



STORMWATER DRAINAGE- FLOODING WORKSHOP



Village of Key Biscayne
February 18, 2014





Introduction

JOSE G. LOPEZ, P.E.

Owner Representative

Stormwater Utility Division





Objectives

- Inform what the Village is doing now to mediate flood prone areas
- Inform what the Village is planning for the future
- To obtain ***FEEDBACK FROM RESIDENTS***



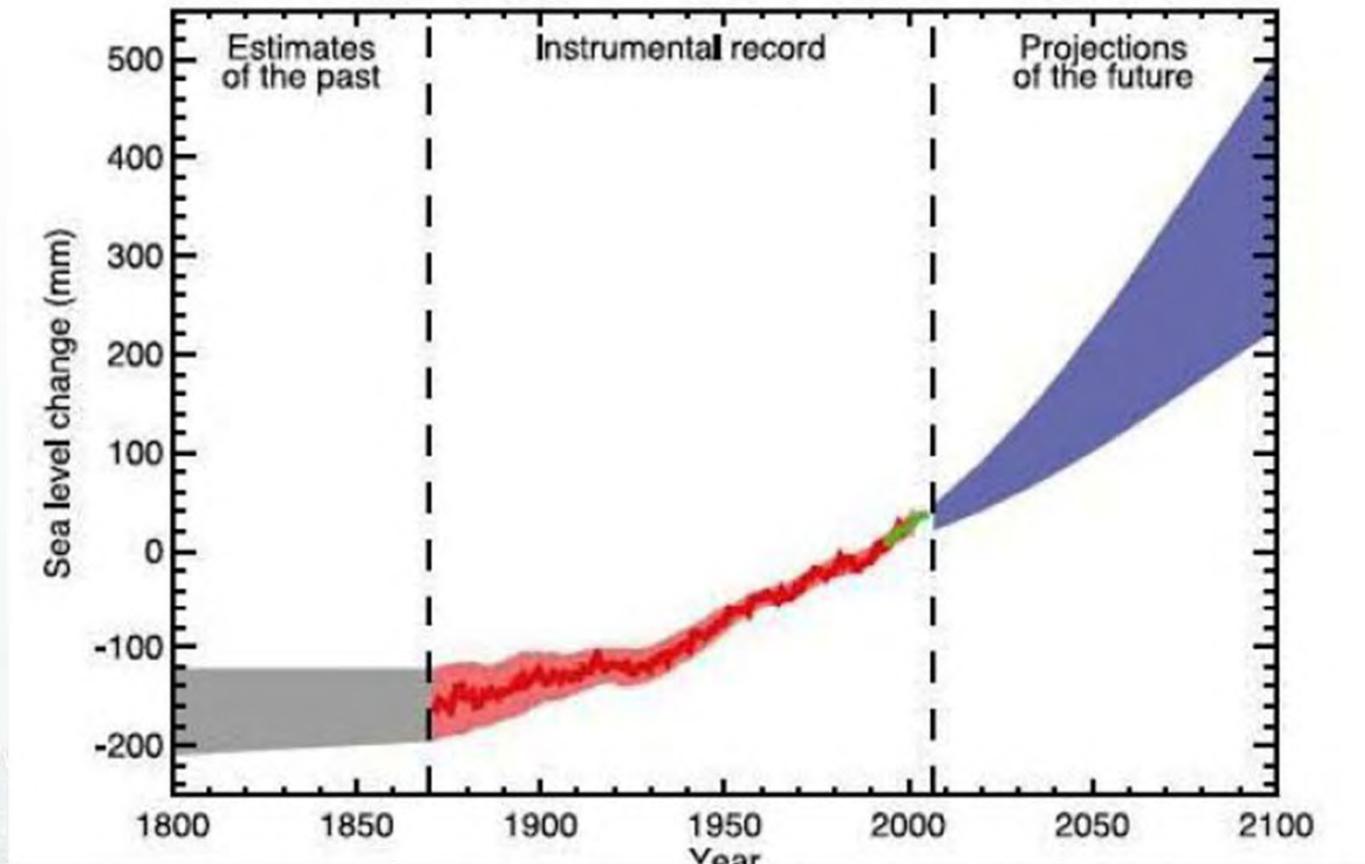
Introduction

- **Adaptation**
- **Resiliency**
- **Minimization of Impact**
 - Tidal Influence
 - Sea Level Rise Preparations
- **Achievements – Projects Completed**
- **GIS Website**
- **Input from Residents: Questions & Answers**
(at end of presentation)





Sea Level Rise Trends



Courtesy of City of Miami Beach & Coastal Engineering International, Inc.

Source: IPC, 2007





Workshop Structure & Agenda

- **Existing Stormwater System – Mariana Dominguez-Hardie**
- **Maintenance Plan – Tony Brown**
- **Code Enforcement – Mike Mila**
- **NPDES and CRS Programs – Alicia Vereza-Feria**
- **Stormwater Utility budget, revenues and financing – Ana De Varona**
- **SWIIP – Stormwater Improvement Implementation Plan – Sean Compel**
- **Residents’ feedback in Q&A at end of presentation**



Existing Stormwater System

MARIANA DOMINGUEZ-HARDIE

**Public Works Department
Special Projects Coordinator**





Water is a RESOURCE

We ***MUST*** protect our Waters!

IT'S THE LAW!





Existing Stormwater System

Storm water retention: Federal requirements

- The **Clean Water Act (CWA)** governs water pollution
 - Eliminate releases of high amounts of toxic substances
 - Ensure surface waters meet standards for human sports and recreation
 - The law dictates the first inch of runoff must be retained
-
- How to follow the law, protect ourselves and our natural resources?



Existing Stormwater System

Swales (right-of-way) drainage purpose

- The swale is the grassy public area between the road and your private property designed to **Retain, Detain and Filter** sediment and pollutants
- Capture runoff temporarily and allow it to soak into the soil
- Reduce the amount of toxins that reach the stormwater system and, ultimately, Biscayne Bay
- Example pollutants: motor oil, pesticides, fertilizers, toxic metals



Existing Stormwater System

A swale at work ... which one is doing its job?





Save the Swales Flyer

What is a Swale?

