



CALIFORNIA STORMWATER  
QUALITY ASSOCIATION®



**Water Boards**

STATE WATER RESOURCES CONTROL BOARD  
REGIONAL WATER QUALITY CONTROL BOARDS

# CALIFORNIA BACTERIA SUMMIT

SEPTEMBER 14-16, 2022

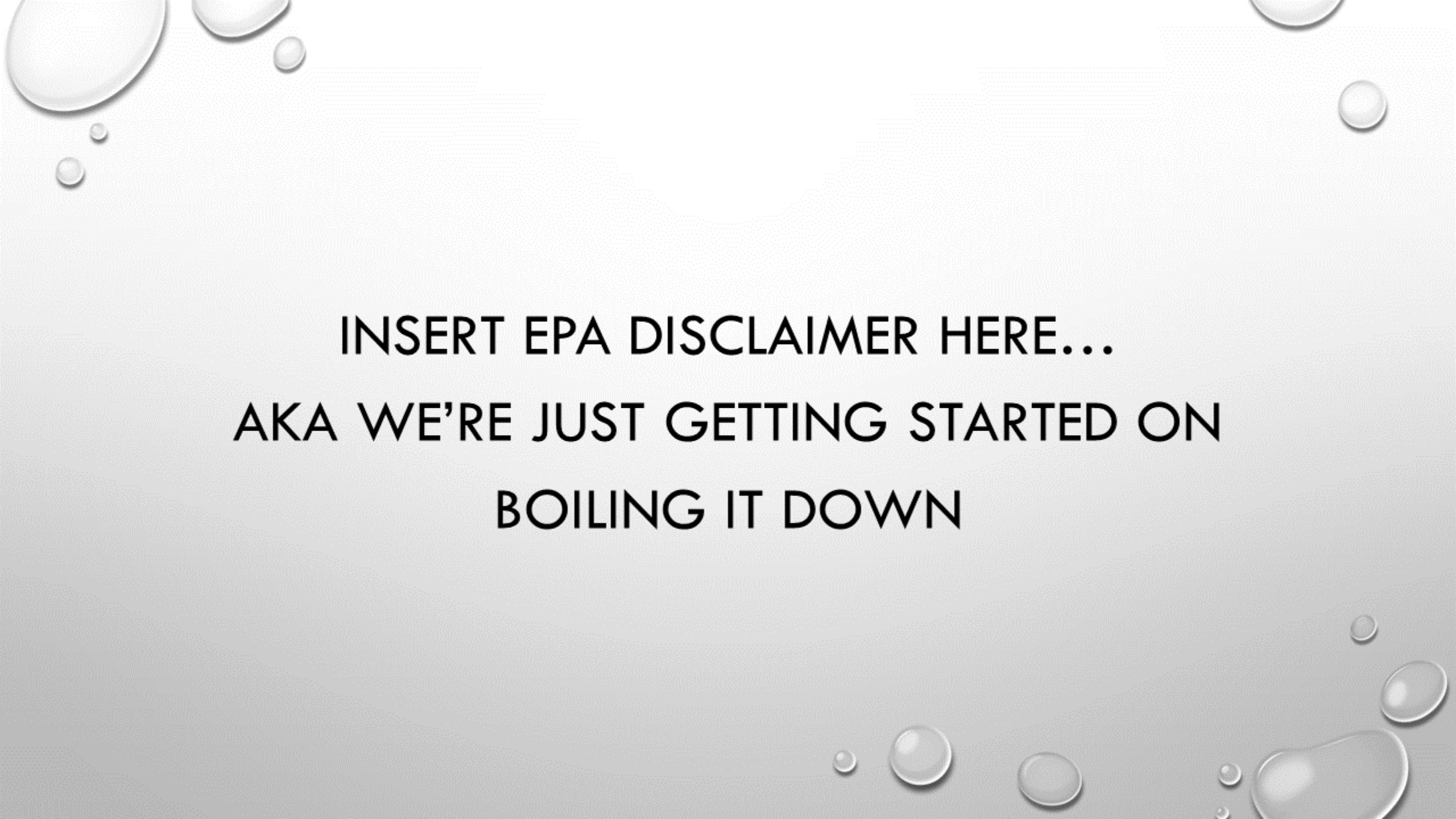
AGENDA ITEM #15: KEY TAKE-AWAY FROM DAYS 1 AND 2

Jonathan Bishop: State Water Board

Karen Cowan: CASQA

The background is a light gray gradient. There are several realistic water droplets of various sizes in the corners: top-left, top-right, and bottom-right. The text "THANK YOU" is centered in the middle of the page.

