

**Water Supply Reserve Fund  
Water Activity Summary Sheet  
March 10-11, 2021  
Consent Agenda Item 2(h)**

**Applicant & Grantee:** The Water Connection of the Greenway Foundation  
**Water Activity Name:** Nautilus 2  
**Water Activity Purpose:** Education & Outreach, Nonconsumptive (Environmental and Recreational) - Implementation  
**County:** Denver  
**Drainage Basin:** South Platte  
**Water Source:** Chatfield Dam to Sand Creek  
**Amount Requested:** \$25,000 Metro Basin Account  
\$10,000 South Platte Basin Account  
\$25,000 Statewide Account  
\$60,000 Total Request

**Matching Funds:** **Basin Account Match = \$35,000**  
• 140% of statewide request (meets 10% min)  
**Applicant & 3rd Party Match = \$31,900 (cash)**  
• 127% of the statewide request (meets 10% min)  
**Total Match (Basin request & Applicant Match) = \$66,900**  
• 267% of the statewide request (meets 50% min)

<b>Staff Recommendation:</b>
Staff recommends approval of up to \$25,000 from the Metro Basin Account, up to \$10,000 from the South Platte Basin Account and up to \$25,000 from the Statewide Account to help fund the project: Nautilus 2

**Water Activity Summary:** If approved, the applicant would use WSRF funds to assist in the development of “*Nautilus 2*”, an in-stream trash removal device to be installed and tested in a Metro Denver waterway of the South Platte River within the Chatfield to Sand Creek focus area.

In 2016, the applicant tasked local university students to significantly improve water quality and safety by designing an in-stream trash removal device. A half-scale prototype of the winning design, Nautilus has been successfully collecting trash and debris from the Lower Downtown area of Cherry Creek for over 9 months. The applicant’s vision for Nautilus 2 is to have proof of concept for a cost effective device that can protect and enhance environmental and recreation attributes by collecting in-stream trash.

The goal of developing Nautilus 2 is to improve the environmental health and recreational appeal and safety of Colorado urban waterways. WSRF funding will be used for tasks 1 through 4. This project consists of five main tasks: 1) full evaluation by project partners of Nautilus’ performance and next generation design priorities; 2) design drawings for next iteration & feasibility/floodplain impact analysis; 3) fabrication of Nautilus 2; 4) permitting and installation; and 5) educational outreach to businesses, educational institutions, media, and the general public.

**Discussion:** This proposal meets the South Platte Basin Implementation Plan’s goals of maintaining, enhancing and proactively managing water quality for all use classifications as well as helping address the adequacy of domestic and municipal water uses. The proposal also will further advance Colorado’s Water Plan healthy watersheds objectives.

**Issues/Additional Needs:** No issues or additional needs have been identified.

**Eligibility Requirements:** The application meets requirements of all eligibility components.

**Evaluation Criteria:** Staff has determined this activity satisfies the Evaluation Criteria.

<b>Funding Sources/Match</b>	<b>Cash</b>	<b>In-Kind</b>	<b>Total</b>	<b>Status</b>
The Greenway Foundation	\$22,900	\$4,000	\$26,900	Secured
Riverfront Park Community Foundation	\$0	\$5,000	\$5,000	Secured
<b>Sub-Total</b>	<b>\$22,900</b>	<b>\$0</b>	<b>\$31,900</b>	
WSRF Metro Basin Account	\$25,000	\$0	\$25,000	Secured
WSRF South Platte Basin Account	\$10,000	\$0	\$10,000	Secured
WSRF Statewide Account	\$25,000	\$0	\$25,000	
<b>Sub-Total</b>	<b>\$60,000</b>	<b>\$0</b>	<b>\$60,000</b>	
<b>Total Project Costs</b>	<b>\$82,900</b>	<b>\$9,000</b>	<b>\$91,900</b>	

**CWCB Project Manager:** Ben Wade



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**Colorado Water Conservation Board**  
**Water Supply Reserve Fund**  
**Grant Application**

**Instructions**

All WSRF grant applications shall conform to the current [2020 WSRF Criteria and Guidelines](#).

To receive funding from the WSRF, a proposed water activity must be recommended for approval by a Roundtable(s) **AND** the approved by the Colorado Water Conservation Board (CWCB). The process for roundtable consideration and recommendation is outlined in the 2020 WSRF Criteria and Guidelines. The CWCB meets bimonthly.

If you have questions, please contact the WSRF Grant Program Manager (for all Roundtables) or your Roundtable Liaison:

Ben Wade <a href="mailto:ben.wade@state.co.us">ben.wade@state.co.us</a> 303-866-3441 x3238 (office)	Sam Stein <a href="mailto:Sam.stein@state.co.us">Sam.stein@state.co.us</a> 303-866-3441 (office)
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**WSRF Submittal Checklist (Required)**

- YES X NO  This request was recommended for CWCB approval by the sponsoring roundtable.
  - YES X NO  I have read and understand the [2020 WSRF Criteria and Guidelines](#).
  - YES X NO  Grantee will be able to contract with CWCB using the [Standard Contract](#).<sup>1</sup>
- Application Documents included:**
- YES X NO  Exhibit A: Statement of Work<sup>2</sup> (*Word – see Template*)
  - YES X NO  Exhibit B: Budget & Schedule<sup>2</sup> (*Excel Spreadsheet – see Template*)
  - YES X NO  Letters of Matching and/or Pending 3<sup>rd</sup> Party Commitments<sup>2</sup>
  - YES  NO X  Map<sup>2</sup>
  - YES  NO X  Photos/Drawings/Reports
  - YES X NO  Letters of Support
- Contracting Documents<sup>3</sup>**
- YES  NO X  Detailed/Itemized Budget<sup>3</sup> (*Excel Spreadsheet – see Template*)
  - YES  NO X  Certificate of Insurance<sup>4</sup> (*General, Auto, & Workers’ Comp.*)
  - YES  NO X  Certificate of Good Standing<sup>(4)</sup>
  - YES  NO X  W-9 Form<sup>4</sup>
  - YES  NO X  Independent Contractor Form<sup>4</sup> (*If applicant is individual, not company/organization*)
  - YES  NO X  Electronic Funds Transfer (ETF) Form<sup>4</sup>

<sup>1</sup>Click “Grant Agreements”. For reference only/do not fill out or submit/required for contracting  
<sup>2</sup> Required with application if applicable.  
<sup>3</sup>Additional documentation providing a Detailed/Itemized Budget maybe required for contracting. Applicants are encouraged to coordinate with the CWCB Project Manager to determine specifics.  
<sup>4</sup> Required for contracting. While optional at the time of this application, submission can expedite contracting upon CWCB Board approval.



