COLORADO
Colorado Water Conservation Board
Department of Natural Resources

Last Updated: July 2019

Colorado Water Conservation Board

Water Plan Grant Application

Instructions

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

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

Water Storage Projects	Anna.Mauss@state.co.us
Conservation, Land Use Planning	Kevin.Reidy@state.co.us
Engagement & Innovation Activities	Ben.Wade@state.co.us
Agricultural Projects	Alexander.Funk@state.co.us
Environmental & Recreation Projects	Chris.Sturm@state.co.us

FINAL SUBMISSION: Submit all application materials in one email to *waterplan.grants@state.co.us*
in the original file formats [Application (word); Statement of Work (word); Budget/Schedule (excel)]. Please do not combine documents. In the subject line, please include the funding category and name of the project.

Water Project Summary

Name of Applicant	Fourmile Watershed Coalition
Name of Water Project	Tolland Ranch Feasibility Study
CWP Grant Request Amount	$30,321
Other Funding Sources CPW	$9,000
Other Funding Sources SparkJoy Foundation	$15,000
Other Funding Sources	$
Applicant Funding Contribution	$6,321
Total Project Cost	$60,642

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Applicant & Grantee Information
Name of Grantee(s)- Four Mile Fire Protection District
Mailing Address- 1740 Fourmile Canyon Drive, Boulder CO 80302
FEIN- 84-098-1141
Organization Contact -Bret Gibson
Position/Title- Fire Chief
Email- chiefbret@gmail.com
Phone -303-449-3333
Grant Management Contact- Maya MacHamer
Position/Title- Watershed Coordinator
Email- fourmilewatershed@gmail.com
Phone- 303-817-2261
Name of Applicant (if different than grantee) - Fourmile Watershed Coalition
Mailing Address- 1740 Fourmile Canyon Drive, Boulder CO 80302
Position/Title- Watershed Coordinator
Email- fourmilewatershed@gmail.com
Phone 303-817-2261

Description of Grantee/Applicant
Provide a brief description of the grantee's organization (100 words or less).
The Fourmile Watershed Coalition (FWC) was developed to address the recovery effort for the 2013 flood event. For the past five years the Coalition has been conducting stakeholder engagement stream restoration, mine reclamation, water quality assessments and forest health projects within the Fourmile Watershed. The FWC works closely with its fiscal agent, the Four Mile Fire Protection District, and other stakeholder agencies and private landowners. The coalition is expanding its geographical boundaries into the Boulder Creek watershed. This expansion will increase landscape and community impact within the Boulder Creek watershed.

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Type of Eligible Entity (check one)	
	Public (Government): 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.
x	**Public (Districts):** Authorities, Title 32/special districts (conservancy, conservation, and irrigation districts), and water activity enterprises.
	Private Incorporated: Mutual ditch companies, homeowners associations, corporations.
	Private Individuals, Partnerships, and Sole Proprietors: Private parties may be eligible for funding.
	Non-governmental organizations (NGO): Organization that is not part of the government and is non-profit in nature.
	Covered Entity: As defined in Section 37-60-126 Colorado Revised Statutes.

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

Category of Water Project (check the primary category that applies and include relevant tasks)		
	Water Storage - Projects that facilitate the development of additional storage, artificial aquifer recharge, and dredging existing reservoirs to restore the reservoirs' full decreed capacity and Multi-beneficial projects and those projects identified in basin implementation plans to address the water supply and demand gap.. *Applicable Exhibit A Task(s):*	
	Conservation and Land Use Planning - Activities and projects that implement long-term strategies for conservation, land use, and drought planning. *Applicable Exhibit A Task(s):*	
	Engagement & Innovation - Activities and projects that support water education, outreach, and innovation efforts. Please fill out the Supplemental Application on the website. *Applicable Exhibit A Task(s):*	
	Agricultural - Projects that provide technical assistance and improve agricultural efficiency. *Applicable Exhibit A Task(s):*	
x	Environmental & Recreation - Projects that promote watershed health, environmental health, and recreation. *Applicable Exhibit A Task(s):*	
	Other	Explain:

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Location of Water Project	
Please provide the general county and coordinates of the proposed project below in **decimal degrees**. The Applicant shall also provide, in Exhibit C, a site map if applicable.	
County/Counties	Gilpin
Latitude	39 54'12.29" N
Longitude	105 36'8.58" W

Water Project Overview
Please provide a summary of the proposed water project (200 words or less). Include a description of the project and what the CWP Grant funding will be used for specifically (e.g., studies, permitting process, construction). Provide a description of the water supply source to be utilized or the water body affected by the project, where applicable. Include details such as acres under irrigation, types of crops irrigated, number of residential and commercial taps, length of ditch improvements, length of pipe installed, and area of habitat improvements, where applicable. If this project addresses multiple purposes or spans multiple basins, please explain. The Applicant shall also provide, in Exhibit A, a detailed Statement of Work, Budget, Other Funding Sources/Amounts and Schedule.
Tolland Ranch is a 3,334-acre conservation easement located downstream of the Moffat Tunnel on South Boulder Creek. The proposed project is a feasibility study that will evaluate opportunities and develop conceptual designs for wetland and riparian enhancements including habitat for the boreal toad, fisheries enhancements to support a self-sustaining population of greenback cutthroat trout (GBCT) and designs to retrofit an existing diversion to prevent non GBCT from entering the system. Stakeholder engagement will be supported throughout the project. The project is in the headwaters of South Boulder Creek in the South Platter Basin. The study will evaluate approximately 93-acres adjacent to the stream and currently a complex system of off-channel ponds and wetland complexes created when the channel was straightened in the 1960's to facilitate transport of west slope water to Gross Reservoir. A committed group of partners has come together to evaluate the tasks listed above and to create a foundation for multiple phases of ecological restoration to occur in the future.

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Measurable Results		
To catalog measurable results achieved with the CWP Grant funds, please provide any of the following values as applicable:		
	New Storage Created (acre-feet)	
	New Annual Water Supplies Developed or Conserved (acre-feet), Consumptive or Nonconsumptive	
	Existing Storage Preserved or Enhanced (acre-feet)	
8,579 LF evaluated	Length of Stream Restored or Protected (linear feet)	
	Efficiency Savings (indicate acre-feet/year OR dollars/year)	
93 acres evaluated	Area of Restored or Preserved Habitat (acres)	
	Quantity of Water Shared through Alternative Transfer Mechanisms	
	Number of Coloradans Impacted by Incorporating Water-Saving Actions into Land Use Planning	
	Number of Coloradans Impacted by Engagement Activity	
	Other	Explain:

Water Project Justification

Provide a description of how this water project supports the goals of Colorado's Water Plan, the most recent Statewide Water Supply Initiative, and the applicable Roundtable Basin Implementation Plan and Education Action Plan. 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).

The proposed water project shall be evaluated based upon how well the proposal conforms to Colorado's Water Plan Framework for State of Colorado Support for a Water Project (CWP, Section 9.4, pp. 9-43 to 9-44;)

The Tolland Ranch project supports multiple goals within Colorado's Water Plan, South Platte Roundtable Basin Implementation Plan and the Statewide Water Supply Initiative. The Critical Action Plan in Chapter 10 of the **Colorado Water Plan** (CWP) discusses Colorado's Water Values. Three primary values are listed including a productive *economy* that supports cities, agriculture, recreation, and tourism; efficient and effective water *infrastructure*; and a strong *environment* that includes healthy watersheds, rivers, streams, and wildlife. The Tolland Ranch project address two of these goals: economy and watershed health.

- Tolland Ranch is nestled between the James Peak Wilderness and Roosevelt National Forest. Eldora ski area currently has 65 miles of Nordic trails on the Tolland property. Boulder County recently received a $300,000 grant to move forward with a trail connection between two existing trail systems on USFS lands. These recreational opportunities, in addition to fishing along South Boulder Creek, significantly affect the local economies of Boulder, Nederland and Gilpin County.
- Tolland Ranch is downstream of the East Portal of the Moffat Tunnel and is a transport reach for Denver Water drawing water from the West Slope to Gross Reservoir. Riparian and wetland improvements will contribute to improved water quality.
- Habitat improvements for GBCT and boreal toads contribute to preserving threatened species native to the area while also having a broader and long-term effect on species recovery efforts across Colorado.