Chances are if you've lived in Miami-Dade County long enough, you've heard at least one person refer to a "swale." A swale is the grassy area of land that stretches from the edge of the sidewalk in front of homes (or the property line if there is no sidewalk) to the edge of the street.

Swales are a commonly used stormwater management tool. They slow down the flow of stormwater and allow runoff to pond temporarily. In doing so, this helps filter pollutants from stormwater as it percolates into the ground, and it helps protect lives and property by minimizing flooding.

Swales perform an important stormwater management function, but they differ from berms/barriers and ditches in that a swale slopes gently away from property and swales tend to be wider than they are deep.



Save Our Swales

Learn why a well-kept swale is more important than you may realize

Save Our Swales

For more information on swales and stormwater management, call (305) 375-4772 or visit <http://www.miamidade.gov/publicworks/roads-bridges-canal.asp>.

To request this material in an alternate format please call 305-514-6653



Properly Maintained Swales



How Can I Help Save Our Swales?

Properly maintaining your swale area is easy and will help you to reduce street flooding in your neighborhood:

- Mow the swale area regularly to keep grass healthy and under control.
- Use as little fertilizer, pesticides and herbicides as possible on both your lawn and the swale area.
- Aerate the soil in the swale area from time to time to improve the rate of stormwater percolating into the ground.
- Don't let trash, tree limbs or garden waste accumulate in your swale; call 3-1-1 for a bulky waste pick-up if needed to remove these materials.
- Report any illegal dumping on your swale; call 9-1-1 if you see the illegal dumpers in the act, otherwise call 3-1-1 to report it.
- Do not pave your swale area unless it is for a permitted driveway approach.
- Do not park cars in the swale area; this compacts the soil and makes it more difficult for stormwater to soak in.
- Do not be alarmed if water ponds temporarily (24 to 48 hours in your swale area; but if water ponds for longer (72 hours or more) call 3-1-1 to report it.

Para obtener una copia de este folleto en español, visite <http://www.miamidade.gov/publicworks/publications.asp>.

Si ouie you kopy ti liré sa ankeyd, ale nan <http://www.miamidade.gov/publicworks/publications.asp>.



PUBLIC WORKS AND WASTE MANAGEMENT



Existing Stormwater System

Excessive runoff reaches drainage structures located in swales and streets

- The system is connected to larger pipes that drain into the bay
- Help us maintain a healthy system by protecting your own drainage structure
- Do not place bulk trash on top of drains
- Keep grass from growing over drain
- After rain event, clear the drain in front of your property





Existing Stormwater System

- **Flooding time and impact criteria**
 - Temporary water accumulation is expected since the Village is in a barrier island subject to tides
 - Ponding for 24 to 36 hours is the norm in low level areas
 - The system is designed so no water accumulation should last more than 72 hours
- **Exception to the 72 hours**
 - Flooding affecting buildings
 - Health and safety hazard



Existing Stormwater System

Flood/Drainage incident report procedure

- Allow time for the stormwater system to act as designed
- Submit a complaint form to the Village if you notice:
 - A problem with a storm drain
 - Standing water persists for more than 72 hours in the streets or public swales
 - Flooding occurs after a storm event
- Find the interactive form at the Village website under Document Center or Public Works Division:

What you can expect after you file a report

- Complaint type will dictate scheduling of inspection
- Public Works Staff will inspect the area
- Public Works will report back with findings





Drainage/Flooding Complaint Form



VILLAGE OF KEY BISCAYNE DRAINAGE AND FLOOD COMPLAINT FORM

Division of Public Works
88 West McIntyre Street, Suite 230
Key Biscayne, FL 33149
(305) 365-8945

Service Request # _____

Complaint Date

Resident Name

Address

Telephone

Location of Drainage/Flooding Complaint or Nearest Street Intersection

First time you reported this issue? Yes No If No, date of report

PLEASE SELECT ONLY ONE (1) COMPLAINT TYPE AND ANSWER QUESTIONS FOR BETTER SERVICE

Storm Drain Not Functioning

Is water on top of the drain now? Yes No

How long does it take for the water to drain?

Is the drain covered with debris? Yes No

What is the location (address) of the drain or drains?

Is the location near demolition area or new construction? Yes No

Standing Water (No Drain)

Approximately how deep is the water?

How hard did it rain? Light Moderate Heavy

Is your property flooded? Yes No

Is your property near a new construction? Yes No

What is the location (address) of nearest storm drain/s?

Page 1 of 2

VILLAGE OF KEY BISCAYNE DRAINAGE AND FLOOD COMPLAINT FORM

Flooding

Is the water flooding the inside of your residence? Yes No

Is the water in your driveway / swale? Yes No

Is the water across the roadway? Yes No

Is the water affecting traffic? Yes No

How long does the water remain after rainfall?

Other Complaint

Please provide detailed observations

For more information, email mdominguez@keybiscayne.fl.gov at the Division of Public Works or call (305) 365-8945.

[Submit Form by Email Below](#)

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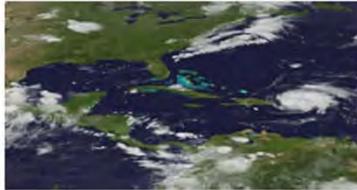


Public Outreach Info in Hurricane Newsletter



VILLAGE OF KEY BISCAIYNE
Newsletter No. 25 June 2013
www.keybiscayne.fl.gov

**THE 2013 HURRICANE SEASON BEGINS
JUNE 1 AND ENDS NOVEMBER 30 ...
PLAN NOW AND BE PREPARED!**



Now is the time to organize a plan for what you and your family would do if disaster hits. An above-normal Atlantic Basin hurricane season is expected this year, according to the seasonal outlook issued by NOAA's Climate Prediction Center, a division of the National Weather Service. "The United States was fortunate last year. Winds steered most of the season's tropical storms and all hurricanes away from our coastlines," said Jane Lubchenco, Ph.D., Under Secretary of Commerce for Oceans and Atmosphere and NOAA Administrator. "However, we can't count on luck to get us through this season. We need to be prepared, especially with this above-normal outlook."

It only takes one storm hitting your area to cause a disaster. Residents, businesses, and government agencies of coastal and near-coastal regions are therefore urged to prepare for every hurricane season regardless of the overall activity predicted for this, or any other, seasonal outlook.