**THANK YOU**



**INSERT EPA DISCLAIMER HERE...  
AKA WE'RE JUST GETTING STARTED ON  
BOILING IT DOWN**

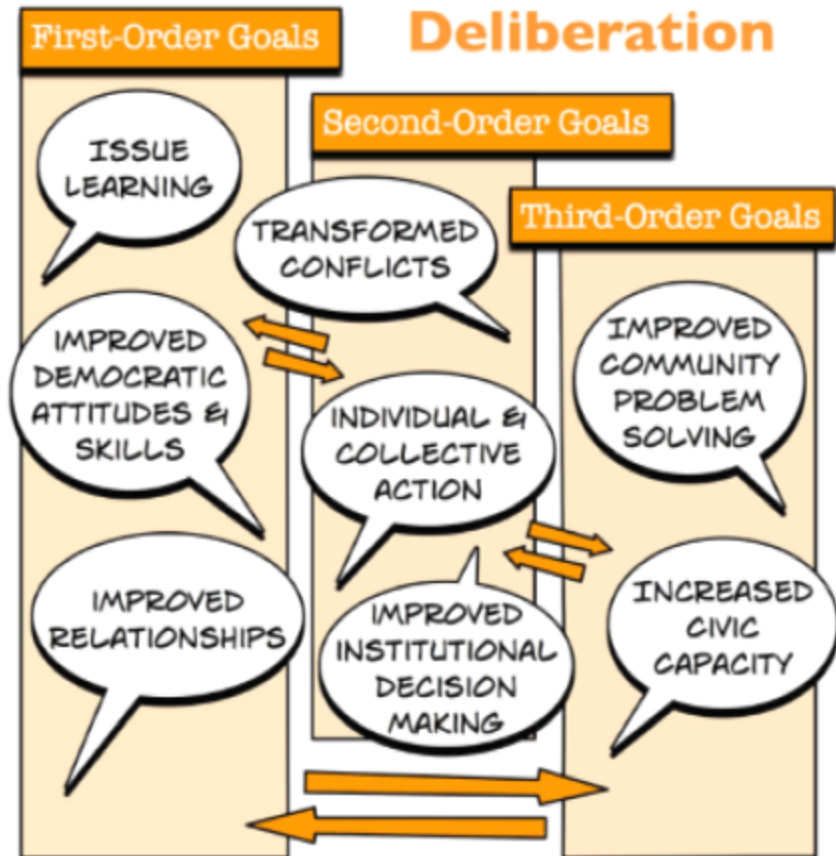
# WHAT DO WE HOPE TO ACHIEVE?

- **ISSUE LEARNING AND IMPROVED RELATIONSHIPS**
  - BUILD A TEAM OF ENGAGED AND COLLABORATIVE PROBLEM SOLVERS
- **PRIORITY ACTIONS** (INDIVIDUAL AND COLLECTIVE)
  - LONG-TERM TO ACHIEVE OUR GOALS
  - SHORT-TERM TO ALIGN WITH LONG-TERM GOALS



**Waters that are safe to swim**  
**Shellfish that are safe to eat**

## Goals of Dialogue & Deliberation



Graphic created by Sandy Heierbacher, NCDD (August 2009). Its content is a slightly adapted version of the "Goals of Deliberation" figure in *Beginning with the End in Mind: A Call for Goal-Driven Deliberative Practice* (Summer 2009, Public Agenda's Center for Advances in Public Engagement), by Martin Carcasson of Colorado State University's Center for Public Deliberation, available at [www.publicagenda.org/cape](http://www.publicagenda.org/cape).

