



Florida Department of Environmental Protection

Walk the Waterbody Training

City of Neptune Beach

February 10, 2011

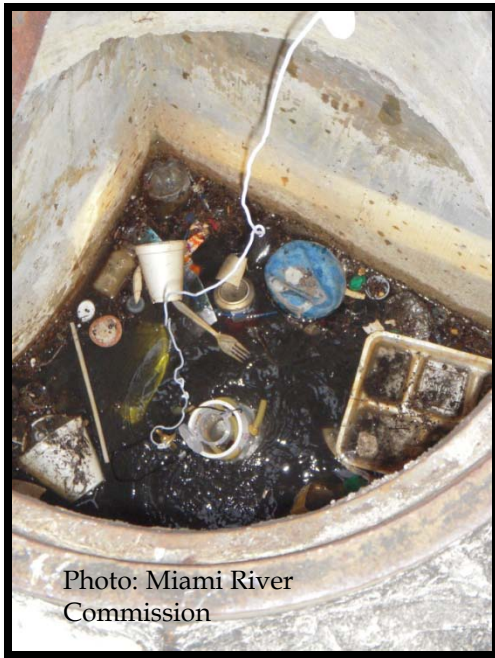


Photo: Miami River
Commission



Today's Topics

- Why Walk
- Objectives
- Steps to Completing the Field Event
- Post Event Follow Up
- Additional Resources and Information





Why Walk the Waterbody?

- There is a fecal coliform impairment or TMDL.
- Good first step to determining sources and identifying easy to implement management actions.
- Utilize existing programs and ongoing activities to address “low hanging fruit.”
- Identify uncertainties and future options for more effective adaptive management.





Why Walk Continued

- Contributes to improved communication between and within agencies.
- Increased public awareness.



Photo: Miami River Commission





Walking your Waterbody *OBJECTIVES*





Objectives of Walk the Waterbody

- Have all agencies with jurisdictional authority to collaborate simultaneously pre-event, in the field, and for post event follow up.
- Categorize conditions of watershed.
 - Hydrology;
 - Contributing ditches and branches; and
 - Flood prone areas.





Objectives Continued

- Implement management actions to eliminate sources and locate potential sources.
- Identify sampling needs:
 - Fill in knowledge gaps; and
 - Identify location of suspected sources.
- Establish follow-up protocol when a source is located.
- Determine potential next steps.





Just in Case

A QUICK REMINDER





Fecal Coliform & Impaired Waters Rule

- IWR for determining fecal coliform bacteria impairment :
 - The most probable number (MPN) or membrane filter (MF) counts per 100 ml of fecal coliform bacteria shall not exceed a monthly average of 200, nor exceed 400 in 10 percent of the samples, nor exceed 800 on any one day.





Planning & Execution of the Field Event

STEP BY STEP

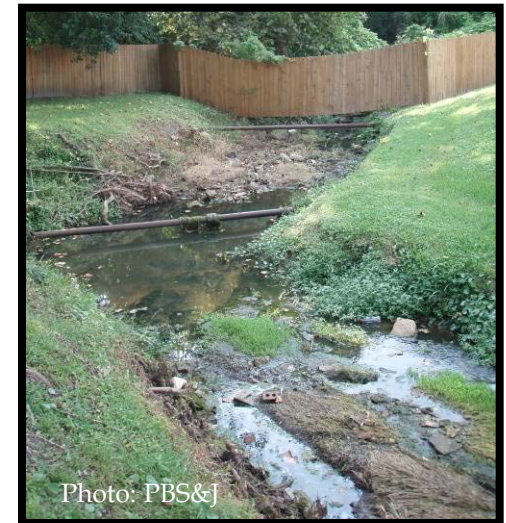


Photo: PBS&J





Walk the Waterbody Steps

- Lead Entity
- Stakeholder Identification
- Data Collection and Assimilation
- Maps on the Table (MOT)
- Synthesize Data from MOT
- Pre-Field Investigation
- Field Event





Identifying Stakeholders

- There must be a lead agency, typically:
 - MS4 permittee;
 - Municipality; or
 - Utility.
- How to identify partner agencies:
 - Characterize sources:
 - MS4 co-permittees that discharge to WBID;
 - Septic tanks: Department of Health;
 - Wastewater utility; and
 - Agriculture.
 - Check TMDL.