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Schedule		
CWCB Meeting	Application Submittal Dates	Type of Request
January	October 1	Basin Account
March	December 1	Basin/Statewide Account/Water Plan Grant Match <sup>1</sup>
May	February 1	Basin Account
July	April 1	Basin Account
September	June 1	Basin/Statewide Account
November	August 1	Basin Account

<sup>1</sup> If either the basin or statewide match includes matching funds from a pending Water Plan Grant, both must be submitted by December 1st deadline for March Board meeting review.

Water Activity Summary	
Name of Applicant	The Water Connection of the Greenway Foundation
Name of Water Activity	Nautilus 2
Approving Roundtable(s)	Basin Account Request(s) <sup>1</sup>
Metro Basin Roundtable	\$25,000 (approved)
South Platte Basin Roundtable	\$10,000 (approved)
Statewide Account	\$25,000
Basin Account Request Subtotal	\$35,000
Basin Account Request Subtotal Approved by Roundtable	\$0
Statewide Account Request <sup>(1)</sup>	\$25,000
Total WSRF Funds Requested (Basin & Statewide)	\$60,000
Total Project Costs	\$ 91,900

<sup>1</sup> Please indicate the amount recommended for approval by the Roundtable(s)

Grantee and Applicant Information	
Name of Grantee(s)	The Water Connection of The Greenway Foundation
Mailing Address	1800 Platte Street



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Grantee and Applicant Information	
FEIN	51- 0193575
<b>Grantee's Organization Contact<sup>1</sup></b>	Devon Buckels
Position/Title	Director, The Water Connection
Email	Devon@thewaterconnection.org
Phone	(720) 837-3289
<b>Grant Management Contact<sup>2</sup></b>	Lauren Berent
Position/Title	Associate Director
Email	lauren@greenwayfoundation.org
Phone	(303) 743-9720 ext. 850
<b>Name of Applicant (if different than grantee)</b>	
Mailing Address	
Position/Title	
Email	
Phone	

<sup>1</sup> Person with signatory authority

<sup>2</sup> Person responsible for creating reimbursement invoices (Invoice for Services) and corresponding with CWCB staff.

Description of Grantee
Provide a brief description of the grantee's organization (100 words or less).
<p>The Greenway Foundation (TGF) advances a sustainable water future, focusing primarily on Colorado and the western United States. TGF protects and revitalizes watersheds, promotes water stewardship, conducts environmental education, stimulates innovative policies and practices while also celebrating the historic, recreational, and environmental roles involving water that flows through our communities. TGF transcends cultural, political, geographic, and disciplinary boundaries, focusing on opportunities and initiatives that bind our communities together, the most vital of which is water. The Water Connection is TGF's water resources arm, fostering civic action and technological innovation for resilient watersheds through a policy, partnerships and economic lens.</p>

Type of Eligible Entity (check one)	
<input type="checkbox"/>	<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.
<input type="checkbox"/>	<b>Public (Districts):</b> authorities, Title 32/special districts (conservancy, conservation, and irrigation districts), and water activity enterprises



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Type of Eligible Entity (check one)	
	<b>Private Incorporated:</b> mutual ditch companies, homeowners associations, corporations
	<b>Private Individuals, Partnerships, and Sole Proprietors:</b> are eligible for funding from the Basin Accounts but not for funding from the Statewide Account.
X	<b>Non-governmental organizations:</b> broadly, any organization that is not part of the government
	<b>Covered Entity:</b> as defined in <a href="#">Section 37-60-126 Colorado Revised Statutes</a>

Type of Water Activity (check one)	
	Study
X	Implementation

Category of Water Activity (check all that apply)		
X	Nonconsumptive (Environmental)	
X	Nonconsumptive (Recreational)	
	Agricultural	
	Municipal/Industrial	
	Needs Assessment	
X	Education & Outreach	
	Other	Explain:

Location of Water Activity	
Please provide the general county and coordinates of the proposed activity below in <b>decimal degrees</b> . The Applicant shall also provide, in Exhibit C, a site map if applicable.	
County/Countries	Denver County
Latitude	TBD
Longitude	TBD

Water Activity Overview
<p>Please provide a summary of the proposed water activity (200 words or less). Include a description of the activity and what the WSRF funding will be used for specifically (e.g. studies, permitting, construction). Provide a description of the water supply source to be utilized or the water body affected by the activity. 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, area of habitat improvements. If this project addresses multiple purposes or spans multiple basins, please explain.</p> <p>The Applicant shall also provide, in Exhibit A, a detailed Statement of Work, Budget, and Schedule.</p>



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**Water Activity Overview**

TWC seeks funding for the next phase of development of Nautilus, an in-stream trash removal device to be installed and tested in a Metro Denver waterway of the South Platte River within the Chatfield to Sand Creek focus area.

In 2016 TWC tasked local university students to significantly improve water quality and safety by designing an in-stream trash removal device. A half-scale prototype of the winning design, Nautilus has been successfully collecting trash and debris from the Lower Downtown area of Cherry Creek for over 9 months.

The vision for Nautilus 2 is to have proof of concept for a cost effective device that can protect and enhance environmental and recreation attributes by collecting in-stream trash. The goal of developing Nautilus 2 is to improve the environmental health and recreational appeal and safety of Colorado urban waterways.

This project consists of five main tasks: 1) full evaluation by project partners of Nautilus' performance and next generation design priorities; 2) design drawings for next iteration & feasibility/floodplain impact analysis; 3) fabrication of Nautilus 2; 4) permitting and installation; and 5) educational outreach to businesses, educational institutions, media, and the general public.

WSRF funding will be used for tasks 1 through 4.

**Measurable Results**

To catalog measurable results achieved with WSRF funds please provide any of the following values.

