



## Climate Change Workgroup Meeting No. 2

July 26, 2012 ○ 9:00am - 11:00am

San Diego County Water Authority, Library Conference Room  
4677 Overland Avenue, San Diego 92123

### MEETING NOTES

#### Attendees

Linda Flournoy, Planning & Engineering for Sustainability	Ann Tartre, Equinox Center
Tim Bombardier, SDCWA	Anna Lowe, County of San Diego
Brendon Reed, City of Chula Vista	Fiona Lyons, SDCWA
Goldy Thatch, City of San Diego	Lauma Jurkevics, DWR – So. Region
Persephene St. Charles, Dawn Flores, RMC	

#### 1. Meeting No. 1 Objectives

The objectives of this meeting were to:

- Finalize Regional climate change vulnerabilities
- Identify and begin prioritization of management strategies

#### 2. Discuss Vulnerability Prioritization Results

The group discussed the results of the prioritization activity that were presented in the meeting notes from Workshop 1. The group was asked to provide comments on:

- Priority categories
- Resulting vulnerability issue rankings
- Potential refinements to the vulnerability issues or rankings

It was noted that there was very little difference in the voting count between the high, medium, low and very low categories, meaning that the final prioritization of vulnerability issues could be adjusted to better reflect the needs identified in other regional planning documents as well as the consensus of the work group.

The work group discussed the following items:

- **Objectives and targets:** A sustainability objective and associated targets were developed for the Draft 2006 IRWMP, but were not brought into the Final Plan. The language may be useful for development of a climate change objective and targets.
- **Climate Change Study** should include:
  - Language regarding whether a vulnerability issue is highly prioritized due to just climate change, or due to climate changes compounded by other factors (such as increases in industrial demand over time).
  - Adaptive management approach to implementing adaptation strategies
  - Which sea level rise vulnerability issues are a land use planning issue or a water management issue
    - Adapting to potential damage to structures on cliffs is a land use planning issue
    - Irrigation has been linked to susceptibility of cliffs to erosion, which is a water management issue
- **Prioritization refinements:** Several suggestions were made to refine the vulnerability issue prioritization to better align with the vulnerabilities identified in planning documents. These include:
  - Very high category: Work group upheld the imported water vulnerability issue being the only one in the very high category.
  - High category:
    - DWR Representative Lauma Jurkevics encouraged the work group to review the vulnerability prioritization to ensure that it aligns with local planning documents – in particular sea level rise vulnerabilities.
    - “Sea Level Rise: Flooding will increase” should be added as a high vulnerability issue.
    - Ecosystem/habitat vulnerability issue language should be changed to combine multiple issues that correlate to each other – Linda has information on a study that supports this and will provide language.
    - “Water demand: Industrial demand would increase” should be moved down to the medium category as the SDCWA found as part of their demand modeling that industrial demand increases due to climate change were not going to be significant.
  - Medium category:
    - Sea Level Rise: Damage to coastal infrastructure/recreation/tourism should be moved up to the high category given vulnerability to flooding.
- **Timing of vulnerability issues:**
  - Group members agreed that there would be value in classifying the vulnerability issues into temporal categories (i.e. near-, mid-, long-term).
  - This could take an adaptation tipping point approach.
  - However, it is difficult to classify vulnerability issues temporally given very long time planning and modeling periods for climate change (e.g. San Diego plan is near-term though 2050 and climate modeling through 2100) relative to what is considered “long-term” for other planning:
    - IRWMP – at least 20 years but updated every 5
    - UWMP – through 2035 but updated every 5
    - 20x2020 – through 2020

- After discussion, the resulting potential time frames for classifications of vulnerability issues were either:
  - Near = 2012-2035 and Long = 2035+ (aligned with UWMP)
  - Near = 2012-2050 and Long = 2050+ (aligned with San Diego 2050)
- There was concern that if issues were classified as “long-term” that they would be ignored until later dates when work would need to begin on addressing them today. Therefore the group determined that the prioritization of vulnerabilities should not incorporate any temporal classifications.

