
General Information

Project Title	IMPROVING SHADE AND TEMPERATURE DEFICITS - MIDDLE EAST FORK LEWIS RIVER
Project Short Description	<p>The middle East Fork of the Lewis River and its tributaries have average and 7-DADMax values for temperature that greatly exceed state water quality standards due to high shade deficits. We will Improve the shade deficit and thereby reduce temperature along this section of the East Fork by creating a 10 acre, 100 foot wide riparian forest corridor on 2,400 feet of Manley Creek, an important tributary to the East Fork.</p>
Project Long Description	<p>Our proposal targets temperature impairments (caused by a shade deficit) in Manley Creek, a perennial stream that empties into the East Fork of the Lewis River between RM 9.0 and 10.0. Temperature data in the 2018 East Fork Lewis River Watershed Bacteria and Temperature Source Assessment Report (Report) shows a 7-DADMax value of 23.0 at RM 10.1. Manley Creek shows a value of 22 where it empties into the East Fork just below this point. The Washington state standard is 16.0 degrees.</p> <p>Washington state standards related to salmonids show migration can be impaired at stream temperatures above 18-20 degrees; adult mortality can occur starting at 16 degrees; spawning success can be impaired by temperatures above 14-16 degrees and egg survival requires temperature below 13-15 degrees. The EF Lewis has critical fall Chinook and chum spawning habitat from about RM 10.0 to the mouth. Coho, sea-run cutthroat and summer and winter steelhead are present at various times of the year in this stretch of river. Winter steelhead, coho and possibly chum are present in Manley creek. The Lower Columbia Salmon Recovery and Fish and Wildlife Subbasin Plan for the East Fork Lewis River indicates temperature is a factor that can have severe impacts on egg incubation and active rearing life history stages for these species in this creek.</p> <p>The Report's shade analysis for the EF Lewis River shows shade deficits (the difference between system potential shade and current effective shade) are greater than 50% in the middle watershed around RM 9.0-13.0. Daily effective shade - July 1, at RM 10.1 is calculated in the Report at only 19%. Our project site parallels the East Fork of the Lewis River at RM 10. The site is owned by Clark County and is part of the undeveloped area of Daybreak Park. Reforestation at the site is consistent with the Daybreak Park Master Plan which recognizes that in the pre-settlement condition the site would have been mostly forested providing cooling shade and integral ecological value to the East Fork.</p> <p>It is well established in the scientific literature that loss of riparian vegetation results in larger daily temperature variations and elevated monthly and annual temperatures. We will reduce the shade deficit on Manley creek and improve temperatures by establishing at least a 100-foot forest buffer along 2,400 feet of creek; 1,700 feet will be on both sides of the creek. The additional 700 feet on the north side of</p>

General Information

the creek is contiguous with the 1,700 feet and opposite a healthy forested hillside on the south side of the creek. Ten acres will be restored.

A multi-year approach of site preparation and planting followed by plant survival monitoring, site maintenance and replanting will be used to ensure that a healthy forest corridor results. Planting densities will be 435 stems/acre for trees and 2,700 stems/acre for shrubs in three planting zones along the creek. Species like Pacific willow, Pacific ninebark and Douglas spirea will be planted in the wetter zone. The upslope areas will be planted to a mixture of fast growing, early successional native trees like Red alder, Big-leaf maple, Oregon ash and Western dogwood. The highest bench top zone above the creek will be planted to Douglas Fir, Western red cedar and Western Hemlock. These plantings will approximate the original mixed coniferous/deciduous riparian forest that occurred at the site.

The second component of the project will target all 34 private property owners on Manley Creek. We will identify as many property owners as possible who are interested in restoring their creek side area to further improve temperature deficits along the creek.

Total Cost	\$216,455.20	Total Eligible Cost \$216,455.20
Effective Date	7/1/2020	Expiration Date 7/1/2023
Project Category	<ul style="list-style-type: none"> ✓ Nonpoint Source Pollution On-Site Sewage Systems Stormwater Activity0 Stormwater Facility Wastewater 	
Will Environmental Monitoring Data be collected?	No	
Ecology Program	Water Quality	
Overall Goal	<p>The first goal of the project is to improve temperature deficits in the middle East Fork Lewis River. We will do this by improving the shade deficit and thereby reducing temperature on a long stretch of Manley Creek, an important tributary to the middle EF Lewis River. The shade deficit will be improved by</p>	

General Information

restoring 10 acres in a 100 foot forested buffer along 2,400 feet of Manley Creek.

A second goal is to identify private property owners along the creek with degraded riparian areas that will work with us in future grants to improve the shade deficits on their property.

WATER QUALITY COMBINED FINANCIAL ASSISTANCE

Organization: The Watershed Alliance

WQC-2021-Waters-00002

Project Characterization

Project Themes

Select a primary and secondary theme that best describes the work to be achieved during this project.

Primary Theme:	Nonpoint Source Pollution
Secondary Theme(s):	Riparian/Wetland Restoration
	Monitoring and/or Maintenance

Project Website

If your project has a website, please enter the web address below. After entering a website and saving, another blank row will appear. Up to three websites may be provided.

