing.

RESERVE CAPACITIES

The difference between the median speed and the LOS C standard gives the reserve speed. This can be converted into an estimated reserve capacity of additional traffic volume and corresponding additional development. The median overall speed of 46.4 mph compared to the LOS C standard of 45 mph leaves an overall reserve speed of 1.4 mph. This reserve speed can be converted into an estimated reserve capacity of additional traffic volume and corresponding additional development. This reserve speed is converted into an estimated reserve volume (25,966 daily trips).

Map 2.9 is a map of the segment boundaries indicating 2007 LOS and 2008 LOS. The median segment speed ranged from 56.1 mph (LOS B) in the 7-Mile Bridge segment to 31.7 mph (LOS B) in the Stock Island segment. The level of service determined from the 2008 travel time data yield the following level of service changes as compared to 2007 data:

Compared to last year's (2007) study results, there is level of service changes to six segments - two resulted in positive level of service changes while four resulted in negative level of service changes.

- The Duck Key segment (Segment 15) increased from LOS 'C' to LOS 'B'

The estimated reserve capacity is then converted into an estimated capacity for additional residential development (4,057 units), assuming balanced growth of other land uses. Applying the formula for reserve volume to each of the 24 segments of U.S. 1 individually gives maximum reserve volumes for all segments totaling 81,166 trips. These individual reserve volumes may be unobtainable, due to the constraints imposed by the overall reserve volume.

The Land Development Regulations mandate a minimum LOS of 'C' for all roadway segments of U.S. 1. However, county regulations and FDOT policy allow segments that fail to meet LOS C standards to receive an allocation not to exceed 5% below the LOS C standard. The resulting flexibility will allow a limited amount of additional land development to continue until traffic speeds are measured again next year or until remedial actions are implemented. These segments are candidates for being designated either "backlogged" or "constrained" by FDOT. Applications for new development located within backlogged or constrained segments are required to undergo a thorough traffic analysis as part of the review process.

Based on this year's results, Sugarloaf (Segment 5), Big Pine (Segment 10), Tea Table (Segment 18) and Cross Key (Segment 24) are below the LOS C threshold. However, Sugarloaf and Tea Table have reserve capacity within the 5% allocation and the Cross Key segment is under construction. Due to the strictly enforced speed limits along the Key Deer Habitat segment, the travel speeds along the Big Pine Key segment were observed to be near the posted speed limit. Segments that have used-up the 5% reserve trips are restricted from new development or redevelopment, except where redevelopment has no net increase in trips. A detailed summary table displaying level of service and reserve capacity values for each segment is contained in Table 2.10.

TABLE 2.10

2008 LEVEL OF SERVICE AND RESERVE CAPACITY

SEGMENT	LENGTH (miles)	FACILITY TYPE	POSTED SPEED		ADJUSTED	ADJUSTED	MEDIAN	LOS	2008			2007	
			Limits (mph)	Average (mph)	FOR	LOS C	TRAVEL		RESERVE	MAXIMUM RESERVE	5% ALLOCATION	MAXIMUM RESERVE	5% ALLOCATION
					SIGNAL	CRITERIA	SPEED		SPEED	VOLUME	BELOW LOS C	VOLUME	BELOW LOS C
					(mph)	(mph)	(mph)		(mph)	(trips)	(trips)	(trips)	(trips)
1 Stock Island (4.0 - 5.0)	1.1	4-L/D	30/35/45	38.3	N/A	22.0	31.2	B	9.7	1,767	N/A	2,295	N/A
2 Boca Chica (5.0- 9.0)	3.9	4-L/D	55/45	54.1	N/A	49.6	55.5	B	5.9	3,810	N/A	5,360	N/A
3 Big Coppitt (9.0- 10.5)	1.5	2-L/U	45/55	49.7	N/A	45.2	45.7	C	0.5	124	N/A	0	568
4 Saddlebunch (10.5- 16.5)	5.8	2-L/U	45/55	54.1	N/A	49.6	51.6	C	2.0	1,921	N/A	2,497	N/A
5 Sugarloaf (16.5- 20.5)	4.0	2-L/U	45/55	52.1	N/A	47.6	47.2	D	0.0	0	1308	132	885
6 Cudjoe (20.5- 23.0)	2.5	2-L/U	45/55	45.5	N/A	41.0	47.7	A	6.7	2,771	N/A	3,105	N/A
7 Summerland (23.0- 25.0)	2.2	2-L/U	45	45.0	N/A	40.5	46.4	B	5.9	2,149	N/A	1,858	N/A
8 Ramrod (25.0- 27.5)	2.3	2-L/U	45	45.0	N/A	40.5	47.7	A	7.2	2,742	N/A	2,895	N/A
9 Torch (27.5- 29.5)	2.1	2-L/U	45	45.0	N/A	40.5	46.6	A	6.1	2,121	N/A	2,295	N/A
10 Big Pine (29.5- 33.0)	3.4	2-L/U	45	45.0	2.8	37.3	35.7	D	0.0	0	0	1,070	N/A
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	52.3	B	4.7	5,448	N/A	7,535	N/A
12 7-Mile Bridge (40.0- 47.0)	6.8	2-L/U	55	55.0	N/A	50.5	56.1	B	5.6	6,306	N/A	5,180	N/A
13 Marathon (47.0- 54.0)	7.3	2-L/U (13%) 4-L/D (87%)	35/45	42.2	N/A	22.0	37.3	A	15.3	18,496	N/A	18,979	N/A
14 Grassy (54.0- 60.5)	6.4	2-L/U	45/55	54.4	N/A	49.9	50.7	C	0.8	848	N/A	1,060	N/A
15 Duck (60.5- 63.0)	2.7	2-L/U	55	55.0	N/A	50.5	54.4	B	3.9	1,744	N/A	1,073	N/A
16 Long (63.0- 73.0)	9.9	2-L/U	55/45	53.5	N/A	49	52.3	B	3.3	5,410	N/A	3,771	N/A
17 L Matecumbe (73.0- 77.5)	4.5	2-L/U	55	55.0	N/A	50.5	51.0	C	0.5	373	N/A	447	N/A
18 Tea Table (77.5- 79.5)	2.2	2-L/U	55/45	54.6	N/A	50.1	50.0	D	0.0	0	858	0	805
19 U Matecumbe (79.5- 84.0)	4.1	2-L/U	45	45.0	N/A	40.5	42.1	C	1.6	1,086	N/A	611	N/A
20 Windley (84.0- 86.0)	1.9	2-L/U	45	45.0	8.4	32.1	43.8	A	11.7	3,681	N/A	3,052	N/A
21 Plantation (86.0- 91.5)	5.8	2-L/U	45	45.0	2.2	38.0	41.9	B	3.6	3,458	N/A	3,650	N/A
22 Tavernier (91.5- 99.5)	8.0	4-L/D	45/50	47.1	2.1	40.5	47.6	A	7.1	9,406	N/A	11,128	N/A
23 Key Largo (99.5- 106.0)	6.8	4-L/D	35/45	44.4	2.1	37.8	44.4	A	5.5	7,432	N/A	10,360	N/A
24 Cross (106.0- 112.5)	6.2	2-L/U	35/45/55	48.2	N/A	43.7	38.3	E	0.0	0	0	0	0
Overall	108.4					45.0	46.4	C	1.4				

Source: 2008 Arterial and Travel Time/ Delay Study, URS Inc.

In addition to the requirement that areas with inadequate public facilities be identified in the annual assessment, the Land Development Regulations also require those areas with marginally adequate public facilities to be identified. U.S. 1 segments with reserve speeds of less than or equal to 3 mph should be given particular attention when approving development applications. This year, there are nine segments of U. S. 1 in this category (Table 2.11).

