This webinar is sponsored by EPA’s Decentralized Wastewater MOU Partnership, which consists of 18 organizations that work collaboratively to encourage proper decentralized system management and education on system maintenance in order to protect the nation’s public health and water resources.
Presenters

Ayana Jones, MPH, Project Coordinator at the National Environmental Health Association, works across a broad spectrum of program areas at NEHA, including decentralized wastewater. Ayana previously worked as an environmental health fellow at the American Public Health Association and as a county sanitarian in Ohio.

Sonia Marino, MPH, is Director of the Westbrook, Connecticut, Health Department and a registered sanitarian. She has spent the past eight years working for local municipalities along the CT shoreline, which are largely dependent on onsite wastewater systems. Sonia has been actively pursuing the goals of the town’s Water Pollution Control Commission/Associations.

Joel Blanco-González, Sustainability Advisor for Puerto Rico, works on the Puerto Rico Recovery Plan for EPA and FEMA following Hurricanes Irma and Maria in 2017. He has previously served as an environmental engineer and tribal affairs expert for EPA Region 3, a strategic integration analyst for EPA Region 2, and in international affairs for EPA Region 4.

Paul Fericelli, Water Advisor with EPA Caribbean Environmental Protection Division in San Juan, Puerto Rico, coordinates efforts with FEMA, other federal agencies, Puerto Rico and stakeholders to expedite the recovery from Hurricanes Irma and Maria. Paul provides planning, technical, managerial and compliance support to water systems and infrastructure projects.
Emergency Preparedness Resources for Septic System Users

Ayana Jones, MPH
Project Coordinator
National Environmental Health Association
About NEHA

- ~ 89,000 Professionals
- > 6,200 Credential Holders
- Annual Conference
- JEH
- 38 State Affiliates
- Web-based learning platform
- Workforce Capacity Building

Members
- Local governmental PH
- State governmental PH
- Industry
- 7 uniformed Services
- Academic institutions
Presentation Agenda

• Background
  • Importance
  • Awareness

• NEHA’s Role
  • Project goals
  • Committee process

• Disaster Impact and Key Septic Guidance
  • Disaster areas
  • Key messages
Background
Importance

- Public health
- Long-term effects
- Emergency planning
- Population use
- Education and awareness
Septic Systems

• 20% (26.1 million) of U.S. homes
• 22% (1.6 million) of housing less than 4 years old
• 50% in rural areas

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NEHA’s Role
Project Goals

- Protect public health
- Provide one-stop-shop for safety resources
- Collect ongoing best practices
- Maintain flexibility
Committee Process

• Committee formation
  • Partners from federal agencies, state agencies, industry, academia, and nonprofits

• Committee structure

• Examples of discussion points
  • Differing regulations for cesspools
  • Different septic system types
    • Gravity or conventional
    • Pressure distribution
Disaster Impact and Key Septic Guidance
Hurricanes

• Potential Issues
  • Floating or dislodged septic tank
  • Exposed sewage
  • Potential contamination of drinking water sources (i.e. private well)

• Impact¹
  • 30% (2.6 million) in Florida

Hurricane Preparedness

Long term
• Make sure the land around the manhole covers is sloped downwards

Immediately before (time permitting)
• Turn off electricity to the system
• Waterproof all electrical connections (when power is off)
• Reduce water use in the house
During a Hurricane

- Follow emergency and evacuation advice
- Eliminate non-essential water use
- Do not use the system if the drain field becomes covered with water
Hurricane Response

• Rope off the septic system if it floods and avoid the area
• Contact a septic system service professional for an inspection
• Do not have the septic tank pumped under flooded conditions
• Avoid using the system and do not dig around the system
Wildfire

• Potential Issues
  • Damage from heavy equipment such as fire trucks driven or parked over drain fields
  • Fire damage to above ground components
  • Potential contamination of drinking water sources (i.e. private well)
Wildfire Preparedness

Long term
• Follow defensible space guidelines
• Mark system components with a fire-resistant marker

Immediately before (time permitting)
• Turn off power to your system
• After the power is off, wrap control panels, plastic risers, and lids with a durable flame-resistant sheet plastic
During a Wildfire

• Follow emergency and evacuation advice
• Eliminate non-essential water use
Wildfire Response

• Contact a septic system service professional for an inspection
• Stay out of the area if sewage backs up due to a system malfunction or excess water from firefighting efforts
• Reduce water use until the system is inspected and repaired
Other Issues

• Earthquakes
• Freezing Temperatures and Snow
Other Guidance

Earthquakes
• Check for changes in how the septic system functions (how appliances drain, wet or unusually green spots in your yard, odors, activated alarms, etc.)

