OREGON WATER RESOURCES DEPARTMENT
WATER SUPPLY DEVELOPMENT ACCOUNT
LOAN AND GRANT APPLICATION

I. Project Information

Project Name: *Coe Branch Pipeline & On-farm Irrigation Efficiency Project*

Type of Project: *water conservation* ☐ Check box if project type includes storage

Funding Request Type: ☐ Loan ☒ Grant

Funding Amount Requested: $ 985,500 Total cost of project: $ $ 1,871,390

Note: Grant funding requests must demonstrate cost match of at least 25% of total project cost. This may include in-kind.

II. Applicant Information

Principal Contact: *Craig DeHart*				**Fiscal Officer:** *Cheryl Moore*			
Address:	*8235 Clear Creek road*			Address:	*same*		
	Parkdale oregon						
Phone:	*541 352 6468*	Fax:	*541 352 7794*	Phone:	*same*	Fax:	*same*
Email:	*craig@mfidp.com*			Email:	*mfid@mfidp.com*		

Involved Landowner 1: *United States Forest Service*				**Involved Landowner 2:** See attached			
Address:				Address:			
Phone:		Fax:		Phone:		Fax:	
Email:				Email:			

***Please include a supplementary document that lists all additional involved landowners if applicable.**

Certification:

I certify that this application is a true and accurate representation of the proposed project work and that I am authorized to sign as the Applicant or Co-Applicant. By the following signature, the Applicant certifies that they are aware of the requirements of an Oregon Water Resources Department funding award and are prepared to implement the project if awarded.

Applicant Signature: Craig DeHart Date: 14 Jan 2016

Print Name: Craig DeHart Title/Organization: General Manager MFID

III. Project Summary

Please provide a description of the need, purpose and nature of the project. Include what the applicant intends to complete and how the applicant intends to proceed.

The purpose of this project is to increase on-farm water conservation in the Middle Fork Irrigation District (MFID), which will allow more water to be left instream for the benefit of threatened populations of winter steelhead, spring Chinook, and bull trout. Increased on-farm water conservation will be accomplished in two ways. First, MFID proposes to construct a pipeline from their Coe Branch diversion to an existing settling pond, which will allow them to remove significant amounts of sediment from the water before it is delivered to irrigators (more details on this are described below). Second, MFID patrons will upgrade irrigation equipment on 200 acres, which will save approximately 1 cfs (130 acre-ft/year). Removing sediment from Coe Branch water, via the

existing settling pond, is key to enabling MFID irrigators to use more efficient irrigation equipment such as micro-sprinklers and drip lines.

Coe Branch is a glacier-fed tributary of the Middle Fork Hood River. The high sediment load in Coe Branch restricts MFID's ability to fully utilize this water source during irrigation season because the sediment plugs micro irrigation systems and requires extensive filtering and backflushing on-farm. When Coe Branch is too turbid to use, MFID must meet irrigation demand with stored water from Laurance Lake. This reservoir and its tributaries, Clear Branch and Pinnacle Creek, are critical habitat for a population of bull trout, listed as threatened under the Endangered Species Act. Both of these tributaries have very cold, clear water, making them particularly valuable salmonid spawning and rearing habitat. Clear Branch continues below the reservoir where it also provides habitat for threatened winter steelhead, spring Chinook, and bull trout. From a fisheries perspective, it is better for MFID to divert its legal water right from Coe Branch and reduce its diversion of stored water in Laurance Lake, thereby improving lake levels for bull trout and downstream flows for winter steelhead, spring Chinook, and bull trout.

Currently, water diverted from Coe Branch is piped directly to MFID patrons. The proposed Coe Branch pipeline will route the water from the Coe Branch diversion to an existing settling pond, where sand can settle out, before being delivered on-farm via an existing pipeline. This will facilitate on-farm water conservation in two ways. First, patrons that already have efficient irrigation systems and filters will need to backflush their filters less. (Backflushing wastes a significant amount of water). Second, patrons that don't have high efficiency irrigation systems yet will be more motivated to install them knowing their maintenance requirements will be less.

Key tasks for this project include: 1) Finalizing the pipeline design, 2) Working with Natural Resources Conservation Service (NRCS) and the U.S. Forest Service (USFS) to complete an Environmental Assessment, 3) Securing a removal-fill permit from the U.S. Army Corps of Engineers and the Oregon Department of State Lands, 4) Constructing the Pipeline, including issuing a Request for Proposals and selecting a contractor, and 5) Facilitating on-farm irrigation upgrades on 200 acres of commercial agriculture land.

NRCS recently awarded MFID $275,000 to conduct an Environmental Assessment on four major projects being proposed by MFID. One of these projects is the Coe Branch pipeline project. In spring 2016, MFID will hire a consultant to conduct the Environmental Assessment. Because the Coe Branch diversion and proposed pipeline is on USFS land, MFID will confer with and incorporate data from the Hood River Ranger District. At the end of the NEPA process, NRCS and USFS will issue their findings. Both agencies are familiar with the proposed Coe Branch pipeline project and do not anticipate any problems (see attached letters of support).

MFID does not foresee any challenges with the pipeline construction. The design documents are mostly complete and MFID has implemented many similar pipeline projects in the past.