Year Work Program. The major project for unincorporated Monroe County in the current FDOT Work Program (2008/09 to 2012/2013) is to replace the Jewfish Creek drawbridge with a high-level fixed-span bridge and the installation of culverts to improve the tidal flow to the surrounding wetlands. The construction phase for this project began in 2005. Additionally, construction on the 18 mile stretch between the Jewfish Creek Bridge and Florida City began in 2005.

#	Name	Mile Marker Range	Reserve Speed
3	Big Coppitt	9.0 - 10.5	0.5
4	Saddlebunch	10.5-16.5	2
5	Sugarloaf	16.5 - 20.5	0.0
10	Big Pine	29.5 - 33.0	0
14	Grassy	54.0 - 60.5	0.8
17	Lower Matecumbe	73.0 - 77.5	0.5
18	Tea Table	77.5 - 79.5	0
19	Upper Matecumbe	79.5 - 84.0	1.6
24	Cross	106 - 112.5	0

Source: 2008 Arterial and Travel Time/ Delay Study, URS Inc.

The construction of the intersection conversion of Card Sound Road/County Road 905 scheduled for 2012. The widening / resurfacing of existing lanes from SR 5 from

LEVEL OF SERVICE ON COUNTY ROADS

Section 114-2 of the Land Development Regulations establishes LOS D standard for all County roads, as measured on a volume or AADT basis.

Based on the results of this analysis as shown on Table 4.7 in the Monroe County Year 2010 Comprehensive Plan Technical Document, all of the County roads examined are operating at or above the County standard of LOS D.

IMPROVEMENTS TO ROADWAY FACILITIES

Major improvements scheduled for U.S. 1 are outlined in the Florida Department of Transportation Five-

Ships Way to Sands Road and from Sands Road to west of Key Deer Crossing in Big Pine Key with construction beginning in 2009. Per the Big Pine Key Habitat Conservation Plan, a PD&E/EMO Study from SR/U.S. 1 begins in 2009. Turn lane projects and numerous resurfacing projects are scheduled throughout the Keys over the span of the 5-year Work Plan. These projects are outlined in the Five-year Work Program.

In addition to the road projects on U.S. 1, the construction of different segments of the Florida Keys Overseas Heritage Trail is included in the 5-year Work Plan. These construction projects include:

- The segment from MM 60.5-Craig Key to 62.9-Long Key

- The segment from MM 16.5-Lower Sugarloaf to MM 24.5-Summerland Key
- The segment from MM 47 to MM 54 for safety improvements
- The segment from MM 106 (new trailhead) between U. S. 1 and Card Sound Road
- The segment from MM 83.5-Windley Key to MM 84.8
- The segment from MM 92 to MM 96 (safety improvements)
- The segment from MM 15 to MM 16.5-Lower Sugarloaf Key
- The segment from MM 96 to MM 106-Key Largo

The following historic bridges are also scheduled for reconstruction to be used as part of the Overseas Heritage Trail:

- The Ohio-Missouri Historic Bridge (MM 39.1)
- The Kemp Channel Bridge (MM 23.6)
- The Spanish Harbor Historic Bridge (MM 33)
- The Historic South Pine Channel Bridge (MM 29)

Copies of the FDOT's most recent Five Year Work Program are available at the Florida Department of Transportation offices in Marathon.

SUMMARY

The Land Development Regulations provide clear guidance for assessing the capacity of the roadway system in Monroe County. U.S. 1 is required to maintain at least a LOS of 'C', while County roads must maintain a LOS of 'D'. Level of service is determined using the speed-based methodology developed by the U.S. 1 Level of Service Task Force in 1993. The speed based methodology utilizes the empirical relationship between volume-based capacities and median vehicle speeds. The level of service for U.S. 1

is measured for the overall 108 miles of the roadway as well as for the 24 individual segments making up the roadway in the Keys.

The overall travel speed on U.S. 1 for 2008 is 0.7 mph higher as compared to the 2007 overall travel speed. The reserve speed for the entire length of U.S. 1 is 1.4 miles per hour.

The traffic volumes recorded at Big Pine, Marathon and Upper Matecumbe segments have decreased as compared to the traffic volumes during the 2007 study.

Compared to 2007 data, the travel speeds on 14 of the 24 segments decreased.

They are:

Stock Island (-2.9 mph)	Big Pine (-3.3 mph)
Boca Chica (-2.4 mph)	Bahia Honda (-1.8 mph)
Saddlebunch (-0.6 mph)	Marathon (-0.4 mph)
Sugarloaf (-0.6 mph)	Grassy Key (-0.2 mph)
Cudjoe (-0.8 mph)	L. Matecumbe (-0.1 mph)
Ramrod (-0.4 mph)	Tavernier (-2.3 mph)
Torch (-0.5 mph)	Key Largo (-1.3 mph)

Travel speeds in 10 segments have increased. They are:

Big Coppitt (+0.5 mph)	Tea Table (+0.2 mph)
Summerland Key (+0.8 mph)	U. Matecumbe (+0.7 mph)
7 Mile Bridge (+1.0 mph)	Windley (+1.4 mph)
Duck (+1.5 mph)	Plantation (+0.1 mph)
Long (+1.0 mph)	Cross (+1.2 mph)

Compared to last year's study (2007) results, there are changes in LOS in six of the segments studied. The Boca Chica segment experienced a decrease in LOS from A to B. Sugarloaf segment experienced a decrease in LOS from C to D. Big Pine segment experienced a decrease in LOS from C to D. Bahia Honda segment experienced a decrease in LOS from A to B. The Duck and Long segments experienced an increase in LOS from B to C.

The largest speed increase of 1.5 mph was recorded in the Duck segment, while the largest speed decrease of 3.3 mph was recorded in the Big Pine Key segment.

There were a total of 112 delay events, 5 of which were excluded due to their non-recurring nature. The delay due to traffic signals proved to be the largest delay-causing event this year. The traffic signals caused 94 of the delays, totaling 46 minutes and 31 seconds. The signals caused on average a 1 minute 40 second delay per trip, a 15% decrease compared to 2007.

The construction delay was the second largest delay event in 2008. There were 8 construction delay events resulting in 12 minutes 1 seconds of delay. This is a significant decrease when compared to 2007 construction delay of 23 minutes and 52 seconds.

There were 2 drawbridge opening delays amounting to 10 minutes and 11 seconds. One of the drawbridge delays occurred along the Cross segment and one along the Plantation segment. The drawbridge opening contributes to an average of 22 seconds per trip, a 71% decrease compared to the delays recorded in 2007.

The congestion delay was the third most delay event recorded in 2008. The congestion delay events contributed to a total of 26 minutes and 36 seconds. The congestion contributed to an average of 47 seconds per trip, an 85% increase compared to the delays recorded in 2007. The number of congestion events has decreased from 19 last year to 3 this year.

U. S. 1 segments with reserve speeds of less than or equal to 3 mph should be given particular attention when approving development applications. This year, there are nine segments of U. S. 1 in this category. They are:

Big Coppitt (MM 9.0 - MM 10.5)	L. Matecumbe (MM 73.0 - MM 77.5)
Saddlebunch (MM 10.5 - MM 16.5)	Tea Table (MM 77.5 - MM 79.5)
Sugarloaf (MM 16.5 - MM 20.5)	U. Matecumbe (MM 79.5 - MM 84.0)
Big Pine (MM 29.5 - MM 33.0)	Cross (MM 106.0 - MM 112.5)
Grassy (MM 54.0 - MM 60.5)	

The 2007 study, only Tea Table and Cross Key were below LOS threshold. This year, Big Pine, Tea Table and Cross Key segment are below LOS threshold. The Cross Key segment has been functioning at LOS E since 2007 study because of the construction along this segment. However, the travel speeds on Cross Key segment are likely to improve with the implementation of a high level fixed bridge, completion is anticipated within the next two years. Big Coppitt, Saddlebunch, Sugarloaf, Grassy, Big Pine, Lower Matecumbe, Tea Table and Upper Matecumbe segments do not have any planned improvements to curtail the travel speed reductions. All of these segments have reserve volume or

reserve capacities within the 5% allocation, except for Big Pine Key. The Florida Department of Transportation and/or the Monroe County should conduct a special study along this stretch of U. S. 1 to determine what improvements, if any can be implemented to improve the declining travel speeds.