Freezing temperatures and snow
• Check for open, broken, or uncapped risers, inspection pipes, or manhole covers
• Avoid compacting the snow around the system
• Call a septic system professional if your system freezes
General Guidance

• Know your septic system and take pictures or keep documents of the following
  • Septic tank location
  • Septic system records or drawings
  • Electrical components

• Have contact information for a septic system service professional on hand

• Always make sure power to the system is off before inspecting the area
Next Steps

• Documents can be accessed at neha.org
  • Septic materials will be posted June 2019
  • Well materials will be posted Fall 2019

• Promotion
  • Social media channels
  • NEHA membership
    • Journal of Environmental Health
    • Email blasts
  • Partner organizations

• Ongoing feedback
  • Update every few years
  • Contact aschneider@neha.org
Questions?
Natural Disaster Preparedness & Recovery In A Shoreline Community Dependent On Decentralized Wastewater Management

Hurricane Irene 2011 & Super Storm Sandy 2012

By: Sonia Marino, MPH, RS
WESTBROOK CONNECTICUT

CONNECTICUT SHORELINE

Some Shoreline Towns Dependent on Onsite Wastewater Management

https://shorelinechange.uconn.edu/
IRENE AUGUST 2011

LOCAL HEALTH DEPARTMENTS/DISTRICTS

Multitask & Prioritize

- Emergency Preparedness
- Shelters
- Power Outage
- Road Closures
- Food Service Establishment
- Drinking Water
- Environmental Assessment
- Clean-up

- Mold
- Stagnant Water
- Onsite Wastewater Management
- Plan & Review
- Permit & Rebuild
- Construct & Inspect
- Plan for the Future
AUGUST 2011

Photo by: Wallace, H 2011
AUGUST 2011 (1)

Photo by: Brown-Arnold, W 2011
AUGUST 2011

Photo by: Brown-Arnold, W 2011
AUGUST 2011 (3)

Photo by: Brown-Arnold, W 2011
AUGUST 2011 (4)

Photo by: Brown-Arnold, W 2011
AUGUST 2011 (5)

Photo by: Brown-Arnold, W 2011
AUGUST 2011 (6)
SUPER STORM SANDY 2012

Photo by: Wallace, H 2012
OCTOBER 2012
OCTOBER 2012 (1)

Photo by: Wallace, H 2012
OCTOBER 2012 (2)

Photo by: Brown-Arnold, W 2012
OCTOBER 2012 (3)
OCTOBER 2012 (4)
2019 SEASIDE AVENUE REPAIR

Photo by: Marino, S 2019
2019 SEASIDE AVENUE REPAIR

Photo by: Marino, S 2019
2018 SEASIDE AVENUE
AFTER A STORM AND HIGH TIDE
2019 OLD MAIL TRAIL
HEAVY RAIN & NORMAL HIGH TIDE

Photo by: Maiden, D 2018
OLD MAIL TRAIL
SEPTIC REPAIR 2018

Before

Install

After

Photo by: Mickens, S 2018
QUESTIONS???
Caribbean Septic Systems Workgroup

An EPA initiative promoting stronger, more effective septic systems in the Caribbean

US EPA Region 2
Caribbean Environmental Protection Division
Guamnabo, Puerto Rico
Septic Systems in Puerto Rico

Legend
- Communities with no Sewer Connections
- Municipios

Data Layer / Map Description:
This map displays the Communities with no sewer connections.

