

# San Diego Integrated Regional Water Management 2019 Prop 1 Round 1 IRWM Planning Grant Proposal Climate Change

Attachment 10 consists of the following items:

- ✓ **Strategic Business Plan.** An overview of the San Diego County Water Authority's (SDCWA) *2019-2023 Business Plan* to assist SDCWA in providing a safe, reliable water supply to the region.
- ✓ **Climate Change Vulnerability Assessment.** An overview of the climate change vulnerability analysis completed as part of the *2013 San Diego Integrated Regional Water Management Plan*.
- ✓ **Contact Person for Climate Change.** SDCWA's climate change contact.
- ✓ **Risk of Climate Change in its Capital Reserves and Investments.** An overview of SDCWA's focus on improving water supply reliability and availability.
- ✓ **Proposal Relation to Climate Change.** The projects included in this proposal address climate change resiliency.

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## Table of Contents

Strategic Business Plan .....	3
Climate Change Vulnerability Assessment .....	3
Contact Person for Climate Change .....	5
Risk of Climate Change in its Capital Reserves and Investments .....	5

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## Strategic Business Plan

The primary threat from climate change to San Diego County is reduced availability of imported water supplies. SDCWA has a *2019-2023 Business Plan (Appendix 10-1)* to assist SDCWA in providing a safe, reliable water supply to the region. The Business Plan is divided into three key focus areas: Water Supply, Water Facilities, and Business Services. The Water Supply focus area consists of three programs that support the Board of Directors' adopted level of water supply diversification. The Water Facilities key focus area consists of three programs that are designed to implement the Board of Directors' cost-effective asset management strategy. Climate change is a focus under the Sustainability Program within the Water Facilities focus area and includes climate change mitigation and adaptation strategies for the region. SDCWA's agile strategies and associated tactics for climate change include implementing cost-effective measures to reduce greenhouse-gas emissions, updating the Climate Action Plan (CAP), and collaborating on leading-edge climate science research to evaluate potential impacts of climate change on the quantity and quality of local water supplies and its effect on water demands. The Business Services key focus area consists of four programs that are essential, in that they include the majority of SDCWA's business operations required to execute the activities of the Water Supply and Water Facilities focus areas. SDCWA's main concerns for Water Supply are imported water, local water, and resources planning as seen in **Table 10-1**; which are all effected by climate change

**Table 10-1: Water Supply – Programs and Focus Areas**

Imported Water	Local Water	Resource Planning
Bay-Delta	Member Agency Supply	Water Management Planning
Colorado River	Potable Reuse	Water Shortage and Drought Response Management
Metropolitan Water District	Seawater Desalination	Water Use Efficiency

Source: SDCWA, *2019-2023 Business Plan*

The Business Plan contains additional information on how SDCWA is working to address climate change in the region. SDCWA adopted its first CAP in March 2014, which was revised in December 2015. The CAP serves as an interdisciplinary guide intended to promote, facilitate, and coordinate implementation of climate change mitigation strategies, and focuses on greenhouse-gas emission reduction measures to ensure SDCWA's water supplies, infrastructure, and services will accommodate projected impacts of climate change.

As described in the Business plan, SDCWA has pursued partnerships with researchers and other climate change practitioners to advance actionable climate science focused on adaptation strategies. SDCWA was an active participant in California's Fourth Climate Change Assessment – San Diego Region, led by the Scripps Institution of Oceanography, and is also a founding member of the Water Utility Climate Alliance (WUCA). Formed in 2007, WUCA includes 12 of the nation's largest water providers, who together supply drinking water to more than 50 million people throughout the United States. WUCA provides leadership in assessing and adapting to the potential effects of climate change.

## Climate Change Vulnerability Assessment

A climate change vulnerability analysis was completed as part of the San Diego IRWM Region's *2013 Climate Change Study (Appendix 10-2)*, for the *2013 San Diego Integrated Regional Water Management Plan*. This Study was developed by the Climate Change Workgroup (comprised of San Diego IRWM Program stakeholders) and examined current climate change science, policies, and regulations in terms of how they affect the San Diego IRWM Region; and its purpose is to serve as an initial guide for the IRWM Region to begin incorporating climate change adaptation and mitigation measures. Climate change is expected to directly impact a number of areas related to water resources, in particular temperature, precipitation, and sea level rise. Adaptation measures may be implemented in response to climate change impacts that have already occurred or are projected to occur. The

2019 San Diego Integrated Regional Water Management Plan added additional references to climate change studies that were finalized since the 2013 plan, including the *San Diego Region Report*.<sup>1</sup>

The Climate Change Workgroup identified the Region’s areas of concern in terms of climate change issues, which was then used to begin examining the adaptability of its water resources to climate change by prioritizing the vulnerability issues. Once the vulnerability issues were prioritized, the Workgroup identified those water resources that are of highest concern to the Region in terms of the significance of the impact of climate change and therefore the level of adaptation that will be needed as seen in **Table 10-2** below. These priorities were revisited for the 2019 San Diego IRWM Plan, with the current prioritization list presented in **Table 10-2**.

