COUNCIL POLICY NUMBER 34. 7

POLICY TITLE: SECURING OUR WATER FUTURE POLICY GUIDANCE FOR WATER SUPPLY AUGMENTATION TO ADDRESS SANTA CRUZ'S WATER SUPPLY RELIABILITY ISSUE

POLICY STATEMENT:

1. **Statement of Findings:**
   - 1.1 Water is essential to life. Managing Santa Cruz's water resources in a manner that protects the watershed, respects wildlife and the habitats it depends on, and produces and delivers a high quality and reliable supply of water that protects public health and safety and supports economic prosperity will ensure a secure water future for our community.
   - 1.2 Over many decades, Santa Cruz residents and water service customers have placed a high value on stewardship approaches for the management of our region's natural resources and have expected publicly owned natural resources to be managed in a manner that ensures long-term sustainability, protection, and enhancement of ecosystems to support and restore threatened and endangered species, and to serve the needs of the community.
   - 1.3 As identified by the WSAC in its 2015 report, inadequate water system storage is the critical limiting factor that exposes Santa Cruz water service customers to serious shortages and burdensome and unsustainable levels of curtailment should multi-year droughts deplete stored water in Loch Lomond reservoir. The WSAC explicitly acknowledged in its problem statement that long-term water conservation alone cannot ensure supply reliability for Santa Cruz water service customers.
   - 1.4 Santa Cruz water service customers have embraced water use efficiency as a way of life, achieving an unprecedented level of residential indoor and outdoor use of 44 GPCD, with indoor only use stable at 35 GPCD and have taken actions to significantly reduce outdoor water use by more than 35% over the last two decades, which means that the opportunity to include further customer water use curtailments as key elements in Securing Our Water Future is severely limited.
   - 1.5 Due to current customer water use practices, should curtailment of demand be required, mandatory water rationing will be needed. All stages of the City's 2021 Water Shortage Contingency Plan (WSCP) include water rationing in which already highly efficient water use by residential and business customers would be curtailed. To protect the availability of water for public health and safety purposes under water shortage conditions requiring implementation of the WSCP, Section 16.01 of the Santa Cruz Municipal Code establishes significant excess use penalties and other actions for non-compliance with rationing allotments, which could further subject residential and business customers to financial hardship.
   - 1.6 The results of the Economic Impacts of the Costs of Curtailments developed as part of the Securing Our Water Future process indicates that consequences of

routine and potentially significant water use curtailments to water service customers and the impacts to the region's economy and quality of life are both significant and seriously negative These consequences can be mitigated through expeditious action to add new resources to Santa Cruz's water supply portfolio.

1.7 Climate change, which is already influencing weather patterns in Santa Cruz, is expected to increase the annual variability of Santa Cruz's water supply. This means that more frequent and longer drought conditions are likely, that there will be fewer normal and moderately wet years and that wet conditions, when they occur, are likely to substantially increase flooding events because of a shift in the pattern of precipitation to shorter and significantly more intense storms. This increased variability is a substantial change from historic conditions and is the key driver of sizing supply augmentation projects.

1.8 Long-term demand projections for the Santa Cruz water service area include modest growth over the 25-year demand projection period and reflect water use required to accommodate increased housing, mostly in the form of multi-family housing, and the additional water that is needed to support student housing as identified by University of California at Santa Cruz's 2020 Long Range Development Plan.

1.9 Even without additional modest growth in water demand, the Santa Cruz water system cannot provide reliable service to its customers because of its lack of storage and resulting vulnerability to severe water shortages should dry conditions persist over multiple years.

1.10 Because the impacts of climate change on Santa Cruz's water resources are already being experienced, there is an urgent need for immediate and sustained action to implement additional supply augmentation projects as needed to meet the reliability goal established by this policy. Additionally, appropriate adaptive management tools and techniques need to be implemented over time to assure that, as climate impacts evolve, supply reliability will continue to be a focus of assessment and action.

1.11 Based on Climate Stress Testing and Vulnerability Analysis work completed by Dr. Casey Brown and the Water Department's consultants, near term climate change trends indicate increasing variability will be more of a challenge than changes in mean annual precipitation. Longer term climate trends include both increased variability as well as reduced precipitation, resulting in significantly more challenging conditions of longer, more frequent, and deeper droughts.

1.12 Selecting an initial climate scenario for use in assessing the volume of water needed to meet the reliability goal described in Section 2.1 below involved looking at drought conditions across all 10 Climate Realizations identified and evaluated by Dr. Brown and his team and presented and discussed with the Santa Cruz Water Commission in the summer and fall of 2022. The worst-case conditions identified were from Realization 1270, which has a challenging five-year drought sequence, that turns out to be the worst-case drought for deficits under several different versions of assumptions about precipitation change,

including no precipitation change and -10% precipitation change, and under 1.0, 1.1, and 1.2 Coefficients of Variability.