Over the past 2 years, MFID has been providing a cash incentive to patrons with commercial agriculture land to upgrade their on-farm irrigation equipment. To date, they have helped eight patrons upgrade 120 acres. They currently have four patrons signed up who will be upgrading irrigation systems on 76 acres in 2016/17 (see attached documentation). MFID will provide matching funds for an additional 124 acres as part of this project proposal. Each landowner is responsible for 1) having an irrigation system design developed by one of the local irrigation companies, 2) having the design reviewed and approved by MFID, and 3) purchasing and installing new irrigation lines, valves, and sprinklers. MFID staff will monitor water use on each farm for 2 years after project completion.

IV. Project Specifics

Instructions: Answer all questions in this section by typing the answer below the question, using additional space as needed.

1. **Describe how the project will provide public benefits in each of the three public benefit categories.** Project applications will be scored and ranked based on the economic, environmental and social/cultural public benefits identified below. Describe the conditions prior to and after project implementation to demonstrate changes resulting from the project. Descriptions should be quantitative when possible. Information provided must be sufficient to allow evaluation of the public benefits of the project. **Please see the Public Benefit and Evaluation Guidance document for a description of how public benefits will be evaluated.** Applications that do not demonstrate public benefit in each of the three categories (economic, environmental, social/cultural) will be deemed incomplete. Leave blank any categories that are not applicable to project.

Economic Benefits ORS 541.673(2)

(a) Job creation or retention:
This project supports the long-term retention of approximately 500 agriculture-based jobs in the Middle Fork Irrigation District. (This estimate is based on 1 FTE/11 acres and does not include the jobs supported by packing, delivery, and sales of the harvested fruit.) By improving irrigation water quality for 5,720 acres of commercial agriculture land, orchardists will be able to conserve more water and manage their farms more efficiently. This will help them continue to support their families and hire workers to help with irrigation, pruning, and harvesting.

This project will also support local construction jobs, with an estimated 12 FTE being supported for 4 months during construction of the pipeline projects.

The economy of Hood River County is heavily dependent upon irrigated agriculture, with 1/3 of personal incomes in the County coming from the fruit industry (Radtke et al, 2000). In 2012, gross agricultural commodity sales in Hood River County were $112,094,000 (http://oain.oregonstate.edu/). This is a 100% increase since 1999, demonstrating the growth of jobs and economic impact of the tree fruit industry in the Hood River Valley. Vital to the continued growth in agricultural production and associated jobs is the ability to use water more conservatively, both now and in a future warmer, drier climate.

(b) Increases in economic activity:
This project will have a significant, long-term positive effect on economic acitivity for farmers within MFID by increasing the reliability and quality of irrigation water. In addition, purchase of materials for on-farm irrigation projects will benefit local irrigation equipment companies and the local construction industry will benefit from the pipeline project. This project will also boost long-term economic activity for the local and regional economy, which is heavily dependent on irrigated agriculture. Finally, improved instream flows will benefit sport and subsistence fishing, recreation, and tourism.

MFID serves 25% of the Hood River Valley's irrigated agricultural lands and thus contributed over $28 million in gross agricultural sales in 2012. The estimated value added as the fruit crop moves through the first handler level is two times the gross agricultural sales (Oregon State University Extension, 2007), which means that MFID's $28 million in gross sales adds another $56 million to the local economy. Improving on-farm water conservation therefore contributes to both job growth, as described above, and increased economic activity through processing and packing, transportation and handling, marketing, management, and local tax revenue. This effect reverberates through the state and regional economy, as the Hood River Valley produces roughly 25% of the nation's pears.

From a fisheries perspective, increases or even stabilization of salmon and steelhead runs brings economic growth through the sport fishing industry. The Confederated Tribes of the Warm Springs tribal members could also benefit from increased or improved salmon and steelhead runs as the Hood River is a traditional fishing ground and the CTWS has ceded fishing rights in the Hood River.

(c) Increases in efficiency or innovation:
This project will upgrade 200 acres of orchard still being irrigated with inefficient sprinkler systems. Converting these acres to high-efficiency micro-sprinklers will considerably reduce water use and save orchardists time and money on tasks associated with inefficient irrigation equipment and overwatering. Increases in efficiency include:

- *Eliminating excessive canopy development caused by overwatering, which necessitates more pruning costs,*
- *Reducing the likelihood of alfalfa greening in pears caused by overwatering, which leads to lower fruit grading and profit margin,*
- *Preventing fertilizer from being transported overland or below rooting zone,*
- *Eliminating labor costs associated with moving pipes (orchardist or employees can instead focus on tasks associated with careful irrigation water management)*

This project will also increase hydropower efficiency for MFID's hydropower project. The pipeline will be intertied so that during the 9 to 10 months out of the year that Coe Branch is clean, MFID can operate it in a hydraulically parallel manner with the exisiting infrastucture, thus reducing head loss to the hydro turbine and increasing renewable energy production by approximately 700,000kwh annually.

Finally, removing sediment particles from Coe Branch water using MFID's existing settling pond will significantly reduce the amount of filtration required on-farm. This translates into less backflushing of on-farm filters (i.e., reversing the water flow to clean the filter), which equates to more efficient use of water and energy. In addition, MFID can efficiently and effectively remove sediment from all of their diverted water in one location before delivery to patrons. Currently they rely on passive settling, but in the future this centralized location would allow them to install additional sediment removal technology in the most water and energy efficient manner.