## DAY 1

### SHARED GOALS:

Waters that are safe to swim;  
Shellfish that are safe to eat

# DAY 1

- EPA'S 2012 CRITERIA BASED ON RISK LEVEL
  - ALLOWS CONSIDERATION OF OTHER METHODS AND INDICATORS PROTECTIVE OF THE USE
- SCIENCE CONTINUES TO ADVANCE OUR UNDERSTANDING OF RISK IN RECREATIONAL WATERS AFFECTED BY FECAL CONTAMINATION
- SOURCE (FECAL SOURCE) MATTERS FOR RISK
  - OF ALL THE PATHOGENS IN A WATERBODY, VIRUSES MOST LIKELY TO MAKE PEOPLE SICK
  - IN WATERS NOT IMPACTED BY HUMAN FECAL SOURCES, VIRUSES LIKELY NOT PRESENT
  - NATURE AND MAGNITUDE OF SOURCE(S) ARE IMPORTANT
- RISKIEST SOURCES ARE HUMAN AND CATTLE
- FIB CAN DO A GOOD JOB INDICATING RISK, BUT NOT ALL OF THE TIME



# DAY 1

- RAPID METHODS WOULD INCREASE TIMELY RISK COMMUNICATION TO THE PUBLIC
  - IS IT ACTUALLY SAFE TO SWIM TODAY? NOT YESTERDAY OR TOMORROW...
- QMRA IS A TOOL TO BETTER CHARACTERIZE RISK / RISK MANAGEMENT QUESTIONS
  - ALLOWS MODELING DIFFERENT SCENARIOS, WHILE EPI STUDIES LIMITED TO STUDY DESIGN
  - SCIENTIFIC COMMUNITY HAS DEVELOPED RISK BASED THRESHOLDS / FRAMEWORK
  - SENSITIVE TO INPUTS

# DAY 1

- NEW TOOLS UNDER DEVELOPMENT TO IDENTIFY SPECIFIC HUMAN SOURCES
  - E.G., SEPTIC, SEWER, UNHOUSED COMMUNITIES
  - DISTINGUISHING SOURCE IMPORTANT FOR RESOLVING THE INPUT
- COLIPHAGE ANOTHER TOOL FOR IDENTIFYING RAW SEWAGE
  - RESEARCH TO DATE: BEACHES ARE CLEAN; FOUND AT IMPERIAL BEACH (IMPACTED BY TIJUANA)



## DAY 2: SOURCE REDUCTION

- SOURCE NOT ONLY MATTERS FOR RISK, IT MATTERS FOR IMPLEMENTATION
  - ARE OUR ACTIONS REMOVING THE RISK?
- DRY WEATHER = SIGNIFICANT SUCCESS
- WET WEATHER = MORE QUESTIONS ABOUT WHAT WORKS
- INLAND
  - SCOPE BIGGER (MORE WATERBODIES) INLAND
  - LESS STUDIES; BIGGER DATA GAPS

## DAY 2: SOURCE REDUCTION (CASE STUDIES PRESENTED)

- INDICATOR BACTERIA DID NOT CORRELATE WITH HUMAN WASTE MARKERS
  - HUMAN WASTE **WAS NOT** DETECTED AT SOME PROJECT SITES
  - HUMAN WASTE **WAS** DETECTED IN SOME STORM DRAINS
- REMOVAL OF HUMAN MARKERS (HF183) DOES NOT ALWAYS REMOVE FIB
- FINDING THE SOURCE OF HUMAN WASTE IS HARD; RESOLVING THE ISSUE IS THE EASIER PART
- COMMUNICATING SAFETY OF SWIMMING JUST AS IMPORTANT AS WHEN IT'S NOT SAFE TO SWIM (ENVIRONMENTAL JUSTICE = ACCESS TO WILD WATERS)

## DAY 2: REGULATORY

- 1970S: INVESTMENT IN SEWER AND TREATMENT
- 1990S: STORMWATER IS AS REMAIN SOURCE
- HOW DO WE FOCUS ON HUMAN SOURCES IN STORMWATER?
- HOW DO WE CONNECT THE WORK OF STORMWATER AND WASTEWATER?
- WASTEWATER HAS BEEN SO SUCCESSFUL IN THIS AREA