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A Critical Action listed for watershed health is to: *"recover Imperiled Species: promote restoration, recovery, and resiliency of endangered, threatened, and imperiled aquatic and riparian dependent species and plant communities (10-12)."*

- The Tolland Ranch Feasibility Study proposes to create conceptual habitat and fisheries designs to support two of Colorado's threatened species: GBCT and boreal toads.

Chapter 9.2 (9-9) describes the alignment of state resources and policies and the goal to "coordinate existing funding sources and explores additional funding opportunities." This project is collaboration that will leverage funding from public and private sources to work toward "a multipurpose and multi-partner project (9-9)." Chapter 6 also discusses the important role of *strategic partnerships* in accomplishing multi-objective projects. Partners for this project include:

1. The Toll family: The Toll family has owned over 4,000 acres in upper South Boulder Creek for four generations. In 2015, 3,334 acres were put into a conservation easement. The Toll family supports both recreational and environmental projects on their property.
2. Colorado Parks and Wildlife (CPW): CPW has identified this area as potentially suitable for rearing GBCT and boreal toads. They have completed whirling disease testing in the ponds and upper reaches of South Boulder Creek, as well as fish population studies in two ponds. CPW also identified riparian habitat that could support boreal toads. CPW has committed $7,000 in cash and $2,000 in-kind for the project.
3. Denver Water: Denver Water transports water from the west slope through the Moffat Tunnel to South Boulder Creek. If there are additional water requirements necessary to support GBCT Denver Water will evaluate approaches developed. Denver Water is a critical partner to have for any stream corridor work at Tolland Ranch. Denver Water is considering a $1,500 in-kind donation to review study documents and provide comments.
4. Private funders: The SparkJoy Foundation has donated $15,000 to support this project because they value Colorado wildlife and natural resources. Strategic public/private partnerships are critical to long-term support for ongoing projects.
5. Colorado State Forest Service (CSFS): CSFS is the conservation easement holder, completed a Forest Management Plan and is committed to other conservation efforts on the property.
6. Other conversations and potential partners include Trout Unlimited's Boulder Flycasters and Lincoln Hills Fly Fishing Club and Lincoln Hills Cares. Partnering with these organizations sets up the opportunity for youth education and engagement and volunteer support during implementation.

Chapter 6.6 of the CWP highlight a state-wide long-term goal to *"promote restoration, recovery, sustainability, and resiliency of endangered, threatened, and imperiled aquatic- and riparian-dependent species and plant communities."*

- Tolland Ranch has been identified by CPW as an area suitable to assist in recovery of threatened species. Riparian and wetland enhancements will also support other plant and animal species including elk herds that migrate through Tolland Ranch and use the area for calving.

Chapter 6.1 discusses *Developing Plausible Scenarios* one of which is Cooperative Growth. In this scenario *"environmental stewardship becomes the norm…and broad alliances form…(6-7)."* This vision also includes eco-tourism as the norm.

- Public lands surrounding Tolland Ranch are a large tourism draw for many types of recreationalists visiting the James Peak Wilderness and Roosevelt National Forest. The conservation easement and

continued conservation efforts at Tolland will promote ongoing tourist and economic benefits to the surrounding communities.

- The project partners have formed a "broad alliance" of interests and priorities.
- Environmental stewardship is at the core of the project as represented through attention toward species recovery and biodiversity improvements.

Chapter 6.1 also highlights climate changes and the subsequent effect on water use in all sectors, stream flows and supplies. "*This dynamic reinforces the social value of widespread water efficiency and increased environmental protection (6-7).*"

- An evaluation of existing hydrology and potential additional water needs to support habitat and fisheries will occur through the feasibility study. All evaluations will consider, first and foremost, that South Boulder Creek delivers water to approximately 1.4 million people on the Front Range.
- Denver Water is a project partner and the project team looks forward to evaluating opportunities to retain water efficiencies (in quantity and transport), while improving water quality and habitat diversity through riparian and wetland enhancements.

Chapter 6 lists IBCC actions. Action number nine is "*continued support of ESA activities (6-179).*" This action describes how the CWCB and CPW (among others) will work collaboratively to support ESA issues, including recovery plans, to promote the sustainability of threatened, riparian and aquatic dependent species.

- This project presents an opportunity for CWCB and CPW to work collaboratively to address habitat needs for GBCT and boreal toads.

One of the **South Platte Basin Roundtable Basin Implementation Plan's** (SPBRT BIP) focus areas is to *"protect and enhance environmental and recreation attributes…and to fully recognize the importance of, and support the development of environmental and recreational projects and multipurpose projects that support water availability for ecologically and economically important habitats and focus areas."* This project supports this goal in multiple ways:

- The project recognizes that enhancing habitat can improve recreational opportunities for wildlife viewing and associated hiking and skiing in the immediate area, as well as across the Front Range with potential angling opportunities associated with GBCT reintroduction in other streams.
- The project will consider water availability for downstream water users as well as groundwater storage and recharge opportunities associated with wetland development.
- The project supports goals of conservation easements that strive to retain important environmental and historic values.

S.3.6 of the SPBRT BIP describes the importance of preserving and enhancing environmental and recreational opportunities in order to support Colorado's economy (S-8).

S.4.2 provides a strategic overview that recommends identifying and implementing methods to protect and enhance environmental and recreational water uses (S-10).

S.5.8 discusses the risk of increased demands and reduced supplies due to climate change. While this is primarily directed at drinking water and agricultural supplies, habitat and species loss are particularly sensitive to climate changes (S-11).

The **Statewide Water Supply Initiative** (SWSI) reports that Colorado's population is projected to nearly double to between 8.6 and 10 million people by 2050. The Front Range of Colorado will continue to be the most populous place in Colorado with over 80 percent of the state's population.

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SWSI 2010 discusses environmental/nonconsumptive needs and highlights that environmental and recreational values will continue to be important to the state's economy. Environmental focus areas were identified on 33,000 miles of streams with water related environmental and recreational values. Tolland Ranch is just above a South Boulder Creek segment identified for recreational needs in the SPBRT Nonconsumptive Needs Assessment (Appendix B, 2015).

Related Studies

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

Tolland Ranch Conservation Easement Baseline Assessment (2015):

- Baseline documentation of the land's environmental and historical value.

Wright Water Engineers Study (2017):

- Evaluates opportunities to implement Greenback Cutthroat Trout recovery habitat and overall aquatic resource enhancement at Tolland Ranch (Attached, 2017).

Tolland Ranch Forest Management Plan (2016):

- Developed for the landowner to actively manage their forest, woody vegetation, and associated resources. Intended to aid the owner in increasing the health, vigor, and beauty of the forest land through use of forest management practices.

Boreal Toad Conservation Plan and Agreement (2001):

- Guidance for the recovery and management of the boreal toad and its habitat in the Rocky Mountains.

Greenback Cutthroat Trout Recovery Plan (1998):

- Delineates reasonable actions which are believed to be required to recover and/or protect the species.

Saint Vrain Watershed Plan (2015):

- The Watershed Plan provides helpful background on geology, soils, hydrology and other watershed characteristics that impact water supply, watershed health and water quality.

Previous CWCB Grants, Loans or Other Funding

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

1) Fourmile Watershed Coalition/Four Mile Fire Protection District
2) EWP Stream Restoration Projects, Monitoring and Adaptive Management, Northern Front Range Forestry Network, Water Quality Sampling in the Boulder Creek Watershed, Debris Flow Early Warning System.
3) South Platte Basin RT
4) September 18, 2019, January 28, 2020.
5) Projects and contract numbers include:

- Ingram Gulch- EWP match (CTGG1 2018*661), EWP TA design: (POGG PDAA 201700000775).
- Wall Street- EWP match (CTGG1 12017*1819 CMS#101032)
- Fire Station Pond- EWP match (POGG1 PDAA 201700000935(SB-179))
- Monitoring and Adaptive Management (PDAA, 201900002117).
- Northern Front Range Forestry Network (POGG1 PDAA, 202000002417.
- Water Quality Sampling in the Boulder Creek Watershed (awarded, not contracted).
- Debris Flow Early Warning System (awarded, not contracted).

6) 0

Taxpayer Bill of Rights

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

In 2011 the Four Mile Fire Protection District's voters exempted the District from TABOR's revenue and spending limits, and the annual revenue limits imposed by Section 29-1-301 of the Colorado Revised Statutes.

