Colorado Water Conservation Board

Water Resource Conservation Public Education and Outreach Grant Request:
Net Zero Water

Grant Request Overview

Applicant: Colorado Clean Energy Cluster
(on behalf of the Colorado Water Innovation Cluster and Net Zero Water Initiative)

Project Name: Net Zero Water Planning Template

Goal: To develop a "net zero" water planning template and tool that drives innovative projects in Net Zero Water (NZW) implementation in communities across the state.

Funds Requested: $49,399

Matching Funds: $51,343 ($40,000 cash, $11,343 in-kind)

Contact: Becky Fedak, Brendle Group, 970-207-0058, bfedak@brendlegroup.com,
212 W. Mulberry Street, Fort Collins, CO 80524

Project Overview

From risk management to environmental responsibility, many organizations have identified water management as an important issue to tackle. The frameworks and analytical tools for water planning, however, are less developed than those for other sustainability-related topics, such as energy and climate change. The Colorado Water Innovation Cluster (CWIC) in partnership with the Colorado Clean Energy Cluster (CCEC) is supporting an initiative to fill this gap with a Net Zero Water Planning Template. The template will build off net zero energy and climate neutrality innovation, and translate these concepts into water management. The partnership between CWIC and CCEC brings a depth of knowledge, industry networks, and teaming support that will propel this initiative forward.

CWIC and CCEC, both 501(c)3 organizations, are submitting this grant request in partnership, with CCEC as the primary applicant due to the current administrative capacity of both organizations and CCEC's ability to provide centralized support services to the Net Zero Water initiative. CWIC's primary mission is to utilize the triple helix approach of engaging private industry, local government, and research universities to address complex water issues and foster innovation, commercialization, and economic vitality through synergy, collaboration, and leverage. CCEC's primary objective is clean energy innovation with the water-energy nexus recently adopted by the board as a key area of focus.

From water quality trading credits to net zero water districts and smart grid for water, this template will create the next logical extension into net zero water planning. The template will include guidelines for identifying the water quantity and quality impacts within a defined boundary and tools for analyzing opportunities to reduce those impacts. It also lays groundwork for a roadmap to water neutrality.

The proposed template will help users:

- Determine a company or organization's baseline and forecasted water footprint based on existing and future activities
- Identify strategies to reduce water consumption and impacts on water quality
- Analyze strategies and aggregating into scenarios for water planning
- Set milestones on the path to neutrality based on scenario modeling
- Measure and monitor progress during implementation

Potential opportunities to reduce a site's water impacts could include:

- Reducing water use through efficiency and conservation
- Maximizing water reuse and recycling to make the most of the water resources on site
- Minimizing the impacts of stormwater runoff by reducing impervious area and increasing on-site capture
- Generating voluntary markets for water quantity and quality trading credits

As mentioned previously, the Net Zero Water Planning Template is an initiative of the Colorado Water Innovation Cluster (CWIC), sponsored by the Colorado Clean Energy Cluster (CCEC), a project-driven, 501(c)3 nonprofit economic development organization aimed at growing primary jobs in Colorado in the area of clean energy through formal partnerships between clean energy companies, the public sector, and higher education. The water-energy nexus is a priority area of focus for CCEC and this initiative falls within that purview. Similarly, CWIC's primary mission is to utilize the triple helix approach of engaging private industry, local government, and research universities to address complex water issues and foster innovation, commercialization, and economic vitality through synergy, collaboration, and leverage. The Net Zero Water Planning Template is a prime example of innovation in the water arena, with the intent of making Colorado the center for thought leadership in "net zero" water planning, providing visibility for the state and showcasing the capabilities of Colorado's water innovation economy.

The "Triple Helix" Approach:

CCEC and CWIC are growing primary jobs in Colorado (in the areas of clean energy and water innovation) through active, high-performing partnerships between the private sector, public sector, and higher education. This kind of cross-cutting partnership exemplifies the CCEC/CWIC "triple helix" model of collaboration.