Website Title/Name	Web Address
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Recipient Contacts

Project Manager

Tom Dwyer

Contact Information

Tom Dwyer
Program Coordinator
500 W 8th Street
Vancouver, Washington 98666
(360) 852-9189

tom@thewatershedalliance.org

Authorized Signatory

sunrise omahoney

Contact Information

sunrise omahoney
Executive Director
500 W. 8th St Ste 50
Vancouver, Washington 98660
(360) 852-9189

sunrise@thewatershedalliance.org

Billing Contact

sunrise omahoney

Contact Information

sunrise omahoney
Executive Director
500 W. 8th St Ste 50
Vancouver, Washington 98660

Recipient Contacts

(360) 852-9189

sunrise@thewatershedalliance.org

Other recipient signatures on printed agreement

Name

Title

Funding Request- Nonpoint Project

Total Eligible Cost: \$216,455

Grant Request: \$162,341

Match Required: \$54,114

IMPORTANT NOTICE. Grants for nonpoint projects require a 25% match. Projects with cash-only match are eligible for up to \$500,000 in grant. Projects with a mix of funds for match are eligible for up to \$250,000 in grant. Cash match includes any eligible project costs paid for directly by the recipient that are not reimbursed by the Ecology grant or another third party. Donations that become the long-term property of the recipient are considered cash match. Loan money provided through the CWSRF is also considered cash match. In-kind contributions are considered non-cash match. More information on match requirements can be found in the Water Quality Combined Financial Assistance Guidelines which are available for download on the Application Menu.

Will your match be cash-only? Yes No

Are you requesting or will you accept loan funds for part or all of the eligible project costs or to meet your match requirement? Yes No

Do you want your project to be considered for GPR subsidy under the CWSRF program? Yes No

NOTE: Projects are only eligible if they meet EPA's GPR criteria, and applicants accept a CWSRF loan.

Do you have any secured funds committed to this project? Yes No

If Yes, complete the Secured Funds Table, and include any secured matching funds if known.

Source	Type	Amount Committed
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State/Federal agency:
 State/Federal agency:
 State/Federal agency:
 Interlocal contributions:

WATER QUALITY COMBINED FINANCIAL ASSISTANCE

Organization: The Watershed Alliance

WQC-2021-Waters-00002

Funding Request- Nonpoint Project

Interlocal contributions:

Interlocal contributions:

Local agency:

Local agency: Clark Conservation District	Cash	\$41,255.00
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Local agency:

In-kind contributions:Friends of the East Fork	In-kind	\$700.00
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In-kind contributions:Clark Skamania Fly Fishers	In-kind	\$7,455.00
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In-kind contributions:Clark County	In-kind	\$5,094.00
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Other

Other

Other

Scope of Work - Task 1 Project Admin: 1

Task Number 1

Task Title Project Administration/Management

Task Cost \$21,681.73

IMPORTANT NOTICE. The cost of this task should not exceed 15% of the Total Eligible Costs you entered on the General Information form.

Task Description

A. The RECIPIENT shall carry out all work necessary to meet ECOLOGY grant or loan administration requirements. Responsibilities include, but are not limited to: Maintenance of project records; submittal of requests for reimbursement and corresponding backup documentation; progress reports; the EAGL (Ecology Administration of Grants and Loans) recipient closeout report; and a two-page outcome summary report (including photos, if applicable). In the event that the RECIPIENT elects to use a contractor to complete project elements, the RECIPIENT shall retain responsibility for the oversight and management of this funding agreement.

B. The RECIPIENT shall keep documentation that demonstrates the project is in compliance with applicable procurement, contracting, and interlocal agreement requirements; permitting requirements, including application for, receipt of, and compliance with all required permits, licenses, easements, or property rights necessary for the project; and submittal of required performance items. This documentation shall be available upon request.

C. The RECIPIENT shall maintain effective communication with ECOLOGY and maintain up-to-date staff contact information in the EAGL system. The RECIPIENT shall carry out this project in accordance with any completion dates outlined in this agreement.

Task Goal Statement Properly managed and fully documented project that meets ECOLOGY’s grant or loan administrative requirements.

Task Expected Outcomes

- * Timely and complete submittal of requests for reimbursement, quarterly progress reports, Recipient Closeout Report, and two-page outcome summary report.
- * Properly maintained project documentation.

WATER QUALITY COMBINED FINANCIAL ASSISTANCE

Organization: The Watershed Alliance

WQC-2021-Waters-00002

Scope of Work - Task 1 Project Admin: 1

Recipient Task Coordinator Sunrise O'Mahoney

Deliverable #	Description	Due Date	Received? (ECY Use Only)	EIM Study ID	Latitude (expressed in decimals)	Longitude (expressed in decimals)	Location Address
1.1	Progress Reports that include descriptions of work accomplished, project challenges or changes in the project schedule. Submitted at least quarterly.						
1.2	Recipient Closeout Report (EAGL Form)						
1.3	Two-page Outcome Summary Report						

Scope of Work - FOR APPLICATION

How many tasks do you want to appear?