1.13 Our understanding of and need to continue our work to adapt to climate change is supported by the Vulnerability Analysis, Climate Stress Testing, Water Balance and Santa Cruz Water System modeling tools that have been developed by the Water Department and its consultants as part of the Securing Our Water Future and WSAIP work. Maintaining, updating, and using these tools to inform climate adaptation planning for water supply will be key to the timely development of needed water supply augmentation projects and climate adaptation strategies for ensuring the resilience of water system and its facilities in the face of climate change.

2. Water Supply Reliability Goal

2.1 The City of Santa Cruz's water supply reliability goal shall be achieved by having an adequate supply to meet all customer demand under plausible, worst-case conditions.

2.2 The initial assessment of plausible worst-case conditions shall be based on the review of Water Supply Vulnerability Analysis and Climate Stress Test work completed by Dr. Casey Brown and his team in the summer and fall of 2022 using the following parameters:

2.2.1 **Temperature Parameter:** 2° C increase in temperature (dT = +2º C),

2.2.2 **Precipitation Parameter:** No change in precipitation (dP =100% of average), and

2.2.3 **Coefficient of Variability Parameter**: A +10% coefficient of variability (CV = 1.1).

In selecting these initial climate change parameters to use as the basis for near-term planning for supply augmentation projects, staff has considered a wide range of climate scenarios and chosen parameters that are moderate, plausible, and attempted to choose parameters that do not either over- or under-estimate the potential implications of near-term impacts of climate change on local water resources and water supply reliability.

The parameters shall be reviewed and updated no less frequently than every five years as part of the regular update of the City's Urban Water Management Plan. The resulting review and revision may result in modifications to the volume of water that needs to be developed to meet the water supply reliability goal articulated in 2.1 above.

2.3 As curtailment of demand under the provisions of the state mandated Water Shortage Contingency Plan has been found not to be an effective tool for addressing anticipated water shortages for longer or more frequent dry conditions, its use shall be limited to the infrequent implementation of Stage 1 of the plan where the 10% demand reduction associated with Stage 1 curtailments is determined to be critically necessary to protecting supply availability for public health and sanitation purposes.

3. Santa Cruz's Water Supply Portfolio

3.1 Resources available to achieve water supply reliability in Santa Cruz are limited to those available locally, including surface water flows from local rivers and streams during wet seasons, local groundwater resources, various forms of advanced treated recycled water, and seawater desalination.

3.2 These supply augmentation source options have been found to be technically viable and reliable from a long-term availability perspective considering the potential impacts of climate change. In various circumstances as they may develop into the future, development of one or more of these sources may be determined to be the most appropriate and effective way to ensure water is available to meet the City's public health and safety and economic sustainability goals.

4. Considerations In Developing Water Supply Augmentation Projects

As part of the Securing Our Water Future process, Water Department staff worked with Water Commissioners to use, adapt, and update as needed the evaluation criteria developed and recommended by the WSAC. This policy incorporates these criteria as updated by the Department's active engagement with the Water Commission in the years following completion of the WSAC's work.

The goal of integrating the guiding principles, key criteria and additional criteria in this policy is to confirm that these criteria are important to the consideration and selection of supply augmentation projects to pursue and to set an expectation for transparency. Attachment A to this resolution and policy includes more detailed definitions of each of the criteria.

4.1 Guiding Principles

4.1.1 Public Health – Protecting public health is every water utility's most fundamental duty. The Water Department as an organization, and its individual employees, work every day to produce and deliver an adequate supply of high-quality water that complies with numerous public health-based regulatory standards and is used for human consumption, sanitation, for other domestic and commercial use and for fire protection.

4.1.2 Affordability and Equitable Access to Water Service – Water service is critical to public health and community wellbeing. The City and Water Department recognize that rising costs of water to address system vulnerability, climate adaptation and supply reliability present affordability challenges to customers and, consistent with the City's Health in All Policies policy, is committed to taking steps during the planning and implementation of projects to ensure a reliable water supply and equitable access to service for everyone. Given the limitations of Proposition 218 that prohibit directly subsidizing the cost of water service for those least able to pay, options for locally addressing water affordability are limited, but staff is committed to continuing to advocate for state and federally funded programs for those in need.

4.1.3 Public Acceptance – During the WSAC process and throughout the ensuing work in collaboration with the Water Commission over the intervening years, connecting with community interests, customers, and members of the public about the need for and the approach to improving the reliability of Santa Cruz's water supply has been a key focus of the design and execution of the Department's work. Along

with the yield, costs, timeliness, and technical feasibility of various supply augmentation alternatives, the WSAC identified and applied criteria reflecting the community's values, and also considered energy use, and environmental impacts of the alternatives. All the WSAC's values and considerations have been carried forward in the work that has occurred following the end of the WSAC process and are recommended to be carried into future work as important criteria that, when objectively evaluated and transparently communicated, are aligned with the goal of establishing and maintaining public trust.