### **3. Discuss and Prioritize Adaptation and Mitigation Strategies**

RMC explained that the draft strategies provided in the hand-out were compiled from several sources including the 2009 California Water Plan, regional Climate Action Plans currently under development, the 2005 California Energy Commission staff report on California’s Water – Energy Relationship, the 2010 Climate Action Team Biennial Report from California EPA, and the 2008 Managing an Uncertain Future – Climate Change Adaptation Strategies for California’s Water. The group briefly discussed the listing of adaptation and mitigation strategies, and a draft the process to be used for prioritizing. Due to time constraints, it was decided that the group would complete the initial strategy step as a homework assignment prior to the next meeting.

### **4. Summary and Action Items**

- RMC to prepare meeting notes for Workshop #2
- RMC to send homework with instructions to complete strategy homework for work group to complete
- RMC to provide new schedule with an additional (fourth) workshop to complete objectives per a request made by the work group

### **Post-Meeting Addendum**

In response to the comments and discussions during Workshop #2, the RMC team completed the following items in order to help finalize the vulnerability prioritization results in advance of the strategy homework assignment.

- Revisited the *Sea Level Rise Adaptation Strategy for San Diego Bay* relative to vulnerability discussion
- Revised prioritized vulnerability issues relative to comments from the meeting

### **Sea Level Rise Research**

Additional sea level rise research was conducted by revisiting *Sea Level Rise Adaptation Strategy for San Diego Bay* to support the addition of the vulnerability issue of “Sea Level Rise: Flooding” to the “High” priority level. This was done to support modifications to the sea level rise vulnerability prioritization; however it should be noted that this study does not encompass the entire IRWM region and so may not be indicative of all sea level rise vulnerabilities. The following key items were identified from this research report:

- **Water Supply:** Sea level rise does not pose a high concern relative to water supply other than potential for flooding of some distribution infrastructure.

- **Water Quality:** The entire wastewater collection system in the planning area will be vulnerable to floodwater inflow which could exceed their capacity, potentially resulting in discharge of wastewater to the San Diego Bay.
  
- **Flood Risk:**
  - Similarly, sea level rise creates a significant vulnerability to coastal developed areas impairing stormwater drainage infrastructure and causing localized flooding in low-lying areas.
  - However, flooding increases during extreme weather events caused by climate change are expected to be more significant than inundation from sea level rise.

The assessment of stormwater management, in particular storm sewers vulnerable to flooding and inundation due to higher sea levels, supports the addition of “Sea Level Rise: Flooding” to the “High” priority level. It is also recommended that the workgroup consider including the potential for sewer system overflows relative to sea level rise as well. Based upon the report it would indicate that such a vulnerability would be prioritized as “High” relative to the others.

If these vulnerabilities are included as recommended, correlating adaptation strategies would then also need to be determined. The *Sea Level Rise Adaptation Strategy for San Diego Bay* proposed the following strategies that could be added to the strategy spreadsheet previously distributed to the work group:

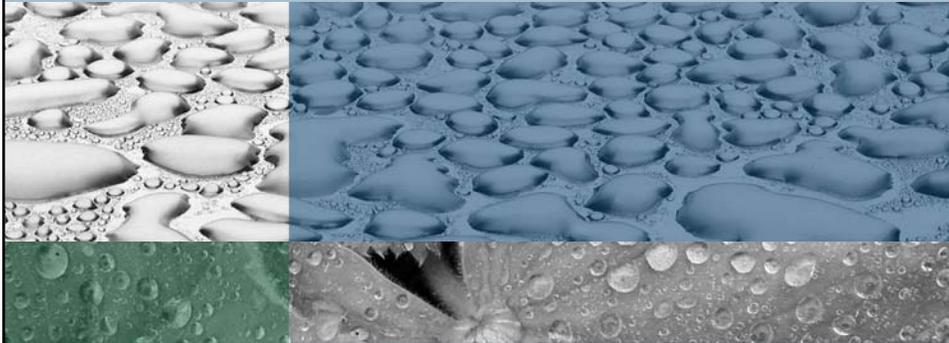
- Update wastewater management plans and capital improvement programs to account for sea level rise related challenges.
- Develop a detailed vulnerability assessment of wastewater facilities including future sea level rise impacts for the most at-risk facilities, and work towards a map of these facilities.
- Update wastewater emergency response and maintenance procedures to account for more common and extensive coastal flooding of vulnerable infrastructure.
- Depending on facility design, elevate pump stations and emergency generators as they are rehabilitated or in new construction.
- Ensure that new sewer mains and manholes are sealed against floodwater inflow and groundwater infiltration. Expand programs to reduce inflow and infiltration through rehabilitation of sewer mains and manholes, prioritizing areas where risk of flooding is highest.

### **Revised Prioritized Vulnerability Issue List**

The below table of prioritized vulnerability issues was revised from the table in notes from Workshop #1 to reflect the comments made during the discussion of vulnerability issue priorities and the subsequent research by the consultant team (see blue font).

Priority Level	Category and Vulnerability Issue
Very High	<ul style="list-style-type: none"> <li>• Water Supply: Decrease in imported supply</li> </ul>
High	<ul style="list-style-type: none"> <li>• Water Supply: Sensitivity due to higher drought potential</li> <li>• Water Quality: Increased constituent concentrations</li> <li>• Flooding: Increases in flash flooding <b>and inundation (extreme weather)</b></li> <li>• Ecosystem/Habitat: Decrease in available necessary habitat</li> <li>• <b>Sea Level Rise: Inundation of storm drains and sewer systems</b></li> <li>• <b>Ecosystem/Habitat: <i>Decrease in ecosystem services</i></b></li> </ul>
Medium	<ul style="list-style-type: none"> <li>• Water Demand: Crop demand would increase</li> <li>• <b>Water Demand: Industrial demand would increase (<i>moved from High</i>)</b></li> <li>• Water Supply: Decrease in groundwater supply</li> <li>• Water Quality: Increase in treatment cost</li> <li>• <b>Sea Level Rise: Damage to coastal <del>infrastructure</del> recreation / tourism due to inundation (<i>not erosion as that was considered a land use planning vulnerability – infrastructure was separated and added as a high priority</i>)</b></li> </ul>
Low	<ul style="list-style-type: none"> <li>• Water Supply: Lack of groundwater storage to buffer drought</li> <li>• Water Supply: Limited ability to conserve further</li> <li>• Water Quality: Increased eutrophication</li> <li>• Flooding: Increases in inland flooding</li> <li>• Ecosystem/Habitat: Increased impacts to coastal species</li> </ul>
Very Low	<ul style="list-style-type: none"> <li>• Water Supply: Limited ability to meet summer demand</li> <li>• Water Supply: Invasives can reduce supply available</li> <li>• Water Quality: Decrease in recreational opportunity</li> <li>• Sea Level Rise: Decrease in land</li> <li>• Sea Level Rise: Damage to ecosystem/habitat</li> <li>• Ecosystem/habitat: Decrease in environmental flows</li> <li>• Hydropower: Decrease in hydropower potential</li> </ul>