The 2016 Financial Audit completed by John Cutler & Associates for the Four Mile Fire Protection District records the following statement: "The District has established and emergency reserve, representing 3% of fiscal year spending (excluding debt service), as required by TABOR. TABOR is complex and subject to judicial interpretation. The District believes it is in compliance with the requirements of TABOR".

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Submittal Checklist	
x	I acknowledge the Grantee will be able to contract with CWCB using the Standard Contract.
Exhibit A	
x	Statement of Work(1)
x	Budget & Schedule(1)
n/a	Engineer's statement of probable cost (projects over $100,000)
x	Letters of Matching and/or Pending 3rd Party Commitments(1)
Exhibit C	
x	Map (if applicable)(1)
x	Photos/Drawings/Reports
x	Letters of Support (Optional)
x	Certificate of Insurance (General, Auto, & Workers' Comp.) (2)
n/a	Certificate of Good Standing with Colorado Secretary of State(2)
x	W-9(2)
n/a	Independent Contractor Form(2) (If applicant is individual, not company/organization)
Engagement & Innovation Grant Applicants ONLY	
n/a	Engagement & Innovation Supplemental Application(1)

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

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ENGAGEMENT & INNOVATION GRANT FUND SUPPLEMENTAL APPLICATION

Introduction & Purpose

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

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

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

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

Application Questions

*The grant fund request is referred to as "project" in this application.

Overview (answer for both tracks)
In a few sentences, what is the overall goal of this project? How does it achieve the stated purpose of this grant fund (above)?
Who is/are the target audience(s)? How will you reach them? How will you involve the community?
Describe how the project is collaborative or engages a diverse group of stakeholders. Who are the partners in the project? Do you have other funding partners or sources?

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Overview (answer for both tracks)
Describe how you plan to measure and evaluate the success and impact of the project?
What research, evidence, and data support your project?
Describe potential short- and long-term challenges with this project.

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

Engagement Track
Describe how the project achieves the education, outreach, and public engagement measurable objective set forth in Colorado's Water Plan to "significantly improve the level of public awareness and engagement regarding water issues statewide by 2020, as determined by water awareness surveys."
Describe how the project achieves the other measurable objectives and critical goals and actions laid out in Colorado's Water Plan around the supply and demand gap; conservation; land use; agriculture; storage; watershed health, environment, and recreation; funding; and additional.
Describe how the project achieves the education, outreach, and public engagement goals set forth in the applicable Basin Implementation Plan(s).

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

Innovation Track
Describe how the project enhances water innovation efforts and supports a water innovation ecosystem in Colorado.
Describe how the project engages/leverages Colorado's innovation community to help solve our state's water challenges.
Describe how the project helps advance or develop a solution to a water need identified through TAP-IN and other water innovation challenges. What is the problem/need/challenge?
Describe how this project impacts current or emerging trends; technologies; clusters, sectors, or groups in water innovation.

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Colorado Water Conservation Board
Water Plan Grant - Exhibit A

Statement Of Work	
Date:	January 28, 2020
Name of Grantee:	Fourmile Watershed Coalition
Name of Water Project:	Tolland Ranch Riparian and Aquatic Enhancement Project
Funding Source:	Colorado Water Plan Grant

Water Project Overview:

Tolland Ranch straddles a reach of South Boulder Creek that historically meandered across a broad valley floor at roughly 9,000 feet above sea level (see maps in attached report). This reach supported a diverse array of aquatic habitats, including a high quality trout stream, riparian wetlands, side channel wetland/open water complexes, and floodplain areas. In the early 1960s South Boulder Creek was channelized through Tolland Ranch to facilitate water movement from the Moffat Tunnel toward Gross Reservoir. During this process an off-channel pond system was created where the meanders previously existed. The channelization disconnected the stream from the floodplain and decreased available hydrology to support robust wetland and riparian areas.

This project proposes a feasibility study to build off the previously completed Wright Water Engineer study (attached). The feasibility study will prioritize and develop conceptual restoration design for multiple riparian and wetland areas, evaluate existing hydrology and diversion infrastructure and determine what additional water needs may exist in order to support year-round habitat for the federally listed GBCT. While a primary goal of the project is to support species recovery and create habitat for the GBCT and boreal toad, the project will also result in the restoration of significant wetland and upland floodplain areas.

The feasibility study will produce a conceptual fisheries enhancement design for the project area. One of the project objectives is to create an off-channel rearing habitat area for the GBCT. Existing conditions in the larger ponds at the project area are able to support brook trout, but Colorado Parks and Wildlife sampling indicates that there is significant room for enhancement. Restored hydrology would also create and restore wetland areas that have been dewatered for the past few decades; and riparian upland habitats would be enhanced with increased hydrology. The project will also produce a conceptual design to retrofit an existing diversion structure to prevent non-GBCT from entering the system.

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Project Objectives:
Objective 1: Promote ecological uplift through the enhancement of wildlife and bird habitat, restoring hydrologic and biogeochemical services, promoting plant biodiversity. **Objective 2:** Prioritize riparian and wetland areas for future restoration. **Objective 3:** Support recovery objectives and habitat enhancements for native threatened species including the greenback cutthroat trout and boreal toad. **Objective 4:** Develop conceptual fisheries enhancement design for the project area to create an off-channel rearing habitat area for the greenback cutthroat trout. **Objective 5:** Build and deepen relationships with project partners.

Tasks
Task 1 – Stakeholder Engagement
Description of Task:
There are multiple stakeholders involved in the Project and it important to obtain their input throughout the feasibility study. The primary project partners include the Toll family and CPW, however there are other partners whose support and perspective are critical to long-term project success. These partners include Denver Water, the Colorado State Forest Service, The Conservation Fund, Gilpin County, Colorado Trout Unlimited and the Boulder Flycasters and other private foundations with interests related to angling and protecting Colorado's natural resources. Continuing to build and deepen these partnerships through the feasibility study process will be an important part of future implementation phases.
Method/Procedure:
1. Identify goals and priorities of project partners. 2. Assure that goals and priorities of project partners are integrated into the project. 3. Assure that all project partners are apprised of project milestones. 4. Identify potential new partners and funders through the stakeholder engagement process to develop.

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Tasks
Deliverable:
The deliverable for this task includes a list of primary and ancillary project partners with their primary goals and priorities in the project area and/or property and current or ongoing role in the project. Identifying long-term project partners to proceed with future phases of implementation will be documented. Potential new partners and funders will also be identified through the stakeholder engagement process.

Tasks
Task 2 – Conceptual Design for Wetland and Riparian Area Establishment and Enhancement
Description of Task:
This task will rely on a comparison of existing project area conditions (as documented by previously completed evaluations) to non-fishery project goals in order to develop a conceptual project design for wetland and riparian areas. The current non-fishery project goals include the enhancement of wildlife and bird habitat, restoring hydrologic and biogeochemical services, promoting plant biodiversity, and in general, returning this reach of South Boulder Creek to ecological conditions that were present prior to the drainageway modifications implemented in the 1960s. Specific attention will be given to enhancements applicable to boreal toad habitat.
Method/Procedure:

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Tasks
The methods for existing conditions evaluation and conceptual project design are as follows: 1) Existing wetland and habitat mapping will be used to identify project areas that are currently meeting project goals, areas which require minor modifications to better meet project goals, and areas that may need significant construction to help meet project goals. These areas will be organized and prioritized based on the initially perceived opportunities and costs associated with various habitat enhancement and/or creation activities at each location. 2) Using the desktop assessment described in paragraph 1 above, a multi-disciplinary team will conduct a 1-day site visit to update and revise the project area priorities to reflect current conditions and stakeholder input. 3) Conceptual project designs will be developed for prioritized areas where meaningful uplift and attainment of project goals can be feasibly attained. Conceptual project design will include general grading requirements, soil management and amendment recommendations, non-detailed planting plans (including vegetation species and density, but not precise locations), and other habitat structures.
Deliverable:
The deliverable for this task will include developed conceptual designs for each prioritized project area. The conceptual designs will consist of plan view and cross section drawings which depict current conditions and proposed project activities (including grading, surface flow management, plant communities, and habitat structures). The conceptual design drawings will be supported by a narrative basis of design (BOD) memorandum which identifies the following information for each prioritized project location: 1) the intent of the design; 2) identified constraints and opportunities; 3) perceived level of effort and cost to implement the design; 4) potential permitting requirements; and 5) additional observations and considerations. The BOD memorandum will also include relative prioritization for each project area to facilitate future planning, acknowledging that project activities may occur in a phased manner over a period of several years, or longer.