NOAA announced the following on May 23, 2013: "For the six-month hurricane season which begins June 1, NOAA's Atlantic Hurricane Season Outlook says there is a 70% likelihood of:

- 13-19 Named Storms (winds of 39 mph or higher)
- of which 7-11 could become Hurricanes (winds of 74 mph or higher) including
- 3-6 Major Hurricanes (Category 3, 4 or 5; winds of 111 mph or higher)."

For these reasons, the Village urges all residents and homeowners to read this newsletter. This information, and more, is posted at the Village website (www.keybiscayne.fl.gov) Hurricane and Flood Information section. Updated material has been added for the 2013 season.

ONGOING CONCERNS: FLOOD HAZARDS

The major threat to Key Biscayne from tropical storms and hurricanes is flooding from storm surges and rainfall. The Village is in a "Special Flood Hazard Area" owing to its island setting and low elevation. Substantial flooding will likely damage property. The intent of this newsletter and other information you will receive periodically is to give you direction on what you can do to protect yourself and your property. These reminders are especially important since we have not experienced a significant tropical storm-related flood event in several years.



FLOOD WARNING (photo courtesy of Rafael Momeñ)

You should heed all hurricane and tropical storm warnings. They will be publicized at the Village website (www.keybiscayne.fl.gov), via Constant Contact email blasts, on government access Ch. 77 (Comcast) and Ch. 99 (UVerse), Village Radio 1640AM and news hotline (305) 365-NEWS. Non-computer users can call (305) 365-8945. Warnings are broadcast by local TV stations (WTVJ Channel 4, WCIX Channel 6, WSVN Channel 7, WPLG Channel 10) and radio stations WQAM 560 AM and WJOD 610 AM. Miami-Dade County and Village emergency operations personnel will issue warnings and updates via text message and email to VINS subscribers (Village Information and Notification System). Sign up for VINS at the Village website.

nce purchased through financial requirement for obtaining a mortgage improvement loan. It usually covers only structure and not the contents. The type that occurs in Key Biscayne usually damage to furniture and contents than sure. If you have flood insurance check the amount and make sure you contents coverage.

that a 30-day waiting period normally flood insurance takes effect after the ted. Do not wait until a storm warning k to your insurance agent!

ROTECTION FLOODPROOFING

be protected from flood damage in You can attempt to keep water away our lot or by building a small floodwall m. These methods work if your lot is if flooding is not too deep, and if your in the floodway. The Village Building, anning Department (BZP) can provide ant information about your property. ach is to make your walls waterproof ertight closures over the doorways; this ended for houses with basements, or if eeper than two feet.

ich is to raise the house above flood /illage Building Official can provide ind site-specific advice on such

ial sewers back up during heavy rains. idpipe can stop this if water does not one or two feet deep. These devices sed at the hardware store for less than as prone to deeper flooding, talk to a overhead sewers or a backup valve.



UIREMENTS

asures are called floodproofing or ore information is available at the Key ic Library. Please bear in mind that to your building or land, including lures, regrading or filling, requires a e BZP Department. A permit may be nsure that projects do not cause other properties. Report building or

AND BENEFICIAL FUNCTIONS OF INS

bed areas in Key Biscayne that exist in a perform a number of beneficial functions to flood hazards. They moderate the flooding, retain floodwaters, reduce sedimentation damages, and mitigate if waves and storm surges from storms. they provide habitat for fish and wildlife. easons, the Village of Key Biscayne is any efforts to both:

its undisturbed public spaces such as d long range beach improvement s and maintenance programs for the e preserves along the bay fronts.

such areas through the conversion, on tunity basis, of unused paved areas to rral state.



FIND MORE INFORMATION AND

mation on all of the above subjects and available at the Village website www.keybiscayne.fl.gov and at the Key Biscayne ary. Just ask the librarian for the Management Section". Copies of the nce Rate Map for Key Biscayne are also the Library and at the Department of nging and Planning on the 2nd Floor of Suite 250).

partment maintains a record of Elevation (ECs) that have been issued. ECs for FY ough the current fiscal year are now at the Village website (www.keybiscayne.fl.gov). Staff will, on request, erty owners with technical assistance tion on resolving problems related to od insurance, floodproofing and flood vention. If necessary, site visits will be didual properties to review problems and tions.

PRESORTED
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COUNCIL

plan, Mayor
ay, Vice Mayor
Davey
Holloway
Kelly
ondon
Taintor

illage Manager

z, MMC, Village Clerk





Maintenance Plan

TONY BROWN

**Public Works Department
Superintendent**





Maintenance Plan

- **Contracted services – drain maintenance, street sweeping and litter control**
- **Pump Station Maintenance**
- **Pre-Demolition and Pre-Construction**
- **Collapsed Outfall repairs – O-16 Harbor Drive**
- **Metal Pipe Corrosion**
- **Oil and Grease causing sanitary sewer overflow**



Maintenance Plan

- **Drainage Structure Cleaning**



- **Ongoing**
- **Vacuum cleaning of drainage structures**





Maintenance Plan

- **Street Sweeping Contract**



- **Monthly**
- **Mechanical collection and removal of debris and sediment off the road**



Maintenance Plan

- **Swale Cleaning Contract – Litter Control**



- **Daily**
- **Removal of litter from public areas by hand**



Sewer Maintenance



Pump Station 1252
West End





Pump Station Maintenance

- **Inspection Schedule**
 - Monthly (May to October)
 - Bi-monthly (October to May)
- **Performed by PELCO**
- **Public Works inspect weekly**
- **Report if red light is flashing or alarm is sounding**
- **Contact Public Works (305) 365-8945 or Police (305) 365-5555 (non emergency number)**



