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## Colorado Water Conservation Board

### Water Plan Grant Application

#### Instructions

To receive funding for a Water Plan Grant, applicant must demonstrate how the project, activity, or process (collectively referred to as “project”) funded by the CWCB will help meet the measurable objectives and critical actions in the Water Plan. Grant guidelines are available on the CWCB website.

If you have questions, please contact CWCB at (303) 866-3441 or email the following staff to assist you with applications in the following areas:

Supply and Demand Gap Projects: Gregory.Johnson@state.co.us

Water Storage Projects: Anna.Mauss@state.co.us

Conservation, Land Use Planning: Kevin.Reidy@state.co.us

Engagement & Innovation Activities: Mara.MacKillop@state.co.us

Agricultural Projects: Brent.Newman@state.co.us

Environmental & Recreation Projects: Linda.Bassi@state.co.us

Applicants interested in submitting an ‘Intent to Apply’ in the future are encouraged to check here ☐ and fill in all sections with the best information available at the time. Exhibits excluded.

This “Intent to Apply” will help CWCB prioritize Projects that are not ready for fully completed Water Plan Grant Application due to the initial timeframe and deadlines required.

#### Water Project Summary

Name of Applicant	<b>DENVER BOTANIC GARDENS</b>	
Name of Water Project	<b>Water in the West: Exhibition &amp; Outreach through the Gardens</b>	
CWP Grant Request Amount		\$ 44,750
Other Funding Sources _____		\$
Other Funding Sources _____		\$
Applicant Funding Contribution		\$ 50,000
Total Project Cost		\$ 94,750

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Applicant & Grantee Information	
Name of Grantee(s)	Denver Botanic Gardens
Mailing Address	909 York Street, Denver, CO 80206
FEIN	84-0440-359
Organization Contact	Jennifer Riley-Chetwynd
Position/Title	Director of Marketing & Social Responsibility
Email	<a href="mailto:jennifer.riley-chetwynd@botanicgardens.org">jennifer.riley-chetwynd@botanicgardens.org</a>
Phone	720-865-3581
Grant Management Contact	Lisa M.W. Eldred
Position/Title	Director of Exhibitions, Art & Interpretation
Email	<a href="mailto:lisa.eldred@botanicgardens.org">lisa.eldred@botanicgardens.org</a>
Phone	720-865-3518
Name of Applicant (if different than grantee)	same
Mailing Address	
Position/Title	
Email	
Phone	



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### Description of Grantee/Applicant

**Provide a brief description of the grantee's organization (100 words or less).**

Denver Botanic Gardens, one of the most visited gardens in North America, welcomed more than 1.2 million people in 2016 (York Street, Chatfield Farms, Mount Goliath locations). This included 34,000 school children, 6,000 from low-income schools benefiting from access funding. The Gardens showcase water-efficient horticultural and agricultural practices. Together with Colorado State University, the Gardens created Plant Select 25® years ago to bring to market plants that thrive in a semi-arid climate. A recent collaboration with Metropolitan State University of Denver to jointly manage its One World One Water Center creates a platform to educate an even broader audience.



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Type of Eligible Entity (check one)	
	<b>Public (Government):</b> Municipalities, enterprises, counties, and State of Colorado agencies. Federal agencies are encouraged to work with local entities. Federal agencies are eligible, but only if they can make a compelling case for why a local partner cannot be the grant recipient.
	<b>Public (Districts):</b> Authorities, Title 32/special districts (conservancy, conservation, and irrigation districts), and water activity enterprises.
	<b>Private Incorporated:</b> Mutual ditch companies, homeowners associations, corporations.
	<b>Private Individuals, Partnerships, and Sole Proprietors:</b> Private parties may be eligible for funding.
X	<b>Non-governmental organizations (NGO):</b> Organization that is not part of the government and is non-profit in nature.
	<b>Covered Entity:</b> As defined in <a href="#">Section 37-60-126 Colorado Revised Statutes</a> .

Type of Water Project (check all that apply)	
	Study
	Construction
	Identified Projects and Processes (IPP)
X	Other

Category of Water Project (check all that apply and include relevant tasks)	
	Supply and Demand Gap Projects - Multi-beneficial projects and those projects identified in basin implementation plans to address the water supply and demand gap. <i>Applicable Exhibit A Task(s):</i>
	Water Storage Projects - Projects that facilitate the development of additional storage, artificial recharge into aquifers, and dredging existing reservoirs to restore the reservoirs' full decreed storage capacity. <i>Applicable Exhibit A Task(s):</i>
	Conservation and Land Use Planning Projects - Activities and projects that implement long-term strategies for conservation, land use, and drought planning. <i>Applicable Exhibit A Task(s):</i>
X	Engagement & Innovation Projects - Activities and projects that support water education, outreach, and innovation efforts. Please fill out the Supplemental Application available on the website. <i>Applicable Exhibit A Task(s): <b>Focus groups; exhibition development &amp; implementation; K-12 curriculum &amp; Science Chat program materials.</b></i>
	Agricultural Projects - Projects that provide technical assistance and improve agricultural efficiency. <i>Applicable Exhibit A Task(s):</i>



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	Environmental & Recreation Projects – Projects that promote watershed health, environmental health, and recreation. <i>Applicable Exhibit A Task(s):</i>	
	Other	Explain:

### Location of Water Project

Please provide the general county and coordinates of the proposed project below in **decimal degrees**. The Applicant shall also provide, in Exhibit C, a site map if applicable.