		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)
		Length of Pipe/Canal Built or Improved (linear feet)
X	Other	<ul style="list-style-type: none"> <li>• Reduction of flow altering trash</li> <li>• Reduction of trash that can cause clogging of culverts, potentially causing flooding</li> <li>• Reduction of wildlife ingestion and entanglement due to trash</li> <li>• Reduction of trash negatively affecting recreational use of streams and waterways</li> <li>• Educating thousands of community citizens through awareness building during school field trips, employee volunteer opportunities and media coverage.</li> </ul>



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Measurable Results		
		<ul style="list-style-type: none"> <li>11,000+ people will learn about innovation in in-stream trash removal through TWC/TGF social media and email newsletters.</li> <li>The entire Metro Denver Region, and potentially the State, will benefit from the development and implementation of an effective trash removal solution.</li> </ul>

Water Activity Justification
<p>Provide a description of how this water activity supports the goals of <a href="#">Colorado's Water Plan</a>, the most recent <a href="#">Statewide Water Supply Initiative</a>, and the respective <a href="#">roundtable Basin Implementation Plan and Education Action Plan</a> <sup>(1)</sup>. 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).</p> <p>For applications that include a request for funds from the Statewide Account, the proposed water activity shall be evaluated based upon how well the proposal conforms to Colorado's Water Plan criteria for state support (CWP, Section 9.4, pp. 9-43 to 9-44;) (Also listed pp. 4-5 in <a href="#">2020 WSRF Criteria and Guidelines</a>).</p>



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### Water Activity Justification

The Colorado State Water Plan aims to reduce the gap between water demand and water supply. A key component to achieving this goal will be to protect and enhance the water quality of existing water supplies in the South Platte River Watershed. This must be done given that the population on the Front Range will continue to grow, and that Western Slope Water is reaching full development.

A full scale Nautilus would support the State in developing innovative strategies to protect the water supply from urban trash and its many associated pollutants. A primary goal of the Colorado Water Plan is to address the State's supply and demand challenges while protecting the health of rivers, streams and watersheds. This project supports the State in achieving this goal by facilitating the removal of visible trash pollution. Watershed health affects water supply – the gap will only grow if our available water is ruined with pollutants.

Nautilus addresses key themes in the South Platte / Metro Basin Implementation Plans, including: maximize water resources, protection of watersheds, enhance water quality, and protection of recreational and environmental assets. These BIPs also acknowledge the connection between water supply and water quality.

#### Supporting Justification:

Colorado State Water Plan, Executive Summary, p.8, S.3.7 Water Quality Issues

A major challenge in the South Platte Basin relates to adequacy of the water quality for domestic and municipal water uses. ... Major technological innovations are needed for delivery, treatment, and disposal of the waste streams from currently available complex water treatment systems, which results in significant cost to customers, impacts to the environment, and uncertain regulatory permitting processes. Relying exclusively on South Platte River supplies in the face of decreasing water quality will be a major challenge in the South Platte Basin."

Colorado State Water Plan, Executive Summary, p.16, Watershed Health, Environment, and Recreation

Colorado's Water Plan sets a measurable objective to cover 80 percent of the locally prioritized lists of rivers with stream management plans, and 80 percent of critical watersheds with watershed protection plans, all by 2030. The environment and recreation are too critical to Colorado's brand not to have robust objectives; a strong Colorado environment is critical to the economy and way of life.

Colorado State Water Plan, p. 3-12

Per SWSI 2010, the South Platte Basin population may nearly double from about 3.5 million people to 6 million people by 2050. Approximately 85 percent of Colorado's population resides in the South Platte Basin, and the Front Range area of the basin is Colorado's economic



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### Water Activity Justification

and social engine.

Colorado State Water Plan, p.3-13

A substantial amount of the basin's water supply originates in the Colorado River Basin. As such, compliance with the Colorado River Compact, and efforts to avoid a compact curtailment, are critical to the South Platte Basin.

Colorado State Water Plan, p.3-14

The urban environment is an important component of the quality of life for many South Platte Basin residents. Judgments about the value of the urban environment, including both the need to provide water for irrigated landscape and the vital benefits that landscape provides to citizens and the environment, make the discussions about water supply development needs all the more difficult.

Colorado Water Plan, Analysis and Technical Update, p.142

The South Platte Basin is expected to experience the largest municipal growth in the state by 2050, straining already limited water supplies and increasing competition among municipal, industrial, agricultural, environmental and recreation users in the basin.

South Platte Basin Implementation Plan, p. S-8

Preservation and enhancement of the environmental and recreational aspects of the South Platte River is important to Colorado's economy and quality of life. Additional projects to address these needs should be considered including ... restoration of habitat and stream channels.

South Platte Basin Implementation Plan, p. 5-27

5.5.5 Protect and Enhance Environmental and Recreational Attributes

Environmental and recreational specific projects can be implemented to enhance and protect attributes to contribute to healthier rivers and increase economic benefits from recreational uses. Projects should be proactively pursued to maintain and enhance the recreational and environmental attributes in the South Platte Basin.

South Platte Basin Implementation Plan, p. S-8

A major challenge in the South Platte Basin relates to adequacy of the water quality for domestic and municipal water uses..... Today, however, these higher quality water sources are approaching full development and municipal water suppliers are attempting to meet new supply demands with lower quality water sources often located within the lower portions of the basin.

South Platte Basin Implementation Plan, p. 1-27

1.9.5 Water Quality

Goal: Maintain, enhance and proactively manage water quality for all use classifications.



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<sup>1</sup> Access Basin Implementation Plans or Education Action Plans from Basin drop down menu.

Matching Requirements: Basin Account Requests	
<p><b>Basin (only) Account</b> grant requests require a 25% match (cash and/or in-kind) from the Applicant or 3<sup>rd</sup> party and shall be accompanied by a <b>letter of commitment</b> as described in the <a href="#">2020 WSRF Criteria and Guidelines</a> (submitted on the contributing entity's letterhead). Attach additional sheet if necessary.</p>	
Contributing Entity	Amount and Form of Match (note cash or in-kind)
Riverfront Park Community Foundation	\$5,000 (committed)
The Greenway Foundation	\$26,900
Total Match	\$31,900
If you requested a Waiver to the Basin Account matching requirements, indicate the percentage you wish waived.	

Matching Requirements: Statewide Account Requests	
<p><b>Statewide Account</b> grant requests require a 50% match as described in the <a href="#">2020 WSRF Criteria and Guidelines</a>. At least of 10% of the required Statewide Account Grant request match shall be cash from Basin Account funds whether that is from one or multiple basins; and the remaining 40% of the required match may be provided from any source, including other grants, cash from the Basin Account, or any combination of cash, in-kind services, or in-kind materials. and shall be accompanied by a <b>letter of commitment</b>. Attach additional sheet if necessary.</p>	
Contributing Entity	Amount and Form of Match (note cash or in-kind):
Metro Basin	\$25,000 (cash)
South Platte Basin	\$10,000 (cash)



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Matching Requirements: Statewide Account Requests	
Total Match	\$35,000
If you requested a Waiver to the Statewide Account matching, indicate % you wish waived. (Max 50% reduction of requirement).	