Tasks
Task 3 – Conceptual Fisheries Enhancement Design Based on Current Conditions
Description of Task:
Task 3 consists of developing a conceptual fisheries enhancement design for the project area. One of the project objectives is to create an off-channel rearing habitat area for the federally listed threatened GBCT. Existing conditions in the larger ponds at the project area are able to support brook trout, but Colorado Parks and Wildlife sampling indicates that there is significant room for enhancement.
Method/Procedure:

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Tasks
Task 3 will include the following methods and approach: 1) Evaluation of the existing conditions, including pond depth, hydrology (including in- and outflows from surface and groundwater sources), water quality, and other habitat considerations (e.g., impacts from cattle grazing). The evaluation will be used to develop distinct fishery habitat areas (e.g. Ponds N1, N2, etc. and connecting channels between the ponds) that will be summarized in terms of their current conditions and potential for uplift. 2) Using the information compiled during step 1 of this task, conceptual designs will be developed for each distinct habitat area. Conceptual designs will be focused on promoting fishery habitat improvements for GBCT, including enhanced hydrology, increasing pond depth, constructing channel habitat features, etc. 3) The existing hydrology in the project area will be compared to the desired hydrology that is needed to promote the successful implementation of the fishery habitat conceptual design. It is perceived that current hydrology will not be sufficient and that the project will require supplemental flow-through rights to allow the diversion of water into and through the Project area. Task 3 will include an evaluation of the water demands for this diversion, potential sources of water to meet this demand, the legal process for using potential sources at the project, and the probable cost to procure water rights and navigate Colorado Water Court as needed to change their point of use. This step will include initial coordination with the State Engineer Office and Denver Water to review the water rights approach and considerations for the project. 4) Distinct habitat area prioritization will be developed based on the current conditions, conceptual design approach, associated costs of construction, and how implementation of the conceptual design will promote the project goal of implementing a diverse and productive array of habitat areas for the greenback cutthroat trout.
Deliverable:
Deliverables for Tasks 3 will include: 1) A BOD memorandum for the fishery enhancement activities that identifies the intent of the habitat improvements, the expected water demands for the Project (including the assessment of water rights purchase and change-case requirements), and a prioritization scheme for the specific habitat enhancement locations. 2) Conceptual project design for each distinct habitat area. The conceptual design will include plan view and cross sections depicting existing conditions and proposed project conditions.

Task 4 – Conceptual Design for Project Water Supply to Maintain Genetic Purity of Greenback Cutthroat Trout
Description of Task:

Task 4 includes the development of conceptual designs for alternative project water supply approach that will provide water for the project that is free from non-greenback cutthroat trout salmonids (including eggs and fry from trout species that can hybridize with the greenback cutthroat trout). The importance of this structure is significant—if hybridization between greenback cutthroat trout and other salmonid species occurs within the project, the entire population would need to be eliminated and restocked.

Preliminarily, it is expected that the water supply could consist of a screened diversion off South Boulder Creek, construction of an infiltration gallery in South Boulder Creek, modification of the first pond (Pond N1) to include a filtered pump, and/or construction of a shallow alluvial well that would deliver flow to the project area. Task 4 will include an alternatives assessment that evaluates the costs, benefits and perceived challenges in implementing the developed alternative water supply approaches.

Method/Procedure:

Task 4 will include the following steps:

1) Development of a BOD memorandum which provides the requirements for the water supply structure, including supply rates and removal of salmonids and their eggs.
2) Identification of the potential water supply approaches for the project, including but not limited to a screened diversion, an infiltration gallery, a filtered pump station, and an alluvial groundwater well.
3) Development of conceptual design for each potential water supply approach, including water supply location, typical structure details, and associated infrastructure (e.g., pipes, ditches, power supply, etc.).
4) An assessment of the alternative water supply approaches, including considerations such as relative cost, environmental impacts, maintenance requirements, permitting, and reliability.

Deliverable:

The Task 4 deliverables will include:

1) BOD memorandum for the water supply structure.
2) Conceptual designs (including location, typical details, and project-specific configuration) for the evaluated water supply structures.
3) Alternative analysis of the structures with recommendations for the preferred alternative.

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.

Last Updated: July 2019

Reporting Requirements

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

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

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

The CWCB will pay out the last 10% of the 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 purchase order or grant will be closed without any further payment.

Payment

Payment will be made based on actual expenditures and must include invoices for all work completed. 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.

Costs incurred prior to the effective date of this contract are not reimbursable. The last 10% of the entire grant will be paid out when the final deliverable has been received. All products, data and information developed as a result of this contract must be provided to CWCB in hard copy and electronic format as part of the project documentation.

Performance Measures

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-kind contributions (if applicable) per the budget in Exhibit B. Per Water Plan Grant Guidelines, the CWCB will pay out the last 10% of the 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 purchase order or grant will be closed without any further payment.
(b) Accountability: Per Water Plan 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 Water Plan 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.

Last Updated: July 2019

Colorado Water Conservation Board

Water Plan Grant - Detailed Budget Estimate

Fair and Reasonable Estimate

Prepared Date:
Name of Applicant:
Name of Water Project:

EXAMPLE A: Study or Project Coordination

Task 1 - [TASK NAME]

Sub-task	Item	Hourly Rate	# Hours	Sub-total	Item Cost	Item Quantity	Sub-total	Total	CWCB Funds	Matching Funds
Focus Groups										
	Participant Stipend			$ -	$ 50.00	20.00	$ 1,000.00	$ 1,000.00	$ 250.00	$ 750.00
	Catering			$ -	$ 15.00	20.00	$ 300.00	$ 300.00	$ 75.00	$ 225.00
	Feedback Survey			$ -	$ 0.50	20.00	$ 10.00	$ 10.00	$ 2.50	$ 7.50
	Staff Time	$ 40.00	10	$ 400.00				$ 400.00	$ 100.00	$ 300.00
Develop Exhibit										
	Exhibit Designer	$ 50.00	100	$ 5,000.00			$ -	$ 5,000.00		
	Staff Time Project Manager	$ 50.00	30	$ 1,500.00			$ -	$ 1,500.00		
	Staff Time Administrative	$ 35.00	20	$ 700.00			$ -	$ 700.00		
	Film Production (filming, editing, production)			$ -	$ 5,000.00	1.00	$ 5,000.00	$ 5,000.00		
				$ -			$ -	$ -		
TOTAL								**$ 13,910.00**		
Other Direct Costs (see below)								**$ 2,469.00**		
OVERALL TOTAL								**$ 16,379.00**		

Other Direct Costs

Item:	Copies & Printing (Black & White)	Copies & Printing (Color)	Materials and Final Report Production	Lodging and Meals	Travel Expenses (Airfare and Car Rental)	Mileage	Total
Units:	**No.**	**No.**	**Lump Sum**	**Per Diem**	**Lump Sum**	**Miles**	
Unit Cost:	**$0.10**	**$0.50**		**$ 100.00**		**$0.535**	
Project Initiation	150	100		2		400	$479
Report, Conclusions and Recommendations	150	150	$ 1,900	0		0	$1,990
Total Units:	300	250	1,900	2	0	400	
Total Cost:	$30	$125	$1,900	$200	$0	$214	**$2,469**

COLORADO
Colorado Water Conservation Board
Department of Natural Resources

Colorado Water Conservation Board

Water Plan Grant - Detailed Budget Estimate
Fair and Reasonable Estimate

Prepared Date:
Name of Applicant:
Name of Water Project:

EXAMPLE C: Construction

Task 1 - Construction

Sub-task	Unit	Quantity	Unit Cost	Total Cost	CWCB Funds	Matching Funds
Mobilization	LS	1	$ 50,000	$ 50,000	$ 10,000	$ 40,000
Coffer Dam	EA	1	$ 100,000	$ 100,000	$ 20,000	$ 80,000
Cut	CY	20,000	$ 4	$ 80,000	$ 16,000	$ 64,000
Fill	CY	18,000	$ 8	$ 144,000	$ 28,800	$ 115,200
Erosion Control	LS	1	$ 40,000	$ 40,000	$ 8,000	$ 32,000
18-inch HDPE	LF	500	$ 50	$ 25,000	$ 5,000	$ 20,000
18-inch Valve	EA	1	$ 10,500	$ 10,500	$ 2,100	$ 8,400
Etc…						

Task 2 - ?