4.1.4 Regional Collaboration – Consistent with the goal of achieving a sufficient water supply, the City is committed to regional collaboration to improve water supplies, achieve groundwater sustainability, protect the Santa Cruz Mid-County Groundwater Basin from further seawater intrusion and support the protection and restoration of critical aquatic habitats and the resources dependent upon these ecosystems.

4.1.5 Incremental Implementation – The reality of developing a water supply augmentation project is that such projects take a long time to fully develop due to the required feasibility work, environmental reviews, design and permitting and what is often multi-year construction. Projects developed with regional partners also require development of agreements and funding arrangements at various stages of the work, which also requires time and effort. An incremental implementation strategy supports near-term progress that is important for reducing Santa Cruz's vulnerability to water shortages caused by multi-year droughts while also allowing for simultaneous work on the often-time-consuming early planning and feasibility work to move forward with long-term projects.

4.1.6 Ongoing Community Engagement – The Santa Cruz Water Commission has a long history of engagement with the Water Department on supply augmentation planning and shall continue to be a forum for the active engagement of community interests and the public in this important work. A key goal of Water Commission engagement shall be to maintain transparency through the process of developing and implementing water supply augmentation projects.

4.2 Primary Evaluation Criteria

4.2.1 Cost Metric – Cost-effectiveness is an important consideration in decision-making about supply augmentation projects under development. Useful cost metrics include total capital costs, annualized capital costs, annualized operation and maintenance costs, and unit costs based on both average production and maximum production. To the degree feasible, cost-effectiveness data will be developed and compared for available supply augmentation alternatives at the time a decision is made to proceed forward with a project or pursue an alternative.

4.2.2 Yield Metric – The Yield Metric is the most straightforward and quantifiable of the evaluation criteria. The supply reliability goal described in Section 2 of this policy is used to define the yield needed to achieve reliability. Project yield analyses need to relate to the volume of water needed to meet the supply reliability goal, as it is defined and updated at least every five years as part of the update to the Urban Water Management Plan.

4.2.3 Timeliness Metric – Water projects typically take a decade or more to develop and implement. Planning work on supplemental water supply has been underway since completion of the WSAC work in late 2015. The WSAC's timeliness metric set a 10-year target for achieving water supply sufficiency, with sufficiency defined as having a fully functional water system able to meet the supply-demand gap forecasted during extended droughts.

The Securing Our Water Future Policy acknowledges that, due to the length of time required to develop supply augmentation projects, and the need to use an ongoing and evolving understanding of the impacts of climate change on water supply reliability, incremental implementation of augmentation projects to address the supply deficit will be required. To reduce the vulnerability to nearer term droughts, however, supply augmentation producing at least 500 million gallons a year of additional supply by 2027 should be completed.

4.3 Additional Criteria – The following additional criteria are further characterized and defined in Attachment A-1 to this policy. These criteria are aligned with the criteria and values developed by WSAC for use in evaluating water supply augmentation projects and sharing those evaluation results with the community to support both data-driven and transparent decision-making:

4.3.1 Project's supply contribution as a percent of worst year supply shortfall;
4.3.2 Increases resilience to climate change;
4.3.3 Is understood and accepted by the public and key stakeholders;
4.3.4 Scalable or can be implemented incrementally or in phases;
4.3.5 Technical feasibility;
4.3.6 Likelihood of project being funded by state or federal grants;
4.3.7 Opportunity for shared funding;
4.3.8 Greenhouse gas emissions (from both construction and operations);
4.3.9 Time required for implementation;
4.3.10 Operational complexity;
4.3.11 Energy use;
4.3.12 Potential impacts for CEQA-required mitigation;
4.3.13 Adaptable to future regulatory or source water changes; and
4.3.14 Degree of administrative complexity.

5. Policy Implementation

Subject to the same general terms and provisions for Council review and approval used for the development and implementation of capital investment projects in the City of Santa Cruz, the Santa Cruz Water Department is authorized to pursue any of the following or other similarly related activities in implementing this Policy:

5.1 Conduct planning, preliminary engineering, and technical feasibility analyses for supply augmentation alternatives;

5.2 Consider Primary and Additional Evaluation Criteria in Section 4, evaluate and select supply augmentation projects needed to achieve the Water Supply Reliability Goal described in Section 2 of this Policy;

5.3 Prepare project designs, environmental reviews, and complete project permitting activities;

5.4 Select and implement project development and construction delivery methods using any procurement method authorized by the City Charter and Municipal Code;
5.5 Recommend for Council consideration and action any other steps required to achieve compliance with Section 1431.3 of the City Charter (2012 Measure P requirement for a public vote prior to construction of a desalination plant); and
5.6 Develop and recommend to the City Council for consideration or action as appropriate any agreements with other regional water providers for partnerships, joint ventures, or other collaborative approaches to improving water supply reliability, groundwater sustainability, environmental, and natural resource management and protection, or mutually beneficial projects or partnerships in support of water supply and water system resiliency, and climate adaptation.