Task #: 2

Task Title: Planning/Design/Permits

Task Cost: \$13,606.00

Expected Start Date: 7/1/2020

Expected Finish Date: 9/30/2020

Describe the work that will be billed to this task. (char 3,500)

The Recipient will comply with Ecology's cultural resources review requirement:

- Submit to ECOLOGY the 05-05/106 Form
 - develop and submit to ECOLOGY an Inadvertent Discovery Plan (IDP), using the ECOLOGY template. The RECIPIENT will ensure that all contractors and subcontractors have a copy of the completed IDP prior to and while working on site .
 - perform a cultural resources review survey if required and submit to Ecology
- The Recipient will prepare and submit to Ecology a Riparian Planting Plan, BMP approval form and vegetation maintenance plan .

Deliverables

To Add a Row

Enter a deliverable
 When done, click the **SAVE** button
 After SAVE a new row will appear
 Repeat these steps for each deliverable

To Delete a Row

In the row you want to delete, remove the information in all of the textboxes
 When done, click the **SAVE** button
 After SAVE the row will be deleted

Deliverables Table (Deliverables are documents that can be uploaded into EAGL to show that work was completed; deliverables should align with the detailed budget provided on the Task Costs and Budget Form and the project schedule uploaded on the

Scope of Work - FOR APPLICATION

Project Planning and Schedule Form.)

Deliverables Description	Deliverable Date	Deliverable Budget
05-05/106 form and IDP	9/1/2020	\$968.45
Cultural Resources Review Survey	9/30/2020	\$9,052.57
Riparian Planting Plan/BMP Approval	9/1/2020	\$3,584.90
Form/vegetation maintenance plan		
		Total Deliverable Budget: \$13,606
		Total Task Costs:

Task #: 3

Task Title: Site Restoration

Task Cost: \$95,678.87

Expected Start Date: 10/1/2020

Expected Finish Date: 3/31/2021

Describe the work that will be billed to this task. (char 3,500)

The entire 2,400 feet of Manley Creek in the project site will be restored to at least the Ecology minimum standard for riparian buffers on this stream type, i.e. 100 feet. Our restoration approach is consistent with the WDFW's Stream Habitat Restoration Guidelines. A total of 10 acres will be restored.

Site Conditions and Restoration Approach: There is a small area of stream canopy cover consisting of Pacific willow on the eastern edge of the project area; upslope from the willow fringe there is no effective woody canopy cover on either side. Woody canopy cover is absent in the project area along the remainder of the north side of the creek and on the south side of the creek.

There are three elevational or moisture zones along the creek. The lower wetter zone near the creek is dominated by a dense stand of reed canary grass that cover about 30% of project site area. The reed canary grass zone in particular will require initial and repeat site preparation and maintenance to assure adequate plant survival. The next elevational zone along the creek is dominated by mixed grasses and a few native trees and shrubs and covers about 20% of the area.. The final zone, the bench above the creek, is the driest and is mowed or abandoned field and

Scope of Work - FOR APPLICATION

covers about 50% of the area. This area has some scattered conifers planted by Clark County in past years. These three moisture zones are shown on the project site map attached to this application.

In October/November 2020, the entire restoration site will be prepared for spring 2021 planting by cutting all grasses and non-native vegetation to ground level with hand held weed and brush cutters. Small patches of Himalayan blackberry will be sprayed under a DOE Aquatic Noxious Weed Control Permit and cut to ground after the vegetation is dead. The reed canary grass will require repeated cuttings in year 2 and year 3 to eliminate moisture competition for the plants.

In February/March of 2021 the site will be planted to 3,000 native trees and 8,100 shrubs of 12 species. Plant stock will be live stakes and/or bare root for the shrubs and one gallon pots for trees. All plants will be clearly marked with bamboo stakes to facilitate plant survival monitoring and to ensure plants are not damaged in site maintenance in future years. Beaver fencing and tree browse protection will be installed.

WDFW Stream Habitat Restoration Guidelines (2012) were used to determine appropriate plant densities. Planting densities of 2,700 stems/acre will be used for shrubs and 435 stems/acre for trees, with a different plant palette for the three planting zones. Species like Pacific willow, Pacific ninebark and Douglas spirea will be planted in the wetter reed canary grass zone. The upslope higher zone will be planted to a mixture of early successional, fast growing native hardwood trees like Red alder, Big-leaf maple and Western dogwood. The highest and driest bench top zone above the creek will be planted to Douglas Fir, Western red cedar and Western Hemlock. These plantings will approximate the original mixed coniferous/deciduous riparian forest that occurred at the site. Details of the planting design will be in the riparian planting plan completed in Task 2.

Permanent photo points will be established to help determine plant survival in subsequent years.

Deliverables

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After SAVE a new row will appear

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In the row you want to delete, remove the information in all of the textboxes

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Scope of Work - FOR APPLICATION

Repeat these steps for each deliverable

Deliverables Table (Deliverables are documents that can be uploaded into EAGL to show that work was completed; deliverables should align with the detailed budget provided on the Task Costs and Budget Form and the project schedule uploaded on the Project Planning and Schedule Form.)