County/Countries	Denver and beyond
Latitude	
Longitude	

### Water Project Overview

**Please provide a summary of the proposed water project (200 words or less). Include a description of the project and what the CWP Grant funding will be used for specifically (e.g., studies, permitting process, construction). Provide a description of the water supply source to be utilized or the water body affected by the project, where applicable. Include details such as acres under irrigation, types of crops irrigated, number of residential and commercial taps, length of ditch improvements, length of pipe installed, and area of habitat improvements, where applicable. If this project addresses multiple purposes or spans multiple basins, please explain. The Applicant shall also provide, in Exhibit A, a detailed Statement of Work, Budget, Other Funding Sources/Amounts and Schedule.**

Denver Botanic Gardens requests funds to support development and implementation of a new, comprehensive exhibition within its Science Pyramid venue to educate Coloradans and visitors to the state about water in the West, highlighting Colorado's water issues and needs for conservation, reuse, and preservation/enhancement of natural environments. The exhibition visitor engagement opportunities will reinforce the many ways in which people, land, and the broader natural environment are connected. The digital learning space offers an ideal forum for discovery and presents multiple ways for participants to understand how water, through its presence or absence, affects people, plants, and animals in all of Colorado's life zones, from steppe to alpine. The Gardens will include new methods for data visualization to illustrate impacts of water scarcity and educate about best practices for stewardship. Elements within the new exhibition will include:

- large-scale environmental graphics
- sound
- a projection program on a globe display demonstrating variability in precipitation in geographic regions, as well as waterway connections and drought
- video/animation
- interactives with messages centered on soil, water, plants, animals
- data visualization of user-generated content gathered both on- and off-site to create a platform for citizen science, whether through precipitation monitoring or the sharing of water usage data



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Measurable Results		
To catalog measurable results achieved with the CWP Grant funds, please provide any of the following values as applicable:		
	New Storage Created (acre-feet)	
	New Annual Water Supplies Developed or Conserved (acre-feet), Consumptive or Nonconsumptive	
	Existing Storage Preserved or Enhanced (acre-feet)	
	Length of Stream Restored or Protected (linear feet)	
	Efficiency Savings (indicate acre-feet/year OR dollars/year)	
	Area of Restored or Preserved Habitat (acres)	
	Quantity of Water Shared through Alternative Transfer Mechanisms	
	Number of Coloradans Impacted by Incorporating Water-Saving Actions into Land Use Planning	
	Other	Explain:

Water Project Justification
<p><b>Provide a description of how this water project supports the goals of <a href="#">Colorado's Water Plan</a>, the most recent <a href="#">Statewide Water Supply Initiative</a>, and the applicable Roundtable <a href="#">Basin Implementation Plan</a> and <a href="#">Education Action Plan</a>. The Applicant is required to reference specific needs, goals, themes, or Identified Projects and Processes (IPPs), including citations (e.g. document, chapters, sections, or page numbers).</b></p> <p><b>The proposed water project shall be evaluated based upon how well the proposal conforms to Colorado's Water Plan Framework for State of Colorado Support for a Water Project (CWP, Section 9.4, pp. 9-43 to 9-44;)</b></p>
<p>This project supports the multi-layered goals of the CWP especially in the areas of Education and Outreach as noted below:</p> <p>CWP, Section 9.5 (pg. 9-59) Topics including: 1) Colorado's water challenges, solutions, and the need to be adaptable to changing conditions, 2) Connection between climate change and water, 3) Water conservation and reuse, 4) Integration of land use and water supply, 5) Education and outreach to support environmental and watershed strategies, such as those designed to protect imperiled warm-water fish species and forest health.</p> <p>CWP, Section 10.2 (pg. 10-7) – Education, Outreach, and Innovation: Colorado's Water Plan sets a measurable objective to significantly improve the level of public awareness and engagement regarding water issues statewide by 2020, as determined by water awareness surveys. Colorado's Water Plan also sets a measurable objective to engage Coloradans statewide on at least five key water challenges (identified by CWCB) that should be addressed by 2030.</p> <p>This projects supports the South Platte Basin Implementation Plan (Metro and South Platte Basin Roundtables), as noted specifically here:</p> <p>S.5.2 (pg. S-12) – Maintain leadership in conservation and reuse and implement additional measures to reduce water consumption rates.</p>



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## Water Project Justification

*-continued-*

S.5.9 (pg. S-15) – Facilitate effective South Platte communications and outreach programs that complement the state's overall program, including “a strategic focus on communication and education with stakeholders, include water users” and more.

In addition, this project addresses the South Platte Basin Roundtable and Metro Roundtable Education Action Plan 2016-2018 as noted in Educational Priorities & Implementation: Overall goals of the Education and Outreach Committee of the South Platte Basin Roundtable include a focus on educating and engaging the public, decision-makers and elected officials on the scope and purpose of the BIP and the State Water Plan, with an overarching theme of focusing on solutions-oriented water supply planning. (pg. 3 of 9).

