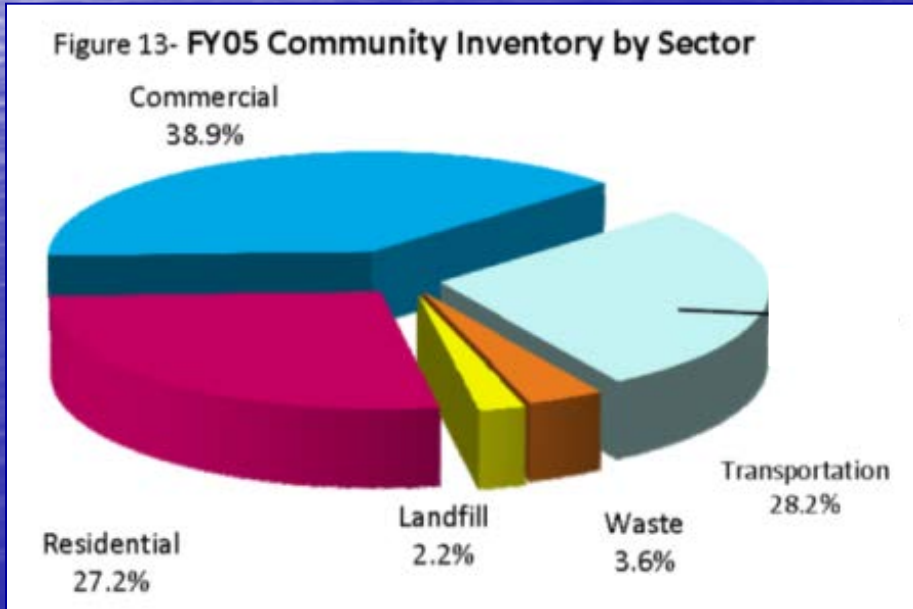
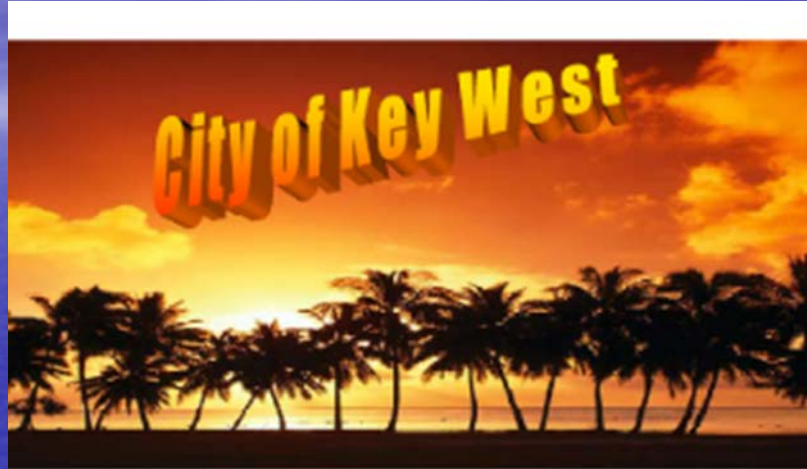