Deliverables Description	Deliverable Date	Deliverable Budget
Site preparation report for 10 acres - Map and photos showing site preparation area	12/31/2020	\$26,038.44
Planting report for 10 acres - Map and photos showing planted area and table of plant number by species and location	3/31/2021	\$69,320.43
Obtain Aquatic Noxious Weed Control Permit	9/30/2020	\$320.00
		Total Deliverable Budget: \$95,678.87

Task #: 4

Task Title: Site Monitoring and Maintenance - Year 1

Task Cost: \$44,338.03

Expected Start Date: 4/30/2021

Expected Finish Date: 3/31/2022

Describe the work that will be billed to this task. (char 3,500)

In early summer, late summer and again in late fall 2021, all competing nonnative vegetation will be cut to ground level across the entire site with hand-held weed and brush cutters. Care will be taken to not damage new plants, all of which will have been marked with a bamboo stake. Particular care will be taken in the reed canary grass zone to cut all new growth completely to ground level each time to reduce moisture competition for the new plants. The entire 10 acres will be treated in this manner.

Scope of Work - FOR APPLICATION

The area will be surveyed for plant survival in the fall of 2021 by doing a complete count of all surviving plants and comparing the results to the original riparian planting plan. The results will used to procure plants for the replanting to occur in February/March 2022.

In February/March of 2022 the site will be replanted with the same species as the original planting to replace the plant mortality that occurred the first year. For budget purposes a 20% replanting rate was used. This would result in approximately 1,600 native shrubs and 600 native trees of 12 species.

Deliverables

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Deliverables Description	Deliverable Date	Deliverable Budget
Report on plant survival by species and number from initial planting	6/30/2021	\$1,909.72
Site maintenace on 10 acres - Report and map showing site prepared for replanting	12/30/2021	\$25,842.30
Replanting on 10 acres - Report showing replanting effort by number and species	3/31/2022	\$16,586.01
		Total Deliverable Budget: \$44,338.03

Task #: 5

Scope of Work - FOR APPLICATION

Task Title: Site Monitoring and Maintenance - Year 2

Task Cost: \$39,197.93

Expected Start Date: 3/31/2022

Expected Finish Date: 6/30/2023

Describe the work that will be billed to this task. (char 3,500)

Site maintenance will continue with cutting of all competing nonnative vegetation around marked plants in the early summer, late summer and late fall of 2022. The entire 10 acres will be treated.

Site monitoring to determine plant survival will occur in fall of 2022 and these results will be used to procure plants for the final planting in early spring of 2023. For budget purposes a replanting rate of 10% was used that would result in 810 native shrubs and 300 native trees.

In February/March of 2023 the final replanting will take place with the same species used in previous years.

Deliverables

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Deliverables Description	Deliverable Date	Deliverable Budget
Site maintenance on 10 acres - map and report showing site prepared for	12/31/2022	\$25,490.92

WATER QUALITY COMBINED FINANCIAL ASSISTANCE

Organization: The Watershed Alliance

WQC-2021-Waters-00002

Scope of Work - FOR APPLICATION

replanting		
Report showing results of plant survival survey	10/31/2022	\$2,259.27
Replanting on 10 acres - Map, and report showing final planting by species and number	3/31/2023	\$11,447.74
		Total Deliverable Budget: \$39,197.93

Task #: 6

Task Title: Outreach to Private Property Owners on Manley Cr.

Task Cost: \$1,952.64

Expected Start Date: 5/3/2021

Expected Finish Date: 9/1/2021

Describe the work that will be billed to this task. (char 3,500)

Most of the land along Manley Creek is privately owned. We will conduct door to door outreach to all 34 private property owners along Manley Creek. These properties are shown on the map attached to this application. The purpose of the outreach is to develop a list of property owners that would be interested in restoring the riparian zone on their property to contribute to the overall reduction in temperature and bacteria issues on Manley Creek.

Property owners that are contacted face to face will be given a brief synopsis of water quality problems on the East Fork Lewis River and Manley Creek. Emphasis will be on the causal factors behind temperature and bacteria impairments. If the property is on the Clark County non-compliance list for septic system inspections, information will be provided from a Clark Conservation District grant (WQC-2021-ClarCD-00010) on how to achieve compliance.

At this first visit, owners will be encouraged to allow Watershed Alliance staff to do a quick survey of their streamside area to determine if a shade deficit exists on the property. If so, and if the property has an agricultural nexus, the owners will be referred to the Clark Conservation District for possible help with agricultural BMPs. If no agriculture exists on the property, staff will determine whether or not the landowner has interest in participating in a future program that would pay all or part of the cost of installing a 100 foot riparian forest buffer on their property.

Scope of Work - FOR APPLICATION

Landowner commitments will be obtained through a signed landowner acknowledgement form on a second visit. The form will have the property address and owner's name(s) and state that if future funding is secured they will be contacted to develop a landowner agreement. Interested property owner contact information will be entered into a data base.

Properties where no face to face contact occurs will receive a mailer from the Watershed Alliance with information on East Fork Lewis River water quality problems, contact information for the Clark Conservation District and the Watershed Alliance and information on financial assistance for septic system compliance and riparian improvement programs.