TOTAL				$ 449,500.00	$ 89,900	$ 359,600

Colorado Water Conservation Board

Water Plan Grant - Detailed Budget Estimate

Fair and Reasonable Estimate

Prepared Date:
Name of Applicant:
Name of Water Project:

EXAMPLE B: Engineering

Task 1 - Engineering		**Water Consultants**				Subcontracts						
Sub-task	Senior Principal Engineer	Senior Water Resources Engineer/ Consultant	Water Resources Engineer	Geologist/ Water Resources Analyst		Geotechnical	Environmental and Cultural Resources	(Other)		Project Total	**CWCB Funds**	**Matching Funds**
	$ 190	$ 160	$ 130	$ 100	**Subtotal**	Lump sum	Lump Sum		**Subtotal**			
	Estimated Hours					Estimated						
Project Initiation / Stakeholder identification	12	32		16	**$ 9,000**				$ -	$9,000		
Water Rights Evaluation	24	24	80	30	**$ 21,800**			$ 12,000	**$ 12,000**	$33,800		
Geotechnical	24			36	**$ 8,160**	$ 27,000			**$ 27,000**	$35,160		
Permitting		32		40	**$ 9,120**				$ -	$9,120		
Survey	4	24		8	**$ 5,400**				$ -	$5,400		
Design of XXX	160	60	100		**$ 12,640**				$ -	$12,640		
Preparation of construction documents (bid docs, specs)	40	10	30									
Project Management	20	30		24	**$ 11,000**				$ -	$11,000		
Report, Conclusions, & Recommendations	40	54	16	40	**$ 22,320**			$ 3,000	**$ 8,500**	$30,820		
Task 2 - ?												
TOTAL										**$146,940**		

Wright Water Engineers, Inc.
2490 West 26th Ave., Suite 100A
Denver, Colorado 80211
(303) 480-1700 TEL
(303) 480-1020 FAX
www.wrightwater.com
ngreenberg@wrightwater.com

February 17, 2017

Via Email: harry.crockett@state.co.us

Harry Crockett
Colorado Division of Parks and Wildlife
317 West Prospect Street
Fort Collins, Colorado 80526

Re: Opportunity to Implement Greenback Cutthroat Trout Recovery Habitat and Overall Aquatic Resource Enhancement at Tolland Ranch, Tolland, Colorado

Dear Harry:

Wright Water Engineers, Inc. (WWE) has prepared this letter on behalf of Tolland Ranch LLC, owners of Tolland Ranch, a roughly 3,300 acre property in the South Boulder Creek valley that is protected by a conservation easement through the Colorado State Forest Service. The purpose of this letter is to present an opportunity to achieve significant habitat enhancement and creation through the implementation of the Tolland Ranch Aquatic Habitat Enhancement Project (Project). While a primary goal of the Project is to create recovery habitat for the federally-listed greenback cutthroat trout (GBCT), the Project would also result in the restoration of significant wetland and upland floodplain areas. The Project conceptual design has been developed in coordination with you and others at Colorado Parks and Wildlife (CPW) as well as the U.S. Fish and Wildlife Service (USFWS). Based on the Project's need for a flow-through water right from South Boulder Creek, WWE expects that having Denver Water as a Project proponent (and possibly beneficiary) will be important for achieving a successful outcome.

TOLLAND RANCH AND SOUTH BOULDER CREEK—HISTORIC AND CURRENT CONDITIONS

HISTORIC CONDITIONS

Tolland Ranch straddles a reach of South Boulder Creek that historically meandered across a broad valley floor at roughly 9,000 feet above sea level (see Figure 1). This reach supported a diverse array of aquatic habitats, including a high quality trout stream, riparian wetlands, side channel wetland/open water complexes, and floodplain areas. Figure 2 is a 1953 aerial image depicting South Boulder Creek at Tolland Ranch prior to channel modifications.

MODIFICATIONS TO SUPPORT DENVER WATER OPERATIONS

In the early 1960s the Denver Water Board approached the Toll family with a plan to channelize South Boulder Creek through the Tolland Ranch to facilitate water movement from Moffat Tunnel toward Gross Reservoir. At that time, Henry W. Toll Sr. and Henry W. Toll Jr. arranged with Denver Water that during the channelization of South Boulder Creek through their property, Denver Water would create a series of ponds on the north and south sides of

the Creek by removing rock, sand and gravel along the stream bed to build up the channelized banks of South Boulder Creek. Denver Water was also to provide flow-through water to these systems. Henry Toll Jr. in particular had a lifelong interest in fishing, and the agreement for the right-of-way for the channelization was that a flow be maintained through the ponds in order that trout could overwinter in the ponds. The ponds were constructed by Denver Water to include two headgates on the north side of the creek and one on the south to feed the respective ponds. Please see Figure 3 which depicts current conditions at Tolland Ranch in the South Boulder Creek valley bottom.

At the time of the construction of the ponds, no formal water right was established for maintaining flow through the ponds. The current members of the Toll family were not present, but understand from conversations with Henry W. Toll Sr. and Henry W. Toll Jr. that Denver Water was to maintain the flow through the ponds. This verbal agreement was not codified and its administration was subject to downstream senior priorities--in one drought year, stream flows were low and water demands were such that the gates were closed and stayed that way for a number of years.

RECENT ATTEMPTS TO RESTORE FLOW

After years with no flow being allowed through the north and south side channels, the Toll family applied for, and received, a Colorado Water Court decree (03CW451 and 03CW452). While the pond system is designed to efficiently return water that runs through the ponds to South Boulder Creek and has limited depletions to the river system, the decreed rights are sufficiently junior that water only runs through the north and south pond systems when there are free river conditions in South Boulder Creek and the South Platte River systems. Thus, water availability is a limiting resource that is suppressing the area's ability to support a viable fishery and significant aquatic resources. Because much of the north and south pond systems maintain wetland and open water characteristics (and corresponding evaporative losses) from groundwater sources, it would only take a small amount of senior water to allow the ponds to continuously divert water from South Boulder Creek. WWE's initial estimates are that a few dozen acre feet of consumptive use would likely account for the evaporative depletion from increased water surface area and wetlands areas created by a continuous 5 cubic feet per second (cfs) diversion.

TOLLAND RANCH AQUATIC HABITAT ENHANCEMENT PROJECT

As described above, Tolland Ranch could achieve significant environmental enhancement with the addition of continuous flow-through at its north and south pond systems. There would be additional trout habitat in an otherwise sparsely populated reach; restored hydrology would create and restore wetland areas that have been dewatered for the past few decades; and riparian upland habitats would be enhanced with increased hydrology. An additional opportunity has been identified by the Toll family, working in conjunction with CPW and USFWS—the north and south pond systems are isolatable aquatic systems that could be used as habitat to rear self-sustaining populations of trout in genetic isolation. There is a recently

identified need for this type of habitat in the northern Colorado Front Range to facilitate the recovery of the greenback cutthroat trout (GBCT).

GBCT RECOVERY HABITAT COMPONENT
Genetic testing of museum specimens resulted in a 2012 discovery that GBCT, native to the South Platte River basin, were only present in one stream in the Arkansas River Basin. The retention of this endangered fish population outside its home range was due to historic stocking in a headwater reach that is isolated from other trout species/populations that can hybridize with GBCT. Because GBCT are vulnerable to interspecies hybridization with rainbow trout and non-greenback cutthroat trout (both non-native fish to this part of Colorado), a critical component of the GBCT recovery plan is identifying or creating suitable habitats that are isolated from existing trout populations.

The side channel systems at Tolland Ranch provide an opportunity to create areas that provide natural stream and open water habitat for GBCT that are isolated from other trout populations. While the Project described in this letter is limited to the north pond system, other GBCT projects are under concurrent evaluation, including a possible establishment of a Jenny Creek GBCT population. The herein described north pond system enhancement would include the following conceptual physical improvements (these components are identified, conceptually, on Figure 4):

1) Diversion from South Boulder Creek that prevents entrainment of non-GBCT trout:
Preliminarily, the planned diversion is expected to consist of either an infiltration gallery in South Boulder Creek, an alluvial well, or a screened headgate at the current diversion structure. The selection and design of the diversion structure will be consistent with the Project goal of allowing roughly 5 cfs of water (that is free of fish) to flow through the north pond system. In addition to preventing adult non-GBCT trout from entering the Project area, it will be necessary to prevent juvenile fish and fish eggs from becoming entrained into the north pond system. Maintenance requirements, permitting, capital costs, and efficacy will all be considered during the selection process.