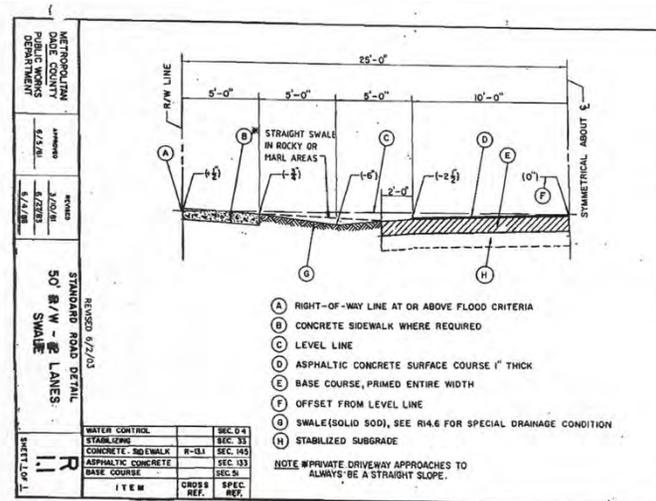


Pre-Demo & Pre-Con

- Pre-Construction and Pre-Demolition

- Swale Detail provided to Contractor

- Sediment & Erosion Control methods discussed



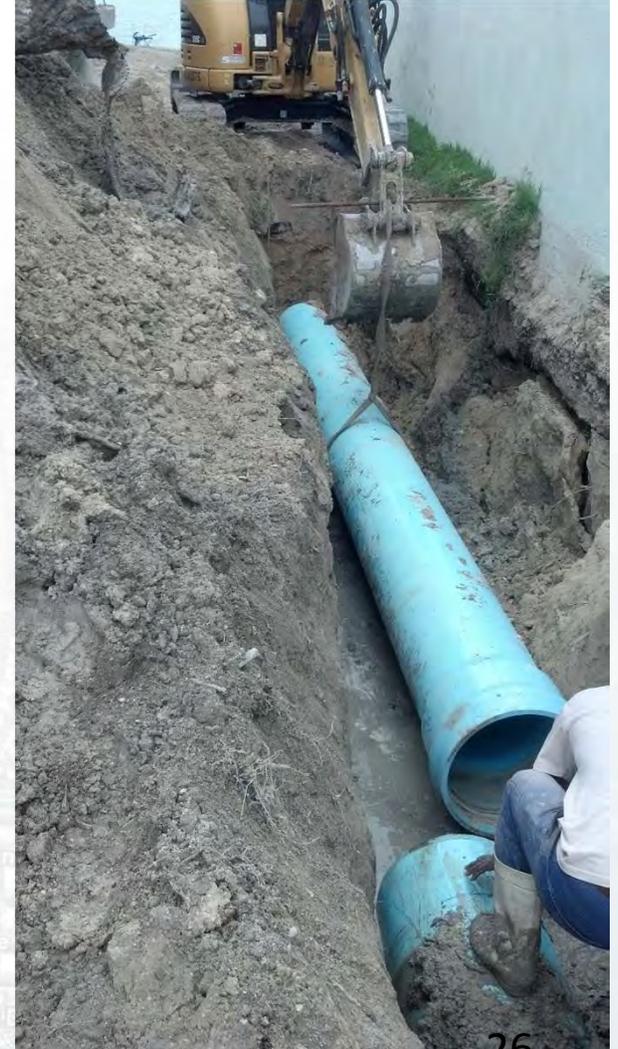


Outfall O-16 Repairs





Outfall O-16 Repairs





Metal Pipes Corrosion





Grease blockage causes weeping





Sanitary Sewer Overflow Procedure

- **Identify spillage area where overflow is occurring**
- **Contact Public Works (305) 365-8945 or Police Dept. (305) 365-5555 (non emergency number)**
- **Village contacts Miami-Dade Water & Sewer Department Emergency (305) 274-2922 – Owner of System**
- **Village contacts The Department of Environmental Resource Management (305) 372-6955 – Ensures issue is resolved**



Sanitary Sewer Reports

Sewer Complaint Log

Date	Time	Location	Manhole Structure No.	Comment
12/18/2013	3:59pm	260 Hampton Lane	27	Miami-Dade WASA was contacted and advised of the sewer leak. Miami-Dade DERM was also contacted and advised of the leak.
01/03/2014	3:43pm	310 W. Heather Drive	Unknown	Miami-Dade WASA was call out to a Sewer backup near 310 W. Heather Drive. There was a mainline blockage due to heavy grease and debris. The line was cleared at 11:57pm

MIAMI-DADE COUNTY
Water and Sewer Department
Sanitary Sewer Division

DOMESTIC WASTEWATER DISCHARGE/ABNORMAL EVENT NOTIFICATION

MIAMI-DADE COUNTY
Water and Sewer Department
Sanitary Sewer Division

WASD Incident #: 206990 Version: 3 Version Type: Supplementary Qualified UDP? No

Incident Version Created on: 08/16/12 11:28AM Job Order #: _____

Location of Discharge: 155 188 ST

Additional Location Description: This is the City of Sunny Isles Beach.

Reported By WASD Employee? Yes Employee ID: 00002558 Employee Title: Pipe/Filter Supervisor

Reported by: Ricardo Amodeo

Utility Name: Miami-Dade Water & Sewer Phone Number: (305) 274-9272

Path of Flow: West On: 188TH ST

Occurred at/in: Force Main

Contractor Involved? No Contractor Name: _____

Discharge Due to/Caused by: Force Main Broken Due to Corrosion

Additional Discharge Cause: _____

Pipe Material: CI (Cast Iron) Pipe Size: 8.00

Type of Water Discharge: Raw Sewage

Did Discharge Go to Public Access Area? Yes Did Discharge Go into Storm Sewer? Yes

Number of Storm Drain(s) Impacted: 2 Distance in Feet to Storm Drain(s): 10 Direction: North and South

Did Discharge Go into Surface Water? Yes Distance into Surface Water in Feet: 3800

Name: NO NAME Type of Water: Canal

Weather Condition: Sunny Sewage Released Estimate in Gallons: 1,200

Estimated Time Release Started: 08/13/12 09:35AM Estimated Time Action Taken at Site: 08/13/12 10:00AM

ACTION TAKEN

Active Spill Observed? Yes Discharge Flow Stopped? Yes When Did Discharge Stop? 08/13/12 10:40AM

Spill Contained? Yes Area Cleaned? Yes Area Disinfected? Yes Method of Disinfection: Wash Down