# City Sustainability



Reduce GHG by  
15% by Dec 2015

# 12 Step Program

Jan: Resolutions



Feb: Water Quality



Mar: Transportation



Apr: Water Conservation



May: Youth Leadership



June: Green Business



# 12 Step Program

Feb: Water Quality

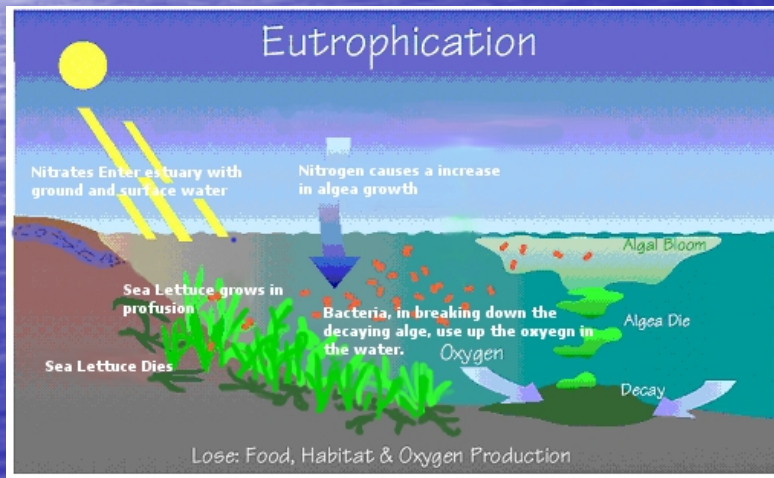


## Partners:

Florida Keys National Marine Sanctuary, FL DEP, Reef Relief, The Nature Conservancy, Key West Wildlife Center, City Marinas,

## Top 3 Actions

1. No Fish Cleaning into marinas/canals
2. Protect Stormwater Drains
3. Fertilize Appropriately



**Code Compliance: (305) 809-3740**

# 12 Step Program

[www.PreserveIslandLife.com](http://www.PreserveIslandLife.com)

Pledge: Newsletter



The image shows a Facebook page for the "City of Key West - Preserve Island Life Campaign". The background is a large photograph of a palm tree against a blue sky. On the left, there is a circular logo with silhouettes of two people on bicycles and the text "KEY WEST" and "PRESERVE ISLAND LIFE". The page title is "City of Key West - Preserve Island Life Campaign" with 120 likes and 15 people talking about it. Below the title, there is a description: "Government Organization Dedicated to helping individuals, businesses and organizations live lighter and save money." There are navigation tabs for "About", "Photos", "Likes", and "Events". The "Likes" tab is active, showing a thumbs-up icon and the number "120". The "Events" tab is also visible, showing a thumbs-up icon and the number "439".

**KEY WEST**  
PRESERVE ISLAND LIFE

**City of Key West - Preserve Island Life Campaign**  
120 likes · 15 talking about this

Government Organization  
Dedicated to helping individuals, businesses and organizations live lighter and save money.

About Photos Likes Events

120

439



# City of Key West Pump Out Workshop



# Water Quality Problems in 1999

- In 1999, every major beach in Key West was posted with a health advisory for nearshore waters unsafe for swimming.
  - Leaky sewer pipes on public and private property
  - Fecal bacteria flushed into nearshore waters after heavy rains
  - Sewer discharge directly from vessels directly into outstanding Florida waters

# What Was Done – Improve Sewer System

- The City accelerated a \$67.3 million sewer capital improvement program into less than 3 years.
- Wastewater Treatment Plant was upgraded to AWT
- All private property sewer laterals tested
- City sewer lines replaced
- Over 80% of Key West voters approved issuing bonds to help pay for repairs
- Over 8,000 private properties repaired their sewer lines at a cost of over \$17 million.
- New ordinances for sewer pump out at marinas and zero discharge policies established