## DAY 2: REGULATORY

- CONTROL CONTROLLABLE SOURCES
- MOVE TO A MORE PROACTIVE STATEWIDE APPROACH
- WHAT'S THE BASELINE LEVEL OF ACTIVITIES THAT EVERYONE SHOULD BE DOING?
- MOVE AWAY FROM REACTIVE ACTIONS
- IDEAL WORLD = ACTIONS TO ADDRESS THE PROBLEM
- REALITY = ENFORCE WQOS
- HOW LOW CAN GO?
- CHALLENGES WITH TREATING / DISINFECTING STORMWATER

## DAY 2: REGULATORY

- A RISK BASED APPROACH REQUIRES LINKAGE TO ILLNESS RATE IN STATE STANDARDS
- EXISTING REGULATORY TOOLS BUILT INTO STATE STANDARDS
  - NATURAL SOURCE EXCLUSION
  - SEASONAL SUSPENSIONS OF USE
- NEED TO FIGURE OUT WHAT TO DO WHEN SOURCE ID SHOWS NO HUMAN SOURCES
- WORKING TO FILL DATA GAP TO COMMUNICATE WHAT IT MEANS TO BE SAFE TO SWIM IN INLAND WATERS
- DESIRE TO WORK WITH HEALTH AGENCIES

# WHAT RESONATED: SOURCE REDUCTION

## Risk-Based

- Assessment & Identification
- Control
- Human
- Dry weather / wet weather

## Prioritize and Fix

- Sewer / septic
- Broken pipes

## Collective Action

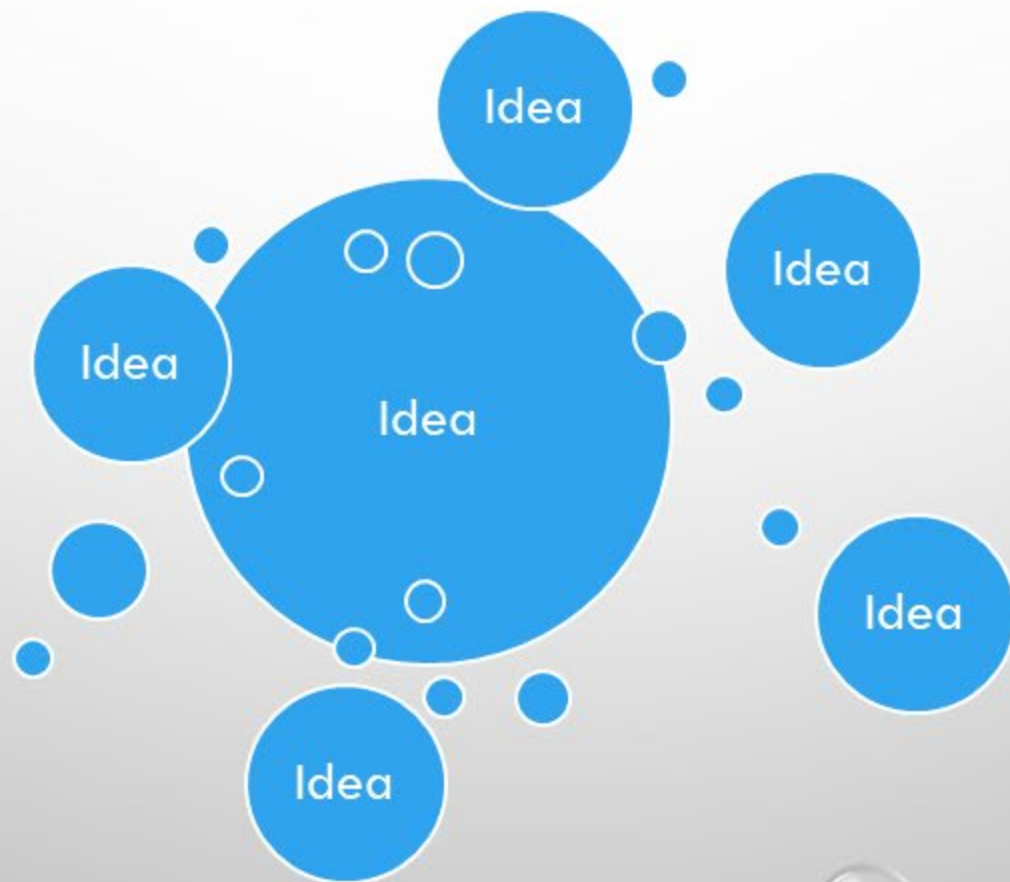
- Stormwater and Wastewater
- Community Analysis
- Monitoring