(d) Enhancement of infrastructure, farmland, public resource lands, industrial lands, commercial lands or lands having other key uses:
This project improves the infrastructure of MFID's conveyance system, making it more efficient and resilient to changing environmental, economic, and social conditions. It will also increase the property value of farmland within MFID through on-farm irrigation system upgrades (i.e., 200 acres proposed) and by enabling MFID to provide water that is virtually free of damaging sediment in the water column, thus facilitating the deployment of more efficient irrigation application methods.

Laurance Lake is located on USFS land and benefits bull trout rearing habitat and recreation, in addition to providing irrigation water. This project will lead to less early irrigation season demand on stored water in Laurance Lake, thus increasing summertime lake levels for bull trout and recreation. The project will also free up reservoir water for summertime stream flow release below Clear branch dam, supporting spring Chinook, winter steelhead, and bull trout.

(e) Enhanced economic value associated with tourism or recreational or commercial fishing, with fisheries involving native fish of cultural significance to Indian tribes or with other economic values resulting from restoring or protecting water instream:
The Hood River Watershed is part of the ceded lands of the Confederated Tribes of the Warm Springs Reservation (CTWS). To improve subsistence fish harvest opportunities for tribal members, CTWS created the Hood River Production Program (HRPP). This program includes local, tribal hatchery production of winter steelhead and spring Chinook and implementing a suite of stream restoration projects to improve fish habitat and restore stream flows. The HRPP funding has resulted in the investment of millions of dollars into the Basin, which has helped pay for numerous water conservation and habitat restoration projects. These conservation projects are invariably constructed by local companies, which add significant value to the local economy. Ongoing water

conservation and increased summer stream flow is vital to the continued investment of CTWS funding and success of the HRPP.

Tourism is another significant component to Hood River County's economy. Statistics gathered by Dean Runyan and Associates for the Hood River Chamber of Commerce shows an economic impact of $87.4 million to the local economy of Hood River County in 2014 from tourism. Total direct employment related to tourism in Hood River County was calculated at 1,040 full time jobs. The vast majority of the tourism industry is focused on agriculture or recreation. When the local agricultural system is strengthened, so is the agricultural tourism economy. Recreational tourism in Hood River County has a strong focus on water sports. Laurance Lake is a popular boating, swimming, and fishing spot;additional stored water is a significant improvement for these recreational pursuits.

Finally, recreational fishing as well as CTWS harvest opportunities would be enhanced by increased instream flow. Increased flow generally leads to better production and survival numbers which in turn leads to overall improved return of adult fish to spawn.

(f) Increases in irrigated land for agriculture:
MFID is not seeking an increase in irrigated land. We are working diligently to protect the use of water on our existing land base. We have done this by eliminating water transmission losses, end spills, overflows and virtually all open conveyance systems in the District. The MFID delivery system is extremely efficient and supports long term resiliency and adaptibility by the agriculural producers we serve.

Environmental Benefits ORS 541.673(3)

(a) A measurable improvement in protected streamflows that accomplishes one or more of the following:
(A) Supports the natural hydrograph;
(B) Improves floodplain function;
(C) Supports state- or federally-listed sensitive, threatened or endangered fish species;
(D) Supports native fish species of cultural importance to Indian tribes; or
(E) Supports riparian habitat important for wildlife:
This project will ultimately result in approximately 1 cfs being left in Clear Branch and/or Laurance Lake Reservoir as a result of on-farm water conservation. It will be protected when MFID renews its Special Use Permit with the USFS in 2021 to continue its operation of Laurance Lake Reservoir on National Forest land. The Clear Branch drainage contains the best salmonid habitat in the Middle Fork Hood River sub-basin. The reservoir provides crucial rearing habitat for the only viable population of bull trout in the Hood River Basin. Higher lake levels, which will ultimately result from this project, will improve that rearing habitat. In addition, increased streamflow in Clear Branch below the reservoir will improve spring Chinook spawning and rearing habitat and winter steelhead rearing habitat. Spring Chinook and winter steelhead are culturally important to CTWS, which has a hatchery on the Middle Fork Hood River and has been working closely with MFID to improve streamflow and habitat conditions in the Middle Fork sub-basin.

Draft stream flow and temperature modeling completed for Clear Branch, Middle Fork tributaries, and Laurance Lake has recently been completed for MFID by Watershed Professionals Network (2015). Preliminary results indicate that MFID can maintain its water supply to agriculture and release more water below Clear branch dam in the summer months. The modeling assumed an increase in withdrawal from Coe Branch in the summer (not to exceed the existing water right), as we are proposing with this application. Preliminary model results showed no detrimental effect to Coe Branch and Middle Fork stream temperatures, and an improvement to stream temperatures, streamflow, and the natural hydrograph in Clear Branch.

(b) A measurable improvement in groundwater levels that enhances environmental conditions in groundwater restricted areas or other areas:
This project will protect groundwater levels by reducing the desire or need for agricultural producers to seek new wells or more heavily utilize existing wells. The vast majority of agricultural land in the Hood River Valley is irrigated with surface water. By improving irrigation water quality, through more efficient infrastructure and

technology, we anticipate that growers will not go to the time or expense of pumping groundwater. To evaluate current groundwater levels, OWRD and the Hood River Watershed Group have been monitoring 52 wells around the Valley, which will enable us to track groundwater levels over the long-run and better predict whether more groundwater use could be an option for sustainably augmenting irrigation and instream flows in the future.