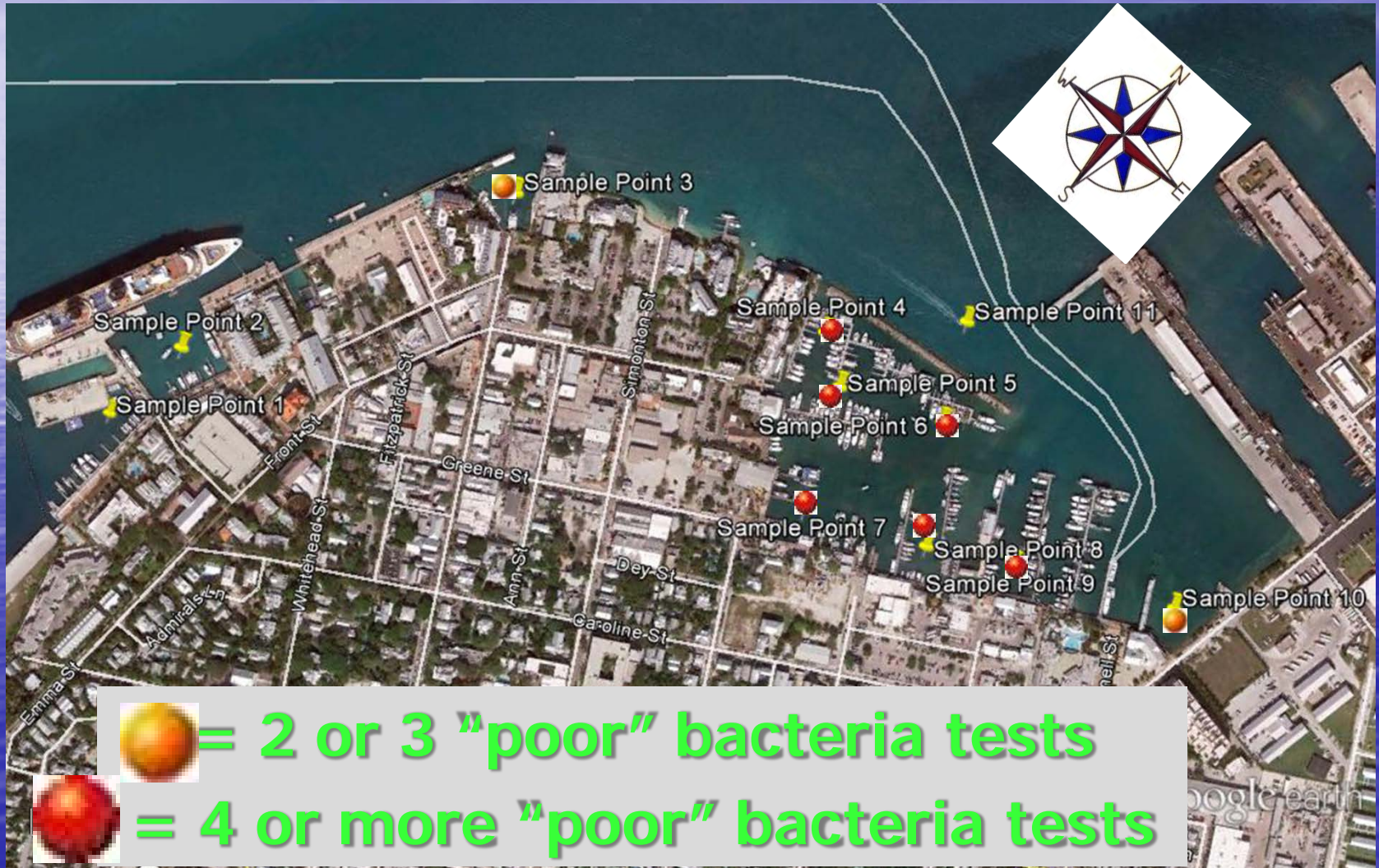
# What Was Done – Improve Stormwater System

- The City created a new stormwater utility in 2002.
- 68 new stormwater wells and 9 outfall retrofits all with pollution control baffle boxes have been constructed since 2006.
- Baffle boxes at all stormwater wells and outfalls are cleaned 2-5 times annually.
- City regularly tests stormwater outfalls at our lab at the WWTP.
- Over 220 trash guards installed at drains and inlets throughout the City.
- The City completed a new Stormwater Master Plan in 2012.



# Key West Marina Water Quality Testing

The City of Key West tested for fecal coliform and enterococcus bacteria at 11 locations over 12 days between Nov 19 and Dec 3rd