Public Notified? Yes Method: Post Signs When? 08/13/12 10:00AM

AGENCIES NOTIFIED

DEP	<u>EDEP State Warning Point</u>	Phone	Notified to: <u>KIM</u>	Notified On: <u>08/16/12 11:38AM</u>
RER	<u>RER Compliance Desk</u>	Phone	Notified to: <u>FRANCISCO CALLEJA</u>	Notified On: <u>08/16/12 11:38AM</u>
WASD	<u>WASD Bertha Goldenberg</u>	Phone	Notified to: <u>BERTHA GOLDENBERG</u>	Notified On: <u>08/16/12 11:38AM</u>
DEM	<u>DEM Notification Group</u>	E-mail	Notified to: _____	Notified On: <u>08/16/12 11:38AM</u>
DEP	<u>DEP Notification Group</u>	E-mail	Notified to: _____	Notified On: <u>08/16/12 11:38AM</u>
DOH	<u>DOH Notification Group</u>	E-mail	Notified to: _____	Notified On: <u>08/16/12 11:38AM</u>
EPA	<u>EPA Notification Group</u>	E-mail	Notified to: _____	Notified On: <u>08/16/12 11:38AM</u>
RER	<u>RER Notification Group</u>	E-mail	Notified to: _____	Notified On: <u>08/16/12 11:38AM</u>
SFWM	<u>SFWM Notification Group</u>	E-mail	Notified to: _____	Notified On: <u>08/16/12 11:38AM</u>
WASD	<u>WASD Interdepartmental Personnel</u>	E-mail	Notified to: _____	Notified On: <u>08/16/12 11:38AM</u>

Future Contact Person: Marcelo Garcia Phone Number: (786) 552-8342

Form Completed by: ULYSSES WASD Of: Water & Sewer Department

Notifier: ULYSSES WASD Of: Water & Sewer Department



DEP USE ONLY

WRITTEN REPORT REQUESTED: _____ No/ _____ Yes DUE DATE: _____

NAME: _____ TITLE: _____ SIGNATURE: _____ DATE: _____



“Can the GREASE” Campaign





“Can the Grease” Campaign

Can the GREASE!

DON'T POUR GREASE DOWN THE DRAIN!

The Problem:

- Grease can build up in your pipes over time and cause a clog (just as eating too much fat can block your arteries). The result? An unpleasant backup in your plumbing system that could require expensive plumbing work to fix.
- Pouring grease down your drain could cost you big bucks if major damage occurs to the public sewer system.

The Solution:

- Pour hot grease into a metal can. Let it cool and then throw the can into the trash.

So remember,

Can the GREASE!

For more information contact the Village of Key Biscayne at 305-365-8945 or visit our web site www.keybiscayne.fl.gov



¡La GRASA es una lata!

¡NO ECHE GRASA POR EL TRAGANTE!

El Problema:

- La grasa puede acumularse en las cañerías con el transcurso del tiempo lo que puede producir una obstrucción desagradable en su sistema de tuberías (al igual que ingerir demasiadas grasas puede obstruir sus arterias) y puede costarle mucho dinero para reparar los daños de plomería en su hogar.
- Echar grasa por el tragante de su propiedad le pudiera costar mucho dinero a usted si el sistema público de alcantarillado de aguas sucias sufre graves daños.

La Solución:

- Eche la grasa caliente en un recipiente de metal (una lata). Déje enfriar la grasa y luego deseche la lata en su basura regular de la cocina.

Así que, recuerde:

¡La GRASA es una lata!

Para más información llame a Village of Key Biscayne al 305-365-8945 o visite www.keybiscayne.fl.gov





“Can the Grease” Procedure

- Allow oil/grease to cool
- Pour into a covered can or disposable container
- Store in bag
- Freeze
- Dispose in trashcan on pick up day



Code Enforcement

MIKE MILA

**Building, Zoning & Planning Department
Code Enforcement Chief**





Stormwater Management

- **Purpose**
 - FL receives 40 – 60 in rain annually
 - 80% small storms of >1 in of rain
 - Torrential downpours and hurricanes experienced
 - Tides
- **FDEP Certification of staff**
- **BMPs (Best Management Practices)**
 - Control practices used
 - Filter Fabric
 - Dewatering
 - Temporary Gravel



Code Enforcement

■ Illicit Discharges and Connections

- Disposing of paints and chemical, pool drain hoses, etc.

■ Erosion and Sediment Control

- Daily Inspections
- Warnings - 24 hours to resolve
- Notices of Violation issued - after 24 hour warning
- Further fines and legal measures (liens)

■ Flood openings = vents

- Minimum two (2) openings
- Area of enclosure (ft²) = Area of opening (in²)

■ Tracking log for NPDES Annual Report





Stormwater Violations Before and After





Illicit Discharge and Dewatering Flood Openings





NPDES & CRS

ALICIA VEREA-FERIA

Tetra Tech

Consulting Engineer Project Manager





NPDES & CRS Requirements

- **Overview of NPDES versus CRS**
- **Clean Water Act – NPDES Permit – Cycles – Reports**
- **NPDES Compliance Requirements and Enforcement**
- **CRS – Certificate of Elevation of new construction**
- **Flood Insurance classification and economic impact**
- **Stormwater Master Plan**
- **Stormwater Drainage Modeling & Design**
- **Repetitive Losses**
- **LMS Identified Projects**