Data Sources: FEMA, ESRI, PRASA
Polluted Creek

Adiestramiento auspiciado por USEPA
Adiestramiento auspiciado por USEPA
Strategic Planning

- **VULNERABILITIES**
  - Tropical Flooding
  - Oversaturation of Soil
  - Erosion

- **STRESSORS**
  - Planning
  - Design
  - Construction
  - Operation
  - Maintenance

- **REPERCUSSIONS**
  - Surface Water
  - Ground Water
  - Drinking Water

- **INTEGRATED RESOURCES MANAGEMENT**
  - Efficiency/Efficacy
  - Identifying Deliverables
  - Describing Measures
  - Leveraging Resources
  - Setting Timeframes
  - Consistency/Consensus
Federal government, state, and local stakeholders and counterparts

Federal Government:
- EPA (Headquarters, Region 2, Region 9)
- U.S. Department of Agriculture
- U.S. Department of Housing and Urban Development
- U.S. Geological Survey

State and Local Government:
- U.S. Virgin Islands Department of Planning and Natural Resources
- Puerto Rico Department of Natural and Environmental Resources
- Puerto Rico Department of Health
- Puerto Rico Office of Permits Management
- Puerto Rico Planning Board
- Puerto Rico Housing Department
- Hawaii Department of Health Office of Environmental Quality Control
FEDERAL GOVERNMENT, STATE, AND LOCAL STAKEHOLDERS AND COUNTERPARTS

Academia:
• University of Puerto Rico at Mayagüez
• Polytechnic University of Puerto Rico
• Interamerican University of Puerto Rico at San German
• University of the Virgin Islands
• University of Puerto Rico at Rio Piedras
• Ana G. Méndez University System

Non-Governmental Organizations
• USVI Coral Bay Community Council, Inc.
• Protectores de Cuencas Inc.
• Centro de Microempresas y Tecnologías Agrícolas Sustentables Yauco Inc.
• Fideicomiso de Conservación e Historia de Vieques
• Programa del Estuario de la Bahía de San Juan
• RCAP Solutions
• Enterprise Community Partners, Inc.
• Colegio de Ingenieros y Agrimensores de Puerto Rico
CONSENSUS
Although much of the existing laws and regulations are sufficient, there is no consensus about roles and legal jurisdictions of the territory agencies.

PERMITTING
Need to address shortfalls in the permitting process to arrest growth of noncompliance with building codes and best management practices.

OUTREACH & DETERRENCE
Changes on public behavior are needed through public education and deterrence.

SHORT-TERM STEPS
The need for short-term and relatively inexpensive steps can significantly reduce the problem.

AWARENESS MODEL
The Homeowner Awareness Model is the most practical/reasonable management model due to unclear implementation of PR laws.

FUNDING
Funding is needed for continuation, coordination and success of the stewardship.
Caribbean Septic Systems

CARIBBEAN SEPTIC SYSTEMS

FOCUS GROUPS

01 Public Policy
Facilitate the discussion at the government level to leverage shifts in public policy.

02 Technical Support
Provide technical support on technology and innovation endeavors.

03 Community Outreach
Engage with the public and professional groups to build capacity and situational awareness.
Leverage the incorporation of protocols to address shortfalls in the territory permitting process using as a baseline the Watershed Stewardship protocols.

Provide support to coordinate proper installation, repair, and upgrades of septic systems using federal funds (e.g., EPA SRF).

Develop the framework and methodology to conduct a pilot study in areas of interest.

Implement and manage the EPA SepticSMART Program in partnership with the Government of PR.

Coordinate training events with EPA grantee for the general public.

Establish strategies and partnerships to secure human and financial resources for continuity of focus groups.

Support development of a geospatial model to prioritize environmental risk factors from unsewered communities.

Support the San Juan Bay Estuary on case study project.

Conduct a training event with the Professional College of Engineers and Land Surveyors of Puerto Rico for the professional community.

Build capacity in federal and territory agencies.
The Clean Water Act and Safe Drinking Water Act are the fundamental building blocks for clean water and safe drinking water in the United States and its territories. We should use them to great advantage to improve water quality and protect drinking water and secure tangible environmental results.

KEEP BUILDING ON A RESULTS-FIRST APPROACH
Questions for Joel and Paul?