The Net Zero Water Template encompasses several sectors including water resources engineering, sustainability planning, landscape design, irrigation engineering, and civil engineering. Because of the broad scope of this project many local partners are involved in the project team including Brendle Group, Riverside Technology, BHA Design, Aqua Engineering, and Lamp Rynearson & Associates. Aside from the project team, a diverse group of stakeholders is engaged in the initiative, including the State of Colorado, the Environmental Protection Agency, the Colorado Water Conservation Board, Colorado State University, and various water utilities and non-profit organizations such as the Nature Conservancy.

Attempts at similar planning tools are starting to emerge including a tool by the Alliance for Water Stewardship. This tool focuses mainly on the supply chain aspects of a corporation or manufacturing company which is a key part of water stewardship. The Net Zero Water Template, however, will take this idea even further by developing an easy to use toolkit that **will enable all users**, individual

households as well as large corporations, to analyze their water footprint and then develop a plan for reducing that impact with the ultimate goal of “net zero.”

CCEC is seeking $49,399 in funding to support the Net Zero Water initiative. This project will develop a guidebook and supporting set of software tools to be utilized by organizations to quantify water quantity and quality impacts at various scales. The initial scales to be tested as part of this first phase of development will include examples at the building, building portfolio, campus, and eco-district levels. Future phases of development would expand the tool to support net zero water planning within a complete local government (city/county) geopolitical boundary and the full watershed scale. **The tool is intended help individuals, organizations, and interest groups understand their impact on specific water resource issues and, more importantly, identify areas for improvement and suggest specific water footprint reduction scenarios and strategies.**

Of the total requested funds, $43,499 will be used for development of the toolkit while the remaining $5,900 will be used in coordination with the various initiative sponsors to pilot the various template modules, including a comprehensive pilot testing at the building portfolio scale through coordination with Adams County and the City of Brighton. This grant will be matched one to one through a combination of in-kind hours from the project team and key initiative sponsorships from the City of Fort Collins, New Belgium Brewing, and Adams County/City of Brighton. See Section 4 for a more detailed budget.

Project Goals

The net zero water initiative was started by CWIC with the objectives of:

- Promoting Colorado's water values: That water is a precious resource essential to protecting our economy, security, lifestyles, and values.
- Recognizing Colorado's leadership in the science, business, and stewardship of water resources.
- Providing technical guidance and assistance to enhance the utilization of Colorado's waters.

With these goals in mind, the Net Zero Water Planning Template, including the guidebook and toolkit, are being developed to help users quantify their water footprint, evaluate reduction strategies, and recognize financial and environmental benefits from reducing their water use and water quality impacts. The target users include individuals, business owners, water planners, and sustainability coordinators across all business sectors who want to perform a rigorous technical evaluation of water use, or simply want to use the tool to further education and awareness around the ideas of water consumption, conservation, and protection. Based on the stakeholders committed to the pilot projects – Adams County, City of Brighton, City of Fort Collins, and New Belgium Brewing – as well as the various stakeholder engaged in the initiative's technical advisory group, the tool is anticipated to be used widely across the public and the private sectors.

In addition to general awareness, the results from the tool have the potential to effect real change in water policies and processes as users assess and evaluate their net impact on water consumption and quality. The tool will be a hands-on, effective mechanism for communicating about water conservation and protection in an era of climate variability and change. The toolkit includes a component that compares water usage against water availability in dry, wet, and average years. The analysis will include future projections, and can address long-range changes in supply as well as use.

Education and outreach for the tool and results from the pilot project will be accomplished by CCEC, CWIC, the partner companies, the pilot project sponsors, and the stakeholders that have been identified to date. The team organized a workshop at the 2014 AWWA Sustainable Water Management Conference that was a great opportunity to engage interested parties. Stakeholders and the technical advisory group will participate in the entire process, including method development, tool development, pilot applications, development of lessons learned and best practices, and a wider roll-out once the tool and guidebook are completed.

NET ZERO WATER TECHNICAL ADVISORY GROUP

American Water Works Association

Colorado State University – Civil/Env Engineering

CSU Stormwater Center

Colorado Water Conservation Board

Environmental Protection Agency

Living Building Challenge

The Nature Conservancy

Western Resource Advocates

All education and outreach activities will emphasize interconnectivity in the following areas:

- Scale. The tool can be run for different scales, but the results may look very different for a building than for the watershed in which the building is located. Ultimately, water use is not sustainable if it contributes to imbalances at larger scales.
- Water quantity and water quality. These aspects must be considered together to successfully support our municipal, agricultural, recreation, and tourism sectors.
- Natural and built environments. Both are necessary to our way of life, and balance is needed to maintain water availability for the built environment and to protect natural systems.