Regulatory Programs



NPDES
Regulatory Requirement for
Stormwater per Clean Water Act

COUNTY

Municipality



NFIP
Incentive Program to reduce
flood insurance rates

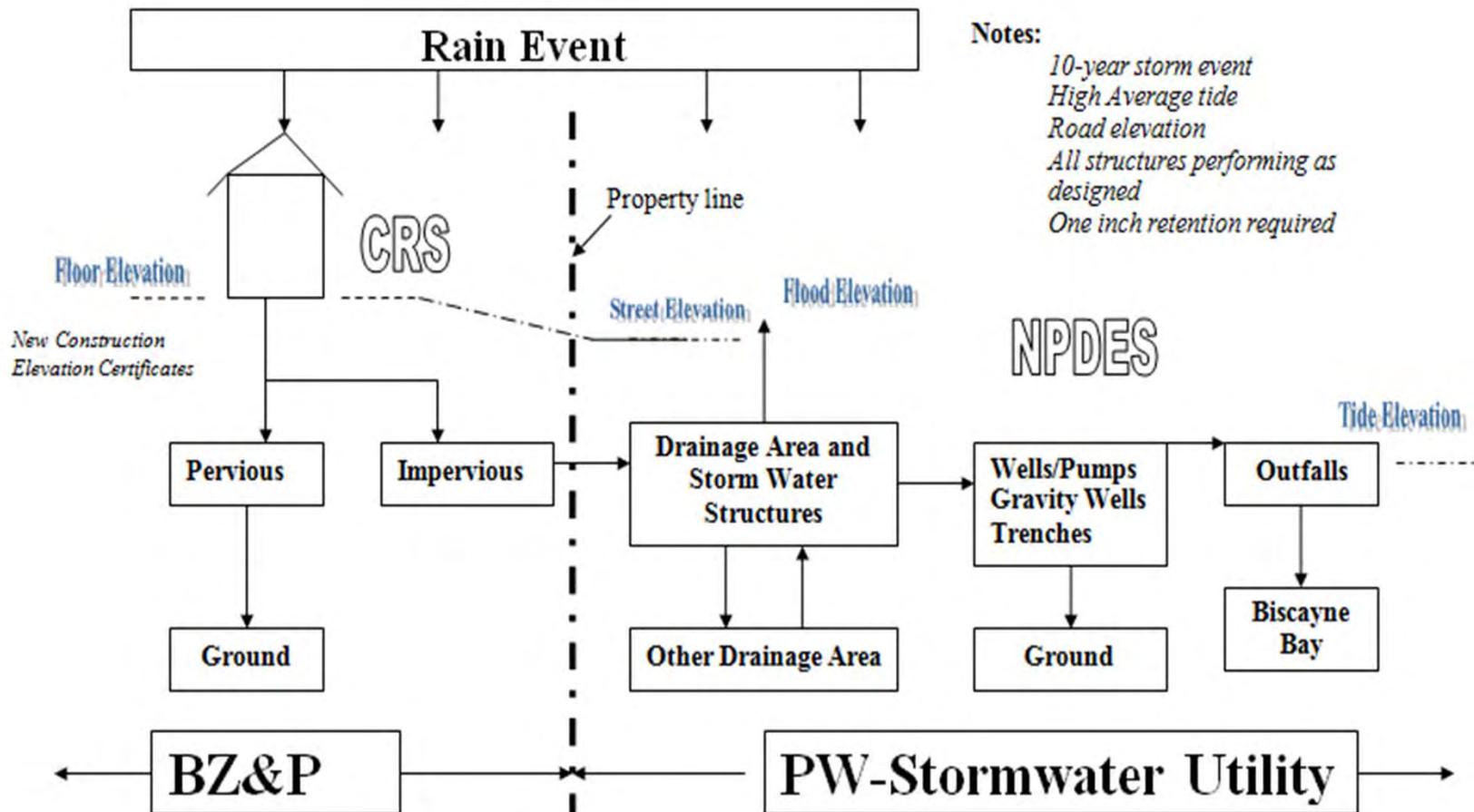
CRS

Municipality





CRS & NPDES Work Distribution





NPDES MS4 Program

National Pollutant Discharge Elimination System (NPDES)

- The Municipal Separate Storm Sewer System (MS4) NPDES is a federal program designed to reduce stormwater pollutant discharges to receiving water of the United States per the US EPA Clean Water Act of 1987.
- Miami-Dade County joined the NPDES program in 1998
- Key Biscayne is a co-permittee with the County under a 5-year MS4 NPDES Permit (2012-2016)



NPDES Compliance Requirements

- Storm water Sediment and Erosion Control
- Illicit Discharge Determination
- Reduction of Pesticides, Herbicides, & Insecticides
- Training & Public Outreach





PH&F Minimization Activities

Pesticides & Herbicides:

- Florida Department of Agriculture and Consumer Services (FDACS) certified & licensed contractor

Fertilizers:

- Annual training of the Green Industry BMP Program.
- Certification for “urban landscape commercial fertilizer application”
- For reporting: List of all personnel and contractors who have received training, licensing, certification, and annual refresher training.





NFIP & CRS Programs

NFIP = National Flood Insurance Program

- Provide flood insurance to property owners
- Encourage flood loss reduction activities by communities

CRS = Community Rating System

- “Goals of the CRS are to recognize, encourage, and reward, by the use of flood insurance premium adjustments, community and state activities beyond the minimum required by the NFIP...”
- Provide incentives to property owners to save money on NFIP-issued flood insurance policies





Why participate in CRS Program

- **Village property owners will continue to receive 15% discount on policies (Category 7 on CRS rating scale)**
- **Lack of participation will result in loss of 15% discount and increased flood insurance premiums;**
- **Offset cost impact of 2012 Biggert-Waters Flood Insurance Reform Act (BW-12)**
- **Implementation of additional activities could improve rating to Category 6 (20%)**





CRS PARTICIPATION BENEFITS

ITEM	CURRENT CATEGORY 7
SAVINGS PERCENTAGE (%)	15
APPROXIMATE MAXIMUM SAVINGS (per policy)	\$200.00
APPROXIMATE VILLAGE SAVINGS	\$420,000





Elevation Certificates

- Required for New Construction or Redevelopment
- Determines Flood Insurance Rate