## Related Studies

**Please provide a list of any related studies, including if the water project is complementary to or assists in the implementation of other CWCB programs.**

This project supports and offers context to the CWCB-funded Watershed Summit and leverages information gathered and distributed by CWCB. In addition, the repository of information put together by the Colorado Foundation for Water Education and its Water Education Network offers key resources for consideration.

## Previous CWCB Grants, Loans or Other Funding

**List all previous or current CWCB grants (including WSRF) awarded to both the Applicant and Grantee. Include: 1) Applicant name; 2) Water activity name; 3) Approving RT(s); 4) CWCB board meeting date; 5) Contract number or purchase order; 6) Percentage of other CWCB funding for your overall project.**

Denver Botanic Gardens has not received CWCB grant funds previously. The Gardens joined CWCB on the planning committee and was the host venue for both the 2016 and 2017 Watershed Summits. The Gardens was not a direct recipient of CWCB grant funding for this event.



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Taxpayer Bill of Rights
The Taxpayer Bill of Rights (TABOR) may limit the amount of grant money an entity can receive. Please describe any relevant TABOR issues that may affect your application.
N/A

Submittal Checklist	
✓	I acknowledge the Grantee will be able to contract with CWCB using the <a href="#">Standard Contract</a> .
Exhibit A	
✓	Statement of Work <sup>(1)</sup>
✓	Budget & Schedule <sup>(1)</sup> ( <i>Spreadsheet</i> )
n/a	Letters of Matching and/or Pending 3 <sup>rd</sup> Party Commitments <sup>(1)</sup>
Exhibit C	
n/a	Map (if applicable) <sup>(1)</sup>
✓	Photos/Drawings/Reports
✓	Letters of Support (Support letter from Basin Roundtable encouraged)
✓	Certificate of Insurance (General, Auto, & Workers' Comp.) <sup>(2)</sup>
✓	Certificate of Good Standing with Colorado Secretary of State <sup>(2)</sup>
✓	W-9 <sup>(2)</sup>
	Independent Contractor Form <sup>(2)</sup> (If applicant is individual, not company/organization)
Engagement & Innovation Grant Applicants ONLY	
✓	Engagement & Innovation Supplemental Application <sup>(1)</sup>

(1) Required with application.

(2) Required for contracting. While optional at the time of this application, submission can expedite contracting upon CWCB Board approval.



## ENGAGEMENT & INNOVATION GRANT FUND SUPPLEMENTAL APPLICATION

### Introduction & Purpose

Colorado’s Water Plan calls for an outreach, education, public engagement, and innovation grant fund in Chapter 9.5.

The overall goal of the Engagement & Innovation Grant Fund is to enhance Colorado’s water communication, outreach, education, and public engagement efforts; advance Colorado’s water supply planning process; and support a statewide water innovation ecosystem.

The grant fund aims to engage the public to promote well-informed community discourse regarding balanced water solutions statewide. The grant fund aims to support water innovation in Colorado. The grant fund prioritizes measuring and evaluating the success of programs, projects, and initiatives. The grant fund prioritizes efforts designed using research, data, and best practices. The grant fund prioritizes a commitment to collaboration and community engagement. The grant fund will support local and statewide efforts.

The grant fund is divided into two tracks: engagement and innovation. The Engagement Track supports education, outreach, communication, and public participation efforts related to water. The Innovation Track supports efforts that advance the water innovation ecosystem in Colorado.

### Application Questions

\*The grant fund request is referred to as “project” in this application.

Overview (answer for both tracks)
<b>In a few sentences, what is the overall goal of this project? How does it achieve the stated purpose of this grant fund (above)?</b>
<i>Water in the West</i> will educate Coloradans and visitors to the state about water issues so they can effectively engage in Colorado’s water future by better understanding where water originates, conservation, reuse, and the preservation/enhancement of natural environment. A central concept presented in the exhibition is what it means to maintain and protect a biodiverse world – a set of healthy, adaptive environments that support life beyond just human.
<b>Who is/are the target audience(s)? How will you reach them? How will you involve the community?</b>
The primary target audience consists of Colorado adults, students, and families from across the state who visit Denver Botanic Gardens in person or who utilize Gardens resources remotely. Citizens in the seven county Denver Metro area are frequent visitors/program participants. Beyond experiencing the exhibition elements on site, community members will be involved through two focus groups, and will also share water observations and/or changes in water behaviors. The Gardens will also engage water entities in the state to leverage existing resources and identified priorities. The online formative evaluation survey will also extend reach beyond the Front Range to gather input.
<b>Describe how the project is collaborative or engages a diverse group of stakeholders. Who are the partners in the project? Do you have other funding partners or sources?</b>
The Gardens is currently working with Denver Water and the One World One Water Center at MSU Denver and their constituencies on a variety of water education initiatives and these partnerships will also inform the work presented here. Working through Gardens’ outreach and evaluation staff, a diverse set of voices for the focus groups can be engaged. At present, additional funds for this project will be available through the Gardens’ operating budget.

**Overview (answer for both tracks)****Describe how you plan to measure and evaluate the success and impact of the project?**

The Gardens Interpretation & Evaluation Specialist will create avenues for visitor feedback that will assess the effectiveness and impact of the exhibition, including exit surveys. Understanding if visitors learned something new, feel inspired/empowered to act or share information will allow for changes to ensure success and impact. Tracking and timing of visitor engagement in the space will also contribute to an overall understanding of linger time and connection to exhibition concepts. User-generated content contributions can be measured through the number of social media interactions, and reach beyond Gardens walls can be measured by pageviews of related web pages/web app. Teachers utilizing (or not using) the exhibition resources offer an additional perspective to measure success/impact, including actual attendance data, usefulness of pre- and post-visit materials and the accessibility of information and resources.