The signal at the Key Deer Boulevard Intersection in Big Pine (Segment 10) continues to influence the travel speeds on this segment and has experienced 13 delay events compared to the 11 from the 2007 study. Careful consideration has been given to this segment as it has been observed to have fallen below the LOS threshold in the past. In 2008, this segment has fallen below the LOS with no reserve allocation.

All County roads have levels of service above the required standard of 'D'.

III. POTABLE WATER

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

The groundwater from the wellfield is treated at the J. Robert Dean Water Treatment Facility in Florida City, which currently has a maximum water treatment design capacity of 23.8 million gallons per day (MGD). The water treatment process consists primarily of lime softening, filtration, disinfection and fluoridation. The treated water is pumped to the Florida Keys through a 130-mile long pipeline at a maximum pressure of 250 pounds per square inch (psi). The pipeline varies in diameter from 36 inches in Key Largo to 18 inches in Key West. The FKAA distributes the treated water through 648 miles of distribution piping ranging in size from ¾ inch to 12 inches in diameter.

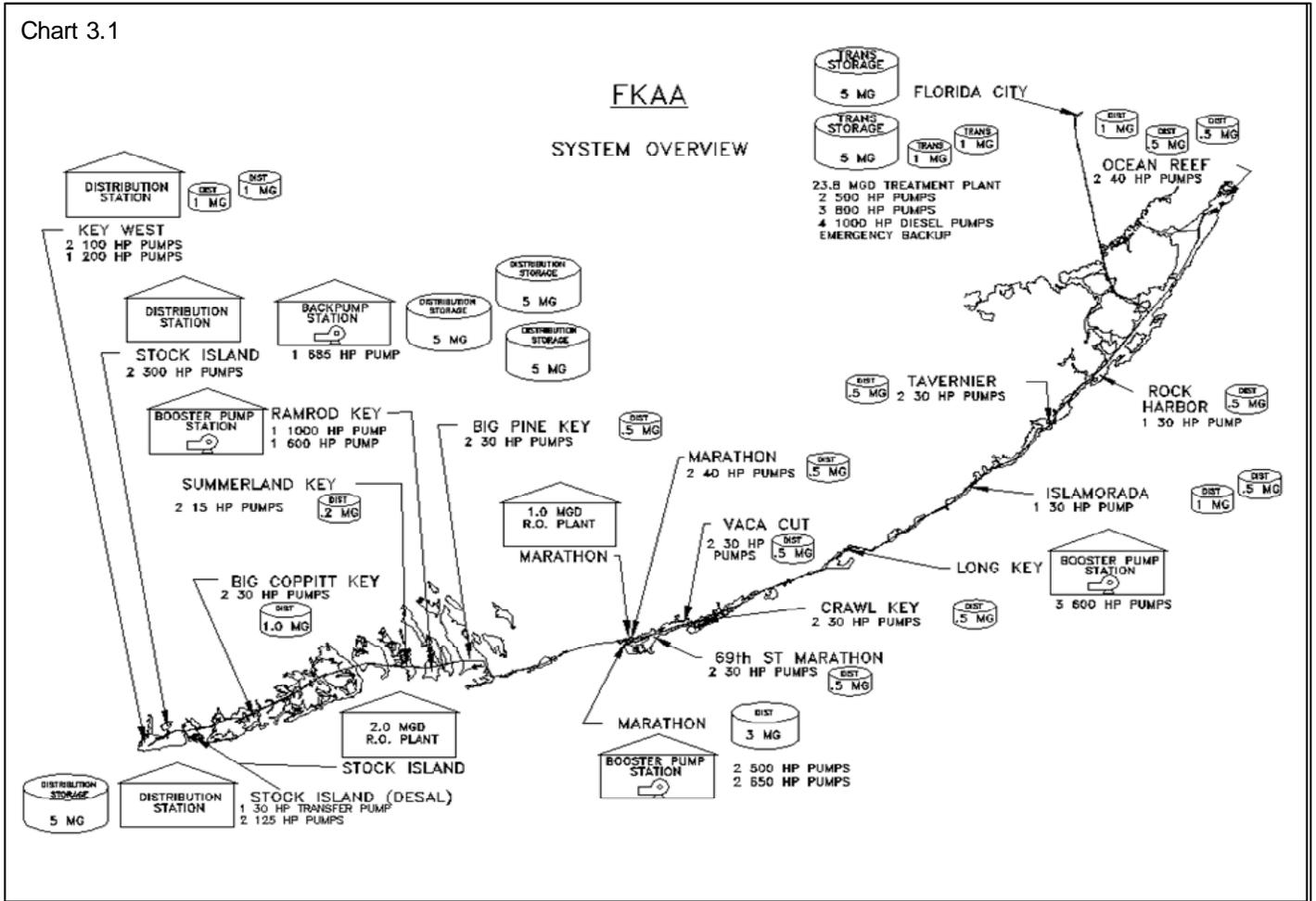
The FKAA maintains storage tank facilities which provide an overall storage capacity of 45.2 million gallons system wide. The sizes of tanks vary from 0.2 to 5.0 million gallons. These tanks are utilized during periods of peak water demand and serve as an

emergency water supply. Since the existing transmission line serves the entire Florida Keys (including Key West), and storage capacity is an integral part of the system, the capacity of the entire system must be considered together, rather than in separate service districts.

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

At present, Key West and Ocean Reef are the only areas of the County served by a flow of potable water sufficient to fight fires. Outside of Key West, firefighters rely on a variety of water sources, including tankers, swimming pools, and salt water either from drafting sites on the open water or from specially constructed fire wells. Although sufficient flow to fight fires is not guaranteed in the County, new hydrants are being installed as water lines are replaced to make water available for fire-fighting purposes and pump station/tank facilities are being upgraded to provide additional fire flow and pressure. A map of the various FKAA facilities in the Keys is shown on Chart 3.1.

Chart 3.1



DEMAND FOR POTABLE WATER

Table 3.2 and Charts 3.3 and 3.4 provide a historical overview of the water demands in the FCAA service area, Water Use Permit (WUP) allocation limits, yearly percent change, and water allocation remaining.