U.S. DEPARTMENT OF HOMELAND SECURITY FEDERAL EMERGENCY MANAGEMENT AGENCY National Flood Insurance Program		ELEVATION CERTIFICATE IMPORTANT: Follow the instructions on pages 1-9.		OMB No. 1660-0008 Expiration Date: July 31, 2015		
SECTION A – PROPERTY INFORMATION				FOR INSURANCE COMPANY USE		
A1. Building Owner's Name				Policy Number:		
A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.				Company Name Number:		
City		State		ZIP Code		
A3. Property Description (lot and block numbers, tax parcel number, legal description, etc.)						
A4. Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.)						
A5. Latitude/Longitude: Lat. _____ Long. _____ Horizontal Datum: <input type="checkbox"/> NAD 1927 <input type="checkbox"/> NAD 1983						
A6. Attach at least 2 photographs of the building if the Certificate is being used to obtain flood insurance.						
A7. Building Diagram Number _____						
A8. For a building with a crawlspace or enclosure(s):			A9. For a building with an attached garage:			
a) Square footage of crawlspace or enclosure(s) _____ sq ft			a) Square footage of attached garage _____ sq ft			
b) Number of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade _____			b) Number of permanent flood openings in the attached garage within 1.0 foot above adjacent grade _____			
c) Total net area of flood openings in A8.b _____ sq in			c) Total net area of flood openings in A9.b _____ sq in			
d) Engineered flood openings? <input type="checkbox"/> Yes <input type="checkbox"/> No			d) Engineered flood openings? <input type="checkbox"/> Yes <input type="checkbox"/> No			
SECTION B – FLOOD INSURANCE RATE MAP (FIRM) INFORMATION						
B1. NFIP Community Name & Community Number			B2. County Name		B3. State	
B4. Map/Panel Number	B5. Suffix	B6. FIRM Index Date	B7. FIRM Panel Effective/Revised Date	B8. Flood Zone(s)	B9. Base Flood Elevation(s) (Zone A0, use base flood depth)	
B10. Indicate the source of the Base Flood Elevation (BFE) data or base flood depth entered in item B9: <input type="checkbox"/> FIS Profile <input type="checkbox"/> FIRM <input type="checkbox"/> Community Determined <input type="checkbox"/> Other/Source: _____						
B11. Indicate elevation datum used for BFE in item B9: <input type="checkbox"/> NGVD 1929 <input type="checkbox"/> NAVD 1988 <input type="checkbox"/> Other/Source: _____						
B12. Is the building located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA)? <input type="checkbox"/> Yes <input type="checkbox"/> No Designation Date: ____/____/____ <input type="checkbox"/> CBRS <input type="checkbox"/> OPA						
SECTION C – BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)						
C1. Building elevations are based on: <input type="checkbox"/> Construction Drawings* <input type="checkbox"/> Building Under Construction* <input type="checkbox"/> Finished Construction *A new Elevation Certificate will be required when construction of the building is complete.						
C2. Elevations – Zones A1–A30, AE, AH, A (with BFE), VE, V1–V30, V (with BFE), AR, AR/A, AR/AE, AR/A1–A30, AR/AH, AR/AO. Complete items C2.a–h below according to the building diagram specified in item A7. In Puerto Rico only, enter meters. Benchmark Utilized: _____ Vertical Datum: _____ Indicate elevation datum used for the elevations in items a) through h) below: <input type="checkbox"/> NGVD 1929 <input type="checkbox"/> NAVD 1988 <input type="checkbox"/> Other/Source: _____ Datum used for building elevations must be the same as that used for the BFE. Check the measurement used.						
a) Top of bottom floor (including basement, crawlspace, or enclosure floor)		_____	<input type="checkbox"/> feet	<input type="checkbox"/> meters		
b) Top of the next higher floor		_____	<input type="checkbox"/> feet	<input type="checkbox"/> meters		
c) Bottom of the lowest horizontal structural member (V Zones only)		_____	<input type="checkbox"/> feet	<input type="checkbox"/> meters		
d) Attached garage (top of slab)		_____	<input type="checkbox"/> feet	<input type="checkbox"/> meters		
e) Lowest elevation of machinery or equipment servicing the building (Describe type of equipment and location in Comments)		_____	<input type="checkbox"/> feet	<input type="checkbox"/> meters		
f) Lowest adjacent (finished) grade next to building (LAG)		_____	<input type="checkbox"/> feet	<input type="checkbox"/> meters		
g) Highest adjacent (finished) grade next to building (HAG)		_____	<input type="checkbox"/> feet	<input type="checkbox"/> meters		
h) Lowest adjacent grade at lowest elevation of deck or stairs, including structural support		_____	<input type="checkbox"/> feet	<input type="checkbox"/> meters		
SECTION D – SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION						
This certification is to be signed and sealed by a land surveyor, engineer, or architect authorized by law to certify elevation information. I certify that the information on this Certificate represents my best efforts to interpret the data available. I understand that any false statement may be punishable by fine or imprisonment under 18 U.S. Code, Section 2001.						
<input type="checkbox"/> Check here if comments are provided on back of form. Were latitude and longitude in Section A provided by a licensed land surveyor? <input type="checkbox"/> Yes <input type="checkbox"/> No						
Certifier's Name		License Number		PLACE SEAL HERE		
Title		Company Name				
Address		City	State			ZIP Code
Signature		Date	Telephone			

FEMA Form 086-0-33 (Revised 7/12)

See reverse side for continuation.

Replaces all previous editions.





Stormwater Master Plan Update

■ Purpose of SWMP Update:

- To meet regulatory requirements
- Update Master Plan adopted in 1993 which was implemented & constructed
- To determine how existing system is functioning
- Identify areas of deficiencies in the stormwater system – where flooding/ponding occurs – Repetitive Loss Areas
- Provide cost effective alternatives for improvements to resolve deficient areas
- Revised and Adopted December 2010

NOTE: Not all ponding will be resolved





Stormwater Drainage Modeling

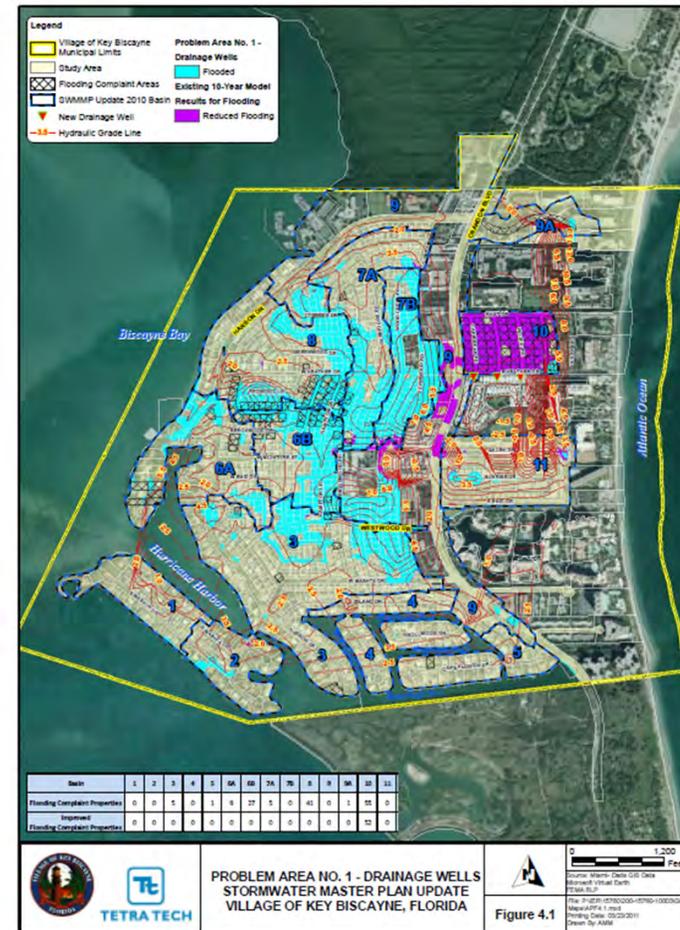
- **InfoSWM Model**
- **Modeling Parameters**
 - Flood complaints 72-hour, 10-year Storm
 - Roadways & Parking areas
 - Ponding >72 hours illustrated