2) Secondary filtering system consisting of wetlands and intake screen:
In addition to the primary filter at the point of diversion from South Boulder Creek, the Project team expects that a secondary filter system would be advantageous. Preliminarily, the secondary system is expected to consist of a broad wetland swale that conveys flows from the diversion structure to a small existing open water feature that feeds into a screened intake. Once water passes through the screened intake, it would feed into the Project areas intended to support GBCT. The design of this system would allow a finer screened mesh on the intake than would be practicable at the South Boulder Creek diversion.

3) Open water enhancement:
The north pond system includes eight existing open water features (see Ponds N1-N8 on Figure 2) that currently provide limited habitat for trout. A few of these ponds are big enough to support seasonal populations, but do not support meaningful numbers of fish nor suitable

overwinter habitat due to shallow water depths and limited flow-through. As part of the Project, these ponds will be dredged and reshaped to establish deeper areas that will provide overwinter refuges as well as shallow benches that will support aquatic vegetation. Outlet areas will be modified to promote fish movement between the open water and channel portions of the Project and would provide a redundant measure to prevent non-GBCT trout from entering the system.

4) Channel enhancement:
The north pond system's open water areas are currently connected by a series of ditches, swales and diffuse wetland areas. As part of the Project, these areas will be modified to promote internal fish movement and establishment of spawning areas. The channels will be designed to safely convey the roughly 5 cfs desired flow-through and will mimic channels that are typically found in this setting.

5) Wetland bench and riparian area establishment and enhancement.
Current conditions in the north pond system corridor limit the extent and functionality of significant wetland areas. For example, broad willow swale areas no longer have wetland hydrology as a result of the curtailed diversions through this area. Additionally, wetland areas along the six open water areas are relatively small due to steep rocky slopes that surround much of these features. The Project is expected to expand and enhance wetland areas as a result of restoring flow through the system and establishing wetland benches around many of the open water areas. The size and extent of these benches will be limited, to a degree, by the amount of consumptive use water that can be secured for augmentation of the Project's increased water demand.

6) Downstream outfall to prevent non-GBCT trout from entering system.
In order to preserve the integrity of the Project's GBCT population, a downstream barrier preventing non-GBCT trout from entering the north pond system will be required. This barrier could include the use of screening on the outfall, a vertical plunge pool from a culvert with a flap that would close under high water conditions, or another similar mechanical barrier that would prevent fish from moving up into the system.

EXPECTED COSTS AND POTENTIAL BENEFITS ASSOCIATED WITH THE PROJECT

Currently, implementation of the Project is viewed as having two primary hurdles that must be navigated:

1. Water Rights: Previous attempts to establish a senior flow-through right were rejected during informal discussions with Denver Water. WWE expects that in order for the Project to move forward and navigate Colorado Water Court, it will be necessary to have Denver Water's cooperation. Ideally, Denver Water would join CPW, USFWS and the Toll family as a member of the Project team.

2. Costs to Design and Construct Improvements: The Project is a relatively low-hanging fruit for aquatic habitat enhancement in that existing grades and vegetation types are largely compatible with the desired site conditions. However, WWE anticipates that the Project will require significant investment at key locations including the diversion from South Boulder Creek, the channel areas establishment, and the open water areas enhancement. Funding for these efforts may include grants from charitable foundations (e.g., Trout Unlimited and The Nature Conservancy) and governmental agencies (USFWS or CPW). An additional source of potential funding could be obtained through the establishment of wetland and other environmental credits that could be used to offset other projects' impacts to these types of features. For example, current market prices for wetland mitigation credits are $100,000 per acre.

CONCLUSION

WWE and the Toll family are very excited about the environmental opportunities presented by the Project. This would be a way to significantly enhance an outstanding property that is protected in perpetuity under the existing conservation easement. In addition to enhancing overall aquatic resource function in the South Boulder Creek watershed, the Project takes advantage of the existing conditions to promote the establishment of a GBCT recovery population. Engaging Denver Water as a team member would constitute a major step toward implementing the Project. WWE hopes that Denver Water will view this opportunity as a net-benefit for their organization—in exchange for facilitating the Project's diversion of roughly 5 cfs and associated consumptive use, they would help restore a reach of South Boulder Creek that was historically modified and degraded. Further, the Project has the potential to satisfy mitigation requirements for projects occurring elsewhere in the South Boulder Creek and South Platte River watersheds.

We sincerely appreciate your interest and time invested on this effort to date, and look forward to working with you moving forward. If you, or any of the other GBCT Recovery Team members have any questions or wish to discuss the Project, please do not hesitate to call me at (303) 480-1700.

Sincerely,

WRIGHT WATER ENGINEERS, INC.

By_____ AND _____

Noah Greenberg
Senior Aquatic Resource Scientist

Patricia Flood, P.E.
Project Manager

Attachments: Figures 1-4

cc: Wolky Toll, Tolland Ranch LLC; Leslie Ellwood, USFWS

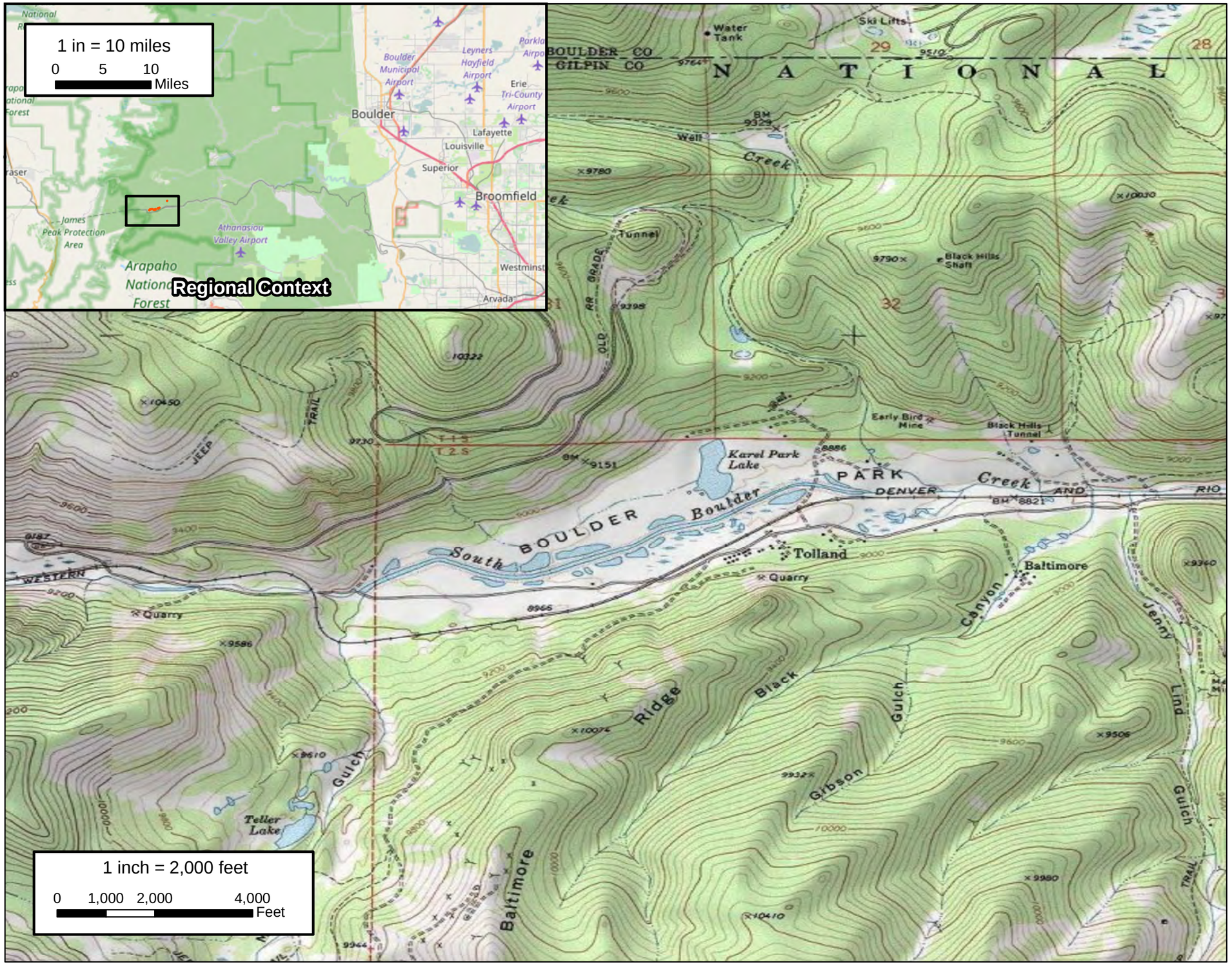

FIGURE 1

PROJECT NO. 021-118.020

GILPIN COUNTY, COLORADO

TOLLAND RANCH

TOLLAND RANCH AQUATIC HABITAT ENHANCEMENT PROJECT

Created by: NMP
Checked by: NSG
Created during: October 2016
Inset: USA Street Map streamed through ESRI
Topographic mapping: USGS 1:24,000 topo, streamed through ESRI