Year	Annual Withdrawal (MG)	% Change	WUP Limit (MG)	WUP +/- Annual Allocation (MG)
1980	2,854.90	-	N/A	N/A
1981	3,101.10	8.60%	N/A	N/A
1982	3,497.30	12.80%	N/A	N/A
1983	3,390.20	-3.10%	N/A	N/A
1984	3,467.50	2.30%	4,450	982.5
1985	4,139.20	19.40%	4,450	310.8
1986	4,641.50	12.10%	5,110	468.5
1987	4,794.60	3.30%	5,110	315.4
1988	4,819.80	0.50%	5,110	290.2
1989	4,935.90	2.40%	5,110	174.1
1990	4,404.10	-10.80%	5,560	1,155.90
1991	4,286.00	-2.70%	5,560	1,274.00
1992	4,461.10	4.10%	5,560	1,098.90
1993	5,023.90	12.60%	5,560	536.1
1994	5,080.00	1.10%	5,560	480
1995	5,140.40	1.20%	5,778	637.6
1996	5,272.00	2.60%	5,778	506
1997	5,356.00	1.60%	5,778	422
1998	5,630.00	5.10%	5,778	148
1999	5,935.30	5.40%	5,778	-157.3
2000	6,228.00	10.60%	5,778	-450
2001	5,626.70	-9.70%	5,778	151.3
2002	6,191.16	10.03%	7,274	1083.29
2003	6,288.29	1.57%	7,274	985.84
2004	6,460.85	2.74%	7,274	813.15
2005	6,471.45	0.16%	7,274	802.55
2006	6,310.00	-2.49%	7,274	964
2007	5,846.32	-7.35%	7,274	1427.68

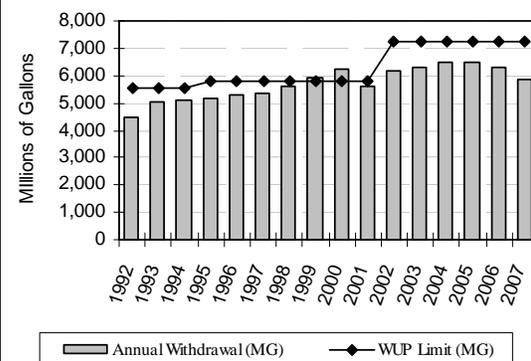
Source: Florida Keys Aqueduct Authority, 2008

In March 2008, South Florida Water Management District (SFWMD) approved the FCAA'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.

This limitation is accomplished by using an alternative water source (blending of the Floridian Aquifer and operation of RO desalination plants), pressure reduction, public outreach, and assistance from municipal agencies in enforcing water conservation ordinances (i.e. irrigation ordinance while the construction of a Floridian Aquifer Reverse Osmosis (RO) water treatment system. This system is designed to withdraw brackish water from the Floridian Aquifer which is approximately 1,000 feet below the ground surface and treat to drinking water standards. The treated water from the Floridian Aquifer will be designed to meet current and future water demands. The RO water treatment system is expected to be completed in 2009/2010 and provide an additional 6.0 MGD of potable water.

**Chart 3.3
FCAA Annual Water Withdrawal**



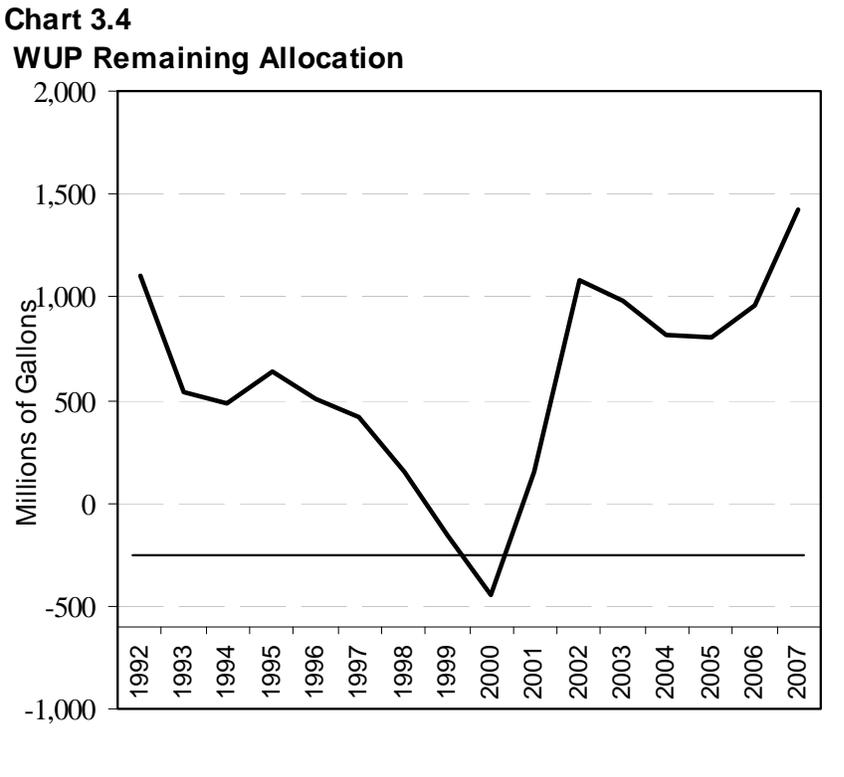


Table 3.5. The maximum monthly water demand of 567.15 MG shown in Figure 3.5 occurred in March of 2007.

Although water shortage/drought conditions and water restrictions imposed by SFWMD were effect in 2008, preliminary figures and projections for 2008 indicate a slight increase to an annual average daily demand of 16.28 MGD and decrease in maximum monthly

Demand for potable water is influenced by many factors, including the size of the permanent residents, seasonal populations and day visitors, the demand for commercial water use, landscaping practices, conservation measures, and the weather. In 2007, the FKAAs distributed an annual average day of 16.02 MGD and a dry season average day of 16.62 MGD as shown in

demand 547.01 MG as compared to 2007 figures. Also, Figure 3.5 provides the water treatment capacities of the RO plants. The RO plants do not require a WUP because the water source is seawater. However, the RO plants are available for emergency water supply.

	FKAA Permit Thresholds	2007 Pumpage	2008 Water Demand Projected
Annual Allocation			
Average Daily Withdrawal	23.98	16.02	16.28
Maximum Monthly Withdrawal	809.01	567.15	542.01
Annual Withdrawal	8,751	5,846	5,942
Biscayne Aquifer Annual Allocation/Limitations			
Average Daily Withdrawal	17.79	15.81	16.14
Average Dry Season Withdrawal*	17.00	16.62	16.02
Annual Withdrawal	6,492	5,771	5,891
Emergency RO WTP Facilities			
Kermit L. Lewin Design Capacity	2.00	0	0
Marathon RO Design Capacity	1.00	0	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, 2008			

Table 3.6 indicates the amount of water available on a per capita basis. Based on Functional Population and permitted water withdrawal from Biscayne Aquifer, the average water available is above 100 gallons per capita (person). The 100 gallons per person per day standard is commonly accepted as appropriate, and reflected in Policy 701.1.1 of the Year 2010 Comprehensive Plan.

planned by the FKAA. The total cost of the scheduled improvements is approximately \$85 million over the next 5 years. These projects are to be funded by the newly revised water rate structure, long-term bank loans, and grants.

In 1989 FKAA embarked on the Distribution System Upgrade Program to replace approximately 190 miles of galvanized lines throughout the Keys.

FKAA continues to replace and upgrade its distribution system throughout the Florida Keys and the schedule for these upgrades is reflected in their long-range capital improvement plan. The FKAA's Water Distribution System Upgrade Plan calls for the upgrade or replacement of approximately 20,000 feet of water main during fiscal year 2008.

Year	Functional Population¹	Average Daily Withdrawal (gallons)²	Average Water Available Per Capita (gallons)²
1998	151,163	15,830,000	104.72
1999	151,396	15,830,000	104.56
2000	153,080	15,830,000	103.41
2001	153,552	15,830,000	103.09
2002	154,023	19,930,000	129.40
2003	154,495	19,930,000	129.00
2004	154,966	19,930,000	128.61
2005	155,438	19,930,000	128.22
2006	155,937	19,930,000	127.81
2007	156,436	19,930,000	127.40
2008	156,935	17,786,301	113.34

Source: 1. Projected Permanent and Seasonal County-wide Population Update (1990-2015)- Monroe County Planning Department, 2007
2. Florida Keys Aqueduct Authority, 2008

In addition to improvements to the distribution system,

FKAA also has significant improvements planned for the water supply and treatment system. FKAA is expanding the treatment capacity at the J. Robert Dean Water Treatment Plant to meet future water demands by construction of Floridian Aquifer supply wells and a 6.0 MGD RO Water Treatment Facility. Also, the FKAA is planning improvements to the transmission and distribution pump stations to improve flow/pressure.