Repetitive Losses

- More than 1 claim in a 10-year period





LMS Identified Projects?

- **Local Mitigation Strategy**
- **Establishes Miami-Dade County's overall mitigation policy.**
- **This document includes the strategy for mitigation, proposed mitigation projects and how they are prioritized, sources of funding, and other supporting information relative to mitigation.**
- **Published and updated biannually**
- **Available Online:**
<http://www.miamidade.gov/fire/mitigation.asp>

Project Titles
Comprehensive Review of Local Laws and Regulations
Stormwater Master Plan Update
Flap Gates at Outfalls
Drainage Improvements on East Heather Drive
Drainage Improvements on Fernwood Road & Hampton Road
Village Hall Courtyard Improvement
Stormwater outfall Rehabilitation
New Stormwater Outfall Construction
Hardening of Village Hall Generator
Ocean Lane Drive - Drainage Wells
Traffic Signage & Pavement Marking Improvements Master plan
Feasibility Study for Additional open Space Preservation
Demonstration Project
Erosion Control Web Q&A and Response System
CRS Outreach Program
Environmental Forum





Completed SW Projects

- Galen Drive – Rehabilitated catch basins
- Ocean Lane Drive – Pump Station
- East Heather Drive – Pump Station
- Outfall O-16 Rehabilitation



SW Utility Budget, Revenues & Finance

ANA De VARONA

**Public Works Department
Special Projects Coordinator**





SW Utility Budget, Revenues & Finance

Storm Water Ordinance

- Ordinance 93-11 Established the Stormwater utility System and established the Stormwater Utility Fee. Administrative Order 1 (October 12, 1993) established a fee of \$5.00 per ERU (Equivalent Residential Unit).
- Administrative Order 2 dated March 8, 2011 increased the Stormwater Rate from \$5.00 per ERU to \$8.90 per ERU

Fees Collection for residences, condo and commercial properties are as follows:

- Single Family Dwelling Units: 1.5 ERU's
- Multi-Family Dwelling Units: 1.0 ERU's
- Non-Residential Developed Properties: 1.0 ERU per 1,083 square feet of impervious area

WASD fee collection procedures through Water Bills

- Stormwater Fees are collected quarterly for Single Family Homes and Condos. Fees are collected Monthly for Commercial Properties.





SW Utility Budget, Revenues & Finance

2014 Budget of SWU Enterprise Fund – Self Financed

- The FY 2014 Budget is \$980,554.
- Debt Service is \$566,559
- Operating Budget is \$413,995

Capital Projects Financing

- Refinance Strategy - Series 2013 Bonds extend the terms of Series 2011 Bonds from mature date of October 1, 2019 to October 1, 2030.
- New financing of \$6,575,000 includes \$3.4 Million dollars in New Projects.
- Even including new projects, the new financing reduces the previous average annual debt service by \$59,000. These savings will help with ongoing maintenance to existing infrastructure.

Grants –Green Projects

Trend in Stormwater grant funding is moving toward Green Projects. Examples are design projects intended to control rain water through green infrastructure tools such as tree canopy, permeable pavement, green street designs, bioswales, planter boxes and green roofs.





Funding Sources

- **Why Refinance and apply for Grants?**

To maintain the current stormwater utility rate



SWIIP

SEAN COMPEL

StanTec

Consulting Engineer Project Manager





SWIIP Overview

- **Storm Water Improvement Implementation Plan (SWIIP)**
- **Identify/Implement Emergency Projects**
- **Issue Professional Service RFQ**
- **Selection of Engineering Services**
- **Incorporation of Residents Input**
- **Selection of project priorities by Drainage Basin**
- **Selection of Contractor for Construction**
- **Overall Preliminary schedule**





Emergency Projects

- **Outfalls O-16**
- **Outfall O-13**
- **Outfall O-15R Harbor Drive**
- **K-8 Center Pump Station**





Professional Services - RFQ

- **Request for Qualifications for Engineering Services**
- **Engineering firm will be selected to study and analyze potential improvements to the existing outfalls and the collection system including drainage pipe sizes, drainage wells, backflow prevention, etc.**
- **Projects will be prioritized and implemented based on limited resources.**



Preliminary SWIIP Schedule

- **Advertise RFQ end of April 2014**
- **Review RFQ packages and select engineering firm May-July 2014**
- **Negotiate/Enter into contract with firm: Aug. 2014 – Sept. 2014**
- **Firm to design/permit the improvements: Sept. 2014 – Aug. 2015 (12 months)**
- **Bid/Award Construction contract Sept. 2015-Dec. 2015**
- **Construction: Jan. 2016-Dec. 2016 (12 Months)**



SUMMARY & CLOSING

- Brochures available at exit on table and online at Village Website under “Document Center”

- *For more information:*

Contact Public Works (305) 365-8945

- **Flood Complaint Form**

http://keybiscayne.fl.gov/index.php?src=gendocs&ref=DocCenter_NPDES&category=DocumentCenter

- **Free Flood Protection Information**

http://keybiscayne.fl.gov/index.php?src=gendocs&ref=FloodProtectionInfoAdvice_Residents&category=HurricaneFlood





Q&A

THANK YOU.

Questions???