N
W E
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WRIGHT WATER ENGINEERS, INC.
DENVER
GLENWOOD SPRINGS
DURANGO

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Document Path: Z:\Project Files\02-03\021-118\021-118.020\CAD-GIS\GIS\01_MXD\GBCT_Project\Figure2_1953.mxd

WRIGHT WATER ENGINEERS, INC.
2490 W 26TH AVE 100A
DENVER, CO. 80211
(303) 480-1700

N
W E
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500 250 0 500 Feet

1" = 500'

TOLLAND RANCH--1953 USGS Aerial Imagery

FIGURE

2

Document Path: Z:\Project Files\02-03\021-118\021-118.020\CAD-GIS\GIS\01_MXD\GBCT_Project\Figure_3.mxd

WRIGHT WATER ENGINEERS, INC.
2490 W 26TH AVE 100A
DENVER, CO. 80211
(303) 480-1700

N W E S

500 250 0 500 Feet

1" = 500'

TOLLAND RANCH -- AERIAL PHOTOGRAPH (1999)

FIGURE 3

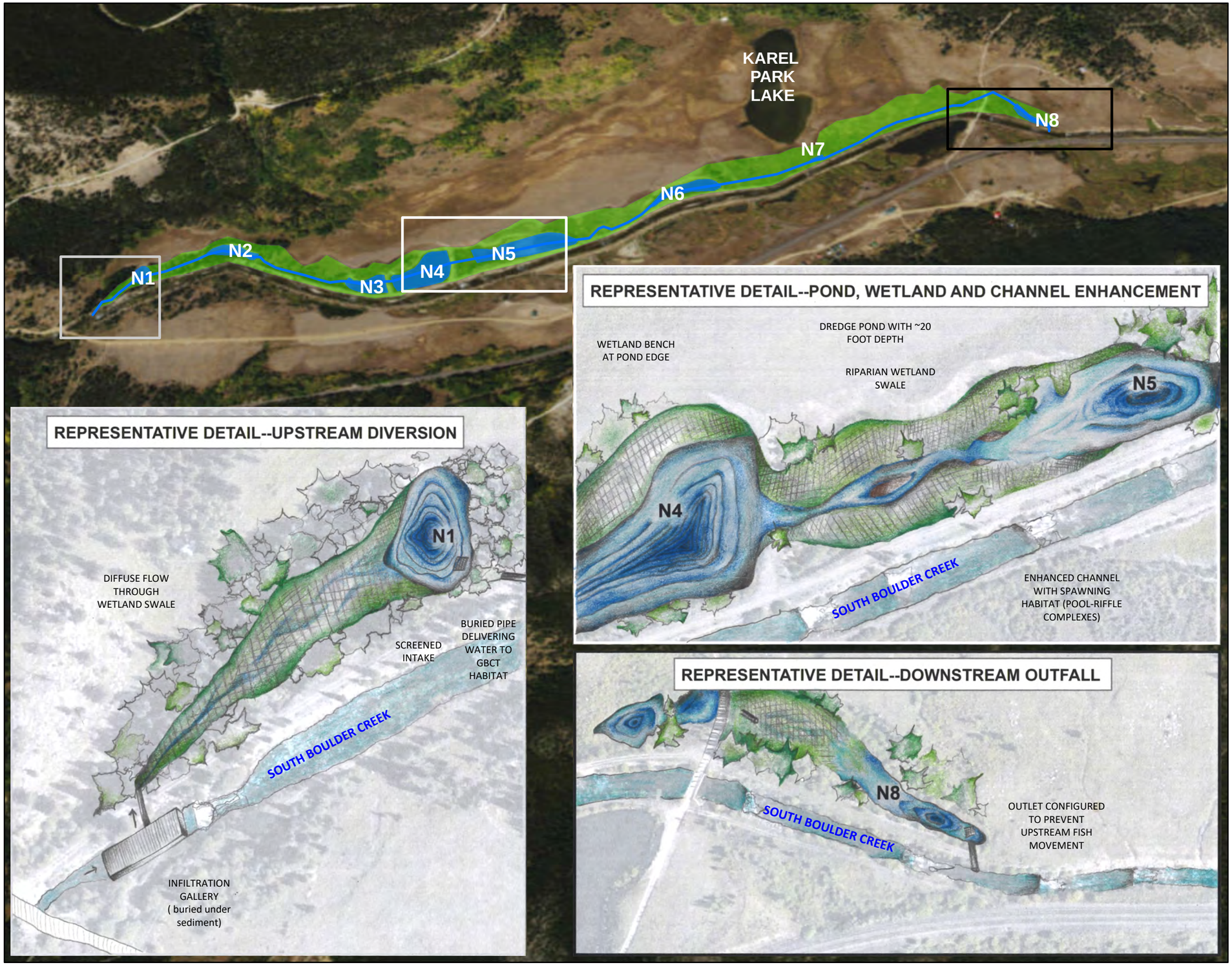

FIGURE 4

PROJECT NO. 021-118.020

GILPIN COUNTY, COLORADO

TOLLAND RANCH

CONCEPTUAL NORTH POND SYSTEM ENHANCEMENT PROJECT

North Pond System Drainage Path

North Pond Existing Open Water Features to be Enhanced

North Pond Riparian Areas (Upland and Wetland) to be Enhanced

Created by: NMP
Checked by: NSG
Created during: February 2017
Photo source: Aerial imagery streamed through ESRI

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WRIGHT WATER ENGINEERS, INC.
DENVER
GLENWOOD SPRINGS
DURANGO

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COLORADO
Parks and Wildlife
Department of Natural Resources

Director's Office
1313 Sherman St., Suite 618
Denver, CO 80203
P 303.866.3203 | F 303.866.3206

Mr. Chris Sturm - Colorado Water Conservation Board
1313 Sherman Street, Denver, CO 80203

Re: Letter of Support for the Fourmile Watershed Coalition's Colorado Water Plan Grant: Tolland Ranch Feasibility Study.

Dear Mr. Sturm,

Colorado Parks and Wildlife (CPW) is pleased to support the Fourmile Watershed Coalition's grant application for funds to support a feasibility study for fisheries improvements at Tolland Ranch. The Tolland Ranch property provides a unique opportunity to raise the Bear Creek Strain Greenback Cutthroat Trout in existing off-channel ponds adjacent to South Boulder Creek. Trout raised at this location could be used to repopulate streams at specific locations in the South Platte Basin. At present, brood stock for this federally listed strain of trout currently reside only in Zimmerman Lake and at the Leadville National fish hatchery. Bolstering brood stock availability and additional spawning resources will strengthen the ability to delist this species.

Colorado Parks and Wildlife (CPW) is charged with balancing the conservation of our wildlife and habitat with the recreational needs of our state. The Future Generations Act Report (2019) presents ten goals to assist CPW in carrying out its mission. Goal number ten is to *Reduce the Need to List Additional Species*. This can be accomplished by investing in non-game species conservation and investing in wetlands conservation. The Tolland Ranch project presents an opportunity to accomplish both of these. For these reasons CPW is pleased to partner with the Fourmile Watershed Coalition and contribute $7,000 to the project.

CPW has evaluated whirling disease in the ponds and upstream in South Boulder Creek and conducted fish species and population evaluations. These assessments have led to the conclusion that Tolland Ranch may be a feasible location to rear the endangered fish species. A feasibility study would provide necessary and specific information required to move closer to implementing wetland enhancements and fisheries improvements. Specific measure outlined as part this study include:

1. Stakeholder engagement (Toll family members, adjoining landowners, interested agencies).
2. Develop conceptual designs for wetland bench and riparian area establishment and enhancement.
3. Evaluate the suitability of the off channel ponds to support fisheries. This will include an evaluation of ground water hydrology, surface water availability and water rights.
4. Develop a conceptual design to retrofit existing diversion structures that prevents entrainment of non-GBCT trout and consider a secondary filtering system.