Data Collection and Assimilation

- Collect stormwater infrastructure data:
 - Inlets and outfalls
 - Ponds
 - Ditches
 - Underground conveyance
 - Best management practices (BMPs)
- Gather sewer infrastructure (private & public):
 - Pump stations
 - Force and gravity mains
 - SSO





Data Collection and Assimilation

- Identify septic tank locations:
 - Repair permits
 - Industrial permits
- Locate specialty farms, kennels, or other animal operations.
- Water quality sampling:
 - Sampling stations
 - Sampling frequency
 - Sampling results





Data Collection and Assimilation

- Hydrology:
 - Wetlands
 - Streams
 - Ponds
- Areas of special concern:
 - Landfill
 - Transfer station
 - Dog parks
 - Homeless populations





Data Collection and Assimilation

- Make maps in large format and multiple copies:
 - Water quality sampling locations;
 - Stormwater;
 - Wastewater; and
 - Combined dataset.





Maps on the Table

- All hands on deck, a representative from each agency needs to attend.
- Divide into teams, if appropriate. There should be one representative from each agency per team.
- Elect a note taker.
- Elect a presenter:
 - Potential sources
 - General information





Maps on the Table Continued

- Review maps as team and identify:
 - Hydrology characteristics, and
 - Known areas of concern.
- Team members should be marking areas of concern on the maps themselves.





MOT Continued

- Note taker should be recording the map notations.
- After the team review, the presenter should review the teams findings to the group.



Photo: PBS&J



MOT Next Steps

- Elect field representatives.
 - Representative from each entity.
 - Consider if there is more than one side of the house (stormwater vs. public works).
 - Participants should have infrastructure knowledge and have access to facilities (gated stormwater ponds, pump stations, etc.).
 - Sampling staff:
 - Should have necessary sampling equipment, and
 - Should be familiar with sampling SOP.





Field Planning

- Spaces for field event are limited, as it is imperative all field participants ride in one vehicle.
 - *Yes, that means one vehicle.*
 - 12 passenger van is recommended.
- Remember you may need to coordinate with local law enforcement if you may be in areas that may have safety concerns.





Field Planning

- Participants should plan on bringing:
 - Lunch (there is no time to stop at restaurant);
 - Sunscreen and bug repellent;
 - Appropriate field clothing;
 - Water; and
 - Agency contact numbers.
- Equipment for field:
 - GPS;
 - Camera;
 - Sampling equipment, coolers, and ice;
 - Large format maps.





Pre Field Survey before Walking with Group

- Lead agency needs to complete a pre-field survey and identify:
 - Event day meeting location with appropriate parking.
 - Route from headwaters downstream.
 - Focus areas.
 - Lunch location.
 - Areas of concern (map and pre-investigation).
 - Access issues.





Walking the Waterbody

- Designate a documentation team or teams:
 - Primary note taker who coordinates GPS points, photos, and sampling locations.
 - GPS – take GPS points.
 - Camera – take pictures.
- **Imperative that the precise record (order) of GPS coordinates, photos, and notes is captured in the field.**
- Other participants should also be taking pictures.





When Walking What are we Looking For?

- Flood prone areas
- Evidence of pet waste
- Water fowl
- Chickens or other hobby animals
- Ruminant populations and raccoons, etc.
- Septic tanks
 - Ponding
 - Strong smell
 - Close to surface waters





Looking Continued

- Wastewater
 - Any infrastructure in close proximity to surface waters:
 - Pump Stations:
 - Alarms;
 - Contact Information;
 - Manholes; and
 - Air release valves (ARVs).
- Branches and contributing ditches.