IMPROVEMENTS TO POTABLE WATER FACILITIES

FKAA has a 20-year Water System Capital Improvement Master Plan for water supply, water treatment; transmission mains and booster pump stations, distribution mains, and facilities and structures, information technology, reclaimed water system, and Navy water system. The master plan was revised in 2008 to include the critical projects as shown in Figure 3.7 summarized below. Figure 3.7 shows the schedule and costs projected for the capital improvements to the potable/alternative water systems

TABLE 3.7						
FKAA PROJECTED 5 YEAR CAPITAL IMPROVEMENT PLAN						
	2008	2009	2010	2011	2012	Total
Water Supply						
Costs	2,000,000	1,700,000				3,700,000
Water Treatment						
Costs	15,763,000	22,265,000	2,200,000	1,300,000		41,528,000
Transmission Mains and Booster Pump Stations						
Costs	230,000	4,500,000	4,800,000	3,000,000		12,530,000
Distribution Mains						
Costs	2,200,000	1,200,000	1,000,000			4,400,000
Facilities and Structures						
Costs	5,000,000	3,095,000	3,000,000	1,600,000		12,695,000
Information Technology						
Costs	2,200,000	753,000				2,953,000
Reclaimed Water System						
Costs	3,663,500	500,000	1,000,000			5,163,500
Navy Water System						
Costs		600,000	600,000	600,000	600,000	2,400,000
TOTALS	31,056,500	34,613,000	12,600,000	6,500,000	600,000	85,369,500

Source: Florida Keys Aqueduct Authority, 2008

SUMMARY

In summary, the average daily water demand is expected to slightly increase to 16.28 MGD over last year's of 16.02 MGD due to water shortage/drought conditions/water restriction and water conservation efforts. In conclusion with the construction of the new water supply wells and RO water treatment facility that will provide an additional capacity of 6.0 MGD, and the ability to operate the 3.0 MGD RO desalination plants for additional capacity, there is an adequate supply of water to meet current and future demand.

IV. EDUCATION FACILITIES

The Monroe County School Board oversees the operation of 13 public schools located throughout the Keys. Their data includes both unincorporated and incorporated Monroe County. The system consists of three high schools, one middle school, three middle/elementary schools, and

make up Islamorada in the Upper Keys (Subdistrict 1), while the Land Development Regulations place them in the Middle Keys (Subdistrict 2). Also, the School Board includes Key West in the Lower Keys (Subdistrict 3), while the Land Development Regulations do not consider Key West. The data presented in this section are based on the School Board's subdistricts.

Subdistrict 1	Subdistrict 2	Subdistrict 3
Coral Shores High School (9-12) Key Largo Elementary/Middle School (K-8) Plantation Key Elementary/Middle School (K-8)	Marathon Middle/High School (7-8) Stanley Switlik Elementary (K-6)	Key West High School (9-12) Horace O'Bryant Middle School (6-8) Adams Elementary (K-5) Archer/Reynolds Elementary (K-5) Poinciana Elementary (K-5) Sigsbee Elementary (K-5) Big Pine Key Neighborhood School (Pre K-9) Sugarloaf Elementary/Middle School (K-8)

Source: Monroe County School Board

six elementary schools. Each school offers athletic fields, computer labs, a cafeteria that serves as both a cafeteria and auditorium, and bus service. Approximately 54 busses transport about 4,316 students to and from school each day. In addition to these standard facilities, all high schools and some middle schools offer gymnasiums.

Subdistrict 1 covers the Upper Keys from Key Largo to Lower Matecumbe Key and includes one high school and two elementary/middle schools, as shown in Table 4.1. Subdistrict 2 covers the Middle Keys from Long Key to the Seven Mile Bridge and includes one high/middle school and one elementary school. Subdistrict 3 covers the Lower Keys, from Bahia Honda to Key West and includes one high school, one middle school, one elementary/middle school, and five elementary schools.

The school system is divided into three subdistricts that are similar, but not identical to the service areas outlined in Section 114-2(a)(4) of the Land Development Regulations. One difference is that the School Board includes Fiesta Key and the islands that

DEMAND FOR SCHOOL FACILITIES

The population of school age children in Monroe County is influenced by many factors, including the size of the resident and seasonal populations,



national demographic trends (such as the “baby boom” generation), that result in decreasing household size, economic factors such as military employment, the price and availability of housing, and the movements of seasonal residents. Student Demographics including District Charter and Pace Center Schools had district enrollment at 8,231. This is a minimal decline from last year’s enrollment of 8,303. Table 4.2 breaks down the enrollment by Grade Level.

The School Board collects enrollment data periodically throughout the year. Counts taken in the winter are typically the highest, due to the presence of seasonal residents (Table 4.2).

	01	02	03	04	05	06	07	08	09	10	11	12	KG	PK	Total
Big Pine Neighborhood Charter School	21	14	18	14	11	0	0	0	0	0	0	0	14	36	128
Coral Shores High School	0	0	0	0	0	0	0	1	232	207	177	144	0	0	761
Gerald Adams Elementary School	77	76	77	61	74	0	0	0	0	0	0	0	58	65	488
Glynn Archer elementary School	43	39	29	39	33	0	0	0	0	0	0	0	45	83	311
Horace O'Bryant Middle School	0	0	0	0	0	224	252	233	0	0	0	0	0	0	709
Key Largo Elementary	92	95	101	86	98	113	100	116	0	0	0	0	88	60	949
Key West High School	0	0	0	0	0	0	0	0	448	368	309	277	0	0	1,402
Keys Center	0	0	0	0	0	0	0	0	1	5	3	3	0	0	12
Marathon High School	0	0	0	0	0	72	87	95	107	95	96	80	0	0	632
Monroe County DJJ	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Montessori Charter - Key West	14	20	20	18	11	0	0	0	0	0	0	0	0	0	83
Montessori Island Charter	28	24	23	26	15	14	11	0	0	0	0	0	22	7	170
Plantation Key Elementary School	50	49	58	54	57	62	72	80	0	0	0	0	48	9	539
Poinciana Elementary School	93	104	108	95	101	0	0	0	0	0	0	0	94	18	613
Sigsbee Elementary School	45	35	47	27	34	0	0	0	0	0	0	0	43	27	258
Stanley Switlik Elementary School	71	69	82	73	77	0	0	0	0	0	0	0	74	54	500
Sugarloaf Elementary School	51	54	66	62	67	94	102	91	0	0	0	0	56	32	675
Total	585	579	629	555	578	579	625	616	788	675	585	504	542	391	8,231

The following table (Table 4.3) shows the fall school enrollments from 1992 to 2007 subdistrict as taken from the School Board's Fall Student Survey.

enrollments while Table 4.5 shows each school's capacity and the projected number of students.