# Water Quality Testing Findings

DATE	DAY	WEATHER							SAMPLE #1			SAMPLE #2			SAMPLE #3			SAMPLE #4			SAMPLE #5			SAMPLE #6			SAMPLE #7			SAMPLE #8			SAMPLE #9			SAMPLE #10			SAMPLE #11		
		COND	AIR TEMP	WIND	RAINFALL	TIDE	TABLE	BP	TIME	mFC	mB	TIME	mFC	mB	TIME	mFC	mB	TIME	mFC	mB	TIME	mFC	mB	TIME	mFC	mB	TIME	mFC	mB	TIME	mFC	mB	TIME	mFC	mB	TIME	mFC	mB			
19-Nov	T	Clear	80	<5 ENE	0	H - Out	H-11:09	1050mb	11:36	<10	<10	11:44	<10	<10	11:47	<10	<10	11:55	<10	<10	11:59	30	10	12:01	10	<10	12:05	30	<10	12:07	50	<10	12:11	10	<10	12:16	20	<10	12:19	10	<10
20-Nov	W	Partly Cldy	80	5 ESE	0	H - Out	H-11:46	1050mb	14:04	<10	<10	14:08	<10	<10	14:11	10	<10	14:20	<10	<10	14:22	<10	<10	14:25	10	<10	14:27	<10	<10	14:31	10	10	14:35	<10	<10	14:40	<10	<10	14:44	<10	<10
21-Nov	R	Partly Cldy	81	10 E	0	M - In	H-12:25	1019mb	9:18	<10	<10	9:21	<10	<10	9:25	10	<10	9:34	30	20	9:36	50	<10	9:37	150	<10	9:40	120	120	9:45	170	10	9:48	110	<10	9:51	80	<10	9:55	10	<10
22-Nov	F	Partly Cldy	78	10 NE	0	High	H-13:08	1012mb	13:08	<10	<10	13:14	<10	<10	13:16	<10	<10	13:21	10	<10	13:25	<10	<10	13:27	<10	<10	13:30	<10	20	13:32	160	10	13:36	10	<10	13:40	<10	<10	13:47	<10	<10
23-Nov	S	Partly Cldy	82	10 NE	0	M - In	L-07:22	1022mb	9:48	<10	<10	9:55	10	<10	10:00	<10	<10	10:10	30	<10	10:14	105	40	10:15	160	10	10:17	140	30	10:20	160	30	10:24	290	60	10:28	160	30	10:30	<10	<10
24-Nov	S	no boat - city needed it for emergency at garrison bight							ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
25-Nov	M	Partly Cldy	77	20-25NE	0	L	L-08:59	1019mb	10:15	<10	<10	10:09	10	<10	10:20	260	30	10:26	220	50	10:30	200	40	10:31	95	25	10:32	70	130	10:35	40	20	10:40	140	<10	10:43	30	<10	10:45	<10	<10
26-Nov	T	PC - Rain	80	5-10E	0.15	L - out	L- 09:47	1014mb	7:44	60	60	7:48	30	50	7:54	>600	>600	8:02	560	<10	8:04	>600	>600	8:08	>600	500	8:10	>600	>600	8:12	>600	>600	8:15	>600	>600	8:18	>600	>600	8:22	70	60
27-Nov	W	Partly Cldy	77	20-25NW	1.3	L - out	L-10:34	1013mb	10:14	110	50	10:17	70	100	10:22	>600	>600	10:30	>600	>600	10:32	>600	>600	10:33	>600	>600	10:36	>600	>600	10:38	>600	>600	10:42	>600	>600	10:46	>600	>600	10:50	30	20
29-Nov	F	Clear	70	20NE	0	M - Out	H-07:02	1023mb	9:42	<10	<10	9:46	<10	<10	9:51	>600	<10	9:59	<10	150	10:01	270	30	10:03	120	>600	10:05	230	40	10:09	190	80	10:11	75	15	10:15	<10	<10	10:19	10	<10
30-Nov	S	Partly Cldy	69	10NE	0	M - In	H-07:59	1021mb	6:25	<10	<10	6:28	<10	<10	6:32	10	<10	6:40	250	160	6:42	340	140	6:43	150	220	6:45	210	130	6:47	210	110	6:51	230	70	6:55	20	<10	6:58	30	40
1-Dec	S	Clear	71	5NE	0	M - In	H-08:49	1018mb	6:20	10	<10	6:24	10	<10	6:28	<10	<10	6:36	180	390	6:38	370	410	6:39	160	580	6:42	270	320	6:45	280	220	6:48	450	>600	6:52	10	70	6:55	30	45
2-Dec	M	Clear	75	5-10NW	0	M - Out	H-09:37	1011mb	13:00	5	<10	13:04	<10	<10	13:10	150	30	13:16	<10	<10	13:18	20	10	13:20	<10	10	13:23	20	10	13:26	20	10	13:28	<10	20	13:33	<10	<10	13:37	<10	<10
3-Dec	T	Clear	71	Calm	0	M - In	H-10:24	1013mb	6:25	<10	10	6:28	20	<10	6:34	<10	<10	6:43	70	50	6:44	>600	130	6:46	200	260	6:52	190	90	6:58	60	10	7:02	>600	20	7:09	10	<10	7:13	30	<10
DOH Limits		Good	Moderate	Poor																																					
Fecal Coliform		0 - 199	200 - 399	>>400	cfu/100ml																																				
Enterococcus		0 - 35	36 - 104	>>105	cfu/100ml																																				

