SCCWRP DIRECTIONS ON EACH OF THESE ITEMS

• **Areas that are presently high priority research areas for SCCWRP and where we see many possible ways to provide support**
  - SHEL beneficial use standard (primary State Board item)
  - Ocean acidification (secondary)
  - Harmful algal blooms (secondary)
  - Emerging contaminants (secondary)

• **Where we might be of help, but have no studies presently planned**
  - Areas of Special Biological Significance (primary)

• **Areas where we are not presently working and which seem unlikely to become a focal point for us**
  - Desalination (primary)
  - Tribal uses (primary)
Our planned study for Newport Bay will be the first to directly address appropriateness of the existing SHELL standard

- The study is a collaborative effort among the Regional Board, regulated parties in the watershed and several NGOs
- A good forum for discussion about alternatives, depending on outcome of the study

We are standing by to help with design and/or implementation of similar studies in other parts of the State

- We are aware of interest in similar studies in Morro and Humboldt Bays
- Nothing concrete at the moment

Conducting several studies with coliphage, a likely alternative indicator

- We recently trained, and are presently conducting an intercalibration among, six southern California laboratories
OCEAN ACIDIFICATION

• Our modeling work is at the forefront of this issue
  – State Board leadership has stated their consideration of this topic is dependent on whether local inputs play a meaningful role in spatial and temporal OA patterns
  – Modeling is the best way to answer that question
  – Our modeling team is the best in the world and addressing exactly the State Board question

• We are also working to determine appropriate biological thresholds
  – Presently have a threshold synthesis project that involves the leading experts in the world
  – Building a new lab that allows us to address the dynamic exposure and multiple stressor data information needs identified by the experts
  – Bight’18 will be first study to comprehensively assess whether SoCal biota are OA affected

• Facilitate scientific consensus-building
  – We are hosting a workshop this fall to enhance agreement among scientists and managers on assessing OA vulnerability
  – Chair California’s Ocean Acidification and Hypoxia Task Force
EMERGING CONTAMINANTS

- **We are at the forefront on this topic**
  - Hosted Expert Panels that developed the State’s strategy for monitoring/management of CECs in reuse water
  - We are planning to host an ambient water Expert Panel this fall (OPC and State Board supported)
  - Our research is focused on filling the scientific holes identified by these Panels

- **Our largest investment is focused on bioanalytical cell-line screening**
  - Developing those tests
  - Pilot testing and placing the test response into managerial context
  - Technology transfer of the tools to other laboratories

- **Targeted chemistry**
  - Working with the Expert Panel to help select the most appropriate target chemicals

- **Nontargeted chemistry**
  - Developing those techniques
HARMFUL ALGAL BLOOMS

• We have a strong leadership role in HAB research and management application
  – Monitoring
  – Modeling
  – Threshold development

• Monitoring of bloom and toxin release conditions
  – We facilitate the California Harmful Algal Bloom Monitoring and Assessment Program
  – Bight ’18 is examining marine toxins accumulating in sediment and assessing bioaccumulation of freshwater toxins in shellfish deployed in coastal waters
  – We are investigating resins that can optimize sampling detection of toxins via passive sampling

• Modeling
  – We are studying the causal drivers of Pseudo-nitzschia blooms
  – Using our coupled physical-biogeochemical model to develop forecasting models of blooms and toxic events

• Cyanotoxin effects on aquatic organisms
  – Present toxin advisory guidance is focused on human health
  – We are leading a team of scientists to synthesize levels at which cyanotoxins affect aquatic organisms
AREAS OF SPECIAL BIOLOGICAL SIGNIFICANCE

- **We have a substantial history in ASBS work**
  - Helped translate narrative standards regarding “natural water quality” to numeric guidelines
  - Mapped the extent to which stormwater plumes infringe upon ASBS
  - Connected ASBS and Marine Protected Area (MPA) monitoring through the Bight Program

- **We have only one minor project planned for future ASBS work**
  - Expanding MPA monitoring into selected ASBS to assess biological condition

- **We are standing by to do more if you think we can be of help**
DE Salination

• **We have some history in this area**
  – We performed some of the original brine toxicity testing almost 30 years ago
  – We hosted a workshop on negatively buoyant plume diffuser technology about 15 years ago

• **Our modeling could be a good solution for describing plume behavior**
  – Already doing a project for OCSD to look at the likely behavior of a concentrated wastewater plume as they move toward enhanced reuse

• **We have no intent to work on desalination at the moment**
  – Our strength is when we have all parties at the table working together
  – The desalination industry is not part of SCCWRP and appears to prefer working through their own consultants
QUESTION FOR YOU ALL

• Are there other things we should be doing to support the Triennial Review process?