Deliverables

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Deliverables Description	Deliverable Date	Deliverable Budget
Report on potential for restoration on 34 private property owners along Manley Creek	9/1/2021	\$1,952.64
		Total Deliverable Budget: \$1,952.64

Task #: 7

Task Title:

Task Cost:

Expected Start Date:

Scope of Work - FOR APPLICATION

Expected Finish Date:

Describe the work that will be billed to this task. (char 3,500)

Deliverables

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Deliverables Description

Deliverable Date

Deliverable Budget

Total Deliverable Budget: \$0

Task #: 8

Task Title:

Task Cost:

Expected Start Date:

Expected Finish Date:

Describe the work that will be billed to this task. (char 3,500)

Scope of Work - FOR APPLICATION

Deliverables

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Deliverables Description

Deliverable Date

Deliverable Budget

Total Deliverable Budget: \$0

Task #: 9

Task Title:

Task Cost:

Expected Start Date:

Expected Finish Date:

Describe the work that will be billed to this task. (char 3,500)

Deliverables

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Scope of Work - FOR APPLICATION

Repeat these steps for each deliverable

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Deliverables Description

Deliverable Date

Deliverable Budget

Total Deliverable Budget: \$0

Total Task Costs: \$216,455

WATER QUALITY COMBINED FINANCIAL ASSISTANCE

Organization: The Watershed Alliance

WQC-2021-Waters-00002

Scope of Work Summary

Task Title	Task Cost
Project Administration/Management	\$21,681.73
Total	\$21,681.73

Total Eligible Costs
(from the General Information Form)
\$233,755.77

Task Costs and Budget

Describe the process used to estimate the cost of the project. If your process included reviewing similar projects, describe how this review affected your estimate.

Project Administration Costs (Task 1) for staff are based on experience managing contracts with the City of Vancouver and the Lower Columbia Fish Recovery Board.

Costs for Task 2, Cultural Resources Review, are based on information provided by Ecology staff on the likely outcome of their review of the 05-05/106 form and the necessity for a cultural resources survey. Two bid estimates for a Cultural Resources Review were received from companies recommended by Ecology. Costs for the riparian planting plan, BMP approval form and vegetation maintenance plan in Task 2 are estimates of staff time needed to prepare the documents and work with Ecology to gain approval .

Staff time ,site preparation, site maintenance, plant costs and planting costs in Tasks 3,4 and 5 are based on past experience with this type of project and on written estimates from a contractor covering site preparation costs, plant costs and planting costs.

Plant monitoring costs in Tasks 4 and 5 are estimates of staff time needed to do the monitoring surveys and write the reports .

Staff costs for Task 6 are based on experience conducting this type of door to door outreach on other projects along Burnt Bridge Creek and the lower Washougal River.

Has the proposed project been demonstrated to be the lowest cost solution to the problem?

If the proposed project is not the lowest cost, describe the other benefits or considerations such as feasibility, community acceptance, or coordination with other projects that influenced the decision making process.

We believe establishing at least a 100 foot forest buffer to this large stretch of Manley Creek is the only solution to temperature issues in the Creek and will incrementally improve temperatures in the middle EF Lewis River. The costs are reasonable due to the match and volunteer labor provided by project partners.

Upload a detailed budget for the project and any supporting documentation, including engineers estimates, cost analysis, etc.**Upload Documents**

Click the Browse button

Select your file

Click Save, your file will appear in the List of uploaded documents

Repeat for each file

To Delete a file, select the Delete checkbox next to the file and click SAVE

https://ecyeagl/IntelliGrants_BASE/_Upload/122347_914117-ManleyCreek Budgetfinal.xlsx

Project Budget

Project Team

Fill out the following table to describe your Project Team, including staff, contractors, and partner agencies:

Team Member Name/and or Title	Agency/ Company Name	Key Responsibilities	Qualifications/ Experience	Estimated Total Hours Devoted to the Project	Who will take over the person's responsibilities if they are unable to work on the project?
Tom Dwyer	The Watershed Alliance	Project manager. Assures project tasks are completed on time and on schedule.	Bachelor of Science in Forestry and Master's Degree in Wildlife Ecology.	1248.00	Sunrise O' Mahoney
Sunrise O'Mahoney	The Watershed Alliance	Project administration/ budget oversight.	Ten years experience managing nonprofit organizations	468.00	Tom Dwyer

Describe similar projects that your project team or organization has completed. Note any deviations from the original proposal in scope, budget, or schedule and briefly describe project success and lessons learned. If the project was funded by Ecology, include the Ecology grant or loan number.

Tom manages a program called Project Restore under a five-year contract with the City of Vancouver to improve water quality in Burnt Bridge creek. He works with private property owners on their creek side property to remove invasive plants, improve bank stability and increase tree canopy cover and habitat by planting native vegetation. In addition, he manages a water quality incentive program funded through the Clark County Clean Water Restoration Fund for homeowners who live along the lower Washougal River. Property owners are reimbursed for part of the cost of removing invasive plant species and planting native trees and shrubs to improve water quality in the river. Both programs have been very successful. There have been no contract administrative problems either with meeting budget or schedule targets. To date we have agreements with 45 individual homeowners that will result in restoration of over two miles of Brunt Bridge Creek shoreline. Our Washougal River program, working with 32 property owners, has already restored over 3,000 feet of shoreline by removing invasive plants and planting over 4,000 native trees and shrubs. These programs have provided experience and lessons in how to successfully manage site preparation to control invasive plant species and successful planting techniques to achieve healthy forest buffers.