**Yellow** = Moderate levels of Bacteria

**Red** = Poor levels of Bacteria

# Water Quality Testing Findings

- Elevated levels of fecal coliform and enterococcus bacteria found on multiple days in the Key West Bight in the two week testing window.
- Bacteria levels were classified as “poor” on six separate days at multiple locations at the Bight, including days when stormwater runoff was not a factor.
- Elevated “poor” levels also found at the north end of Duval St. on three days.
- These test resorts showed bacterial colony levels in many cases over 5 times above the threshold for “poor” under testing guidelines from Florida Healthy Beaches and the EPA.
- No bacteria levels above “moderate” for any day at the marinas at the Westin.

# Current NDZ Ordinance:

Sec. 82-41. No discharge zone.

Every marina in Key West shall install sanitary sewage pump-out facilities to serve every vessel and floating structure that docks at the marina.

The marina proprietor shall require that the owner or operator of each vessel and floating structure both lock out the black water discharge pipe and use the pump-out facilities as a condition of dockage;

All leases or other agreements for dockage shall include this pump-out requirement, as well as a statement that the jurisdictional waters of Key West are a no discharge zone.

# Current Rules/Ordinances

Sec. 82-41. No discharge zone.



Each marina owner shall post conspicuous signage informing vessel operators of the no discharge zone.

Except as provided in section 82-33(d), pump-out shall occur within 24 hours of the vessel's arrival at the marina, unless the vessel departs within 24 hours of arrival, in which case pump-out is not required.

# Current Rules/Ordinances

Sec. 82-41. No discharge zone.

Every such private marina shall maintain a pump-out log showing the sewage disposal history of each vessel and floating structure during its dockage at the marina.

Date	Vessel Name	State	Date of Last Pump Out	Tank Capacity	Status	Initials

Every owner of a vessel docking or mooring within the jurisdictional waters of Key West shall also maintain such a pump-out log at all times that the vessel is in Key West waters.

*(receipts, calendar, logbook, etc.)*

# Current Rules/Ordinances

## Sec. 82-41. No discharge zone.

The marina proprietor shall file with the director of utilities a plan for the collection and disposal of vessel and floating structure sewage not later than December 1, 2002, at which date enforcement of the requirements of this subsection shall commence.

*Must detail how you will service every boat that docks.*

- Who
- What
- Where
- When (and by when)
- How

# New Rules: Comprehensive Plan

## Chapter 5: Coastal Management Element

### Goal 5-1: Coastal Management

Objective 5-1.1: Protect Coastal Resource, Wetlands, Estuarine Salt Pond Environmental Quality, Living Marine Resources, and wildlife habitats

Policy 5-1.1.8: Promotion of Responsible Stewardship. City shall research and implement certification programs which encourage responsible practices by businesses operating in or near natural areas.

### OBJECTIVE 5-1.13 : PLANNING FOR RESILIENCY AND ADAPTATION IN COASTAL AREAS

The City shall research and promote conservation actions which enhance the resiliency and adaptation of coastal resources wetlands water resources, living marine resources, and other natural resources. This may include identification of Adaptation Action Areas, as defined in Policy 5-1.5.3.



# New Rules: Comprehensive Plan

## OBJECTIVE 5-1.2: CRITERIA FOR PRIORITIZING SHORELINE USES AND PROVIDING PUBLIC ACCESS TO SHORELINE.

Policy 5-1.2.2: Limit Impacts of Development and Redevelopment Upon Water Quality and Quantity, Wildlife Habitat and Living Marine Resource and Implement Policies for Shoreline Land Uses.