TABLE 4.3 FALL SCHOOL ENROLLMENTS 1997-2007											
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Subdistrict 1											
Coral Shores (H)	701	757	758	800	810	801	811	619	760	790	792
Key Largo (E/M)	1,273	1,253	1,183	1,173	1117	1112	1073	992	985	989	940
Plantation (E/M)	703	675	643	668	647	641	650	548	617	618	584
<i>Subtotal</i>	<i>2,677</i>	<i>2,685</i>	<i>2,584</i>	<i>2,641</i>	<i>2,574</i>	<i>2,554</i>	<i>2,534</i>	<i>2,159</i>	<i>2362</i>	<i>2,397</i>	<i>2,316</i>
Subdistrict 2											
Marathon (H)	612	637	660	679	682	693	654	596	581	614	573
Switlik (E)	815	834	791	671	687	714	676	624	600	614	617
<i>Subtotal</i>	<i>1,427</i>	<i>1,471</i>	<i>1,451</i>	<i>1,350</i>	<i>1,369</i>	<i>1,407</i>	<i>1,330</i>	<i>1,220</i>	<i>1181</i>	<i>1,228</i>	<i>1,190</i>
Subdistrict 3											
Key West (H)	1,327	1,372	1,344	1,305	1,327	1301	1382	1303	1327	1394	1,368
O'Bryant (M)	863	899	814	838	854	874	873	800	781	788	761
Sugarloaf (E/M)	960	937	913	941	854	901	904	718	767	777	717
Adams (E)	499	574	566	513	544	598	591	291	492	504	491
Archer (E)	520	493	460	393	376	386	382	360	354	341	306
Poinciana (E)	608	620	632	599	586	583	547	536	526	537	598
Sigsbee (E)	404	423	393	358	363	326	295	237	250	264	245
Sands	58	1	0	0	0	0	0	0	0	0	0
<i>Subtotal</i>	<i>5,239</i>	<i>5,319</i>	<i>5,122</i>	<i>4,947</i>	<i>4,904</i>	<i>4,969</i>	<i>4,974</i>	<i>4,245</i>	<i>4,497</i>	<i>4,605</i>	<i>4,486</i>
Total	9,343	9,475	9,157	8,938	8,847	8,930	8,838	7,624	8,040	8,230	7,992

LEVEL OF SERVICE FOR SCHOOL FACILITIES

The Monroe County Land Development Regulations do not identify a numeric level of service standard for schools (such as 10 square feet of classroom space per student). Instead, Section 114-2(a)(4) of the regulations requires classroom capacity "adequate" to accommodate the school-age children generated by proposed land development.

The School Board uses recommended capacities provided by the Florida Department of Education (FDOE) to determine each school's capacity. All schools have adequate reserve capacity to accommodate the impacts of the additional land development activities projected for 2006-2007 school year. Tables 4.3 and 4.4 show fall school

TABLE 4.4 FALL SCHOOL ENROLLMENTS FOR DISTRICT CHARTER SCHOOLS AND PACE CENTERS				
Charter School	2004	2005	2006	2007
Big Pine Neighborhood Charter	22	63	73	105
Monroe County DJJ	4	3	7	2
Montessori Charter - KW	48	60	62	74
Montessori Island Charter	137	149	152	153
PACE - Lower Keys	16	31	31	31
PACE - Upper Keys	19	26	25	0
TOTAL	246	332	350	365

Lastly, Figure 4.6 shows Locations, Capacities, and Planned Utilization Rates of current Educational Facilities based on state requirements. The capacity runs approximately 90-95% of student stations which vary in number from elementary, middle and high school due to class size reduction. The class size reduction was a result of a state constitutional amendment setting limits for the maximum allowable number of student in a class by the start of the 2010-11 school year that was passed by Florida's voters in November 2002.

Grade	Actual 2007-2008	Projected 2008-2009	Projected 2009-2010	Projected 2010-2011	Projected 2011-2012	Projected 2012-2013	Projected 2013-2014	Projected 2014-2015	Projected 2015-2016
PreK	61	62	61	57	55	54	53	53	53
Grade K	546	590	641	651	597	562	542	529	518
Grade 1	538	543	598	648	659	605	567	545	529
Grade 2	584	596	615	667	712	713	646	596	563
Grade 3	514	593	623	644	694	740	744	676	622
Grade 4	534	479	562	592	613	661	704	710	648
Grade 5	569	537	493	575	602	620	665	704	706
Grade 6	574	588	569	520	602	628	644	689	726
Grade 7	613	591	617	598	549	623	654	670	713
Grade 8	687	616	607	627	605	553	618	647	659
Grade 9	739	747	694	678	697	676	623	679	713
Grade 10	631	652	675	629	608	616	596	547	583
Grade 11	577	551	579	598	560	537	540	523	481
Grade 12	566	562	549	570	582	538	511	506	485
TOTAL	7,732	7,707	7,884	8,056	8,134	8,128	8,108	8,073	7,997
Grade Level Summary									
Grade	Actual 2007-2008	Projected 2008-2009	Projected 2009-2010	Projected 2010-2011	Projected 2011-2012	Projected 2012-2013	Projected 2013-2014	Projected 2014-2015	Projected 2015-2016
PreK-5	3,344	3,400	3,594	3,834	3,932	3,955	3,922	3,813	3,639
6-8	1,874	1,795	1,792	1,746	1,756	1,805	1,917	2,005	2,097
9-12	2,514	2,512	2,497	2,476	2,446	2,368	2,270	2,256	2,261
PreK - G12	7,732	7,707	7,884	8,056	8,134	8,128	8,108	8,073	7,997

Enrollment figures for the 2008-2009 school year and projected enrollment figures for the 2012-2013 school year, show that none of the schools are expected to exceed their recommended capacity. School facility plans are based on enrollment projections 5 years out for which Table 4.6 confirms adequate capacity by showing that projected utilization will be between 50 to 100 percent. If utilization was projected to exceed one hundred percent then there would not be sufficient capacity.

This study focused on land requirements for each of the schools expansion needs. Overall, the County has sufficient vacant and appropriately zoned land to meet the area's current and future school siting needs. Figure 4.7 is a table showing the results of the investigation completed by the Monroe County School Board and Planning Department in 1998 and updated in 2008.

TABLE 4.6
LOCATIONS, CAPACITIES AND PLANNED UTILIZATION RATES OF CURRENT EDUCATIONAL FACILITIES 2006-2011

LOCATIONS	2008-2009 Satis. Stu. Sta.	Actual 2008-2009 FISH Capacity	Actual 2007-2008 COFTE	# Class Rooms	Actual Average 2008-2009 Class Size	Actual 2008 - 2009 Utilization	New Stu. Capacity	New Rooms to be Added / Removed	Projected 2012-2013 COFTE	Projected 2012-2013 Utilization	Projected 2012-2013 Class Size
CORAL SHORES SENIOR HIGH	1,130	961	778	51	15	81.00%	0	0	821	85.00%	16
HARRIS ELEMENTARY	396	0	0	24	0	0.00%	0	0	0	0.00%	0
KEY WEST SENIOR HIGH	1,508	1,433	1,338	62	22	93.00%	0	0	1,350	94.00%	22
HORACE O'BRYANT MIDDLE	1,132	1,019	753	50	15	74.00%	0	0	790	78.00%	16
MARATHON SENIOR HIGH	1,523	1,371	567	65	9	41.00%	0	0	666	49.00%	10
MAY SANDS SCHOOL	30	30	21	2	10	70.00%	0	0	0	0.00%	0
GLYNIS ARCHER ELEMENTARY	580	580	245	30	8	42.00%	0	0	361	62.00%	12
POINCIANA ELEMENTARY	641	641	591	34	17	92.00%	0	0	644	100.00%	19
SIGSBEE ELEMENTARY	522	522	222	27	8	43.00%	0	0	0	0.00%	0
SUGARLOAF SCHOOL	1,332	1,199	765	61	13	64.00%	0	0	806	67.00%	13
STANLEY SWITIK ELEMENTARY	907	907	565	47	12	62.00%	0	0	591	65.00%	13
KEY LARGO SCHOOL	1,383	1,245	889	67	13	71.00%	0	0	942	76.00%	14
GERALD ADAMS ELEMENTARY	649	649	452	34	13	70.00%	0	0	581	90.00%	17
PLANTATION KEY SCHOOL	723	651	548	35	16	84.00%	0	0	576	88.00%	16
VACANT	0	0	0	0	0	0.00%	0	0	0	0.00%	0
	12,456	11,208	7,732	589	13	68.99%	0	0	8,128	72.52%	14

IMPROVEMENTS TO SCHOOL FACILITIES

Florida Statute 163.3177 requires counties to identify lands and zoning districts needed to accommodate future school expansions. In order to bring the Monroe County Year 2010 Comprehensive Plan into compliance with this statute, the Monroe County Planning Department and School Board conducted research in 1998 to determine the existing school capacity and the potential need for future educational facilities in Monroe County.