Still Looking

- Erosion or wash out
- Dense tree canopy
- Dense vegetation in stream
- Stagnant water
- Homeless
- Animals in water:
 - Horses
 - Cattle
 - Raccoons





It's a lot of Looking

- Stormwater
 - Potential Illicit Connections
 - Stormwater Drains:
 - Free of debris,
 - In repair, and
 - Smell of sewage (cross- connections).
 - Inlets:
 - Free of debris, and
 - Proximity to wastewater infrastructure.
 - Outfalls:
 - Ponds, and
 - Underground conveyances.





When You See a Discharge

- Take a sample:
 - At point, and
 - Downstream and/or upstream.
- If it is a serious infraction – Call it in!
 - Illegal discharge
 - Turbidity
 - SSO
- Take GPS point and pictures.





When You See Potential Sources

- Take pictures.
- Capture area with GPS point.
- Notes should indicate:
 - What it is or may be.
 - Who may be associated with corrective action, such as:
 - County not FDOT, or
 - Department of Business & Professional Regulation not local Utility.





Important!!!!

- Remember samples must be on ice while waiting for delivery.
- Samples must meet holding times (6 hours)!!
- Samples must be processed in NELAP certified laboratory.
- Arrangements to have samples picked up for delivery to lab.
- Chain of custody must still be maintained.





Summary, Reporting & Follow-up

POST EVENT



Photo: PBS&J





First Steps to Summarize Field Event

- Post process GPS coordinates.
- Create shapefile of coordinates.
- Edit shapefile to include description or information about point.
- Process pictures by adding labels so you can later recall what the picture was showing.
- Obtain sample results from lab.





Hold Follow Up Meeting with Participants

- Review the findings from the field:
 - Pictures
 - Sample results
 - Follow up actions associated with jurisdictional authority:
 - Actions associated with permit obligations:
 - Observed SSO – Utility, or
 - Potential Illicit Connection – MS4.
 - Housekeeping of Existing Infrastructure:
 - Broken infrastructure or in need of maintenance:
 - Broken stormwater grate.
 - General maintenance:
 - Clogged stormwater drains.





Follow Up Meeting with Participants, Cont.

- Coordinated community follow up actions.
 - Additional source investigations.
 - Sampling:
 - Increased sampling frequency (quarterly to monthly).
 - New stations:
 - Information gaps (only two trend stations in WBID).
 - Investigate potential source - Add sampling station to help identify source location , not intended to be a fixed sampling location .
 - Follow up sampling after high count.
 - Specialized sampling :
 - MST.
 - Boron or other indicators.
- Increased maintenance.
- Other source solutions.





Coordinated Community Follow Up

- Lead entity should host a follow up discussion to review the community follow up actions.
- This meeting should prioritize actions that eliminate sources.
- Agencies and partnerships of entities should volunteer for those actions that are closely related to their missions and authority.





Reporting

- Create table of follow up actions and indicate appropriate entities for management actions.
- Create mechanism to ensure all jurisdictional items are completed.
- Prioritize community follow up actions:
 - Identify which community follow up actions will occur near term, and
 - Actions for future implementation.





Reporting Continued

- This information should be recorded in a way that information can be provided to the Department to demonstrate:
 - Identified sources;
 - Completed management actions to remove sources;
 - Non-human sources;
 - Projects or activities to address identified source and source assessment and identification; and
 - Future steps.





Reporting continued

- The Department is working on a document template for inserting Walk the Waterbody results that will be available in March.





References, Case Studies

ADDITIONAL RESOURCES AND INFORMATION





Additional Resources

- Tributary Pollution Assessment Manual (PBS&J).
- LSJ Technical Reports:
 - Miramar Creek
 - Big Fishweir Creek
 - Long Branch
 - Hogan Creek
 - Williamson Creek
 - Red Bay Branch





Additional Resources

- The Department has developed a fecal coliform guidance document that is a great source of tools and information. It will be posted next month:
<http://www.dep.state.fl.us/water/watersheds/bmap.htm>
- Contracting with consultant to obtain better information such as:
 - Develop sampling program,
 - MST work to identify human sources,
 - Water Quality Data Analysis.





Questions

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