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

THANK YOU

INSERT EPA DISCLAIMER HERE…

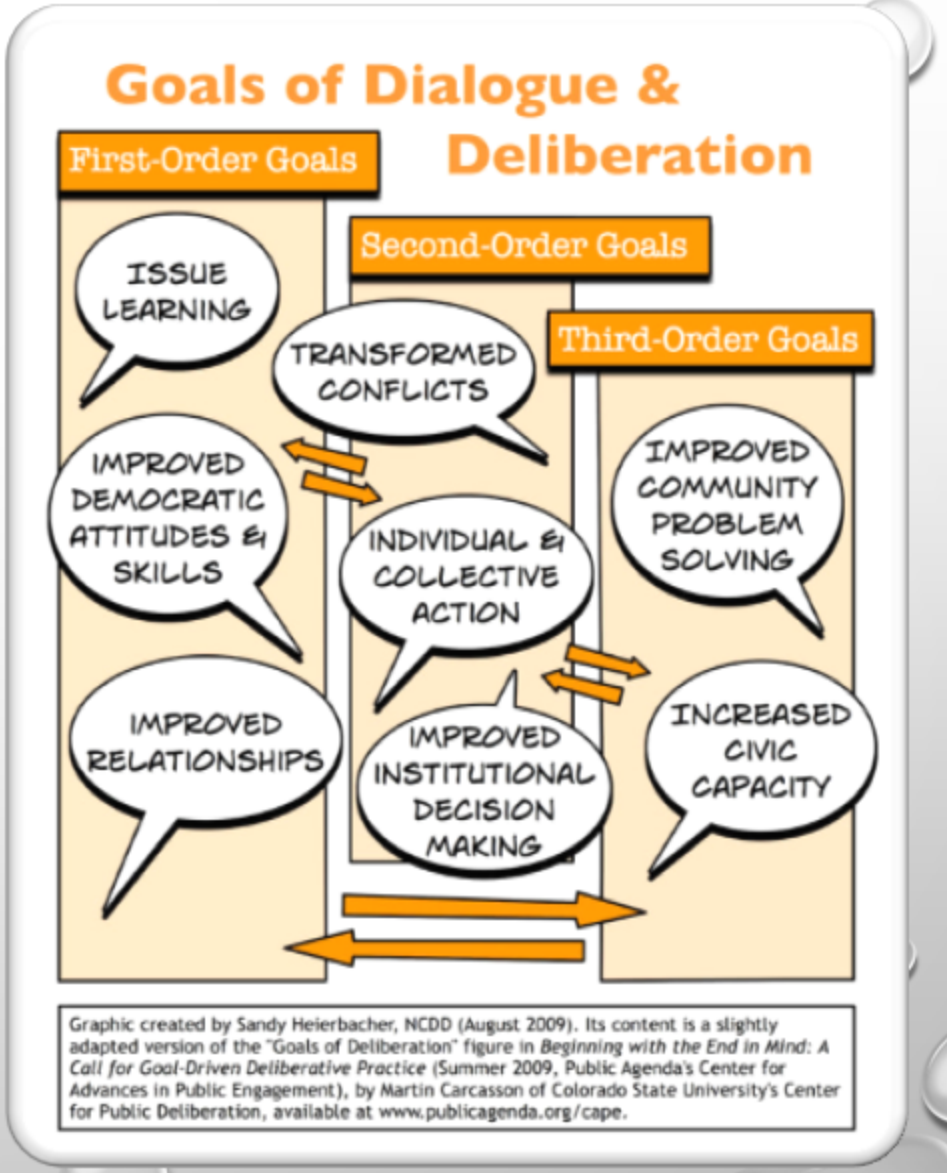
AKA WE'RE JUST GETTING STARTED ON BOILING IT DOWN

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



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 ID 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