Project Team

Brendle Group

Brendle Group is a sustainability consulting firm focused on engineering and strategic planning that leads by example, inspiring and empowering organizations to make thoughtful choices about the resources they use and create realistic roadmaps for sustainability.

As population grows and the climate changes, governments, businesses, and organizations are seeking ways to use water more efficiently. Brendle Group conducts assessments of water use in existing applications, develops water footprints, and identifies opportunities for water conservation in end use fixtures and process water applications. Beyond water savings, Brendle Group helps clients calculate costs, savings, and payback for retrofits to increase water efficiency. From water conservation plans to industry-level initiatives, Brendle Group also helps clients develop successful tools and programs for water conservation, from education initiatives and best practices to benchmarking water use across various sectors.

Finally, Brendle Group believes that the parallels between water and energy are too close to ignore and many of the concepts embodied in Net Zero Energy can be applied to water management. Building off over 15 years of innovation in the energy space, Brendle Group is now providing thought leadership in the transfer of ideas and concepts from energy to water. From net zero water districts and smart grid for water, to water quality trading credits that build on a decade of lessons learned in carbon offsets trading, we are developing the next logical extension to create a path to net zero water, akin to the net zero energy projects such as FortZED that Brendle Group has helped to develop.

Brendle Group will manage the project team and all phases of the Net Zero Water Planning Template development. Specifically, Brendle Group will lead development of the overall methodology and approach to Net Zero Water Planning, the guidebook that will step users through the technical analysis and planning process, indoor and process water conservation reduction strategy analysis, water action planning guidance, and pilot implementation. These efforts will generally involve three key Brendle Group staff members:

Judy Dorsey, PE, CEM, LEED-AP – Judy will serve as the executive project manager, overseeing all aspects of the project and offering 21 years of executive leadership in sustainability, innovation and entrepreneurship. As past executive director of CCEC and CWIC Judy will also help to guide the overall vision for the initiative to ensure long-term success, identifying key opportunities to build off of this first phase of development

Becky Fedak, PE – Becky will serve as the overall project manager and technical lead for the initiative, developing the overall methodology and process by which the Net Zero Water Planning Template will be created. Becky has 10 years of diverse experience in water resources, energy, and sustainability planning and engineering as well as a comprehensive set of business skills that will provide a holistic perspective to this initiative.

Shelby Sommer, AICP – Shelby will lead development of the Net Zero Water Planning Template guidebook, documenting the technical methodology and creating a reference document that walks template users through a clear and concise approach to sustainable water action planning. Shelby brings more than 9 years of experience in community planning and development to the project team.

Riverside Technology

Riverside is a water resources engineering, science, and information technology company with over 25 years of experience providing innovative solutions and services. We specialize in information collection, management, analysis, visualization, and dissemination. We develop decision support tools that use data and models to quantify decision variables. The outputs from our decision tools are used by water managers and stakeholders to make informed decisions about water use, conservation, planning, policies, regulations, operations, trading, production, and development. Since 1993, Riverside has supported the State of Colorado in developing and maintaining Colorado's Decision Support Systems with the goal of helping State agencies, water providers, and water users make informed decisions about major water issues and policies.

Riverside will lead the development of the analytical toolkit that will support the Net Zero Water Planning Template. Initial versions of the tool will be developed using Microsoft Excel to define the functionality and user requirements. Eventually, Riverside aims to develop a web-based Net Zero Water tool.

For the initial project phases, two key staff members from Riverside will be involved:

Amy Volckens, PE, CFM – Amy will serve as the project manager and senior technical engineer overseeing tool and documentation development. Amy has 13 years of professional experience, and has successfully managed many projects that involve the development of information technology tools for water resources applications.

Gabe Miller – Gabe will serve as the initial developer of the toolkit. Gabe is a water resources engineer and an experienced VBA programmer who is well suited to develop the initial toolkit and define the requirements for a future web-based tool.