## Communication

- Public Education
- Risk Communication
- Agency collaboration



# WHAT RESONATED: REGULATORY OPPORTUNITIES



# SHELLFISH

- ACKNOWLEDGEMENT THAT MORE RESEARCH IS NEEDED TO EVALUATE USES AND OBJECTIVE
- DESIRE FOR CDPH, FDA, LOCAL PUBLIC HEALTH AGENCIES, AND WATER BOARD TO WORK TOGETHER
- INTEREST IN A SHELLFISH INDEX TO COMMUNICATE SAFETY TO PUBLIC
- THEY ARE TASTY 😊

The slide features a light gray background with a subtle halftone dot pattern. Several realistic water droplets of various sizes are scattered around the edges, with some in the top-left and bottom-right corners and others more centrally placed.

## WHAT ELSE NEEDS TO BE CONSIDERED AS WE MOVE FORWARD...

- TRIBAL AND CULTURAL BENEFICIAL USES
- EQUITY

# SAFE TO SWIM / SAFE TO EAT

## Fecal Source Matters

- Riskiest Sources = Humans and cattle

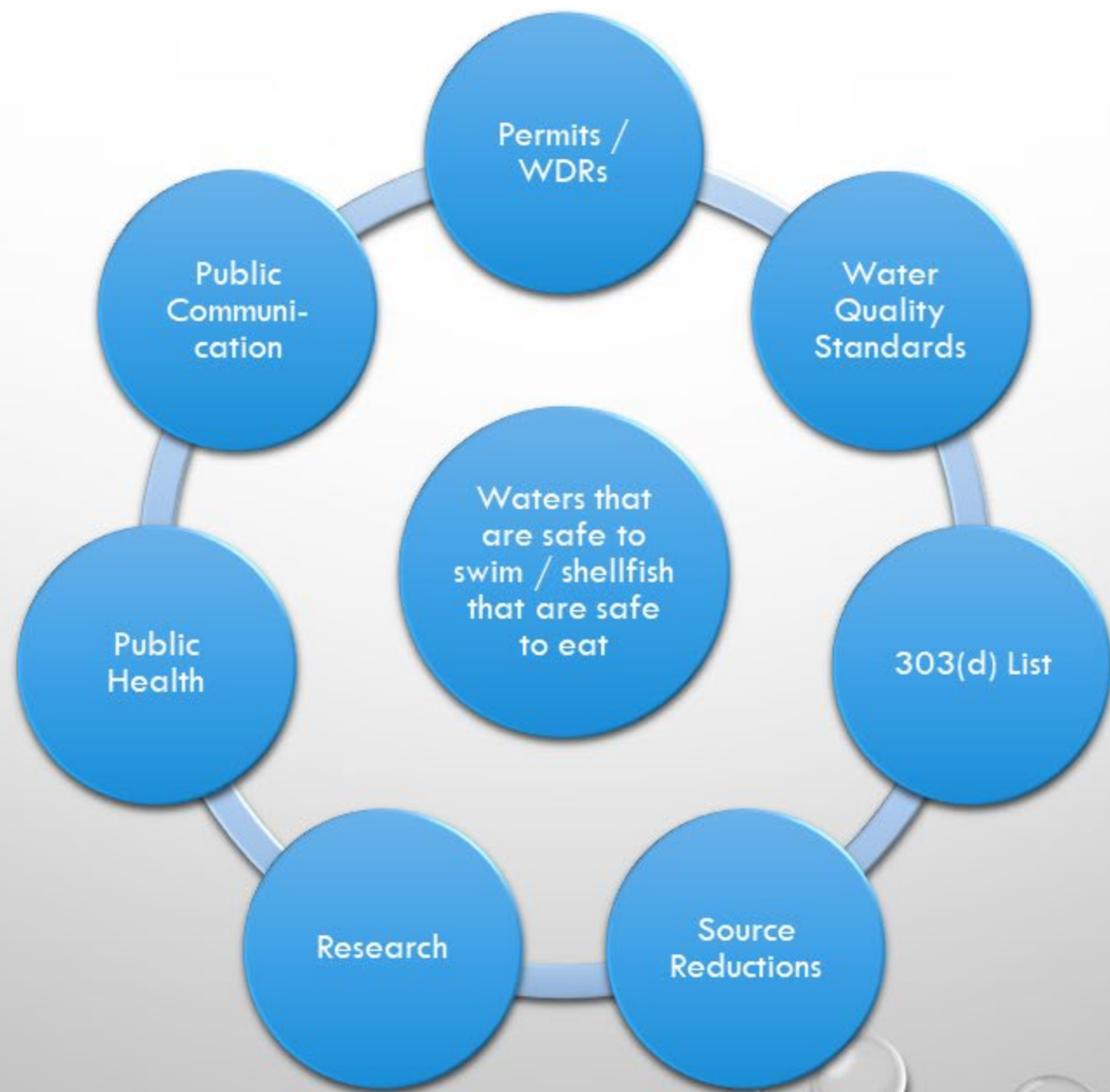
## Implementation Matters

- Prioritize riskiest sources
- Control controllable sources
- Accountability

## Allowing for these Outcomes Varies

- Different regional approaches
- Different TMDLs / permits







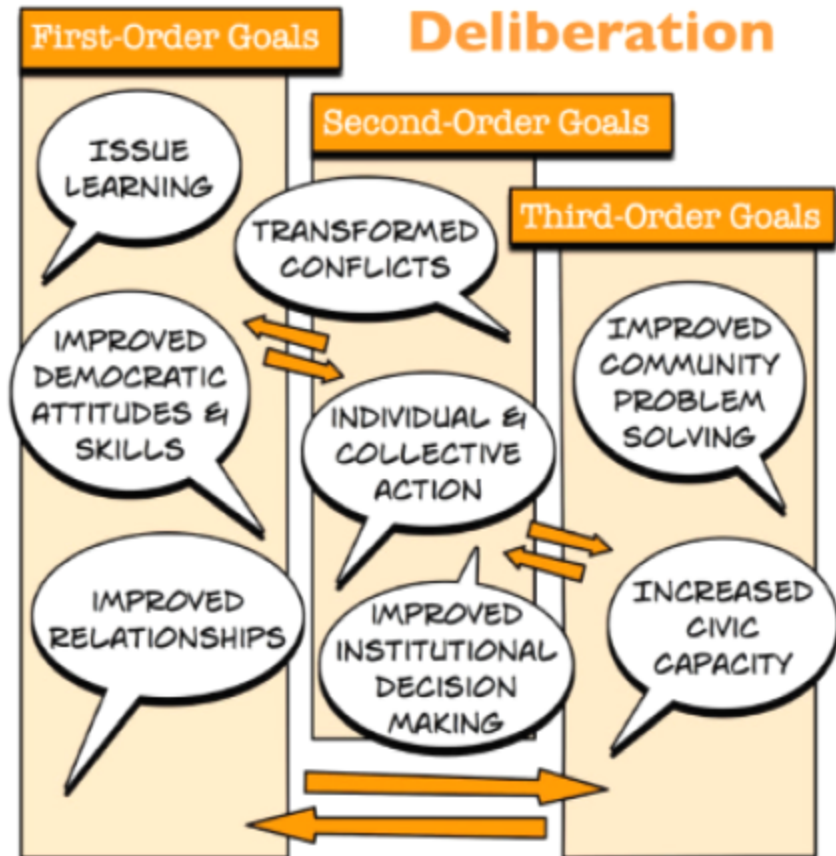
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The image features a light gray background with a fine, dotted texture. Scattered across the surface are numerous water droplets of various sizes and shapes. Some are large and prominent, while others are small and delicate. The droplets have a realistic appearance with highlights and shadows, suggesting a glossy surface. The overall composition is clean and minimalist.

**GOING FORWARD...**