Project Planning and Schedule

Project Start Date 7/1/2020

The date the actual work will start, or if interim refinance, the date the work started.

List and describe the criteria you used to determine the value and feasibility of the project.

Examples: useful life, installation cost, site suitability, and environmental justice.

The 2018 East Fork Lewis River Bacteria and Temperature Source Assessment Report shows that temperature exceedances are universal throughout tributaries to the East Fork Lewis River due to shade deficits. The majority of the land along these tributaries is privately owned.

Our first criteria for a project was to find a large block of property along a tributary to the EF Lewis that had shade deficits and where we were convinced we could improve the deficits and thus improve temperature. Our second criteria was to have the site(s) available to proceed immediately with implementation.

As a first approach, we considered trying to locate enough private property owners along a tributary that would allow significant improvements to shade and thus temperature deficits. However, we did not have the resources to complete a survey to identify these private property owners. On the other hand, this will be an important effort in the future if the shade deficits in the middle East Fork are to be widely remedied. Our outreach effort in this grant to the 34 private property owners along Manley Creek (Task 6) should position us to continue improvements to additional properties along the creek with future grant funds.

Our second criteria for a project was to look for public property sites where shade deficits could be improved. Clark County owns several properties along the mainstem East Fork Lewis and on a few tributaries. The Daybreak Park site is one example where the county owns two parcels totaling 83 acres that contain a long stretch of Manley Creek; a creek identified in the report as having extreme temperature issues in the middle stretch of the East Fork Lewis River with the worst shade deficits.

Our preferred alternative became to use the publicly owned Clark County site because it is part of a county park and protected from development in the future. Manley Creek clearly has a shade deficit and a 7-DADMax temperature that far exceeds state standards. Long term site management as outlined in the Daybreak Park Master Plan shows reforestation as the desired outcome at the site. Master Plan outcomes are compatible with restoration of a healthy minimum 100 foot buffer at the site. We have landowner acceptance of the project and can be ready to proceed as soon as grant funds are available.

Briefly describe all project alternatives (including the preferred alternative) considered, and explain how each alternative met or failed to meet the criteria listed above.

Use one line for each alternative and click "save" to enter additional alternatives.

Project Planning and Schedule

Description of Alternative

Alternative 1: Private Property Alternative

Criteria

failed criteria because properties not yet identified, not ready to proceed

Alternative 1: Public Property Alternative

met criteria. Large property, landowner acceptance, ready to proceed

List project stakeholders and provide documentation showing key stakeholders have been identified and will support the project.

Clark County. Property owner. Landowner agreement signed and included with grant application. Committed in writing to match for site restoration..

Friends of the East Fork. Local 501(c)(3) nonprofit with a long history of work along the East Fork of the Lewis River. Committed in writing to providing low level drone photography of the site that will be used to develop the riparian planting plan.

Clark Skamania Fly Fishers. Local 501(c)(3) nonprofit fly fishing group dedicated to the preservation of wild fish stocks and the natural resources that sustain them. Committed in writing to significant volunteer labor for site maintenance and planting.

Clark Conservation District has committed in writing almost \$42,000 through a Natural Resources Investment Program grant for site restoration..

Describe the steps you have taken to be ready to start the project by May 1, 2021. Provide detailed information and documentation on project elements such as status of designs, permits, interlocal agreements, landowner agreements, easements, other secured funding, staff, or agency approvals.

We can be ready to implement the project in the summer of 2020. We have staff in place experienced in carrying out this type of project.

We have a signed landowner agreement with Clark County and commitments in writing for volunteer labor from a local 501(c)(3) nonprofit and commitments for low level aerial photography from another.

We have commitments in writing from Clark Conservation District and Clark County for match funds for site restoration ..

We have estimates for the cost of a cultural resources review survey and would be ready to contract for the survey in the summer of 2020 if the grant is funded.

Upload a project schedule that includes all tasks necessary to complete the project, including tasks that are not part of the funding request.

Upload any other supporting documentation.

Project Planning and Schedule

Upload Documents

[https://ecyeag/IntelliGrants_BASE/_Upload/122326_914135_4-ManleyCre
ekSchedule.xlsx](https://ecyeag/IntelliGrants_BASE/_Upload/122326_914135_4-ManleyCre
ekSchedule.xlsx)

Project Schedule

Water Quality and Public Health Improvements

To go to the Water Quality Atlas, follow this link: <https://fortress.wa.gov/ecy/waterqualityatlas/StartPage.aspx>.

Name the specific water body(ies) this project will improve or protect.

Our proposal targets temperature deficits (caused by a shade deficit) in Manley Creek, a perennial stream that empties into the East Fork of the Lewis River between RM 9.0 and 10.0. This stream has a category 5 303d listing for temperature. Temperature data in the 2018 East Fork Lewis River Watershed Bacteria and Temperature Source Assessment Report (Report) shows a 7-DADMax value of 23.0 at RM 10.1. Manley Creek shows a value of 22 where it empties into the EF just below this point. The Washington state standard is 16.0 degrees.