**What research, evidence, and data support your project?**

Informal education environments (learning spaces outside of traditional classrooms) include museums such as Denver Botanic Gardens and have long complemented in-classroom instruction. As instruction contact hours are tasked with achieving more and more, greater recognition has been given to the value informal learning spaces contribute to educating students and caregivers. The National Science Teachers Association states in its position statement that “Informal environments—or out-of-school-time (OST) settings—play an important role in promoting science learning for preK–12 students and beyond. The learning experiences delivered by parents, friends, and educators in informal environments can spark student interest in science and provide opportunities to broaden and deepen students’ engagement; reinforce scientific concepts and practices introduced during the school day; and promote an appreciation for and interest in the pursuit of science in school and in daily life. NSTA recommends strengthening informal learning opportunities for *all* preK–12 students.”

**Describe potential short- and long-term challenges with this project.**

Short-term challenges include quickly identifying physical approaches within the space that will best serve the set of priority messages and the visitors’ learning engagement needs as identified in focus groups. This is a typical manner of working, but will require commitment to planned timeline in order to meet the goal of installing exhibition components by end of year 2018. Long-term considerations include the need and aim to adapt exhibition components with new ideas as the story of water in the West continues to unfold and impact citizens and ecosystems. Whether a technological, digital solution or a low-tech, analog approach, the need for updates will be at the fore.

Please fill out the applicable questions for either the Engagement Track or Innovation Track, unless your project contains elements in both tracks. If a question does not relate to your project, just leave it blank. Please answer each question that relates to your project. Please reference the relevant documents and use chapters and page numbers (Colorado’s Water Plan, Basin Implementation Plan, PEPO Education Action Plan, etc.).

**Engagement Track**

**Describe how the project achieves the education, outreach, and public engagement measurable objective set forth in Colorado’s Water Plan to “significantly improve the level of public awareness and engagement regarding water issues statewide by 2020, as determined by water awareness surveys.”**



Through direct connections to people on site and via internet access, this exhibit will improve the level of awareness and engagement and fulfills aims of the CWP as outlined in section 9.5, pg. 9-59: “Work closely with organizations that specialize in the facilitation of public education and outreach programs in order to leverage existing resources within each basin and increase overall impact.” The exhibition and education project also addresses the priority topics noted in the same section, including Colorado’s water challenges, solutions, and the need to be adaptable to changing conditions; connection between climate change and water; water conservation and reuse; integration of land use and water supply; and water quality.

**Describe how the project achieves the other measurable objectives and critical goals and actions laid out in Colorado’s Water Plan around the supply and demand gap; conservation; land use; agriculture; storage; watershed health, environment, and recreation; funding; and additional.**

The exhibition narrative will present stories that reinforce the connections between people, animals, and the environment, inspiring participants via an emotional connection to what they care about when it comes to water and our natural world. Studies have proven that data alone does not motivate an individual. An exhibition experience such as this creates opportunities for citizens to understand in a leisure environment just how they treasure and rely upon the natural world. This, then, prepares and primes visitors and participants to take steps toward transforming and stewarding the world around them, which positions them for moving the following critical goals and actions forward as outlined in Chapter 10 of the CWP. The exhibition will help make it possible to address:

Conservation and Efficiency: Implement long-term water efficiency strategies to meet local and statewide water needs that are cost-effective and promote a water efficiency ethic throughout Colorado.

Agricultural Viability: Maintain Colorado’s agricultural productivity, support of rural economies, and food security. **The Gardens already boasts strong urban food initiatives and a sustainably managed community supported agriculture program which illustrate what is possible even on a small scale to achieve larger goals.**

Watershed Health, Environment, and Recreation: **This work is essentially at the heart of the Gardens’ mission to connect people with plants and to support a biodiverse world.** 1) Recover Imperiled Species: Promote restoration, recovery, and resiliency of endangered, threatened, and imperiled aquatic and riparian dependent species and plant communities. 2) Enhance Environmental and Recreational Economic Values: Protect and enhance river-based environments and recreational opportunities that support local and statewide economies and are important for the enjoyment of current and future generations of Coloradans. 3) Protect Healthy Environments: Understand, protect, maintain, and improve conditions of streams, lakes, wetlands, and riparian areas to promote self-sustaining fisheries and functional riparian and wetland habitat to promote long-term resiliency. 4) Promote Protection and Restoration of Water Quality: The protection and restoration of water quality should be a key objective when planning for Colorado’s current and future consumptive, recreational, and environmental water needs. 5) Protect and Restore Critical Watersheds: Protect and restore watersheds critical to water infrastructure, environmental or recreational areas.

**Describe how the project achieves the education, outreach, and public engagement goals set forth in the applicable Basin Implementation Plan(s).**

This projects supports the South Platte Basin Implementation Plan (Metro and South Platte Basin Roundtables), as noted specifically here:

S.5.2 (pg. S-12) – Maintain leadership in conservation and reuse and implement additional measures to reduce water consumption rates.