### 5. Marine and Dock Facilities.

n. The City should develop a program by 2015 for commercial/residential and commercial/industrial marinas and boatyards to be inspected annually by the City. The results of these inspections should be coordinated with other agencies, and published on the City's website, if feasible. Items to be inspected and reviewed shall include the following:

- i. Pump-out facilities/marine sanitation devices;
- ii. Compliance with power/sailboat mix;
- iii. Spill prevention, control, containment, and clean-up plans;
- iv. Waste collection and disposal methods;
- v. Required fire fighting equipment; and

# New Rules: Comprehensive Plan

## Policy 5-1.2.2: (Continued)

### 5. Marine and Dock Facilities (Continued)

d. All new and expanded marinas shall provide a demonstration of compliance with State Water Quality Standards by maintaining a water quality monitoring program approved by the State of Florida

q. All new and expanded marinas and boatyards must be FDEP Clean Marina or Clean Boatyard certified.

## **6. Ocean, Gulf, and Estuarine Water Quality.**

h. All marinas within the City shall become FDEP Clean Marina certified by 2015. All boatyards shall become FDEP Clean Boatyard Certified by 2020.

# New Land Development Regulations

## Further Progression toward Water Quality Goals:

Stronger ties to clean Marinas:

- Sewer: Provide pumpout stations at every pier (phased in)
- Fuel: Absorbent materials at the fuel dock
- Hazard Waste: Provide convenient disposal of hazardous waste
- Stormwater: Coverage for waste storage containers
- Maintenance: Engine repairs inside over impervious surface
- Boat Cleaning: Prohibit cleansers with ammonia, petroleum distillates, sodium hypochlorite or chlorinated solvents
- Boat Cleaning: No cleaning/scraping of hull bottoms in water
- Fish Waste: Proper fish cleaning stations
- All: Binding Language in sub-leases

Gulf of Mexico Alliances' Clean & Resilient Marina Guidebook

- Emergencies: Hurricane Preparedness Plans

# Results: Coordinators

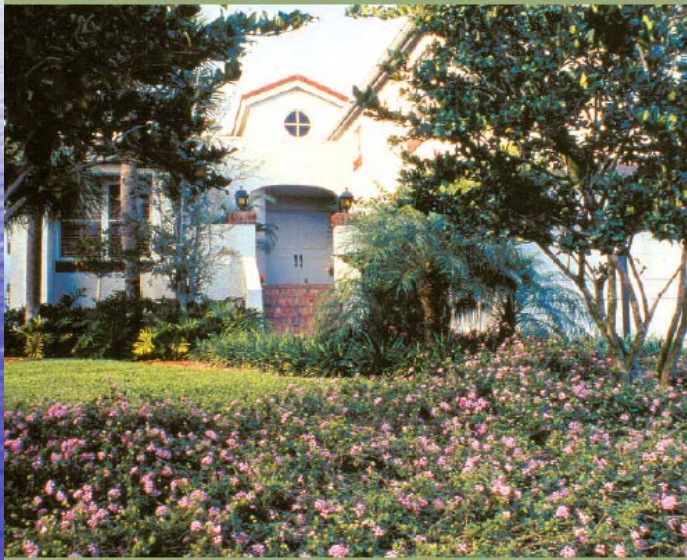
Coordinator prioritization of types of facilities to pursue for CM designation.

<b>Rank</b>	<b>Prioritization</b>	<b>Score</b>
1	Facilities with Fuel	128
2	Geographic need for pump outs	80
3	Larger facilities	69
4	Expensive renovations	67
5	Smaller facilities	63
6	Less expensive renovations	61
7	Facilities with past violations	56
8	Facilities with no prior violations	48
9	Other	43
10	Geographic need for program visibility	30
11	Geographic need for Boatyards	30
12	Geographic need for Marinas	26
13	Clean Restrooms and Showers	21

# New Land Development Regulations

## Further Progression toward Water Quality Goals:

Florida Friendly  
Best Management Practices  
for Protection of Water Resources  
by the Green Industries



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION  
A Florida-Friendly Landscaping™ Publication

### Fertilizer:

- Florida Friendly
  - Fertilizer Guidance:
    - Timing
    - “Ring of Responsibility”
  - Watering Guidance
- Green Industries -BMPs

What Else?



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