(c) A measurable improvement in the quality of surface water or groundwater:
Preliminary reservoir and river temperature model results (Watershed Professionals Network, 2015) indicate this project will have significant benefits to water temperature in the reservoir and Clear Branch by reducing demand on stored water (i.e., more water will come from Coe Branch, due to the new pipeline to settling pond, instead of Laurance Lake Reservoir). Reduced demand on stored water will result in increased reservoir levels, which will allow release of water into Clear Branch later in the summer when water temperatures can exceed state standards for bull trout spawning. Other planned projects needed before these temperature benefits are fully realized include a surface water withdrawal system in the reservoir and new stream flow release infrastructure at Clear Branch Dam. Both of these projects are currently in the planning-level design stage and NEPA review will begin in Spring 2016.

(d) Water conservation:
The on-farm irrigation upgrade projects that will be implemented on 200 acres will result in at least a 30% reduction in water use to achieve the same irrigation benefits. This is based on the following: Orchards that use hand-lines with impact sprinklers use between 2.25 - 3.94 acre-feet/acre/year. Orchards that have upgraded to efficient rotator or microsprinklers use an average of 1.6 acre-feet/acre/year. Conservatively, the 200 acres of orchard land that will be upgraded, as part of this project, from impact sprinklers to micro-sprinklers will go from using 450 acre-feet/year to 320 acre-feet/year.

(e) Increased ecosystem resiliency to climate change impacts:
Increasing streamflow, through water conservation, is the best way to mitigate instream impacts from climate change. This conclusion is drawn from a recently completed Basin Study authored by the Bureau of Reclamation (2015). The study found that by the year 2050, average air temperatures in the Hood River Basin are expected to increase by 2.3° F. This will lead to more precipitation falling as rain instead of snow, resulting in less snowpack, higher winter streamflows, and lower summer streamflows (BOR, 2015). In addition, as glaciers recede, sediment in glacier-fed streams will increase. Silt-laden water is virtually impossible to use in micro and drip systems. By improving irrigation water quality and on-farm irrigation efficiency, this project will increase the future resilience of MFID, its patrons, and ultimately the local ecosystem.

(f) Improvements that address one or more limiting ecological factors in the project watershed:
This project will directly address a primary limiting ecological factor in the watershed. The Hood River Aquatic Habitat Restoration Strategy (Shively 2006), Hood River Sub-basin Plan for Fish and Wildlife (Coccoli 2004), and the Lower Columbia River Recovery Plan for Oregon Populations of Salmon and Steelhead (ODFW, 2010) have identified low streamflow as a primary limiting factor to the recovery of ESA-listed threatened salmon and steelhead. Irrigation withdrawals for agriculture were identified as the main contributing factor to summer low flows.

Social/Cultural Benefits ORS 541.673(4)

(a) The promotion of public health and safety and of local food systems:
Unreliable water ultimately equates to an unreliable national food system, and Hood River County's contribution to national food production accounts for 25% of the U.S. pear crop for fresh consumption. The agricultural community in Parkdale, the primary community served by MFID, will directly benefit from the completion of this project, but so too will the Hood River Valley economy, ecology, and culture at-large. This is evidenced by successful past pipeline and on-farm conservation projects completed by MFID and Farmers Irrigation District, which not only exceeded water conservation expectations but also decreased greenhouse gas emissions, enhanced drought resiliency, decreased instream water

temperatures, decreased sediment delivery to streams, enhanced on-farm and community economics, and preserved cultural aesthetics on a basin-wide scale. As the deleterious impacts on public health, as a function of global warming in general, become increasingly self-evident, the link between effective water conservation projects and public health, safety, and local food systems becomes clear. The Coe Branch Pipeline and On-farm Irrigation Project will thus provide an essential step in the right direction in this regard.

(b) A measurable improvement in conditions for members of minority or low-income communities, economically distressed rural communities, tribal communities or other communities traditionally underrepresented in public processes:
This project will provide exceptional benefits to both tribal and minority communities in the Hood River Valley. In addition, CTWS was integral to the development of this project through their participation in the Adapative Management Group, which created the Fisheries Management Plan. The project was also presented for approval to the Hood River Watershed Group (HRWG), which is Hood River's watershed council and open to all members of the community. Meetings and agendas are published in the Hood River News.

Tribal members harvest salmon and steelhead from the Hood River for subsistence and ceremonial purposes. Tribal fishing opportunity has become severely restricted because of low fish populations and the need to protect weak or threatened stocks. Instream flows have been identified as a primary limiting factor to the recovery of salmon and steelhead, and an increase to instream flow in Clear Branch offers meaningful stream enhancement potential. Furthermore, the success of this and similar flow restoration projects is pivotal to the success of CTWS' Hood River Production Program and ultimate increase in tribal fishing opportunity in the Hood River Watershed.

Hood River County has a substantial and growing Hispanic population making up approximately 30% of the entire population. Migrant workers (primarily from Mexico) began arrriving in the Hood River Valley in the early to mid 1970's to work in the harvest of tree fruit. Since that time, descendants of the original migrants, as well as others moving to the area for work, have become established and valued members of the community, taking leadership roles in agriculture, business and community organizations. Despite the achievements made by some in the Hispanic population, there still exists a problem with the living conditions and access to services for members of the Hispanic population at a disproportionate rate to the rest of the population.