The specific public school capital improvements for the public schools in the County are discussed below.

Plantation Key Elementary / Middle School (K-8)

Currently in the design process to replace the existing elementary building and adding a new gym

Horace O'Bryant Middle School

Currently in the design phase to replace the old middle school building and cafeteria

Renovate or Relocate Administrative Facility

The District is considering using the existing property for affordable housing and moving to another property

Sugarloaf Elementary and Middle School

The District is considering using two acres of the existing property for affordable housing

Upper Keys Maintenance Building

Remodel an existing building on site to allow for the disposal of two temporary office trailers

Founder Park Ball Field Lights

Add lights to the ball field so games could be played at night

V. SOLID WASTE FACILITIES

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 August 1990, the County entered into a contract with Waste Management, Inc. (WMI) to transport the solid waste to the contractor's private landfill in Broward County. 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 identified in Table 5.1.

Upper Keys	Middle Keys*	Lower Keys
Keys Sanitary Service & Ocean Reef Club, Inc.	Mid-Keys Waste, Inc.	Waste Management of Florida, Inc.
Source: Monroe County Solid Waste Management Department, 2008		
*Onyx currently serves the Village of Islamorada.		

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 could be opened if necessary. Table 5.2 below summarizes the status of the County's landfills 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
Source: Monroe County Solid Waste Management Department			

The County's recycling efforts began in October 1994, when curbside collection of recyclable materials was made available to all County residences and businesses. Recycling transfer centers have been established in the Lower, Middle, and Upper Keys. Some agencies are mulching and reusing yard waste, and private enterprises are collecting aluminum and other recyclable materials.

While goods, waste oil, batteries and tires are handled separately, with collection sites operating at each landfill/transfer station site. The County collects household hazardous waste at the Long Key and Cudjoe Key Transfer Stations, in addition to the Key Largo Recycling Yard. Hazardous waste from conditionally exempt small quantity generators is collected once a year, as part of an Amnesty Days program. An electronics recycling program is in the initial

phases, and will be conducted in cooperation with the Household Hazardous Waste collections.

Demand for Solid Waste Facilities

For solid waste accounting purposes, the County is divided into three districts which are similar, but not identical to the service areas outlined in Section 114-2(b)(2) of the Land Development Regulations (LDRs). One difference is that Windley Key, which is considered to be in the Upper Keys district in the LDRs, is included in the Middle Keys district for purposes of solid waste management. Another difference from the LDRs is that the cities of Layton and Key Colony Beach are included in the Middle Keys district for solid waste management.

Although Islamorada incorporated on December 31, 1997, the municipality continued to participate with Monroe County in the contract with Waste Management Inc. until September 30, 1998. Data for Monroe County solid waste generation is calculated by fiscal year which runs from October 1 to September 30. Therefore, the effects of Islamorada's incorporation on solid waste services appear in the 1999 data. Data for the City of Key West and the Village of Islamorada is not included in this report.

Marathon's incorporation was effective on October 1, 2000 and they continue to participate in the Waste Management Inc. contract. Effects of the incorporation, if any, would have appeared in the 2001 data.

Demand for solid waste facilities is influenced by many factors, including the size and income levels of resident

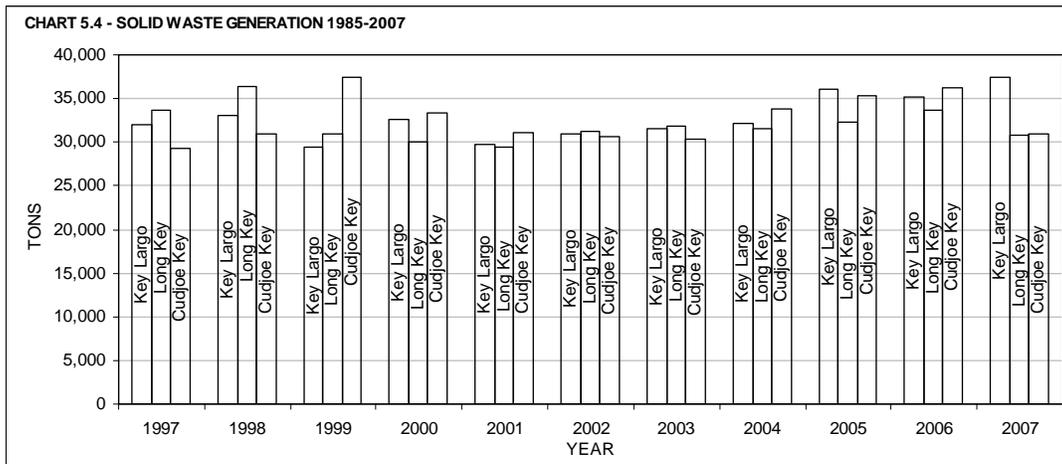
and seasonal populations, the extent of recycling efforts, household consumptive practices, landscaping practices, land development activities, and natural events such as hurricanes and tropical storms. Analyses provided by a private research group indicate that the average single-family house generates 2.15 tons of solid waste per year. Mobile homes and multifamily units, having smaller yards and household sizes, typically generate less solid waste (1.96 and 1.28 tons per year, respectively).

Table 5.3 and Chart 5.4 summarize the past 10 years of solid waste generated by each district. The totals for each district are a combination of four categories of solid waste: garbage, yard waste, bulk yard waste and other (includes construction and demolition debris).

Year	Key Largo	Long Key	Cudjoe Key	Total	% Change
1997	32,003	33,625	29,350	94,978	4.10%
1998	33,119	36,440	30,920	100,479	5.79%
1999	29,382	30,938	37,431	97,751	-2.71%
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%

Note: The figures from 1985 to 1991 include white goods, tires, construction debris, and yard waste. They do not include source-separated recyclables.

Source: Monroe County Solid Waste Management Department



From 1996 onward the amount of solid waste generated had been on the increase until 1998, when it reached its highest level yet. This increase is attributed to the debris associated with Hurricane George, which made landfall in the Keys in September of 1998. A portion of the decline seen from 1998 to 1999 may be attributable to the reduction in solid waste collected from Islamorada. The continuing decline shown in 2000 and 2001 is due to a reduction in construction and demolition debris being brought to the County transfer stations following the implementation of the Specialty Hauler ordinances. Generation continues to rise again from 2002 through 2005 with a 6.2% increase between 2004 and 2005. A very active hurricane season in 2005 could have caused increased generation. Yearly fluctuations are expected to continue due to increasing storm activity and seasonal population changes.

accommodate all existing and approved development for at least three (3) years. The regulations specifically recognize the concept of using disposal sites outside Monroe County.

As of 2008, Waste Management Inc., reports a reserve capacity of approximately 26.91 million cubic yards at their Central Sanitary Landfill in Broward County, a volume sufficient to serve their clients for another seventeen (17) years. Table 5.5 on the shows the remaining capacity at the Central Sanitary Landfill.

