Tentative Resolution No. R9-2018-0051
Addressing Threats to Beneficial Uses from Climate Change

Item 12
May 9, 2018
Jeremy Haas,
Healthy Waters Branch

https://www.esrl.noaa.gov

The effects of climate change will be felt on many uses of local waters.
Climate Change Readiness Project 2016-2018

**Context**
- Climate Change Effects
- State Efforts
- Local Actions
- Practical Vision

**Constraints**
- Limited staff resources
- Incomplete data / info
- Limited ability to influence outcome

**Decisions**
- Priorities
- Goals
- Actions
Goals of the Tentative Resolution

- Inform the public of the Board’s intentions
- Provide guidance to staff
- Respond to climate change directives of the Governor and Legislature
Climate Change has many effects on water quality

- Shoreline erosion
- Ocean acidification
- More extreme heat days
- Increased toxic bioavailability
- Warmer Ocean
- Intertidal habitat loss
- More droughts
- More wildfires
- Seawater intrusion
- More flooding
- More intense rainstorms
- More algal blooms
- Less reliable imported water
- And ???

“Increasing greenhouse gases will have a significant impact on the ocean during the 21st century.” – NOAA

https://climate.nasa.gov/evidence/

California has a lot of science, laws, policies, and plans

- Started with greenhouse gas reduction
- Moving quickly now to adaptation planning

Learn about it all at: http://climatechange.ca.gov/
The San Diego Region is Climate-Busy

- Local climate action plans
- Regional collaboration
- World-class climate research

http://www.climatesciencealliance.org/
http://icleiusa.org
https://www.usbr.gov/lc/socal/basinstudies/SDBasin
There are also indirect threats from local responses to climate change

- Accommodating higher tidal surges by armoring coastlines.
- Managing larger volumes of storm water by modifying stream channels.
- Relying on natural attenuation of soil contamination where exposed to sea level rise and/or rising groundwater.

https://www.eenews.net/
Staff are already taking some actions
Vision: Actions of the San Diego Water Board are preserving, enhancing, and restoring water quality for future generations that will live with the likely effects of climate change.
BREAK FOR SCCWRP
Climate Change Readiness Project 2016-2018

Context

Climate Change Effects

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May 9, 2018

Tentative Resolution R9-2018-0051
<table>
<thead>
<tr>
<th>Threat to Key Use</th>
<th>Ability for Water Board to Influence</th>
<th>Increase in Workload to Address Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assess effects on key beneficial uses and areas</td>
<td>Consider ability to affect outcome</td>
<td>Consider available resources</td>
</tr>
<tr>
<td>Lowest Priority</td>
<td>Highest Priority</td>
<td>Identify top goals</td>
</tr>
<tr>
<td>Focus on this area</td>
<td>Find alternate resources</td>
<td>Leave to other partners</td>
</tr>
<tr>
<td>Temporary workload adjustments</td>
<td></td>
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</tbody>
</table>
### Using Key Beneficial Uses to Determine Priorities

<table>
<thead>
<tr>
<th>Key Beneficial Use</th>
<th>Key Areas for the Use</th>
<th>TOP GOALS RELATED TO CLIMATE CHANGE</th>
</tr>
</thead>
</table>
| **Safe to Drink**  | 1<sup>st</sup> Rank: Drinking water supply reservoirs  
                     2<sup>nd</sup> Rank: Groundwater | • Increase local water supply via water recycling  
                                         • Capture storm water without harming in-stream ecosystems |
| **Safe to Eat**    | 1<sup>st</sup>: Ocean  
                     2<sup>nd</sup>: Bays  
                     3<sup>rd</sup>: Harbor, lagoons, estuaries | • Address bioaccumulation and toxin threats  
                                         • Protect and increase refuges for intertidal ecosystems |
| **Safe to Swim**   | 1<sup>st</sup>: Ocean, bays  
                     2<sup>nd</sup>: Harbors  
                     3<sup>rd</sup>: Lagoons, estuaries, streams, stream mouths | • Protect beaches from harmful shoreline hardening  
                                         • Identify and remedy vulnerable wastewater infrastructure |
| **Healthy Ecosystems** | 1<sup>st</sup>: Ocean, bays, lagoons, estuaries, streams  
                             2<sup>nd</sup>: Stream mouths  
                             3<sup>rd</sup>: Ponds, harbors | • Protect and increase intertidal ecosystems  
                                         • Protect and restore natural flow regimes |
## Using Practical Vision Strategies for Action Plans

<table>
<thead>
<tr>
<th>PV Strategy</th>
<th>Example Priority Climate Change Goal</th>
<th>Near-term Outcome / Action</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Incorporating Latest Science and Technology</strong></td>
<td>Healthy Ecosystems: Protect and restore natural flow regimes</td>
<td>Train staff on ecohydrology research</td>
</tr>
<tr>
<td></td>
<td>Safe to Swim: Identify and remedy vulnerable wastewater infrastructure</td>
<td>Explore next-generation technologies</td>
</tr>
<tr>
<td><strong>Collaboration &amp; Communication</strong></td>
<td>Safe to Swim: Protect beaches from harmful shoreline hardening</td>
<td>Assign sea level rise liaison to agencies and researchers</td>
</tr>
<tr>
<td></td>
<td>Safe to Drink: Capture storm water without harming in-stream ecosystems</td>
<td>Work with Orange County applicants to eliminate or minimize long-term harm</td>
</tr>
<tr>
<td></td>
<td>Safe to Eat: Address bioaccumulation and toxins threats</td>
<td>Educate public on intertidal Bay species bioaccumulation</td>
</tr>
<tr>
<td><strong>Aligning Effort to Priorities</strong></td>
<td>Safe to Swim: Identify and remedy vulnerable wastewater infrastructure</td>
<td>Ensure WDRs for collection systems address vulnerability</td>
</tr>
</tbody>
</table>
Adopting the tentative Resolution will help

- Set expectations for staff
- Staff emphasize climate change in meaningful ways
- Advance Water Board interests in local climate change adaptation planning
- Inform and leverage effort of partners
- Protect key beneficial uses

From NASA: [https://climate.nasa.gov/interactives/climate-time-machine](https://climate.nasa.gov/interactives/climate-time-machine)