Irrigated agriculture was historically (and still is) the primary draw that attracts migrant labor. Irrigated agriculture has provided opportunities for economic growth for many who have chosen to make the Hood River Valley their permanent home. Some families have chosen to open businesses, some have purchased or leased their own acreage, and many have moved into leadership or management roles with associated businesses. Labor shortages in recent years have led to increased pay and improvement in housing and working conditions in the agricultural sector and this trend is expected to continue. Water supply security and efficiency of application both directly affect the long term viability of irrigated agriculture. The Hispanic community is just beginning to reach a place where social and economic parity is possible across the entire community. Irrigated agriculture will continue to be the primary conduit for economic and social growth within the Hispanic community and therefore improving the long term security and viability of irrigated agriculture in Hood River County will lead to improvement in conditions for members of a minority population that has historically had disproportionate representation in the low-income end of the economic spectrum.

(c) The promotion of recreation and scenic values:
The Hood River Valley is known for its scenic beauty as well as the vast array of recreational opportunities. Along with the pure geographic beauty of the Hood River Valley, irrigated agriculture provides a stunning landscape throughout the seasons. In the spring, the entire valley is carpeted in white and pink pear, apple, and cherry blossoms, which attracts people from around the world. Tree fruit are a core part of the scenic beauty and culture of Hood River County.

Many opportunities exist for recreation in Hood River County. Many of the most popular forms of recreation revolve around water. Adequate stream flows are necessary for rafting, swimming, and kayaking and also to support populations of fish that are essential to the sport fishing industry. In a 2015 survey conducted by the Hood River Valley Residents Committee, 562 individuals responded to questions regarding their relationship to the Hood River and recreational opportunities. The survey respondents were from both the local area and from outside the local area and covered the full spectrum of age and economic demographics. All respondents stated an affinity for the natural beauty of the river and the vast majority cited the importance of access for water focused recreation such as swimming, kayaking, and fishing.

Higher summer reservoir levels, made possible by the Coe Branch Pipeline, will directly enhance recreational opportunities on Laurance Lake, which is a popular local destination for camping, swimming, and fishing. Many of the other recreational opportunities in Hood River County also revolve around water. Adequate stream flows are necessary for rafting, swimming, and kayaking and also to support populations of fish that are essential to the sport fishing industry.

(d) Contribution to the body of scientific data publicly available in this state:
MFID will collect data on the effectiveness of their pipeline and on-farm irrigation upgrade projects, the results of which will be publicly available. The effectiveness of the pipeline project will be assessed by decreased backflushing of a large on-farm filter operated by Adam McCarthy (see attached letter of support from McCarthy). The effectiveness of the on-farm irrigation upgrade projects will be assessed with 2 years of post-project flow meter (i.e., flow rate and volume of on-farm water use) monitoring at each farm. Pre-project on-farm water use data will be collected if possible.
MFID, ODFW, CTWS, and the Hood River Watershed Group (HRWG) have a long history of collecting stream flow and temperature data in the Middle Fork Watershed. These partners will continue flow and temperature monitoring to evaluate long-term project effectiveness, which will be publicly available upon request. Furthermore, the HRWG will continue to track progress of all its basin partners as part of its Watershed Action Plan, which is updated every 5 years and available on the HRWG's website (www.hoodriverswcd.org/hrwg).

(e) The promotion of state or local priorities, including but not limited to the restoration and protection of native fish species of cultural significance to Indian tribes:
This project strongly promotes both state and local priorities by directly addressing ecological and economic limiting factors and implementing recommended actions in both regional recovery plans and local management plans.

The Hood River is an essential basin within Oregon for recovery of the Lower Columbia Salmon and Steelhead ESU. This is due to the unique genetics and life history diversity of its populations (e.g., the basin contains the only population of summer steelhead in the Lower Columbia ESU). With the exception of winter steelhead, the current extinction risks of salmon and steelhead populations within the Hood are very high (Lower Columbia Recovery Plan for Oregon Populations of Salman and Steelhead, ODFW 2010). A primary limiting factor to recovery is low streamflow in the summer. The primary threats to streamflow are withdrawals for agriculture and off-channel hydropower production, as well as predicted reduction in summer streamflow from climate change. Tribal, state, and federal fisheries agencies estimate that recovery of Hood River winter steelhead and spring Chinook populations is likely with appropriate restoration and conservation actions. Chief among these is restoration of summer instream flows.

Clear Branch contains the best salmonid habitat in the Middle Fork Hood River sub-basin, and the reach of Clear Branch above the reservoir hosts the only viable population of bull trout in the Hood River Basin. This project will result in approximately 1 cfs being left in Clear Branch and/or in Laurance Lake Reservoir. In Clear Branch, this will increase spring Chinook spawning and rearing habitat and winter steelhead rearing habitat. In Laurance Lake, it will improve rearing habitat for bull trout. Spring Chinook and winter steelhead are culturally important to the Confederated Tribes of the Warm Springs. CTWS has a hatchery on the Middle Fork Hood River and has been working closely with MFID to improve streamflow and habitat conditions in the Middle Fork sub-basin.

(f) The promotion of collaborative basin planning efforts, including but not limited to efforts under Oregon's Integrated Water Resources Strategy:

The MFID Fisheries Management Plan (FMP) was developed in cooperation with CTWS, USFS, U.S. Fish and Wildlife Service, National Marine Fisheries Service, Oregon Department of Fish and Wildlife, and the Oregon Department of Environmental Quality. The Plan describes and recommends several critical improvements to MFID's infrastucture and operations in order to improve summer time stream flows, water quality, and habitat conditions above and below Clear Branch Dam. The Coe Branch Pipeline is the first project in the FMP that will be implemented to accomplish the stream flow and water quality objectives.