The Water Department will continue to actively engage with the Santa Cruz Water Commission and the public in the implementation of this Policy as well as inform and involve the larger community, customers, and interests as appropriate.

Additional Supply Evaluation Criteria

WATER SUPPLY PROJECT EVALUATION CATEGORIES, SUB-CATEGORIES AND DEFINITIONS	
QUANTITATIVE CATEGORIES	
Criterion	**Definition or Explanation** **The criterion provides information about:**
Project Costs	
• Annualized cost per million gallons (and acre foot) of supply	• Full cost analysis of operating and capital costs for the project
Project Yield	
• Project supply contribution as a % of the worst year supply shortfall	• The percent contribution to reducing the worst year supply gap provides information about the degree to which a project can contribute to closing the supply gap
Energy Profile and Climate Mitigation	
• Energy use (KWh/year)	• The amount of energy required annually to operate the project.
• Greenhouse gas emissions associated with the project (metric tons of carbon dioxide equivalents released (MT of CO_{2e}))	• The amount of greenhouse gases associated with the construction and operation of a project. (Similar to the energy version of annualized or life-cycle cost)
Timeliness	
• Time required to begin producing additional an increment of water that makes a significant contribution to improving the system's water supply reliability (months/years)	• The number of years required (from date of evaluation and green light to proceed) to complete technical feasibility work, pre-design, design, CEQA, permitting, construction, commissioning and start-up of a project that produces additional water supply
Technical Feasibility	
• Technical Feasibility (yes/no ratings for each element that comprises a project's technical feasibility benchmarks) o Example sub-elements for technical feasibility can include constructability	• The technical and engineering aspects of a project are realistic and achievable and can and will contribute to improving supply reliability
• Operational complexity (high/medium/low)	• Whether/how the project's operation does or does not add significantly to the operational complexity of the existing system

Qualitative Categories	
Criterion	**Definition or Explanation** **The criterion provides information about:**
Environmental Impact	
• Potential impacts of any CEQA-required mitigation that could significantly affect project cost, yield or timeliness parameters (high/medium/low or additional gradations of this scale)	• The likelihood for potentially large impacts to cost, yield, or timeliness parameters from CEQA required mitigation for the supply augmentation project.
Funding and Financing	
• Likelihood of the project being fundable with federal or state grant funds (highly likely/unlikely with gradations)	• The potential for the project to be grant funded. An example is the US Bureau of Reclamation's Title XVI grant program that is specifically designed to fund recycled water projects.
• Opportunity for shared funding (yes/no)	• The potential for shared funding through partnerships with other regional water agencies.
Public Acceptability	
• The degree to which there is public understanding and acceptance for the projects under consideration.	• Whether a project (or projects) is understood and accepted by the public and key stakeholders.
Administrative Feasibility	
• Degree of complexity with respect to regulatory, permitting, right of way, or legal issues and the time required to address and resolve the identified issues (for complexity: high/ medium/low) (for time requirement: number of months or years)	• The complexity and time required to address regulatory, permitting, right-of-way and/or legal issues related to a supply augmentation project and the amount of time needed to address or resolve those issues.
Adaptive Flexibility	
• Increases resiliency to climate change (high, moderate, low) specifically related to: o Certainty of supply during drought o Certainty of supply during extreme wet weather; o Vulnerability to shifting patterns of precipitation due to climate change; o Seawater intrusion; o Coastal inundation and sea level rise; o Natural disasters (e.g., wildfire , seismic events, etc.)	• How a project may (or may not) be able to adapt to changing conditions or be functional in the face of climate change, wildfire, seismic or other natural disasters.

Qualitative Categories	
Criterion	**Definition or Explanation** **The criterion provides information about:**
• Project includes characteristics that provide for scalability or provide for it to be implemented incrementally or in phases over time (yes/no)	• The degree to which the project can be relatively easily expanded or scaled up over time or implemented in increments or phases.
• Adaptability to future uncertainty from regulations or source water changes (yes/no)	• Whether or how well a project may (or may not) be able to adapt to changing regulations or source water quality changes.

AUTHORIZATION: Adopted by Resolution No. NS-30,074 November 29, 2022.