**Table 10-2: Prioritized Climate Change Vulnerability Issues**

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 and inundation (extreme weather)</li> <li>Sea Level Rise: Inundation of storm drains and sewer systems</li> <li>Ecosystem/Habitat: Decrease in available necessary habitat</li> <li>Ecosystem/Habitat: Decrease in ecosystem services</li> </ul>
Medium	<ul style="list-style-type: none"> <li>Water Demand: Crop demand would increase</li> <li>Water Demand: Industrial demand would increase</li> <li>Water Supply: Decrease in groundwater supply</li> <li>Water Quality: Increase in treatment cost</li> <li>Sea Level Rise: Damage to coastal recreation/tourism due to inundation</li> </ul>
Low	<ul style="list-style-type: none"> <li>Water Demand: Limited ability to conserve further</li> <li>Water Supply: Lack of groundwater storage to buffer drought</li> <li>Water Quality: Increased eutrophication</li> <li>Flooding: Increases in inland flooding</li> <li>Ecosystem/Habitat: Increased impacts to costal species</li> </ul>
Very Low	<ul style="list-style-type: none"> <li>Water Demand: 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>

Source: *SDIRWM, 2013, Climate Change Planning Study Final – 2019 San Diego IRWM Plan*

In the climate change vulnerability assessment, the highest ranked priority issue is decreased imported water supply. The San Diego IRWM Region is highly dependent on imported water with nearly 80% of its supplies currently coming from the State Water Project and the Colorado River Aqueduct. Given the limited local water supplies availability and the projected 20-25% decrease in imported water supply, a decrease in imported supply with climate change could have a significant impact on the area and is an issue that needs to be addressed. With the expected increased drought potential for the Region due to climate change, which is considered one of the

<sup>1</sup> Kalansky, Julie, Dan Cayan, Kate Barba, Laura Walsh, Kimberly Brouwer, Dani Boudrea. (University of California, San Diego). 2018. San Diego Regional Report. California’s Fourth Climate Change Assessment. Publication number: SUM-CCC4A-2018-XXX (in press).

next top vulnerability priority issues, San Diego's water supply availability is significantly at risk for being limited and less available in the future.

## Contact Person for Climate Change

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## Risk of Climate Change in its Capital Reserves and Investments

The risk of climate change is considered in SDCWA's capital reserves and investments, which can be seen through the types of projects implemented throughout the Region. Through SDCWA's *2019-2023 Business Plan* there is a focus on improving water supply reliability and availability.

SDCWA's Capital Improvement Program (CIP), as discussed in the *Business Plan*, focuses on building new infrastructure that can provide safe and reliable drinking water to the Region. Effective management of CIP assets yields savings from improved system reliability, effective rehabilitation, and lower increases to water rates over time. SDCWA is committed to being a model agency for sustainability through cost-effective strategies that reduce environmental impacts, promote thoughtful stewardship of natural resources, and enhances facility and supply resiliency. These strategies save ratepayers money, reduce and manage the environmental footprint of facilities and operations, conserve energy and water, and helps better anticipate and adapt to the impacts of climate change.

## Proposal Relation to Climate Change

The projects included address climate change impacts through water supply reliability and flood mitigation measures. San Diego's Pure Water Program is a large proponent of addressing the risk of climate change recycling water for potable reuse in order to better improve the Region's resiliency to changes in water availability. Additionally, the *Pure Water Oceanside*, *North County Recycled Water Project*, *San Elijo Stormwater Capture & Reuse*, and the *Lower Santa Margarita IPR Pilot Project* are all working towards creating a larger, more reliable local supply to offset the projected decrease of imported water supply availability. Not only will improved local water supply availability increase San Diego's resiliency to climate change, it will also help maintain water affordability. The *2020 Regional Water Use Efficiency Programs* will help incentivize smart water usage and decrease potable water usage for outdoor irrigation. National City's *Paradise Valley Creek Water Quality and Community Enhancement* will improve the area's stormwater infrastructure resilience to increased flooding. All of these projects are addressing various climate change vulnerability issues that are addressed above and are improving the Region's resiliency to these climate change projections through various "no regret" strategies. Even if water supply reliability (imported and local), drought intensity, and flood frequency do not meet climate change projections; then the implementation of these projects will still improve the Region's water management and secure this resource's reliability for future use.