S.5.9 (pg. S-15) – Facilitate effective South Platte communications and outreach programs that complement the state’s overall program, including “a strategic focus on communication and education with stakeholders, include water users” and more.

In addition, this project addresses the South Platte Basin Roundtable and Metro Roundtable Education



Action Plan 2016-2018 as noted in Educational Priorities & Implementation: Overall goals of the Education and Outreach Committee of the South Platte Basin Roundtable include a focus on educating and engaging the public, decision-makers and elected officials on the scope and purpose of the BIP and the State Water Plan, with an overarching theme of focusing on solutions-oriented water supply planning. (pg. 3 of 9).

**Describe how the project achieves the basin roundtable's PEPO Education Action Plans.**

With the Gardens' statewide reach in mind, multiple basin roundtable PEPO Education Action Plans are relevant, including: CBRT: "Enhance K-12 water education opportunities inside and beyond the classroom." The Gardens serves more than 34,000 students annually through on-site school programs and more than 16,500 through family/youth programs. Also, the CBRT aims to use "film, radio, art and literature to engage people who don't have an intrinsic interest in water science and policy issues." The *Water in the West* exhibition and related programs will harness the participant's senses to continually surprise leisure learners as they explore. While the Gardens constituents are well-educated, they also predominately note their aim to relax and wander while on site, making it a prime moment to surprise and engage with new knowledge and understanding. The Metro Roundtable looks to harness social media and to integrate into statewide outreach initiatives. Through the exhibition element that collects user-generated data via social media, *Water in the West* can assist in meeting this goal.

**Innovation Track**

**Describe how the project enhances water innovation efforts and supports a water innovation ecosystem in Colorado.**

This project could serve as a platform for communicating emerging trends and technologies with a wide public audience.

**Describe how the project engages/leverages Colorado's innovation community to help solve our state's water challenges.**

**Describe how the project helps advance or develop a solution to a water need identified through TAP-IN and other water innovation challenges. What is the problem/need/challenge?**

**Describe how this project impacts current or emerging trends; technologies; clusters, sectors, or groups in water innovation.**

This project could serve as a platform for communicating emerging trends and technologies with a wide public audience.



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## Colorado Water Conservation Board

### Water Plan Grant - Exhibit A

#### Statement of Work

<b>Date:</b>	<b>8/1/17</b>
<b>Name of Applicant:</b>	<b>Denver Botanic Gardens</b>
<b>Name of Water Project:</b>	<b>Water in the West: Exhibition &amp; Outreach through the Gardens</b>
<b>Funding Source:</b>	<b>CWCB, Denver Botanic Gardens</b>

**Water Project Overview: Please provide a summary of the proposed water project (200 words or less). The same summary can be used from Page 5 of the CWP Grant Application.**

Denver Botanic Gardens requests funds to support development and implementation of a new, comprehensive exhibition within its Science Pyramid venue to educate Coloradans and visitors to the state about water in the West, highlighting Colorado's water issues and needs for conservation, reuse, and preservation/enhancement of natural environments. The exhibition visitor engagement opportunities will reinforce the many ways in which people, land, and the broader natural environment are connected. The digital learning space offers an ideal forum for discovery and presents multiple ways for participants to understand how water, through its presence or absence, affects people, plants, and animals in all of Colorado's life zones, from steppe to alpine. The Gardens will include new methods for data visualization to illustrate impacts of water scarcity and educate about best practices for stewardship. Elements within the new exhibition will include:

- large-scale environmental graphics
- sound
- a projection program on a globe display demonstrating variability in precipitation in geographic regions, as well as waterway connections and drought
- video/animation
- interactives with messages centered on soil, water, plants, animals
- data visualization of user-generated content gathered both on- and off-site to create a platform for citizen science, whether through precipitation monitoring or the sharing of water usage data

**Objectives: List the objectives of the project.**

Through this project the Gardens will educate Coloradans and visitors to the state about water in the West in an innovative learning environment that reaches off-site constituents as well. By meeting people where they are regardless of knowledge base, and by harnessing a non-traditional environment, the Gardens reaches individuals more apt to learn and retain key concepts about how water is essential for a thriving economy and healthy, resilient ecosystem. By completing the tasks included here (focus groups, exhibition implementation, and K-12/Science Chat educational programs), the Gardens can assist with the need Yale Law School professor Dan Kahan describes as "Fixing the Communications Failure" as included in *Nature*, v. 463, pp 296-97, 2010. "It would not be a gross simplification to say that science needs better marketing. Unlike commercial advertising, however, the goal is . . . to create an environment for the public's open-minded, unbiased consideration of the best scientific information." Additionally, this project can address the cultural side of science communication, a need outlined by Douglas Medin and Megan Bang in the departments of Psychology and School of Education and Social Policy at Northwestern University. The researchers noted that in most science education representations of ecosystems "humans are almost never included" which "provides additional evidence for a cultural

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model of humans' relationship with the natural world where humans are apart from or distanced from nature." The Gardens' education work can change this to foster greater understanding of how human behavior in the environment directly impacts this complicated network of systems.