CPW values collaborative projects with private landowners and other agencies. The Tolland Ranch feasibility study is unique collaboration with the ability to significantly impact shared conservation goals.

Sincerely,

Benjamin Swigle
Colorado Parks and Wildlife - Aquatic Biologist
317 West Prospect Street, For Collins, CO 80526
970-472-4364, ben.swigle@state.co.us

CC: Samuel Peterson, Chris Mettenbrink, Jeff Spohn, Matt Nicholl

THE
CONSERVATION FUND

1942 Broadway, Suite 323, Boulder, CO 80302

January 31, 2020

Mr. Chris Sturm
Colorado Water Conservation Board
1313 Sherman Street
Denver, CO 80203

Re: Letter of Support for the Fourmile Watershed Coalition's Colorado Water Plan Grant: Tolland Ranch Feasibility Study.

Dear Mr. Sturm,

The Conservation Fund is pleased to support the Fourmile Watershed Coalition's grant application for funds to support a feasibility study for fisheries improvements at Tolland Ranch. Nestled between the 14,000-acre James Peak Wilderness and sprawling rural subdivisions and urban areas in the South Boulder Creek watershed lies the 4,700-acre Toll property—one of the largest intact holdings along Colorado's Front Range, located within an hour of Denver/Boulder.

The Conservation Fund is a national environmental organization with a focus on protecting land, water and wildlife in an economically sustainable manner. Since our inception in 1985, we have partnered with private landowners, community leaders, land trusts and various branches of government to conserve over 8 million acres across the country, including over 250,000 acres in Colorado.

In 2015, The Conservation Fund completed a multi-year effort to conserve all 4,700 acres owned by two branches of the Toll family for over 120 years. A conservation easement through the U.S. Forest Service's Forest Legacy Fund was placed on 3,334 acres with funding from the Land and Water Conservation Fund, Boulder County, and Great Outdoors Colorado. This land remains in the Toll's private ownership, with the easement held by the Colorado State Forest Service, and miles of ski trails remaining available to the public through Eldora's Nordic program. An additional 823 acres, buffering the James Peak Wilderness Area, were acquired by the U.S. Forest Service. The last 539 acres, including the ecologically important Mammoth Gulch riparian corridor, were acquired by Denver Water.

The Tolland Ranch conservation project ranked as the #1 priority in the country in 2013 for the U.S. Forest Service's Forest Legacy Program. This top ranking reflected the property's critical importance for wildlife management and movement, and for aquatic species, including the potential for reintroduction of native Greenback cutthroat trout.

The Conservation Fund enthusiastically supports efforts to meet conservation objectives and strive toward more resilient landscapes. We are pleased that the Toll family is willing to partner with Colorado Parks and Wildlife and the Fourmile Watershed Coalition to evaluate methods to protect and conserve the threatened Greenback Cutthroat Trout.

Sincerely,

Christine Quinlan
Senior Project Manager, CO Field Office

COLORADO STATE FOREST SERVICE
COLORADO STATE UNIVERSITY

BOULDER FIELD OFFICE
5625 Ute Highway
Longmont, Colorado 80503-9130

January 31, 2020

Mr. Chris Sturm
Colorado Water Conservation Board
1313 Sherman Street
Denver, CO 80203

Re: Letter of Support for the Fourmile Watershed Coalition's Colorado Water Plan Grant: Tolland Ranch Feasibility Study.

Dear Mr. Sturm,

The Colorado State Forest Service (CSFS) support's the Fourmile Watershed Coalition's grant application for funds to support a feasibility study for fisheries improvements at Tolland Ranch. The Tolland Ranch property provides a unique opportunity to raise Greenback Cutthroat Trout in existing off-channel ponds adjacent to South Boulder Creek.

The Colorado State Forest Service's mission is to achieve stewardship of Colorado's diverse forest environments for the benefit of present and future generations. We are focused on improving forest health and providing wildfire hazard mitigation strategies through technical assistance and outreach to private property owners, local cooperators and county agencies. One program that supports our mission is the Forest Legacy Program (FLP).

The FLP is a federally funded and state-administered program that supports efforts to protect *private* forest lands that are environmentally, economically and socially critical. The program helps prevent fragmentation of our forests and preserves natural vistas for all to enjoy. The FLP is a partnership between Colorado and the USDA Forest Service to identify and help conserve environmentally important forests from conversion to non-forest uses. Through this program and important partnerships with other agencies CSFS became the conservation easement holder for the Tolland Ranch property.

CSFS continues to work with the Toll family to reach conservation objectives and has completed a Forest Management Plan to guide this process. We are pleased to see other projects such as this also working to conserve and protect critical habitats and species in upper watersheds. CSFS highly encourages funding this project.

Sincerely,

Allen Owen
FP&I Supervisory Forester
Colorado State Forest Service

Tolland Ranch LLC
107 Lugar de Oro
Santa Fe, New Mexico 87501
January 29, 2020

Dear Grant Reviewer,

This letter expresses support for the Fourmile Watershed Coalition's grant application for funds to support a feasibility study for fisheries improvements at Tolland Ranch. My family has owned the Tolland Ranch property for four generations since 1893. We are deeply rooted in and protective of land because of our family history and because of the vast and beautiful characteristics of the land itself.

The town of Tolland has seen many changes since the late 1800s. Tolland supported the mining and lumber industries as well as becoming a popular railroad stop for tourists visiting the mountains and traveling through the Moffat Tunnel to the western slope. The landscape also changed dramatically when the South Boulder Creek channel was straightened to facilitate transport of water from the Fraser Valley to the Front Range.

The Toll family has long had a conservation ethic and has cared the land for generations. My grandfather's brother was a superintendent at Rocky Mountain National Park and understood the value of conserving wilderness; my great grandparents, grandparents, parents, and siblings have been and are committed to preserving the natural beauty of the property. Most recently our family has put 3,334 acres of the property into a conservation easement in order to protect the history and natural resources in perpetuity.

The Toll family is happy to work with Colorado Parks and Wildlife, the Fourmile Watershed Coalition and other partners to continue the stewardship of South Boulder Park and the Tolland Ranch. We look forward to the outcome of the feasibility study in order to better understand whether the ponds can support endangered fish species. We feel that helping to restore that species fits well with the conservation objectives of the conservation easement.

Sincerely,

Henry W. Toll III
Managing Member, Tolland Ranch LLC

DENVER WATER

1600 West 12th Ave
Denver, CO 80204-3412
303.628.6000
denverwater.org

February 11, 2020

Mr. Chris Sturm
Colorado Water Conservation Board
1313 Sherman Street
Denver, CO 80203

Re: Letter of Support for the Fourmile Watershed Coalition's Colorado Water Plan Grant Application: Tolland Ranch Feasibility Study.

Dear Mr. Sturm,

Denver Water supports the Fourmile Watershed Coalition's grant application to the Colorado Water Conservation Board for funds to develop a feasibility study for fisheries improvements at Tolland Ranch in Gilpin County. The Tolland Ranch property may provide an opportunity to raise Greenback Cutthroat Trout in existing off-channel ponds adjacent to South Boulder Creek. Trout raised at this location could be used to repopulate streams at specific locations in the South Platte River Basin.

Denver Water delivers water to over 25% of Colorado's population, while minimizing our environmental footprint. As a steward of scarce water resources, we have a long history of protecting endangered species through the Upper Colorado River Recovery Program and the Platte River Recovery Implementation Program. On the **South Platte River**, where about half of our water originates, we work with environmental groups, government agencies and recreational users to protect important values of the river by managing stream flow to enhance trout fisheries and recreation, improve water quality, and protect watersheds.

Denver Water looks forward to collaborating with the Fourmile Watershed Coalition and Colorado Parks and Wildlife to evaluate the water rights and supply feasibility of the proposed Tolland Ranch ponds, wetland and riparian area enhancements. Denver Water cannot guarantee the feasibility study will meet Denver Water's needs, we will work with the Coalition to review ideas and concepts and provide technical assistance as an in-kind contribution while assuring the proposal does not adversely affect Denver Water's water rights.

Sincerely,

Dave Bennett
Director Water Resource Strategy