In 2015, the Hood River Water Conservation Strategy (HRWCS) was developed by Hood River Watershed Group partners to identify, quantify, and prioritize the best opportunities for water conservation and instream flow enhancement in the watershed. Similar to OWRD's Place-Based Planning Initiative, the HRWCS arose from the locally driven Hood River Basin Study (Watershed Professionals Network, 2013 a & b, Bureau of Reclamation, 2015), which included an assessment of current local water use and instream conditions, potential for water conservation, and likely impacts to water resources from climate change. (The Basin Study was partially funded by an OWRD Feasibility Study grant.) Developing the HRWCS included partner and community discussions of how best to meet future out-of-stream and instream needs. The two most important project types identified in the HRWCS were on-farm irrigation efficiency projects and conveyance system improvements, both for their significant overall impact and cost effectiveness. The HRWCS also notes that "…fish populations, the local economy, and social equity are inextricably linked in the Hood River Basin. From an ecological standpoint, if instream flows are insufficient, Hood River salmon and steelhead will not recover to self-sustaining levels. From an economic standpoint, a certain amount of water is required to sustain existing agricultural and energy production. Furthermore, from a cultural and societal perspective, healthy fish runs benefit the local economy through sport fishing revenues, tourism, health benefits associated with a healthy ecology and aesthetics, and the avoidance of costly conflicts over water allocations. Identifying and building local support for effective solutions that keep both fish and people on a positive, synergistic trajectory is the essential goal of the HRWCS."

The proposed project is perfectly aligned with Oregon's Integrated Water Resources Strategy (IWRS), which promotes the protection and long-term sustainability of instream and out of stream water use. Like the HRWCS, the IWRS calls out the effects of a warming climate, which will necessitate even greater attention to water conservation and related innovations to maintain and possibly improve water supply and instream conditions in the future. The Coe Branch Pipeline and On-farm Irrigation Efficiency Project addresses several of the recommended actions under Objective 4 of the IWRS, including "improve water use efficiency and water conservation," "reach environmental outcomes with non-regulatory alternatives," "improve watershed health, resiliency, and capacity for natural storage," and "protect and restore instream habitat and habitat access for fish and wildlife."

2. Identify Project Location.

(a) Attach map of project implementation area if appropriate. List map(s) in this space and attach to application.
Attached with project design drawings

(b)

Township	Range	Section	Quarter-Quarter Section
1S	*9E*	*22*	*SESE*
1S	*9E*	*23*	*SWSW, SESW, SESE*
1S	*10E*	*24*	*SWSW*

(c) Tax Lot Number(s)
Mt Hood National Forest managed land

(d) Latitude/Longitude
Begin project 45 27 39 / 121 38 58

End Project 45 27 50 / 121 37 33

(e) County
Hood River

(f) Watershed
Middle Fork of the Hood Rvier

(g) River/Stream Mile (where applicable)
n/a

3. *(a)* Will the project result in a physical change on private land? ☒ Yes ☐ No

If yes, attach evidence that landowners are aware of and agree to the proposal. List attachments below.
See attached documentation of landowners signed up with MFID

***(b)* Will the project result in monitoring on private land? ☒ Yes ☐ No**

If yes, attach evidence that landowners agree to the proposal and are aware that monitoring information is public record. List attachments below.
See letter of support from Adam McCarthy; landowners doing irrigation system upgrade projects have also agreed to allowing MFID to monitor their post-project water use.

4. Provide a project schedule, including beginning and completion dates. Use the following table as a guide. Attach a separate sheet to application if needed.

Estimated Project Duration: July 15, 2016 to May 30, 2019

Place an "X" in the appropriate column to indicate when each Key Task of the project will take place.

	20*16*				**20*17***				**20*18***
Project Key Tasks	**1st Qtr**	**2nd Qtr**	**3rd Qtr**	**4th Qtr**	**1st Qtr**	**2nd Qtr**	**3rd Qtr**	**4th Qtr**	**& Beyond**
Final Pipeline Design			X						
NEPA (Environmental Assessment) & FERC Approval		X	X	X	X				
State & Federal Permitting			X	X					
Construction-includes RFP & contractor selection					X	X	X	X	
On-farm Irrigation Projects		X		X	X		X	X	X
Monitoring		X	X		X	X		X	X

5. Describe any conditions that may affect the completion of the project.

This is a straight-forward pipeline project; there are no conditions that are antcipated to cause delays.

6. Attach a completed feasibility analysis if one has been completed.

A feasibility study was not necessary and the design for this project is nearly complete. An Environmental Assessment is being conducted by the USFS and consultants to evaluate potential project impacts. USFS does not anticipate any difficulties with this project (see attached letter of support.)

7. Provide suggestions for interim and long-term project performance benchmarks.

Proposed pipeline performance benchmark: MFID proposes to monitor an existing large filter on a 40-acre orchard block. During the summer of 2016 and 2017 we will monitor the volume of water that is back-flushed by this filter, which is an indication of the amount of fine sediment in the water. In 2018 and 2019 we will continue to monitor volume of water backflushed. We predict backflushing will decrease after the project.