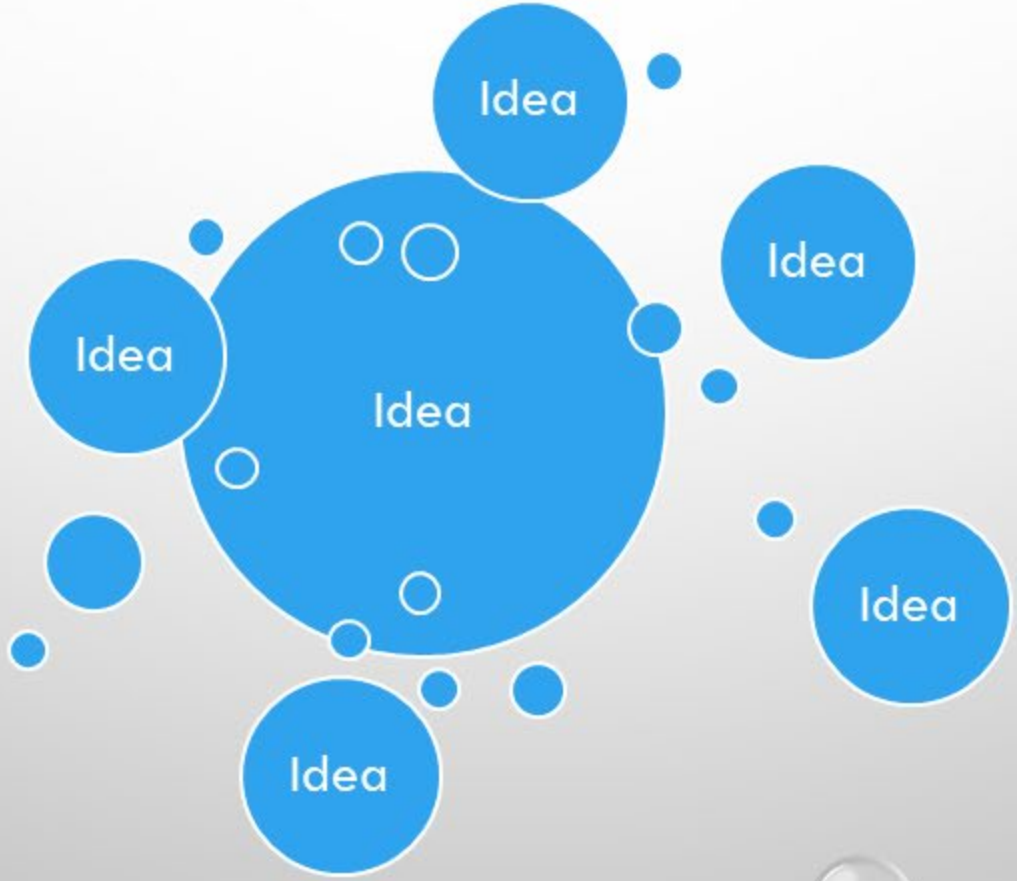
DAY 2: REGULATORY

- 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	Prioritize and Fix	Collective Action	Communication
• Assessment & Identification • Control • Human • Dry weather / wet weather	• Sewer / septic • Broken pipes	• Stormwater and Wastewater • Community Analysis • Monitoring	• 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 ☺

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	Implementation Matters	Allowing for these Outcomes Varies
• Riskiest Sources = Humans and cattle	• Prioritize riskiest sources • Control controllable sources • Accountability	• Different regional approaches • Different TMDLs / permits