Related Studies
<p>Please provide a list of any related studies, including if the water activity is complimentary to or assists in the implementation of other CWCB programs.</p> <p>As part of The Greenway Foundation's 2012 inventory of nonpoint trash, volunteers were able to collect over 25,000 pieces of trash in just three days from along the South Platte River. Mile High Flood District also reported that they collect between 600 and 900 cubic yards of trash from the South Platte River each year. Denver Environmental Health's 2011 survey of Confluence Park users found that they perceive trash in Denver's streams and river as a problem and feel that trash removal is a worthwhile effort for the City to conduct. The users surveyed also felt strong enough about the issue that they expressed a desire to volunteer their own time toward activities that would improve the river. The Greenway Foundation partnered with Market Perceptions for a survey of Metro Denver residents which also found that 71% of respondents perceived water pollution as a problem in the area. This disconnect between the concern for water quality and common sources of water pollution is alarming and a likely reason that the issue continues to persist in Denver's waterways. Increasing Metro Denver resident's understanding of sources, behaviors and activities that contribute to these problems is a critical next step.</p> <p>The engineering firm Merrick &amp; Company reviewed the feasibility of installing in-stream trash removal devices in the South Platte River or Cherry Creek. The Merrick engineers concluded that the proposed device, designed to emulate the popular Baltimore Trash Wheel, impacted the South Platte River flood plain to an unacceptable degree. There is not a one-size-fits-all solution to urban waterway trash so innovation and multiple approaches are needed.</p>

Previous CWCB Grants
<p>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</p> <p>The following is a list of previous CWCB funding awarded to TGF and/or TWC:</p> <ul style="list-style-type: none"> <li>- TGF: South Platte River Recreation and Habitat Feasibility Study; Metro Basin RT and Statewide funds; Approved at 9/17/2008 meeting, Contract # C150442</li> <li>- TGF: South Platte River Recreation and Habitat Improvement Preliminary Design, Metro Basin RT and Statewide funds. Approved at 9/13/2011 meeting, Contract # C150493</li> <li>- TGF: Denver South Platte River Implementation Project, South Platte Basin &amp; Metro RT, approved at 9/28/2012 meeting, Contract # CTGG1 2015-392</li> <li>- TGF: Grant-Frontier Park West Bank Riparian Floodplain Design and Construction Project, Metro Basin RT, approved at 9/24/2013 meeting, Contract # CTGG1 2015-1721</li> </ul>



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#### Previous CWCB Grants

- TGF: 8<sup>th</sup> Ave. to 20<sup>th</sup> St. In-River Recreation and Environmental Improvements and Floodplain Mitigation, Metro Basin RT and Statewide funds. Approved at 9/12/2014 meeting, Contract # CTGG1 2015
- TWC: Clean River Design Challenge, Approved 7/30/2018, Order Number: POGG1, PDAA, 201900002072
- TWC: Denver One Water Plan. Approved June 29, 2019. Contract #CTGG1 2020-056
- TWC: TAP-IN. Education and Innovation statewide funds. Approved 3/10/2020, Order Number: POGG1, PDAA, 202000002926

#### Tax Payer Bill of Rights

The Tax Payer Bill of Rights (TABOR) may limit the amount of grant money an entity can receive. Please describe any relevant TABOR issues that may affect the applicant.

There are no known TABOR issues that would affect this application.



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<b>Colorado Water Conservation Board</b>	
<b>Water Supply Reserve Fund</b>	
<b><u>Exhibit A - Statement of Work</u></b>	
<b>Date:</b>	<b>December 1, 2020</b>
<b>Water Activity Name:</b>	<b>Nautilus 2</b>
<b>Grant Recipient:</b>	<b>The Water Connection of The Greenway Foundation</b>
<b>Funding Source:</b>	<b>WSRF Statewide Account</b>
<b>Water Activity Overview:</b> (Please provide brief description of the proposed water activity (no more than 200 words). Include a description of the overall water activity and specifically what the WSRF funding will be used for. (PLEASE DEFINE ALL ACRONYMS).)	
<p>The Water Connection (TWC) seeks \$25,000 to develop the next phase of Nautilus. In 2016 TWC tasked local university students to significantly improve water quality and safety by designing an in-stream trash removal device. A half-scale prototype of the winning design, Nautilus, has been collecting trash and debris from the Lower Downtown area of Cherry Creek for over 9 months. With the goal of improving the environmental health and recreational appeal and safety of South Platte and Metro Basin waterways, the Nautilus prototype will be evaluated, adapted as needed, and built to scale. Nautilus “2” will be installed in a Metro Denver waterway of the South Platte River within the Chatfield to Sand Creek focus area. In addition to collecting trash, the installation will be used to increase community awareness and understanding of trash related issues.</p> <p>This project consists of five main tasks: 1) full evaluation by project partners of Nautilus’ performance and next generation design priorities; 2) design drawings for next iteration &amp; feasibility/floodplain impact analysis; 3) fabrication of Nautilus 2; 4) permitting and installation; and 5) educational outreach to businesses, educational institutions, media, and the general public.</p> <p>WSRF funding will be used for tasks 1 through 4.</p>	
<b>Objectives:</b> (List the objectives of the project. (PLEASE DEFINE ACRONYMS).)	



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The Water Connection (TWC) works across academic, industrial, environmental and governmental sectors to facilitate and implement tangible, visible projects improving waterways and watershed resiliency. TWC provides resources for demonstration of new products and practices and is a catalyst for innovative and collaborative work. Through collaborative efforts and unique approaches, TWC drives innovative solutions addressing current and future water challenges.

**The Objectives:**

The proposed Nautilus 2 project will target priority problems identified by the Metro Roundtable. Building on initial pilot work completed through October 2020, TWC will convene stakeholders to evaluate performance and consider design modifications for the next version of the Nautilus device. Qualified engineering assistance will be recruited for improved designs, facilitation of flood impact or and/or feasibility studies as required, and building of the next version of the device.