Tasks
Provide a detailed description of each project task using the following format:
<b>Task 1 – Host Focus Groups / Deliver Baseline Survey</b>
<b>Description of Task:</b>
<p>Host two different focus groups as front-end evaluation for exhibition development in order to ascertain baseline understanding of water issues in the state of Colorado and the Rocky Mountain West. Information and perceptions gleaned at these focus groups will be used to inform the development of educational messages and exhibition elements themselves. In addition, a short on-line survey will be distributed to key community stakeholders across the state to gather input from those not physically located on the Front Range.</p>
<b>Method/Procedure:</b>
<p>Together the Gardens' Community Relations Manager and Interpretation &amp; Evaluation Specialist will recruit participants from the seven-county Metro area to participate in focus groups (up to 10 each group) to understand audience knowledge, perceptions, and communications of water issues within the state. The Gardens has done this previously with success and seeks a diverse range of participant profiles, including Spanish language speakers. Participants are provided a \$50 stipend for their time as well as admission passes to return to the Gardens at their leisure; a facilitator is brought in to guide and manage discussion or provide content in Spanish.</p> <p>In addition to discussing perspectives and understanding about a variety of water topics, participants will also spend time interacting with current exhibition elements within the Science Pyramid and will provide feedback about their experiences.</p>
<b>Grantee Deliverable: Describe the deliverable the grantee expects from this task</b>
<p>From this task the Gardens will be able to identify and understand: 1) Perceptions/misconceptions about water issues in the state of Colorado and in the West, 2) Gaps in information about understanding scientific concepts and complex ecosystems, and 3) What kinds of exhibition experiences resonate with or turn off leisure learners.</p>
<b>CWCB Deliverable: Describe the deliverable the grantee will provide CWCB documenting the completion of this task</b>
<p>The Gardens will provide CWCB a report summarizing the work of the two focus groups and will provide a report summarizing responses to the online survey.</p>





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Tasks
Provide a detailed description of each task using the following format:
<b>Task 2 – Develop, Design &amp; Implement Exhibition in Science Pyramid Venue</b>
<b>Description of Task:</b>
The Gardens’ exhibition and interpretative engagement teams are well-versed in developing exhibitions that foster inquiry and discovery, all the while engendering enthusiasm and inspiration among multi-age participants. The multi-phase nature of implementing an exhibition with multiple components is outlined below.
<b>Method/Procedure:</b>
The following items outline the framework to the method of exhibition development: <ul style="list-style-type: none"><li>• Develop interpretive arc; storyboard exhibit components</li><li>• Write, edit, translate (Spanish) interpretive copy</li><li>• Engage exhibit designer</li><li>• Identify and develop sound enhancements</li><li>• Develop new digital program for globe interactive</li><li>• Update and install hardware/software; make physical updates necessary (lighting)</li><li>• Design and develop data visualization interactive</li><li>• Produce film and/or animation</li><li>• Secure image licensing/photography</li><li>• Produce environmental graphics</li><li>• Design and fabricate new displays</li><li>• Integrate content messages into DBG web site, web app, and social media feed(s)</li></ul>
<b>Grantee Deliverable: Describe the deliverable the grantee expects from this task</b>
Through this work, the Gardens will provide a suite of new [exhibition] learning experiences to engage both visitors and off-site learners with important concepts connecting water issues to big picture ideas related to preserving healthy ecosystems and the preservation of biodiversity. This project aligns with the Gardens’ Interpretive Engagement Conceptual Framework (see last grant attachment) that moves participants along a continuum of engagement following the path of: 1) Appreciating, 2) Participating, 3) Understanding, 4) Transforming, and 5) Stewarding.
<b>CWCB Deliverable: Describe the deliverable the grantee will provide CWCB documenting the completion of this task</b>
The Gardens will provide the CWCB a summary report of the experiences and key messages, including visuals, as well as identified visitor outcomes tied with learning experiences.

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Tasks
Provide a detailed description of each task using the following format:
<b>Task 3 – Develop K-12 Curriculum Ties &amp; Science Chat Programs</b>
<b>Description of Task:</b>
<p>Opportunities for interpersonal learning experiences are critical for the success of exhibition venues. This task will formally align exhibition content with CDE content standards (grade level expectations for the Physical, Life, and Earth Systems Sciences), and will outline ways educators can utilize the space to bolster understanding for their K-12 learners through pre- and post-visit lines of inquiry. Materials will be created for use by teachers whether on a self-guided exploration or coordinated through the Gardens' school programs. Additionally, Science Chats offer platforms for guided conversations between a volunteer or Gardens' staff Learning Assistant. A Science Chat can take a variety of forms, including hands-on opportunities, demonstrations, or projected microscopic views of the world, but all offer connections between people and scientific concepts.</p>
<b>Method/Procedure:</b>
<p>In relation to final exhibition elements, a curriculum developer will create pre- and post-visit resources, along with materials for use while on site exploring the Science Pyramid, that can be distributed to teachers and home school coordinators. (Note, final exhibition narratives will be informed by educational content standards during development).</p> <p>Similarly, a Science Chat highlighting one water them/topic will be created to engage visitors of all ages, supplies and materials obtained as needed.</p>
<b>Grantee Deliverable: Describe the deliverable the grantee expects from this task</b>
Teacher curriculum resource packet for K-12 students, including home school audiences. At least one new Science Chat for public delivery, including training and materials necessary to implement.
<b>CWCB Deliverable: Describe the deliverable the grantee will provide CWCB documenting the completion of this task</b>
A summary and copy of resources will be provided to the CWCB.