BHA Design

BHA Design is a landscape architecture firm focused on providing innovations in sustainable site development concepts. Established in 1993, we provide landscape architecture, planning, urban design, and graphic design services to both public and private clients in the Rocky Mountain Region. BHA provides design team support related to sustainable site planning, low water landscape treatments, and site water efficiency.

BHA Design will lead the development and analysis of outdoor water use and landscape related water conservation strategies, with involvement from the following staff:

Angela Milewski, LEED AP - Angela is a landscape architect and President of BHA with over twenty years of experience working in Northern Colorado in landscape architecture, land planning, and the design of outdoor spaces for public and private projects. Angela is a LEED BD+C Accredited Professional, actively pursues design innovations for sustainable sites, and has managed several projects that have obtained LEED certification. She has designed and managed several medical, corporate, transit, streetscape and urban design projects in communities throughout Northern Colorado and Wyoming.

Aqua Engineering

Aqua Engineering is an irrigation engineering firm that provides comprehensive design services including master plans, evaluation of existing systems, water audits, construction documents, construction period services, record drawings and central control system programming. Having completed projects in 45 different states and 12 different countries, the firm is at the forefront of current water issues. In addition to the traditional design services and deliverables, Aqua Engineering provides insight and expertise into sustainable solutions for irrigation. Using the latest computer technology, the firm is uniquely positioned to design water-conserving systems and offer guidance to optimize irrigation system application efficiency. Preparation of water management plans, water rights evaluations, and utilization of emerging technology control systems are examples of specialized expertise Aqua Engineering offers.

Aqua Engineering will provide the basis and insight to the irrigation system analysis, with involvement from the following staff:

Robert Beccard, P.E. – Bob has over 30 years of irrigation engineering experience and has evaluated existing irrigation systems on universities, K-12 school sites, cemeteries and various commercial properties.

Lamp Rynearson

Lamp, Rynearson & Associates was founded in 1959 with services centering on land development, redevelopment, and community infrastructure. Civil engineering, GIS, 3D visualizations, construction administration, water supply planning and survey are integral components in delivering a creative, feasible project. Lamp Rynearson applies innovative thinking to find better, more sustainable ways to get successful project results. Lamp Rynearson has office locations in Fort Collins and Lakewood, Colorado; Omaha, Nebraska; and Kansas City, Missouri with clients ranging from city, county, state and federal government agencies, private developers, industries, utilities and commercial ventures.

Lamp Rynearson will lead the development and analysis of water supply, civil infrastructure, and water quality aspects of the guidebook and toolkit development, with involvement from the following staff:

John Tufte, PE – John is a Senior Project Manager and Design Group Leader for Lamp, Rynearson & Associates. Since 1994, John has worked in the field of engineering, and has been involved in the design and management of public and private sector projects, including residential, commercial, medical, office/industrial, municipal, and roadway projects. His experience also includes construction management, survey, capital improvement projects, and geographical information systems (GIS).

Scope of Work

The CWCB grant funds being requested will support the ongoing development of the Net Zero Water Planning Template. The project team has already secured $40,000 in funding through sponsorships and grants; the CWCB monies will be a significant contribution towards finalizing and piloting the template by the end of 2014. The following scope of work outlines the tasks required to develop and test the Net Zero Water Planning Template at four scales – building, building portfolio, campus, and eco-district. Future efforts would expand the template to other scales (city, watershed, etc.).

There will be four main tasks to develop the template:

1. Water Footprint Methodology

An important first step in the water planning process is quantifying the site's water footprint, including both the water quantity and quality impact for the defined site.

While there is currently no known or widely adopted existing protocol for developing a water footprint, there are organizations such as the Water Footprint Network that are engaging in valuable dialogue and visioning around this concept. Under this task the CWIC project team will use available water planning resources, guidance from other resource footprint methodology like greenhouse gas inventory protocols, and input from stakeholders[1] to develop a simple and streamlined methodology for conducting a water footprint.

As is the case with greenhouse gas footprints, an organization's water footprint can consider both ***direct*** (e.g. on-site) and ***indirect*** (e.g. supply chain) water impacts. For the purposes of this effort, a focus on direct water impacts is being proposed, at least initially. Similar to greenhouse gas footprints, these impacts are easier to track and directly address through action by an organization. Additionally, using guidance from the Water Footprint Network, the proposed initiative takes a comprehensive approach to developing a water footprint including both water use (quantity) impacts as well as the water quality/pollution impacts associated with the direct activities of a given organization so that the template and tools can apply to organizations challenged by water supply, water quality, or both.