8. Provide letters of support for the proposed project (list in this space and attach to application).

Hood River County, Oregon Department of Fish & Wildlife, US Forest Service, Department of Environmental Quality, Confederated Tribes of the Warm Springs, Natural Resources Conservation Service, US Fish & Wildlife Service

9. Describe partnerships and collaborative efforts associated with the project.

Middle Fork Irrigation District collaborated with the U.S. Forest Service, U.S. Fish and Wildlife Service, National Marine Fisheries Service, Oregon Department of Fish and Wildlife , Oregon Department of Enviromental Quality, and the Confederated Tribes of the Warm Springs to develop the MFID Fisheries Management Plan (FMP). This plan identifies management strategies and infrastructure improvements to address concerns about MFID's operational impacts on aquatic habitat. The Coe Branch Pipeline project is described in the FMP and has broad support among partners as one of the first projects to be implemented from the plan.

10. Consultations/communications with affected Indian tribes and with the Legislative Commission on Indian Services regarding the project.

Has the Legislative Commission on Indian Services been contacted to identify tribes affected by the project?

☒ **Yes** ☐ **No**

Please provide correspondence as an attachment to this application.

see attached email correspondence

Has there been consultation/communications with affected Indian tribes?

☒ **Yes** ☐ **No**

Please provide a description of consultation/communication that occurred and attach documents to this application if applicable.

The Confederated Tribes of the Warm Springs (CTWS) support this project and participated in the development of the FMP which helped to develop this project. Please see attached letter of support from CTWS.

11. Provide a description of:

(a) **Required local, state and/or federal permits and/or authorizations for project implementation that have been secured to date. Please attach secured permits/authorizations to the application.**

No permits have been secured to date.

(b) **Required local, state and/or federal permits and/or authorizations that will be secured in the future to implement the project. Describe efforts to date in securing these permits and/or authorizations.**

The Natural Resources Conservation Service will be the lead federal agency in overseeing an Environmental Assessment for the project (i.e., NEPA). U.S. Forest Service will provide data to the consultants that MFID hires to complete the EA. NRCS and USFS will publish decisions once they have reviewed the EA. Once the final design is complete, MFID will submit a joint application to Oregon Department of State Lands and U.S. Army Corps of Engineers for removal-fill activities in wetlands and the pipeline's crossing of Coe Branch.

12. Provide any additional supplemental materials to demonstrate ability to implement the project. Examples include project plans and specifications, engineering details and water availability analysis. List documents in this space and attach to application.

Please see attached plan. A water availability analysis is not required.

V. Storage Project Requirements (if not a storage project continue to Section VI)

For any storage project please contact Water Resources Grant Administrator, Jon Unger, at (503) 986-0869 prior to completing the application.

13. Storage Project Type: ☐ **Above Ground** ☐ **Below Ground**

14. If above-ground storage, would the proposed storage project be located in-channel?

☐ **Yes** ☐ **No** ☐ **N/A**

15. Identify the capacity in acre-feet of the proposed storage project.

16. Has a water right application been filed for the proposed storage project?

☐ Application not yet made.

☐ Water right application made; permit not yet issued Application #

☐ Permit issued. Application # Permit #

For Questions 17 & 18 answer the following:

(a) Does the proposed storage project impound surface water on a perennial stream?

☐ **Yes** ☐ **No** ☐ **Uncertain**

(b) Does the proposed storage project divert water from a stream that supports state- or federally-listed sensitive, threatened or endangered fish species?

☐ **Yes** ☐ **No** ☐ **Uncertain**

(c) Does the proposed storage project divert more than 500 acre-feet of water annually?

☐ **Yes** ☐ **No**

17. Water Dedicated Instream ☐ N/A

For above ground storage projects seeking <u>grant funding</u>: If you answered "yes" to any of the questions posed in a-c above a minimum volume of water equal to at least 25% of the stored water must be dedicated to instream use.

Identify percentage of stored water to be dedicated to instream use.

%

Note: Any storage project dedicating 25% of stored water to instream use will automatically receive a median score in the environmental public benefit category with the opportunity to demonstrate additional environmental benefit to increase the score.

18. **Seasonally Varying Flow Prescription**

For all storage projects: If you answered "yes" to any of the questions posed in a-c above the project will need a **Seasonally Varying Flow (SVF) Prescription**, determining the duration, timing, frequency and volume of flows (including ecological baseflow), necessary for protection and maintenance of biological, ecological, and physical functions outside of the official irrigation season. The initial step in defining the SVF for the project is to schedule an SVF meeting with OWRD. For assistance and more information please contact Water Resources Grant Administrator Jon Unger at (503) 986-0869.

Identify whether the storage project will need a Seasonally Varying Flow Prescription.

☐ **Yes** ☐ **No** ☐ **Uncertain**

VI. Environmental Public Benefit for Conservation Projects Dedicating Water Instream (if not a conservation project continue to Section VII)

19. Identify percentage of conserved water to be dedicated to instream use. ☐ N/A

***0* %**

Note: Any project that conserves water and dedicates at least 25% of the conserved water quantity to instream use will automatically receive a median score in the environmental public benefit category with the opportunity to demonstrate additional environmental benefit to increase the score. Water dedicated to instream use must be permanently placed instream and protected by the Oregon Water Resources Department.