The Report's shade analysis for the EF Lewis River shows shade deficits (the difference between system potential shade and current effective shade) are greater than 50% in the middle watershed around RM 9.0-13.0. Daily effective shade- July 1, at RM 10.1 is calculated in the Report at only 19%. Our project site parallels the East Fork of the Lewis River at RM 10 and is part of Manley Creek Reaches 1B and 1C. The site is owned by Clark County and is part of the undeveloped area of Daybreak Park. Reforestation at the site is consistent with the Daybreak Park Master Plan which recognizes that in the pre-settlement condition the site would have been mostly forested providing cooling shade and integral ecological value to the East Fork. One of the guiding principles in the Master Plan is to: "Continue and expand habitat and riparian restoration activities and consider providing environmental learning opportunities (e.g., interpretive signage, programming, etc.) related to them."

The Lower East Fork Lewis River Habitat Restoration Plan (2009) documents that riparian conditions along the project site in Manley Creek Reaches 1B and 1C "are very poor to non-existent." And, the plan recommends habitat restoration work beginning at our project site location and downstream. Riparian conditions and shade deficits in general are the worst in the lower one to two miles of the creek.

Creating a healthy forest buffer on 2,400 feet of Manley Creek where none exists will improve the 7-DADMax value for the creek and incrementally improve the 7-DADMax value in East Fork Lewis Reach 6C, a Tier 1 Reach, where Manley Creek empties into the East Fork. In addition, the County has plans for development of limited public trails north of the creek buffer area in the future. A healthy forest buffer will filter out any potential water quality contamination from the increased public use.

The second component of the project will be a door to door outreach effort to all the private property owners along the remainder of the creek. This outreach will identify private property owners willing to improve their riparian areas and thus contribute to improving temperature deficits along the entire creek. This outreach will also include information on bacteria contamination in the creek and septic system compliance. The outcome will be an informed group of property owners along the creek who understand the temperature and bacteria contamination in the creek and what programs are available to them to assist them financially in improving their property.

Is the project planning, implementation, or a combination?

Planning

Water Quality and Public Health Improvements

✓ Implementation
Planning/Implementation

If implementation or planning/implementation, complete the Action Table.

To add multiple implementation actions:

Enter the implementation action and plan reference.

When done, click the **SAVE** button.

After SAVE a new row will appear.

Repeat these steps for each implementation action.

Action

Increase native vegetation plantings on stream banks to increase riparian shade. Focus these efforts in areas with large shade deficits in the middle watershed

Restore riparian conditions and function in Reach 1B of Manley Creek

Restore riparian conditions and function in Reach 1C of Manley Creek

Habitat enhancement downstream of 259th street

Continue and expand habitat and riparian restoration activities

Reference the document that describe the action, including page numbers and where a copy can be obtained

2018 East Fork Lewis River Bacteria and Temperature Source Assessment Report. Recommended action - page 90.
<https://fortress.wa.gov/ecy/publications/documents/1803019.pdf>.

LCFRB-East Fork Lewis Sub-basin Plan. 2010. This link opens a SalmonPort map in the LCFRB website. (<https://www.lowercolumbiasalmonrecovery.org/mappage#b>). Zooming in and clicking on Manley Creek opens Reach information including salmon species priority restoration actions by Reach.

LCFRB-East Fork Lewis Sub-basin Plan. 2010. This link opens a SalmonPort map on the LCFRB website. (<https://www.lowercolumbiasalmonrecovery.org/mappage#b>). Zooming in and clicking on Manley Creek opens Reach information including salmon species priority restoration actions by Reach.

Lower East Fork Lewis River Habitat Restoration Plan. 2009. This link opens a SalmonPort map in the LCFRB website. (<https://www.lowercolumbiasalmonrecovery.org/mappage#b>). Zooming in and clicking on Manley Creek will show this document on the sidebar under Documents. Page 33 of Chapter 6.

Lower Daybreak Park Master Plan Report. 2010. page 31, Guiding Principles.
<https://www.clark.wa.gov/sites/default/files/dept/files/public-works/Parks/Lower%20Daybreak%20Trail/Lower%20Daybreak%20Master%20Plan%281%29.pdf>.

Water Quality and Public Health Improvements

What type of plan or regulatory requirement does this project address?

- ✓ TMDL/TMDL Alternative (approved or in development)/Straight to Implementation
Wastewater Engineering Report/Sewer Plan
Permit
- ✓ Salmon Recovery Plan
Watershed Plan
Shoreline Master Plan
Administrative Order or Other Legal Action
Capital Improvement Plan
Puget Sound Action Plan
Mitigation
Other
Not Applicable

If your project is addressing a TMDL, select at least one from the dropdown list.
To select multiple TMDLs, hold down the control key as you select

TMDL Name

East Fork Lewis River TMDL Alternative (In Development)

Did you discuss this project with Ecology staff? If yes, provide the name of the staff and the last date of contact.