In addition to a baseline water footprint, this module of the template will walk users through the process of establishing a business-as-usual forecast for the site based on factors such as population growth rate, planned site development, etc.

Task Lead: Brendle Group

Deliverables:

- Documented water footprint methodology as part of the Net Zero Water Planning Template Guidebook
- Water footprint and forecast module of the Net Zero Water Planning Template analysis tool

2. Water Footprint Reduction Strategies

There are a wide range of options to achieve water footprint reductions and this portion of the template will summarize those options. Within the template, reduction strategies will be organized into the following categories.

[1] A CWIC NZW Stakeholder Workshop was held in March 2014 to gather input from a wide range of stakeholders, water industry experts, and potential users of the template to inform the water footprint methodology and net zero water planning process.

2.1 Indoor water efficiency

The first step towards sustainable water management is the efficient use of existing resources. This category of strategies will include such measures as high efficiency appliances (clothes washers, dishwashers, steam cookers, ice machines, etc.), cooling towers, food disposal, and end-use fixtures.

2.2 Outdoor water efficiency

Following indoor efficiencies, steps can be taken to measure and reduce outdoor water use. This category of strategies will include measures such as planning with native and low-water plants, proper soil preparation and mulching to the renovation and use of higher efficiency irrigation systems, recommendations for better management techniques and control equipment and improved maintenance and monitoring of irrigation systems.

2.3 On-site water supply

After steps have been taken to make the defined site as water efficient as possible, akin to on-site renewable energy generation to achieve climate and energy goals, this category of strategies will consider options for the use of alternative water sources. Potential alternative water sources include ditch water, rainwater harvesting, greywater, effluent water and process water reuse.

2.4 Stormwater management/water quality

In addition to water consumption/quantity, the Net Zero Water Planning Template will also include strategies to reduce water contamination and protect the quality of local water resources. For the scales being targeted during this phase of development, identified strategies will focus on improved stormwater management through the infiltration of runoff, stormwater capture, and general low impact development approaches. As the city and watershed scales are incorporated into the template in future phases, other aspects of water quality such as wastewater will be incorporated.

2.5 Trading credits

Similar to the concept of offsets for achieving climate neutrality, this category of strategies would allow sites below their footprint to realize a financial benefit for their efficiency efforts while also allowing higher water use sites not able to achieve neutrality directly on their site to realize neutrality through offsets. The intent is to use the NZW template to encourage the development of and demand for voluntary markets for water quantity and quality trading credits.

Within the NZW Guidebook, a description of each strategy will be provided along with default assumptions for estimating costs and savings and reference to additional resources where users of the template can go to find more information.

Within the NZW analysis tool, for each reduction strategy, estimates of the water footprint reduction potential and associated implementation costs/cost savings will be provided. Additionally, where applicable, associated energy cost savings will also be estimated.

Task Leads: Brendle Group (Indoor efficiency, on-site water supply, and trading credits), BHA Design/Aqua Engineering (outdoor efficiency), Lamp Rynearson (stormwater management, water quality)

Deliverables:

- Documented list of strategies with descriptions as part of the Net Zero Water Planning Template Guidebook
- Strategy analysis module of the Net Zero Water Planning Template analysis tool

3. Water Planning Guidance

This portion of the template will develop a process for translating the water footprint, forecast, and reduction strategies into a comprehensive water action plan to guide the reduction of water quantity and quality impacts for a site. In addition to the water footprint/forecasting and reduction strategy modules already discussed, the water planning process within the template will include the following.

- **Visioning and Goal Setting** – This module will provide guidance on developing a vision statement for the net zero water plan, organizing the plan into focus area categories based on the areas of interest/impact for the site, determining a planning horizon for the plan, and defining goals, sub-goals, and interim targets for both water quantity and quality within the plan. The intent is to guide the development of a plan framework and guiding principles to lay the foundation for the overall planning process.
- **Implementation Plan** – This module within the template will step the user through the process of developing an approach and outline for implementing the water action plan. It will include a template of the key inputs needed to implement each strategy, including key players, a task/action item list with milestones and deadlines, potential funding sources for each strategy, other available resources to consider, developing metrics for each strategy to track progress, as well as potential barriers and constraints to be aware of during implementation.
- **Tracking and Reporting Progress** – Within this module, guidance and templates will be develop to walk users through the process of tracking and reporting progress. It will include data entry templates as well as summary reports and charts that can be used to share progress with stakeholders.