Overall goals include demonstration of a new, scalable and replicable mechanism for in-stream trash removal that effectively captures trash and other debris from waterways, and allows for simple, cost effective maintenance.

The resulting full-scale model, if successful, will be an energy efficient, easily installed and maintained, tool for use in basins throughout the state to address waterway trash in their communities.

Tasks
Provide a detailed description of each task using the following format: (PLEASE DEFINE ACRONYMS)
<b>Task 1 - (Name)</b> Full Evaluation of Nautilus Prototype Performance & Design Priorities
Description of Task:



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**Tasks**

Recruit and convene stakeholders engaged with installing, monitoring and maintaining the Nautilus prototype to evaluate performance.

An engineer or engineering firm will be recruited for the project, along with others who have been involved in the pilot project to this point. Entities include: Mile High Flood District, Arbor Force (Maintenance contractor for Mile High Flood District), and the City and County of Denver.

**Method/Procedure:**

This group will be convened in-person or via video conference to review performance data for the Nautilus prototype. Also discussed will be improvements in performance and maintenance protocols. TWC staff will review whether users have achieved their in-stream trash removal goals using Nautilus. The following questions among others suggested by the group will be reviewed:

- What aspects of the device performed well?
- What aspects of the device were problematic?
- Are there modifications to the design that could address those problems?
- Was there a performance aspect you anticipated that was not achieved?
- Did the Nautilus meet Mile High Flood District needs?
- How can we scale the device to accommodate a larger volume of trash and still remain easy to maintain?
- What design modifications might be needed to accommodate a larger volume of trash?
- How do the anticipated design modifications affect flood management?

**Grantee Deliverable:** (Describe the deliverable the grantee expects from this task)

Documentation of evaluation meetings including overall recommendations for moving forward.

**CWCB Deliverable:** (Describe the deliverable the grantee will provide CWCB documenting the completion of this task)

Documentation of evaluation meetings including overall recommendations for moving forward.



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<b>Tasks</b>
Provide a detailed description of each task using the following format: (PLEASE DEFINE ACRONYMS)
<b>Task 2 - (Name)</b> Design Drawings & Feasibility/Floodplain Impact Analysis
Description of Task:
<p>Solicit assistance from Engineer for design drawings.</p> <p>If not already completed in Task 1, hire Engineer to develop design drawings of Nautilus 2.</p> <p>A budget of engineering costs including rate and unit costs will be developed for review.</p> <p>Coordination with Mile High Flood District and City and County of Denver on possible locations for placement of full scale Nautilus.</p> <p>Coordination with Mile High Flood District and City and County of Denver to identify studies needed and outline approval process(es).</p> <p>Solicit assistance from Engineer for flood impact/feasibility studies as required. Once the location is determined, the engineer will complete a flood impact/feasibility studies as required.</p>
Method/Procedure:
<p>Design drawings and budget will be reviewed and updated as needed (budgeted for up to 4 meetings) with the stakeholder group from Task 1.</p> <p>Appropriate members of the stakeholder group will be engaged in site selection to confirm the new location meets all criteria for testing. Visit to potential sites will be conducted as needed.</p>
Grantee Deliverable: (Describe the deliverable the grantee expects from this task)
<p>Design Drawings</p> <p>Budget of engineering costs including rate and unit costs</p> <p>Flood Impact / feasibility analysis as required</p>
CWCB Deliverable: (Describe the deliverable the grantee will provide CWCB documenting the completion of this task)



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Tasks
Design Drawings Budget of engineering costs including rate and unit costs Flood Impact / feasibility analysis as required

Task 3 - (Name) Fabrication of Nautilus 2
<b>Description of Task:</b>  Solicit Engineer to oversee fabrication of Nautilus 2 Work with Engineer to determine fabrication facility Engineer and TWC staff will oversee the fabrication of Nautilus 2 to design specifications, drawings and budget.
<b>Method/Procedure:</b>  For early budgeting purposes the assumption was made that the full-scale Nautilus would be made from Aluminum.
<b>Grantee Deliverable: (Describe the deliverable the grantee expects from this task)</b>  Full scale Nautilus
<b>CWCB Deliverable: (Describe the deliverable the grantee will provide CWCB documenting the completion of this task)</b>



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Photos of completed full scale Nautilus

**Task 4 - (Name)** Permitting and Installation

Description of Task:

Working with the Mile High Flood District and the City and County of Denver, all required permits will be obtained prior to installation of Nautilus 2 in stream.

Method/Procedure:

Working with the Mile High Flood District, TWC staff will coordinate all required permitting and coordinate the installation of Nautilus 2.

Grantee Deliverable: (Describe the deliverable the grantee expects from this task)

Installed and functioning Nautilus 2

CWCB Deliverable: (Describe the deliverable the grantee will provide CWCB documenting the completion of this task)

Photos of Nautilus 2 in-stream and actively working



Last Update: March 17, 2020

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<p><b>Task 5 - (Name)</b> Educational Outreach to Businesses, Educational Institutions, Media &amp; Public</p>
<p>Description of Task:</p>
<p>Design and fabrication of on-site educational signage</p> <p>Installation of on-site educational signage</p> <p>Outreach to Media for PR around the installation of Nautilus 2</p> <p>Outreach to community stakeholders on the need, goals and purpose of Nautilus 2</p>
<p>Method/Procedure:</p>
<p>Appropriate on-site educational signage will be designed, created and installed at the designated site of Nautilus 2 placement.</p> <p>Outreach to media, particularly local news media (TV, radio and newspapers) will be done through press releases to encourage and invite coverage of installation. Media packets will include information of the issues, the source of the Nautilus original design, the cooperation between Basin Roundtables and the Statewide WSRF on developing cost effective, efficient solutions to in-stream trash removal. Also covered will be the consequences of not removing trash, and the importance of increasing the public's engagement in keeping trash from street and waterways.</p> <p>The Greenway Foundation and the Water Connection will share blogs, emails and newsletter articles with over 11,000 constituents.</p> <p>Nautilus 2 will be highlighted at two annual Stewardship Events organized by The Greenway Foundation.</p> <p>The Water Connection will highlight the Nautilus work during Reception on the River, an event celebrating the past, present and future of our urban waterways.</p> <p>South Platte River Environmental Education (SPREE) educates thousands of metro Denver students each year, aiming to develop a positive relationship between the South Platte River and Denver area youth through school excursions, day camps, weekend events, internships, and summer employment. The topic of urban waterway pollution issues and solutions, including the Nautilus, will be a topic in these activities, educating children, youth and their parents about the issue of trash affecting our waterways and what the work being done to address it.</p>
<p>Grantee Deliverable: (Describe the deliverable the grantee expects from this task)</p>



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Installed educational signage
CWCB Deliverable: (Describe the deliverable the grantee will provide CWCB documenting the completion of this task)
Press release(s) Blog(s) Photo(s) of installed educational signage

**Budget and Schedule**

**Exhibit B - 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. A separate excel formatted Budget is required for engineering costs to include rate and unit costs.