Permits / WDRs
Water Quality Standards
303(d) List
Source Reductions
Research
Public Health
Public Communi-cation
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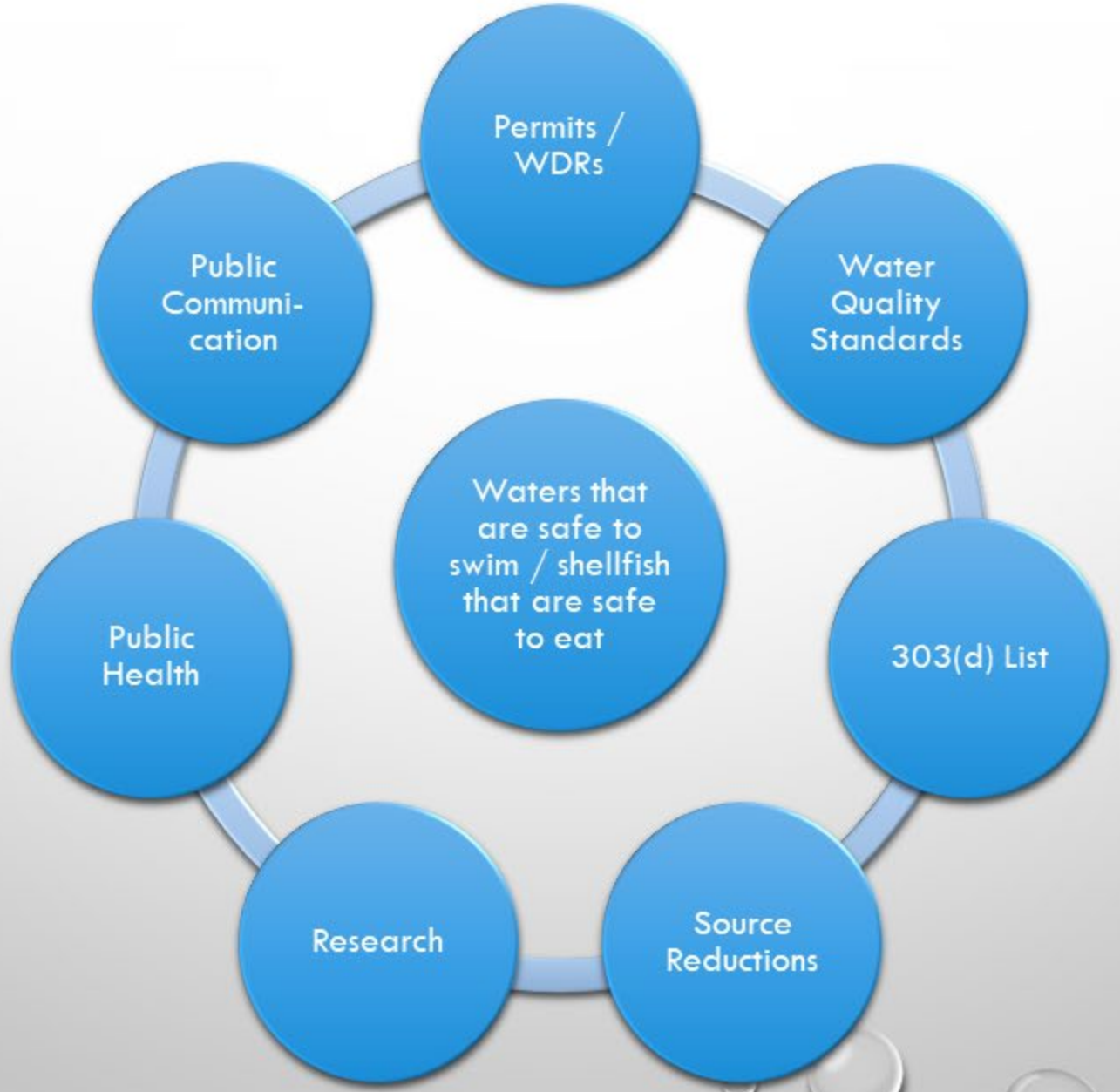
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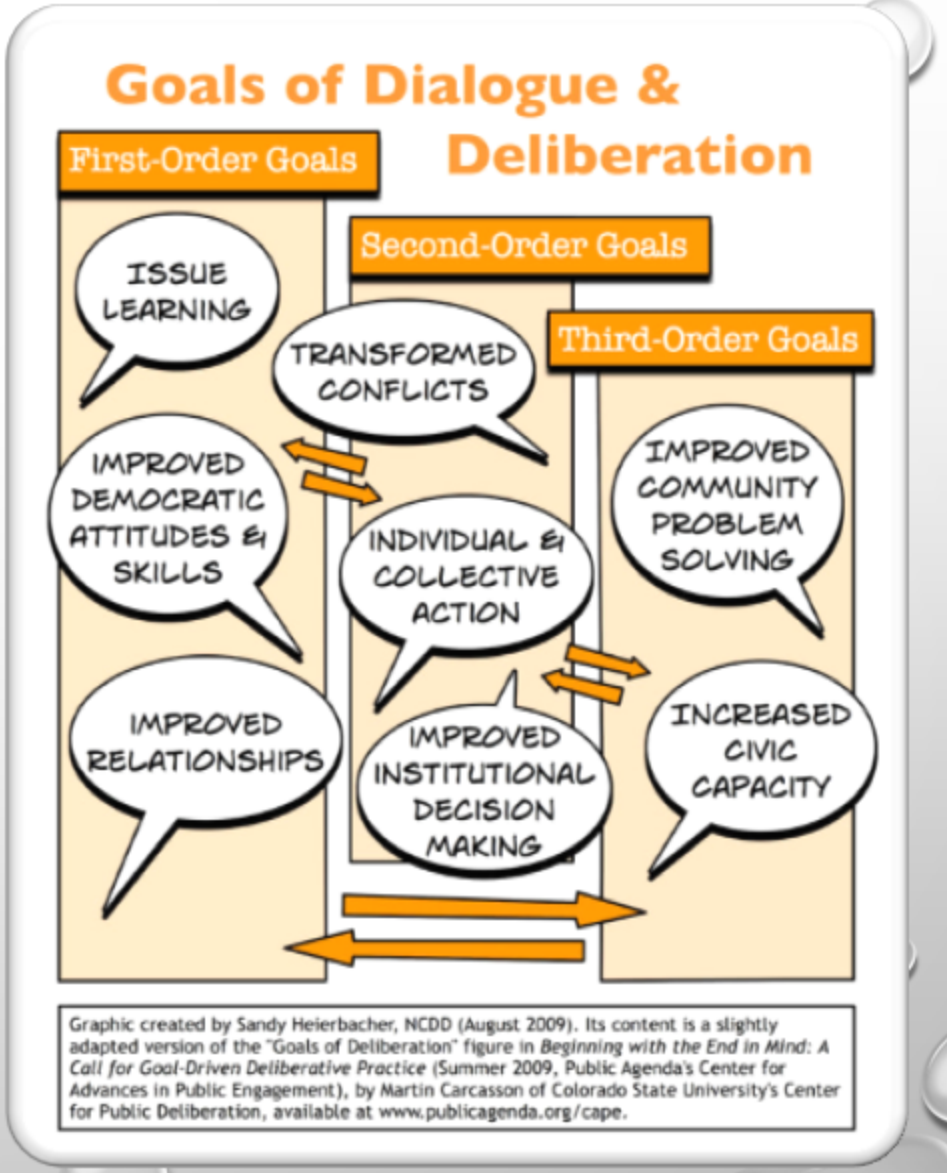

GOING FORWARD…