Task Lead: Brendle Group

Deliverables:

- Documented approach to water action planning as part of the Net Zero Water Planning Template Guidebook
- Visioning/goal setting module of the Net Zero Water Planning Template analysis tool

4. Net Zero Water Analysis Tool

The template will include a tool that entities can use to track their water footprint overtime as well as calculate the estimated contribution of various water footprint reduction strategies. To ensure the tool can be used by various entities, Microsoft Excel will likely be used.

With the additional funds provided under this grant, Riverside will accomplish most of the Phase 2 goals for toolkit development, which include development of version 0.2 of the tool and documentation in Microsoft Excel and development of a requirements document for a web-based tool.

Task Lead: Riverside Technology

Deliverables:

- Net Zero Water Planning Template Toolkit v1.0 (with user's documentation)
- Requirements document for development of a web-based tool and enhanced functionality to serve the needs of future scales and pilot projects

5. Net Zero Water Planning Guidebook

Under this task, all of the content developed within the modules discussed under Tasks 1-3 will be compiled into a Net Zero Water Planning Guidebook. This guidebook will be used to step template users through the process of water action planning. The list below summarizes the proposed outline for the guidebook.

1. Introduction
   - 1.1. About the Net Zero Water Planning Template
   - 1.2. What is NZW – The Definition
   - 1.3. Why this template is needed – The Benefits
   - 1.4. NZW Planning Template Steps and Processes – The Framework
2. Available Tools and Best Practice for Net Zero Water Planning
   - 2.1. Water Footprint Network
   - 2.2. Alliance for Water Stewardship
   - 2.3. U.S. Army Net Zero
   - 2.4. Living Building Challenge
3. Net Zero Water Planning Template Modules
   - 3.1. Module 1. Water Footprint/Baseline
   - 3.2. Module 2. Visioning and Goal Setting
   - 3.3. Module 3. Strategies
   - 3.4. Module 4. Implementation Plan (OPTIONAL)
   - 3.5. Module 5. Tracking and Reporting Progress (OPTIONAL)
   - 3.6. Module 6. Documenting the Plan (Guidebook Only)
   - 3.7. Module 7. Communicating the Plan (Guidebook Only)
   - 3.8. Module 8. Stakeholder Engagement (Guidebook Only)
4. Resources by Water Footprint Type
   - 4.1. Quantity – Indoor (Domestic, Process)
   - 4.2. Quantity – Outdoor (Irrigation)
   - 4.3. Quality – Stormwater
5. Case Studies
   - 5.1. Building
   - 5.2. Building Portfolio
   - 5.3. Campus
   - 5.4. Eco-District

Task Lead: Brendle Group

Deliverables:

- Net Zero Water Planning Template Guidebook v1.0

6. Stakeholder Engagement - Technical Advisory Group Review

During this in-kind task, the NZW project team will coordinate with an extensive group of stakeholder as well as the initiative's technical advisory group to review and gather feedback on the draft template.

Task Lead: Brendle Group

Deliverables:

- Compiled documentation of feedback from the Technical Advisory Group and actions taken to address all feedback

7. Pilot Support

After the NZW Planning template has been created, under this task the guidebook and analysis tool will be tested at four different scales – building, building portfolio, campus, and eco-district. Working with initiative sponsors Adams County/City of Brighton, New Belgium Brewing, and City of Fort Collins the NZW project team will lead sponsor representatives through use of the guidebook and analysis tool. Allowing sponsors to use the template resources directly will allow the template to be tested for ease of use and understanding. Additionally, testing the template on a number of different sites will help ensure that it is flexible and able to address the nuances of sustainable water planning a various scales. A portion of this task is being funded through the $40,000 already raised for the initiative.