**Repeat for Task 3, Task 4, Task 5, etc.**





Last Updated: July 5, 2017

### Budget and Schedule

This Statement of Work shall be accompanied by a combined Budget and Schedule that reflects the Tasks identified in the Statement of Work and shall be submitted to CWCB in excel format.

### Reporting Requirements

**Progress Reports:** The applicant shall provide the CWCB a progress report every 6 months, beginning from the date of issuance of a purchase order, or the execution of a contract. The progress report shall describe the status of the tasks identified in the statement of work, including a description of any major issues that have occurred and any corrective action taken to address these issues. The CWCB may withhold reimbursement until satisfactory progress reports have been submitted.

**Final Report:** At completion of the project, the applicant shall provide the CWCB a Final Report on the applicant's letterhead that:

- Summarizes the project and how the project was completed.
- Describes any obstacles encountered, and how these obstacles were overcome.
- Confirms that all matching commitments have been fulfilled.
- Includes photographs, summaries of meetings and engineering reports/designs.

The CWCB will withhold disbursement the last 10% of the budget until the Final Report is completed to the satisfaction of CWCB staff. Once the Final Report has been accepted, and final payment has been issued, the purchase order or grant will be closed without any further payment.

**Last Updated: July 5, 2017**



## COLORADO

Colorado Water  
Conservation Board

Department of Natural Resources

# Colorado Water Conservation Board

## Water Plan Grant - Exhibit A

## Budget and Schedule

Date: 8/1/17

Name of Applicant: Denver Botanic Gardens

**Name of Water Project:** Water in the West Exhibition & Outreach through the Gardens

Task No.	Task Description	Start Date <sup>(1)</sup>	End Date	Water Project Funding Category	Grant Funding Request	Match Funding	Total
1	Host Focus Groups	1/15/2018	2/1/2018	Engagement	\$1,750		\$1,750
2	Develop, Design & Implement Exhibition	2/1/2018	12/31/2018	Engagement	\$40,000	\$50,000	\$90,000
3	Develop K-12 Curriculum Ties & Science Chat Programs	7/1/2018	7/31/2018	Engagement	\$3,000		\$3,000
Total					\$44,750	\$50,000	\$94,750

(1) Start Date for funding under \$100K, minimum 45 Days from Board Approval; Start Date for funding over \$100K, minimum 90 Days from Board Approval.

• Round values up to the nearest hundred dollars.

- Reimbursement eligibility commences upon the grantee's receipt of a Notice to Proceed (NTP)

-NTP will not be accepted as a start date. Project activities may commence as soon as grantee enters contract and receives formal NTP if prior to the listed "Start Date".

• The applicant shall provide a progress report every 6 months, beginning from the date of contract execution.

-CWCB will withhold disbursement of the last 10% of the total grant amount until a Final Report is completed to the satisfaction of CWCB staff (2017 CWP Grant Guidelines).



Campus Box 22, P.O. Box 173362  
Denver, CO 80217-3362  
303 556 2699 (VOX)  
303 556 4436 (FAX)

July 31, 2017

Dear Ms. MacKillop:

As a member of CWCB's Metro Roundtable and as a faculty member of Metropolitan State University of Denver researching water quality issues regionally, I'm writing to express my support for a unique educational exhibition from Denver Botanic Gardens. They are applying for grant funding from you to support the development and implementation of a new, comprehensive exhibition within their Science Pyramid venue to educate Coloradans and visitors to the state about water in the west, highlighting Colorado's water issues and needs for conservation, reuse, and preservation/enhancement of natural environments.

As you likely are aware, MSU Denver and Denver Botanic Gardens jointly manage the One World One Water Center. This request for funding offers credence to the value of this collaboration in that it presents both institutions with an opportunity to educate a wide audience on where their water comes from, the important role Colorado plays as a headwater state, the inter-connectedness of the basins and the responsibility we all share as stewards of this precious resource. With more than 1.2 million visitors annually from across the region, state, country and world, the Gardens is uniquely positioned to speak to diverse audiences about water.

This exhibition would greatly support our water education efforts at the University and our outreach to k-12 classrooms in the Metro area. Specifically, I have been involved in water education for in-service k-12 teachers from the Englewood School district. This exhibit would be an excellent addition to our program and broaden the understanding of water conservation, use, and importance for our teachers and students.

Thank you for considering your support of this impactful exhibition.

Best regards,

Randi Brazeau, Ph.D., P.E.

