Modern Monitoring and Surveillance

An Informational Workshop on the Use of Remote Monitoring Technologies to Assist the San Diego Water Board Mission

April 12, 2017

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Outline

- Part One: Compliance & Enforcement
- Part Two: New Technology for Old Problems
- Part Three: Sewage Collection Systems Monitoring
- Q&A
- Trade Show

What to Expect

- WHY: Monitoring needs
- WHAT: Technologies
- HOW: Challenges

Internal Challenges

- Staff time
- Data management
- Costs and funding sources
- Contracting

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Part One:
Compliance & Enforcement

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Monitoring Needs- Compliance & Enforcement

Objective	Need	Technology Demonstration
1. Assess Water-Related Conditions to Prioritize Actions	Monitoring Data & Functional Database(s)	-MS4 flow -ALERT E. coli
2. Identify Non-compliance	Surveillance Data -Site-specific -Reactive	-Surveillance Cameras -sUAS (aka Drones) -Satellite Imagery
3. Prevent/Deter Violations	Surveillance Data -Reactive -Retroactive	

Common Challenges- Compliance & Enforcement

- Power source/duration
- Curtilage/landowner consent
- Structural interferences
- Availability when needed
- Cloud cover/weather
- Resolution/accuracy

Speaker Lineup- Compliance & Enforcement

Speaker	Representing	Technology Tool	Time
Dr. Joyce Wong	Fluidion	ALERT E. coli sampling	5 minutes
David Gaw	Sensera	Surveillance cameras	5 minutes
Dr. Steve Steinberg	SCCWRP	-Drones -Satellite imagery -Multispectral imagery -Associated software	15 minutes

Fluidion

Sensera

SCCWRP

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Part Two:
New Technology for Old Problems- Passive Samplers and the Sea Ring

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Part Three:
Sewage Collection Systems Monitoring

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SSO DEFINITION

Any overflow, spill, release, discharge, or diversion of untreated or partially treated wastewater from a sanitary sewer system (that reaches or does not reach surface water)

SSO CHARACTERISTICS

- Discharges from Sanitary Sewer Systems contain high levels of:
  - Suspended solids
  - Pathogenic organisms
  - Toxic pollutants
  - Nutrients
  - Oil and grease

SSO DATA

- >50 Agencies
- >13,000 miles of sewer lines
- From 01/01/2011 to 12/31/2016:
  - >1,000 SSOs
  - >12.5 million gallons of sewage
  - >11 million gallons of sewage reached surface waters

SSO MODERN TECHNOLOGIES

- Early Detection
  - Sewage Sniffing Dogs https://www.youtube.com/watch?v=6WX5zb_c4y4
- Preventative Technology
  - Smart Cover Systems (David Drake)
- Bioanalytical screening tests for constituents of emerging concern (CECs) (Alvine Mehinto)

Smart Cover

SCCWRP

Thank you to our speakers!

Please join us in the lobby for a trade show and live demos.