Task Lead: Brendle Group

Deliverables:

- Survey results and feedback from pilot users

8. Grant Reporting/Documentation

The final task will be the preparation and submittal of a final Project report to the Board. The Final Report will include a review of the activities completed, and other information that is relevant to the Board's record of the Project and future use of the Project outcomes. This task will be performed in-kind by the project team.

Task Lead: Brendle Group

Deliverables:

- 50% and 75% Progress Reports
- Final Report Document

Costs/Budget

The table on the following page summarizes the project budget and hours, broken down by task and funding source. The total project budget is $100,742 with $49,399 being requested through this CWCB grant application and the remaining matched in-kind by the project team and through other cash contributions.

Task	Labor Hours										CWCB Grant Funds	In-Kind Contributions[1]	Cash Contributions	TOTAL
	Brendle Group			Riverside			BHA	Aqua Eng.		LRA				
	Principal $170/hr.	Engineer IV $105/hr.	Planner III $83/hr.	Senior Engineer 3 $143/hr.	Project Engineer 1 $90/hr.	Software Engineer 2 $138/hr.	Principal $145/hr.	Senior Engineer $160/hr.	Project Manager $120/hr.	Senior Proj. Mgr. $145/hr.				
1. Water Footprint Methodology	6	22	11	18	0	0	0	0	0	0	$3,421	$0	$3,396	**$ 6,817**
2. Water Footprint Reduction Strategies	3	45	0	0	0	0	44	9	40	44	$13,645	$0	$10,590	**$24,235**
2.1. Indoor Efficiency	*1*	*15*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*$988*	*$0*	*$757*	***$1,745***
2.2. Outdoor Efficiency	*0*	*0*	*0*	*0*	*0*	*0*	*44*	*9*	*40*	*0*	*$7,144*	*$0*	*$5,476*	***$12,620***
2.3. On-Site Supply	*1*	*15*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*$988*	*$0*	*$757*	***$1,745***
2.4. Stormwater Management	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*44*	*$3,612*	*$0*	*$2,768*	***$6,380***
2.5. Trading Credits	*1*	*15*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*$988*	*$0*	*$757*	***$1,745***
3. Water Planning Guidance	6	6	28	0	0	0	0	0	0	0	$2,036	$0	$1,938	**$3,974**
4. NZW Analysis Tool	3	22	0	40	114	18	0	0	0	0	$14,028	$0	$7,256	**$21,284**
5. NZW Planning Guidebook	8	34	25	18	0	0	13	2	11	13	$10,117	$0	$4,872	**$14,989**
6. Stakeholder Engagement	11	29	22	22	9	0	9	0	9	9	$0	$6,500	$7,887	**$14,387**
7. Pilot Support	0	53	56	0	0	0	0	0	0	0	$6,152	$0	$4,061	**$10,213**
8. Grant Reporting/ Documentation	3	6	8	13	4	0	2	0	2	2	$0	$4,843	$0	**$4,843**
TOTAL Hours	**40**	**217**	**150**	**111**	**127**	**18**	**68**	**11**	**62**	**68**	**$49,399**	**$11,343**	**$40,000**	**$100,742**
Dollars	**$6,800**	**$22,785**	**$12,450**	**$15,873**	**$11,430**	**$2,484**	**$9,860**	**$1,760**	**$7,440**	**$9,860**				

[1] All in-kind hours are provided by the project team

Timeline

The chart below outlines the proposed schedule for the Net Zero Water initiative. Because this initiative is already underway, many tasks are already being addressed, but funds from CWCB would allow the project team to further develop certain concepts and approaches under each task. All work will be completed within 6 months of the CWCB grant award.

This schedule also includes two progress reports intended to share progress with the CWCB Board:

- Progress Report 1 (50% Completion): December 15th, 2014
- Progress Report 2 (75% Completion): February 15th, 2015
- Final Report (100% Completion): March 15th, 2015

Task/Action	2014			2015		
	Oct	Nov	Dec	Jan	Feb	Mar
1. Water Footprint Methodology						
2. Water Footprint Reduction Strategies						
3. Water Planning Guidance						
4. NZW Analysis Tool						
5. NZW Planning Guidebook						
6. Stakeholder Engagement						
7. Pilot Support						
8. Grant Reporting/ Documentation						

Letters of Support

- Adams County
- City of Fort Collins
- New Belgium Brewery