**EXHIBIT C:**  
• Photos of Science Pyramid Exhibit Space at Denver Botanic Gardens •





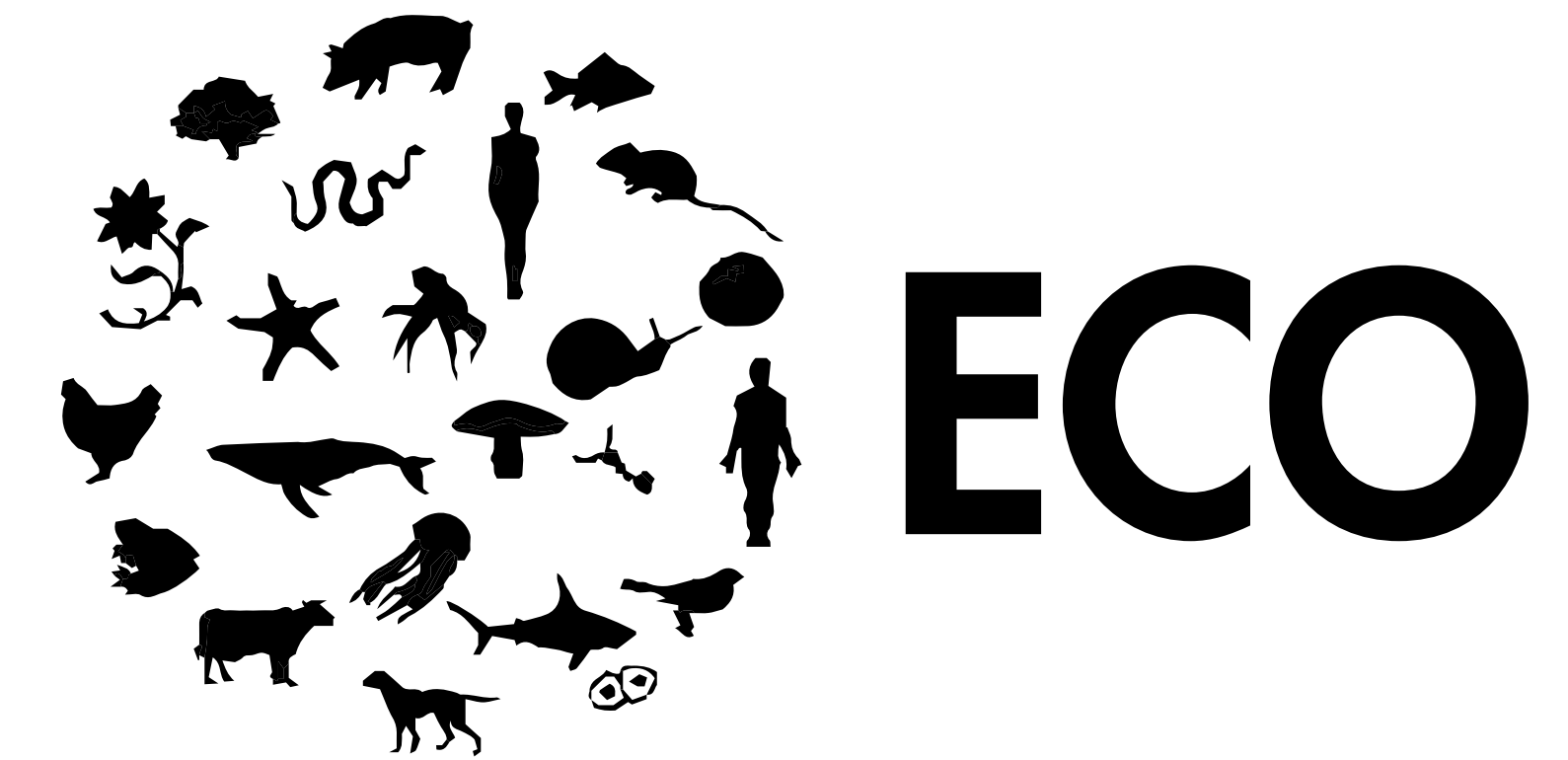








Denver Botanic Gardens strives to deepen audience connections to the natural world through Gardens' collections, programs, and expertise to foster appreciation of and responsibility for life on Earth.



We want visitors and broader audience communities to be actively:

APPRECIATING

PARTICIPATING

UNDERSTANDING

TRANSFORMING

STEWARDING



**THROUGH ENJOYMENT AND REJUVENATION; AWARENESS**

Introduction to diverse plants, gardens, and objects of beauty serve to restore an individual and to inspire meaningful pause. Whether through yoga, visual art, music, event, or garden tour, our aim is to open visitors' eyes to the world around them to acknowledge the intrinsic value of such resources.

**THROUGH INDIVIDUAL ACTIONS; LEARNING**

Creating a dynamic platform for learning and engagement fosters individual exploration and new or expanded awareness for participants. Our aim is to involve audience members near and far, whether through taking a class focused on Rocky Mountain gardening, by attending a lecture, or by recording bloom times of flowers in their own backyard.

**CULTURAL & ECONOMIC CONNECTIONS; HUMAN USES OF NATURAL SYSTEMS & PROCESSES; SCIENTIFIC METHODS**

As participant awareness expands, comprehension of the interconnectedness of human society and natural systems deepens personal engagement with environmental concerns. Our aim is to facilitate greater understanding of science and the larger systems and natural cycles that integrate people and the environment, from food, clothing, and recreation to the water cycle, weather, and soil health.

**BUILT AND NATURAL ENVIRONMENTS BY RECOGNIZING THE PLACE OF PEOPLE WITHIN THE ENVIRONMENT**

With deep understanding of connection comes the desire to take action. We empower people—through example and opportunity—to create positive change in their local environment and community by adopting beneficial lifestyle choices and practices; creating and restoring habitat; or ensuring food security and access.

**THE HEALTH OF THE PLANET THROUGH THEIR INFLUENCE**

Recognizing the human potential and responsibility to ensure global environmental health, people can take actions to slow and mitigate the effects of climate change; preserve and restore biodiversity; increase sustainable agriculture and development; and to influence policy related to these efforts.