## *Climate Change Workgroup Meeting #2*

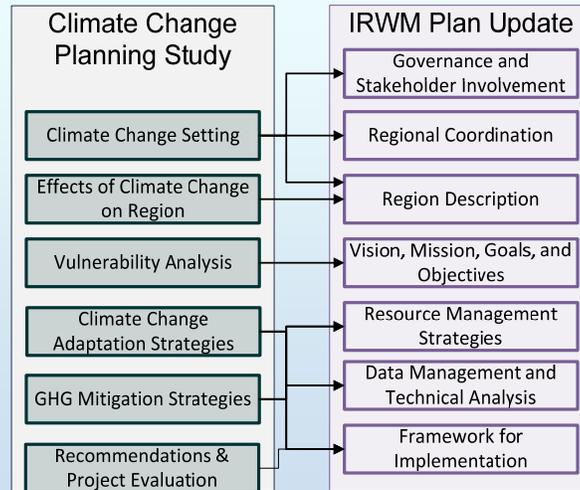


July 26, 2012

### *Agenda*

1. Welcome and Introductions
2. Meeting No. 2 Objectives
3. Discuss Vulnerability Prioritization Results
4. Discuss and Prioritize Adaptation Strategies
5. Discuss and Prioritize GHG Mitigation Strategies
6. Public Comments
7. Summary and Action Items

## IRWMP Climate Change Study Tasks



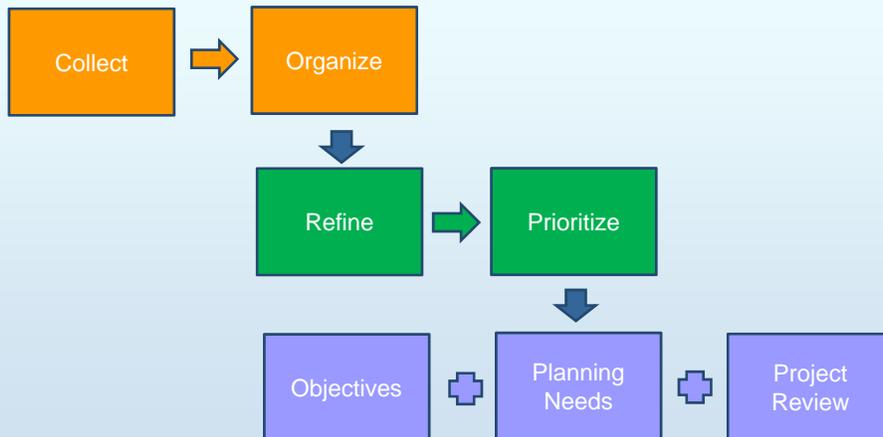
## Vulnerability Analysis Results

- Do you agree with the categories?

Priority Level	Number of Votes
Very High	9
High	3.5-4
Medium	2-3
Low	1-1.5
Very Low	0-0.5

- Do you agree with the resulting rankings?
  - Sea level rise not highly ranked
  - Only 1 very important issue (imported water)
- Are there refinements that should be made?
  - Issue language
  - Ranking changes
  - Missing issues

## Management Strategy Development



## Collection and Organization of Strategies

- Reviewed documents to collect strategies
  - California Water Plan (DWR, 2009)
  - Managing an Uncertain Future (DWR, 2008)
  - Climate Change Scoping Plan (CARB, 2006)
  - Climate Action Team Biennial Report (CalEPA, 2010)
  - Resolution on Sea Level Rise (OPC, 2010)
  - California Climate Extremes Workshop Report (Scripps, 2011)
- Organized into Cal Water Plan RMS
- Aligned strategies with vulnerability issues

## *Today's Exercise*

### *Refine Management Strategies*

1. Acceptance Screening
2. Context
3. Adaptation to Vulnerability
4. Mitigation of GHG Emissions

To the Spreadsheets!



## *Summary and Action Items*

- Mark up hand-outs or email any further comments
- RMC will compile and email:
  - Final vulnerability assessment
  - Results of management strategy exercise
- Determine date of next meeting



## Contact

- Climate Change contacts (310) 566-6460:
  - Persephene St. Charles, [pstcharles@rmcwater.com](mailto:pstcharles@rmcwater.com)
  - Dawn Flores, [dflores@rmcwater.com](mailto:dflores@rmcwater.com)
- San Diego IRWM contact (858) 875-7400:
  - Rosalyn Prickett, [rprickett@rmcwater.com](mailto:rprickett@rmcwater.com)