VII. Financial Information

For Loan Applicants – Since loan applications do not require cost match, loan applicants who do not offer a cost match need not complete Section A and can disregard the match funding columns in Sections B and C. Budget and costs of key tasks must be identified in sections B & C. Loan applicants will be required to provide additional financial information related to their ability to repay the loan. This request for information will take place after the scoring and ranking process for those projects that are recommended for funding.

For Grant Applicants – Complete Sections A, B and C.

Section A – Cost Match Information

Applicants must demonstrate a minimum 25% funding match based on the total project cost. The match may include: a) applicant funds or secured funding commitment from other sources; b) pending funding commitment from other sources; and/or c) the value of in-kind labor, equipment rental, and materials essential to the project. For secured funding, the applicant must attach a funding award letter from the match funding source that specifically mentions the dollar amount shown in the "Amount/Dollar Value" column. For pending resources, documentation showing a request for the matching funds must accompany the application. Funds expended prior to grant agreement are not reimbursable nor do they qualify for cost match without prior authorization by the Department.

In the Type column below matching funds may include:	**In the Status column below matching funds may have the following status:**
• **Cash** - Cash is direct expenditures made in support of the feasibility study by the applicant or partner*.	• **Secured** - Funding commitments already secured from other sources.
• **In-Kind** - The value of in-kind labor, equipment rental and materials essential to the feasibility study provided by the applicant or partner.	• **Pending** - Pending commitments of funding from other sources. In such instances, Department funding will not be released prior to securing a commitment of the funds from other sources. Pending commitments of the funding must be secured within 12 months from the date of the award.

* "Partner" means a non-governmental or governmental person or entity that has committed funding, expertise, materials, labor, or other assistance to a proposed project planning study. OAR 690-600-0010.

Match Funding Source (if in-kind, briefly describe the nature of the contribution)	**Type** (✓ One)	**Status** (✓ One)	**Amount/ Dollar Value**	**Date Match Funds Available** *(Month/Year)*
Middle Fork Irrigation District-construction ($460K), final design($10k), permitting ($30K), NEPA ($67,500), on-farm irrigation ($60K)	☒ cash ☐ in-kind	☒ secured ☐ pending	*$627,500*	*May 16*
Middle Fork Irrigation District (project management- $52/hr & monitoring $31/hr)	☐ cash ☒ in-kind	☒ secured ☐ pending	*$20,890*	*April 16*
Natural Resources Conservation Service-cost share for NEPA on Coe Branch pipeline	☒ cash ☐ in-kind	☒ secured ☐ pending	*$67,500*	*April 16*
Private landowners-onfarm irrigation upgrade projects for 76 acres (materials & installation)	☒ cash ☒ in-kind	☒ secured ☐ pending	*$64,600*	*June 16*
Private landowners-onfarm irrigation upgrade projects for 124 acres (materials & installation)	☒ cash ☒ in-kind	☐ secured ☒ pending	*$105,400*	*December 16*
	☐ cash ☐ in-kind	☐ secured ☐ pending		
	☐ cash ☐ in-kind	☐ secured ☐ pending		
	☐ cash ☐ in-kind	☐ secured ☐ pending		
	☐ cash ☐ in-kind	☐ secured ☐ pending		
	☐ cash ☐ in-kind	☐ secured ☐ pending		

Section B – Project Budget

Please provide a line item budget for the project; see example below. If significant additional detail is needed please complete separately and attach to completed application.

Line Items	**Number of Units*** *(e.g. # of Hours)*	**Unit Cost** *(e.g. hourly rate)*	**In-Kind Match**	**Cash Match Funds**	**OWRD Funds**	**Total Cost**
Materials	*see attached*			*$230,000*	*$374,400*	*$604,400*
Contractual/Services	*see attached*			*$230,000*	*$521,100*	*$751,100*
Staff Salary/Benefits	*496 hrs*	*$52.00*	*$20,890*			*$20,890*
Equipment (must be approved)						
Supplies						
Other:Final design	*67 hrs*	*$150.00*		*$10,000*		*$10,000*
NEPA ($135k) & other permitting ($30K) (County, DSL, Corps)-	*1650 hrs*	*$100.00*		*$165,000*		*$165,000*
Onfarm irrigation upgrades (see attached)	*200 acres*	*$1,600.00*	*$110,000*	*$120,000*	*$90,000*	*$320,000*
		Total for Section B	*$130,890*	*$755,000*	*$985,500*	*$1,871,390*
		Percentage for Section B	***7%***	***40***	***53%***	***100%***

** Note: "Unit" should be per "hour" or "day" not per "project" or "contract."* <u>*Number of Units x Unit Costs = Total Cost*</u>

Section C – Key Task Cost

Complete Section C below. Key Tasks identified in Section C should be the same as the Key Tasks in Section IV(4) above.

Project Key Tasks	**In-Kind Match**	**Cash Match Funds**	**OWRD Funds**	**Total Cost**
Final Pipeline Design		*$10,000*		*$10,000*
NEPA (Environmental Assessment)		*$135,000*		*$135,000*
State & Federal Permitting		*$30,000*		*$30,000*
Construction (in-kind: staff time for RFP, contractor selection, construction inspections)	*$13,356*	*$460,000*	*$895,500*	*$1,368,856*
On-farm Irrigation Upgrade Projects	*$110,000*	*$120,000*	*$90,000*	*$320,000*
Monitoring-on-farm irrigation & blackflush volumes	*$7,534*			*$7,534*
Total for Section C	*$130,890*	*$755,000*	*$985,500*	*$1,871,390*