**Reporting Requirements**

**Progress Reports:** The grantee 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 grantee shall provide the CWCB a Final Report on the grantee'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.

**Payments**

Payment will be made based on actual expenditures, must include invoices for all work completed and must be on grantee's letterhead. The request for payment must include a description of the work accomplished by task, an estimate of the percent completion for individual tasks and the entire Project in relation to the percentage of budget spent, identification of any major issues, and proposed or implemented corrective actions.

The CWCB will pay the last 10% of the entire water activity budget when 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 water activity and purchase order or contract will be closed without any further payment. Any entity that fails to complete a satisfactory Final Report and submit to CWCB within 90 days of the expiration of a purchase order or contract may be denied consideration for future funding of any type from CWCB.

**Performance Requirements**

Performance measures for this contract shall include the following:  
 (a) Performance standards and evaluation: Grantee will produce detailed deliverables for each task as specified. Grantee shall maintain receipts for all project expenses and documentation of the minimum in-



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### Performance Requirements

kind contributions (if applicable) per the budget in Exhibit B. Per Grant Guidelines, the CWCB will pay out the last 10% of the budget when the final deliverable is completed to the satisfaction of CWCB staff. Once the final deliverable has been accepted, and final payment has been issued, the purchase order or grant will be closed without any further payment.

(b) Accountability: Per the Grant Guidelines full documentation of project progress must be submitted with each invoice for reimbursement. Grantee must confirm that all grant conditions have been complied with on each invoice. In addition, per the Grant Guidelines, Progress Reports must be submitted at least once every 6 months. A Final Report must be submitted and approved before final project payment.

(c) Monitoring Requirements: Grantee is responsible for ongoing monitoring of project progress per Exhibit A. Progress shall be detailed in each invoice and in each Progress Report, as detailed above. Additional inspections or field consultations will be arranged as may be necessary.

(d) Noncompliance Resolution: Payment will be withheld if grantee is not current on all grant conditions. Flagrant disregard for grant conditions will result in a stop work order and cancellation of the Grant Agreement.



**COLORADO**  
 Colorado Water Conservation Board  
 Department of Natural Resources

**Colorado Water Conservation Board**

**Water Supply Reserve Fund**

**EXHIBIT B - BUDGET AND SCHEDULE - Direct & Indirect (Administrative) Costs**

**Date: December 1, 2020**

**Water Activity Name: Nautilus 2**

**Grantee Name: The Water Connection of The Greenway Foundation**

<u>Task No.</u> <sup>(1)</sup>	<u>Description</u>	<u>Start Date</u> <sup>(2)</sup>	<u>End Date</u>	<u>Matching Funds</u> (cash & in-kind) <sup>(3)</sup>	<u>WSRF Funds</u> (Basin & Statewide combined) <sup>(3)</sup>	<u>Total</u>
1	Full Evaluation of Nautilus Prototype Performance & Design Priorities	Apr-21	May-21	\$100.00	\$7,900.00	<b>\$8,000</b>
2	Design Drawings & Feasibility/Floodplain Impact Analysis	June 2021	October 2021	\$2,500	\$21,400	<b>\$23,900</b>
3	Fabrication of Nautilus 2	June 2021	July 2021	\$3,000	\$26,800	<b>\$29,800</b>
4	Permitting and Installation	August 2021	October 2021	\$11,100	\$3,900	<b>\$15,000</b>
5	Educational Outreach to Businesses, Educational Institutions, Media and Public	October 2021	September 2022	\$6,200	\$0	<b>\$6,200</b>
<b>Total</b>				<b>\$22,900</b>	<b>\$60,000</b>	<b>\$82,900</b>
6	Grant Administration	April 2021	September 2022	\$9,000	\$0	<b>\$9,000</b>
<b>Total</b>				<b>\$31,900</b>	<b>\$60,000</b>	<b>\$91,900</b>

**(1)** The single task that include costs for Grant Administration must provide a labor breakdown (see Indirect Costs tab below) where the total WSRF Grant contribution towards that task does not exceed 15% of the total WSRF Grant amount.

**(2)** Round values up to the nearest hundred dollars.

• Additional documentation providing a Detailed/Itemized Budget may be required for contracting. Applicants are encouraged to coordinate with the CWCB Project Manager to determine specifics.

The CWCB will pay the last 10% of the entire water activity budget when the Final Report is completed to the satisfaction of the CWCB staff project manager. Once the Final Report has been accepted, the final payment has been issued, the water activity and purchase order (PO) or contract will be closed without any further payment. Any entity that fails to complete a satisfactory Final Report and submit to the CWCB with 90 days of the expiration of the PO or contract may be denied consideration for future funding of any type from the CWCB.

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

November 18, 2020

Ben Wade  
Colorado Water Conservation Board  
1313 Sherman St., Room 721  
Denver, CO 80203

Re: Metro Roundtable support for WSRF Basin Request from The Water Connection/The Greenway Foundation's Nautilus 2

Dear Ben,

At our November 12th meeting, the Metro Roundtable voted to approve a Metro WSRF Basin Grant of \$25,000 for The Water Connection/The Greenway Foundation's Nautilus 2. The Metro Roundtable also approved TWC/TGF's Statewide WSRF request of \$25,000.

Nautilus 1, the result of the 2016 Clean River Design Challenge, is a half-scale prototype was built and for 10 months has been collecting unsightly and unsafe trash and debris from the LoDo area of Cherry Creek. The most common types of trash collected have been thin plastic bags and pieces of Styrofoam—both of which can be ingested by wildlife and/or break down to negatively impact water quality. Also collected were food wrappers, bottles/cans, and textiles that can be dangerous for people and animals using the waterway.

This funding will enable TWC/TGF to with work partners to review the data collected during the pilot of the half-scale prototype, make improvements to the design, and then build and install the full-scale device.