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

LEVEL OF SERVICE FOR SOLID WASTE FACILITIES

Section 114-2(a)(2) of the Land Development Regulations requires that the County maintain sufficient capacity to

	2002	2003	2004	2005	2006	2007	2008
Remaining Capacity (volume in millions of cubic yards)	34.2 yd ³	32.3 yd ³	30.5 yd ³	31.2 yd ³	26 yd ³	22.62 yd ³	26.91 yd ³
Remaining Capacity (time)	14 years	14 years	14 years	12 years	7 years	6 years	17 years

Source: Monroe County Solid Waste Management Department

VI. PARKS AND RECREATION

An annual assessment of parks and recreational facilities is not mandated by Section 114-2 of the Monroe County Land Development Regulations, though it is required for concurrency management systems by the Florida Statutes. The following section has been included in the 2008 Public Facilities Capacity Assessment Report for informational purposes only.

Level of Service standards for parks and recreational facilities are not mentioned in the Land Development Regulations, but are listed in Policy 1201.1.1 of the Monroe County Year 2010 Comprehensive Plan.

PARKS AND RECREATIONAL FACILITIES LEVEL OF SERVICE STANDARD

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

- 0.82 acres of resource-based recreation area per 1,000 functional population
- 0.82 acres of activity-based recreation area per 1,000 functional population

The LOS standards for each type of recreation area can be applied to unincorporated Monroe County as a whole or to each sub-area (Upper, Middle, and Lower Keys) of unincorporated Monroe County. In determining how to apply the LOS standard for each type of recreation

area, the most important aspect to consider is the difference between resource- and activity-based recreation areas. Resource-based recreation areas are established around existing natural or cultural resources of significance, such as beach areas or historic sites. Activity-based recreation areas can be established anywhere there is sufficient space for ball fields, tennis or basketball courts, or other athletic events.

Since the location of resource-based recreation areas depends upon the natural features or cultural resources of the area and cannot always be provided near the largest population centers, it is reasonable to apply the LOS standard for resource-based areas to all of unincorporated Monroe County. Since activity-based recreation areas do not rely on natural features or cultural resources for their location and because they can be provided in areas with concentrated populations, it is more appropriate to apply the LOS standard to each subarea of the Keys.

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

An inventory of Monroe County's parks and recreational facilities are listed on

Table 6.1. The facilities are grouped by subarea and are classified according to the principal use (resource or activity).

There are currently 97.96 acres of resource-based recreation areas either owned or leased by Monroe County as shown in Table 6.1.

TABLE 6.1			
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	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, one-eight foot wide paved pathway for walking, one community building with restrooms / meeting room / concession and storage (11,500 sq. ft total), four bocce ball courts, ninety-eight space parking area with four handicap spaces inclusive		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		87.17	59.97
UNINCORPORATED MONROE COUNTY TOTAL		97.96	118.25

Source: Monroe County Planning Department

Using the functional population projection for 2007 of 70,432 persons in unincorporated Monroe County, and the LOS standard of 0.82 acres per 1,000 functional population, the demand for resource based recreation areas is approximately 57.75 acres. The county currently has enough resource-based land to meet the level of service with an extra 40.21 acres of reserve capacity (Table 6.2).

This total represents 47.98 acres in the Upper Keys (including Plantation Key in Islamorada), 10.3 acres in the Middle Keys (including Marathon), and 49.4 acres in the Lower Keys. Based on a LOS standard of 0.82 acres of activity-based recreation areas per 1,000 functional population in unincorporated Monroe County (35,041-Upper, 3,666-middle, and 31,725-Lower), the demand for these recreation areas are 28.73, 3.01 and 26.01 acres for the

TABLE 6.2 - Level of Service Analysis for Resource-Based Recreation Areas				
LEVEL OF SERVICE ANALYSIS FOR RESOURCE-BASED RECREATION AREAS				
Subarea	2007 Functional Population	Total Resource-based Acreage Available	Demand (.82 AC/1,000 people)	Reserve Capacity (in acres)
Upper Keys Total	35,041	5.79	28.73	-22.94
Middle Keys Total	3,666	5	3.01	1.99
Lower Keys Total	31,725	87.17	26.01	61.16
Total	70,432	97.96	57.75	40.21
Source: Monroe County Planning Department, Based on Unincorporated Monroe County Functional Population				
Note: Population figures were updated based on 2007 Permanent Population Updates. However data was not available by subarea therefore "Subarea" was extrapolated based on percentages of 2006 data for subarea. Seasonal did not change, and the percentage of each category for 2006 remained the same however the total overall permanent population figure changed				

LEVEL OF SERVICE ANALYSIS FOR ACTIVITY-BASED RECREATION AREAS

The Year 2010 Comprehensive Plan allows activity-based recreational land found at educational facilities to be counted towards the park and recreational concurrency.

There is currently a total of 107.68 acres of developed activity-based recreation areas either owned or leased by Monroe County and the Monroe County School Board.

Upper, Middle, and Lower Keys, respectively.

There is currently a reserve of 19.25, 7.29, and 23.39 acres (Upper, Middle, and Lower) for a total of 49.93 acres of activity-based recreation areas for all of unincorporated Monroe County (Table 6.3).

TABLE 6.3				
LEVEL OF SERVICE ANALYSIS FOR ACTIVITY-BASED RECREATION AREAS				
Subarea	2007 Functional Population	Total Activity-based Acreage Available	Demand (.82 AC/1,000 people)	Reserve Capacity (in acres)
Upper Keys Total	35,041	47.98	28.73	19.25
Middle Keys Total	3,666	10.3	3.01	7.29
Lower Keys Total	31,725	49.4	26.01	23.39
Total	70,432	107.68	57.75	49.93
Source: Monroe County Planning Department, Based on Unincorporated Monroe County Functional Population				
Note: Population figures were updated based on 2007 Permanent Population Updates. However data was not available by subarea therefore "Subarea" was extrapolated based on percentages of 2006 data for subarea. Seasonal did not change, and the percentage of each category for 2006 remained the same however the total overall permanent population figure changed				

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. Next year's report will reflect this and it will be added to the inventory list.

ACQUISITION OF ADDITIONAL RECREATION AREAS

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

1. Development of park and recreational facilities on land that is already owned by the county but that is not being used for park and recreation purposes;
2. Acquisition of new park sites;

3. Interlocal agreements with the Monroe County School Board that would allow for the use of existing school-park facilities by county residents;
4. Interlocal agreements with incorporated cities within Monroe County that would allow for the use of existing city-owned park facilities by county residents;
5. Intergovernmental agreements with agencies of state and federal governments that would allow for the use of existing publicly-owned lands or facilities by county residents; and
6. Long-term lease arrangements or joint use agreements with private entities that would allow for the use of private park facilities by county residents.

To date, the county has employed two of these six mechanisms - acquisition of new park sites and interlocal agreements with the School Board. However, these agreements need to be examined more closely to determine the amount of available acreage for calculating concurrency. Furthermore, Monroe County cannot rely upon joint use facilities to eliminate existing deficiencies or meet future LOS requirements until interlocal, intergovernmental, or private use joint agreements are executed. For instance, the County is currently reviewing and revising the interlocal agreements with the Monroe County School Board to provide greater day time accessibility for students to public recreational facilities. Once executed, these agreements will ensure that the facilities will be available for general use to Monroe County residents to meet peak season, weekend, or time of day recreation demands.

The Facility (Richard A. Heyman Environmental Protection Facility) is currently permitted for 10 mgd, and is operating on a (3) monthly average of 4.303 mgd, (12) month daily average flow of 6.218. Therefore there is sufficient treatment to support this project. If you have other questions please feel free to contact me.

Gary W. Bowman
General Services Director
City of Key West
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