The full scale Nautilus 2 is expected to provide numerous community and environmental benefits:

- Reduce in-stream waste
- Create healthier, more appealing nature spaces and waterways for public enjoyment
- Increase public awareness and understanding of the cause, importance, and impact of trash in streams and natural spaces.

Up on review and consideration of TWC/TGF's proposal, the Metro Roundtable unanimously voted to approve the full \$25,000 of Basin WSRF funds requested by the applicant, and to support the TWC/TGF application for Statewide WSRF in the amount of \$25,000.

Sincerely,



Barbara Biggs, Chair  
Metro Roundtable

November 24, 2020

Ben Wade

Colorado Water Conservation Board

1313 Sherman St., Room 721

Denver, CO 80203

Re: Barr Milton Watershed Association Support for WSRF Basin Request from The Water Connection/The Greenway Foundation's Clean River Design Challenge

Dear Ben,

At our November 10th meeting, the South Platte Basin Roundtable unanimously voted to approve a South Platte Basin WSRF Basin Grant of \$10,000 for The Water Connection/The Greenway Foundation's Nautilus 2.

This project focuses on the next phase of development of Nautilus, an in-stream trash removal device to be installed and tested in a Metro Denver waterway of the South Platte River within the Chatfield to Sand Creek focus area. The vision for Nautilus 2 is to have proof of concept for a cost-effective device that can reduce maintenance requirements at downstream diversion structures by collecting in-stream trash. The goal of developing Nautilus 2 is to improve the environmental health and recreational appeal and safety of Colorado urban waterways.

The South Platte Basin Roundtable (SPBRT) lists in its primary objectives the need to solve the water supply gap throughout the basin, and lists the protection of the environment and provision of water-based recreation as crucial to any project that helps solve the water supply gap. Not only does in-stream trash detract from the beauty of riverside parks and waterways, it can be a health and safety hazard for people and aquatic wildlife. Debris can also affect water quality, introducing solvents and other chemicals that can leach into the water. A tremendous amount of time, effort, and expense can be involved in cleaning litter and debris from our waterways. Furthermore, SPBRT's primary objective speaks to education and outreach efforts promoting and supporting SPBRT efforts to solve the water supply gap.

This project addresses both of those objectives by developing a multi-purpose water supply project focused on protecting and enhancing the environment and water-based recreation while promoting education and outreach. Nautilus 2 design priorities include providing an effective and cost-efficient means for removing trash from urban waterways. Trash can contain contaminants that can infiltrate ground water and can collect in streams, rivers, irrigation canals and fields. Working with Mile High Flood District and the City and County of Denver, TWC/TGF will be developing the Nautilus to reduce the impact of in-stream trash including: altering flow, clogging of culverts, reducing flooding potential, increasing wildlife health, and recreational enjoyment and use of urban waterways. By providing onsite signage, media and educational opportunities, TWC/TGF will promote and emphasize SPBRT priorities by encouraging businesses, children and the public to understand the importance of keeping trash out of our waterways. Outreach underscores the impact of trash left behind such as fast-food wrappers, cigarette butts, cans, and other items, and works to raise awareness and change behaviors. Furthermore, thousands of community members will learn about the impact of trash and innovations in

in-stream trash removal. With the further improvement and testing of the Nautilus device, the entire Metro Denver Region and other regions around Colorado can benefit from a cost-effective trash removal solution.

Additional Justification for Nautilus 2:

Colorado State Water Plan, Executive Summary, p.8, S.3.7 Water Quality Issues

A major challenge in the South Platte Basin relates to adequacy of the water quality for domestic and municipal water uses. ... Major technological innovations are needed for delivery, treatment, and disposal of the waste streams from currently available complex water treatment systems, which results in significant cost to customers, impacts to the environment, and uncertain regulatory permitting processes. Relying exclusively on South Platte River supplies in the face of decreasing water quality will be a major challenge in the South Platte Basin.”

Colorado State Water Plan, Executive Summary, p.16, Watershed Health, Environment, and Recreation  
Colorado’s Water Plan sets a measurable objective to cover 80 percent of the locally prioritized lists of rivers with stream management plans, and 80 percent of critical watersheds with watershed protection plans, all by 2030. The environment and recreation are too critical to Colorado’s brand not to have robust objectives; a strong Colorado environment is critical to the economy and way of life.

Colorado State Water Plan, p. 3-12 Per SWSI 2010, the South Platte Basin population may nearly double from about 3.5 million people to 6 million people by 2050. Approximately 85 percent of Colorado’s population resides in the South Platte Basin, and the Front Range area of the basin is Colorado’s economic and social engine.

Colorado State Water Plan, p.3-14 The urban environment is an important component of the quality of life for many South Platte Basin residents. Judgments about the value of the urban environment, including both the need to provide water for irrigated landscape and the vital benefits that landscape provides to citizens and the environment, make the discussions about water supply development needs all the more difficult.

Colorado Water Plan, Analysis and Technical Update, p.142 The South Platte Basin is expected to experience the largest municipal growth in the state by 2050, straining already limited water supplies and increasing competition among municipal, industrial, agricultural, environmental and recreation users in the basin.

Up on review and consideration of TWC/TGF’s proposal, the South Platte Basin Roundtable voted to approve the full \$10,000 of Basin WSRF funds requested by the applicant.

Sincerely,



Garrett Varra, Chair  
South Platte Basin Roundtable

A river is more than an  
amenity, it is a *treasure*  
- Justice Oliver Wendell Holmes



**BOARD OF  
DIRECTORS**

November 1, 2020

**FOUNDER**

Joe Shoemaker

**CHAIRMAN**

Kip Stastny

**VICE CHAIRMAN**

Bar Chadwick

**SECRETARY**

Brent Applebaum

**MEMBERS**

Jon Bridges

Sarah Dominick

Larry Elrod

Fabby Hillyard

John Moran

Lesley Roper

Paula Sandoval

Pete West

**EX-OFFICIO**

Katie Navin

**EXECUTIVE**

**DIRECTOR**

Jeff Shoemaker

Colorado Water Conservation Board  
Water Supply Reserve Fund  
1313 Sherman Street  
Denver, CO. 80202

Re: WSRF Grant Application  
The Water Connection - Applicant  
Nautilus 2

Colorado Water Conservation Board Members,

In support of the enclosed Water Supply Reserve Fund grant application for the Nautilus 2 project, The Greenway Foundation hereby offers our commitment to fund \$31,900 in matching costs for this project, pending approval of the grant application submitted by The Water Connection.

This project stands to benefit our waterways throughout the State of Colorado by developing technology for removing trash from our rivers and creeks.

Please do not hesitate to contact me if you have any questions or if you need further information.

Very truly yours,

Jeff Shoemaker  
Executive Director

A river is more than an  
amenity, it is a *treasure*  
- Justice Oliver Wendell Holmes



**BOARD OF  
DIRECTORS**

September 4, 2020

**FOUNDER**

Joe Shoemaker

Jodye Whitesell  
Riverfront Park Community Foundation  
1610 Little Raven St. Suite 115  
Denver, CO 80202

**CHAIRMAN**

Kip Stastny

**VICE CHAIRMAN**

Bar Chadwick

Dear Riverfront Park Community Foundation Board of Directors,

**SECRETARY**

Brent Applebaum

I am pleased to submit this application for \$15,000 in funding to support The Greenway Foundation's (TGF's) volunteer stewardship days, elementary school field trips, and next steps in **in-stream trash removal**. TGF is deeply grateful for the generous support received from your Foundation in past years. Our goals strongly align with the mission of the Riverfront Park Community Foundation, and we look forward to continuing to work together to make Riverfront Park and downtown Denver a better place to live.

**MEMBERS**

Jon Bridges  
Sarah Dominick  
Larry Elrod  
Fabby Hillyard  
John Moran  
Lesley Roper  
Paula Sandoval  
Pete West

Recently, Denver developed a community driven set of plans for parks, recreational resources and more. Thousands of Denver residents shared their perspectives on what makes Denver great and how it can evolve into an even better place to live. From this emerged a park and recreation plan to support healthy lifestyles and the environment. Collaboration and community engagement are critical to the success of these plans. Building on the vision of Joe Shoemaker when he founded the organization 46 years ago, TGF is committed to participating in the environmental health, human and social well-being, economic sustainability and cultural vitality work needed to keep the South Platte River one of the best place to live, work, and play in Denver. Some of the projects and programs needed in this work are presented to you in this proposal for funding.

**EX-OFFICIO**

Katie Navin

The decades-long tradition of holding volunteer stewardship days will continue in 2021, bringing families and communities together to engage with the River. South Platte River Environmental Education programs will continue to bring thousands of Denver children to Confluence and Commons Parks for hands-on learning experiences. TGF's Water Connection will continue to work with the city, encouraging them to test and embrace the installation of in-stream trash removal devices. With your support, TGF can continue to provide high quality programs and events that benefit Riverfront Park and the surrounding downtown community.

**EXECUTIVE  
DIRECTOR**

Jeff Shoemaker

I sincerely appreciate your consideration of this proposal.

Kindest Regards,

Rachel Gillette  
SPREE Grants & Partnerships Director

November 17, 2020

Colorado Water Conservation Board  
Water Supply Reserve Fund  
1313 Sherman Street  
Denver, CO. 80202

Re: WSRF Grant Application  
The Water Connection - Applicant  
Nautilus 2

Dear Board Members:

In support of the enclosed Water Supply Reserve Fund grant application for the Nautilus 2 project, Mile High Flood District offers our commitment to contribute 38 hours of in-kind time for this project with a value of approximately \$7,600, pending approval of the grant application submitted by The Water Connection. This project stands to benefit our waterways throughout the State of Colorado by developing technology for removing trash from our rivers and creeks.

Mile High Flood District has been a partner in the successful pilot of the Nautilus 1, and we are looking forward to working with The Water Connection to pursue a larger and potentially even more impactful device to keep our waterways clean. We are excited to help provide this educational opportunity to the public, as doing so supports our mission and vision of protecting people, property, and our environment through preservation, mitigation, and education.

Thank you for your consideration of this proposal.

Sincerely,



Ken MacKenzie  
Executive Director

MS/mc



November 30, 2020

Colorado Water Conservation Board  
1313 Sherman St., Room 721  
Denver, CO 80203

**Re: Letter of Support, WSRF Funding Request for The Water Connection / The Greenway Foundation's Nautilus 2**

Dear Evaluation Team,

The Denver Department of Public Health & Environment (DDPHE) supports the application by The Water Connection / The Greenway Foundation (TWC/TGF) for funding for their Nautilus 2 instream trash removal device.

The Clean River Design Challenge was created by TWC/TGF to come up with creative solutions to problems faced by Denver's urban waterways. The 2016 Challenge, which DDPHE provided funding and technical support for, encouraged teams of students from local colleges to find solutions to remove trash from Cherry Creek and the South Platte River near Confluence Park. The winner was a design called the Nautilus.

A half-scale prototype of the Nautilus was built and for the past 10 months has been collecting trash and debris from Cherry Creek in downtown Denver. The most common types of trash collected are plastic bags and pieces of Styrofoam — both of which can be ingested by wildlife and / or break down to negatively impact water quality. Food wrappers, bottles and cans, textiles, and organic material that can be dangerous for people and animals in the water have also been collected.

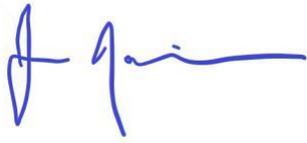
WSRF funding will enable TWC/TGF to with work partners to review data collected during the pilot of the half-scale Nautilus prototype, make improvements to the design, and build and install a full-scale device. The full-scale device is expected to provide numerous community and environmental benefits including:

- Reducing in-stream waste;
- Creating healthier, more appealing natural spaces and waterways for public enjoyment, and;
- Increasing public awareness and understanding of the impact of trash in streams and natural spaces.

DDPHE is a strong supporter of TWC/TGF's efforts to improve Denver's waterways and is excited to see how the next phase of a solution developed by the Clean River Design Challenge will perform.

Environmental Quality Division  
Denver's Department of Public Health & Environment  
200 W 14<sup>th</sup> Ave, Suite 310 | Denver, CO 80204  
[www.denvergov.org/EnvironmentalQuality](http://www.denvergov.org/EnvironmentalQuality)  
p. 720-913-1311 | f. 720-865-5534 | [www.facebook.com/DenverEnvironmentalQuality](https://www.facebook.com/DenverEnvironmentalQuality)

Sincerely,

A handwritten signature in blue ink, appearing to read 'Jon Novick'. The signature is fluid and cursive, with a long horizontal stroke at the end.

Jon Novick  
Water Quality Program Administrator