Devan Rostorfer - August 16, 2019

Leanne Whitesell - October 8, 2019

Seth Elsen - August 16, 2019

Torren Valdez - August 16, 2019

Describe how the project drainage area connects to the water body.

Examples: surface flow, ditch, pipe, groundwater, infiltration, and path/distance to outfall/discharge.

Manley Creek is an important tributary on the middle East Fork Lewis river. It flows directly into the East Fork at Reach 6C between RM 9.0 and 10.0. The project site is approximately 2,000 feet from where Manley Creek enters the East Fork and covers parts of Manley Creek Reaches 1B and 1C.

Water Quality and Public Health Improvements

The next three questions will assist Ecology Evaluators in assessing the project value.

Describe the measure and method that will be used to determine the water quality benefit and overall success of the project.

If you need help determining a water quality metric, please refer to the Funding Guidelines for suggested metrics by project type.

Data in the 2018 East Fork Source Assessment Report shows that Manley Creek is one of two creeks along the middle East Fork that had the highest average temperature; eighty percent of the days sampled exceeded the state water quality standard. The 7-DADMax value was 22 degrees. This creek has a Category 5 303d listing for temperature. The results of shade analysis in this same report shows a direct link between the highest shade deficits (as low as 19%) along the middle East Fork and some of the highest 7-DADMax temperatures.

Washington state standards related to salmonids show migration can be impaired at stream temperatures above 18-20 degrees; adult mortality can occur starting at 16 degrees; spawning success can be impaired by temperatures above 14-16 degrees and egg survival requires temperature below 13-15 degrees. The East Fork Lewis has critical fall Chinook and chum spawning habitat from about RM 10.0 to the mouth. Coho, sea-run cutthroat and summer and winter steelhead are present at various times of the year in this stretch of river. Winter steelhead, coho and possibly chum are present in Manley creek Reach 1B and 1C at the project site. The Lower Columbia Salmon Recovery and Fish and Wildlife Subbasin Plan for the East Fork Lewis River indicates temperature can have an extreme effect on egg incubation and active rearing life history stages for these species in the creek. And the plan indicates that restoring riparian conditions and function are high multi-salmon species priorities for Reach 1B and 1C in Manley Creek.

It is well established in the scientific literature that loss of riparian vegetation results in larger daily temperature variations and elevated monthly and annual temperatures. Near stream vegetation height and density, that are almost totally lacking along this stretch of Manley Creek, combine to produce shadows that reduce solar heat to the surface of the water. Riparian vegetation also creates a microclimate that maintains cooler air temperatures along stream corridors. Shading effect is correlated with riparian area width; studies show that a buffer width of around 100 feet can provide up to 80% of the potential shade at a site. The Ecology minimum buffer width standard for Manley Creek is 100 feet.

We will reduce the shade deficit on Manley creek and improve temperatures by establishing at least a 100-foot forest buffer along 2,400 feet of creek; 1,700 feet will be on both sides of the creek. The additional 700 feet on the north side of the creek is contiguous with the 1,700 feet and is opposite a healthy forested hillside on the south side of the creek. Ten acres will be restored.

Over 11,000 native trees and shrubs will be added to the stream bank resulting in a multi-story canopy that will prevent solar heat from reaching the water.

Water Quality and Public Health Improvements

By using a multi-year approach to reforestation along the creek we will ensure a robust forest buffer . Success will be measured by plant survival and health measured in both year 2 and year 3 of the grant. Invasive plant control and replanting in years after the grant expires will be accomplished by the project partners.

Our outreach to private landowners along Manley Creek will help us complete an assessment of all the properties along the creek and plan for future grants that will target shade deficits on these private properties. It will also result in an educated group of rural landowners in the East Fork watershed.

Using the method described above, estimate the water quality and public health benefits that will be achieved by the project.

The water quality and public health benefit will be lower surface water temperatures in an important tributary to the middle East Fork of the Lewis River. This is a small, narrow creek and after just a few years a growing forest buffer should slow the rate of heating of creek waters as they flow through the area. Shading of streams by riparian vegetation can reduce stream temperatures by as much as 10 degrees Celsius and reduce daily and seasonal variations in temperature. Temperature improvements will benefit egg incubation and early rearing life history stages of coho and winter steelhead in the creek. And, lower water temperatures in Manley Creek should incrementally lower the temperature in the middle East Fork Lewis River Reach 6C.

The water quality and public health benefit from the outreach effort will be a large group of property owners that are knowledgeable about water quality issues in the East Fork watershed and specifically Manley Creek. We anticipate many of these owners will want to work with the Watershed Alliance and our other partners to tackle the more universal problems in the East Fork of both temperature and bacteria .

How long will the project provide benefits after the funding assistance ends? Who will be responsible for maintaining the benefits during its useful life?

Project benefits should last indefinitely because the project site is part of a Clark County Park with very little chance that any detrimental land use changes will occur. Clark County is a strong partner in the effort and has signed the Landowner Agreement required by Ecology and committed match funds.

All of the project partners, Clark County, Clark Conservation District, The Watershed Alliance, Friends of the East Fork and Clark Skamania Fly Fishers, are committed to maintaining the healthy forest buffer this project will create . Invasive plant control or replanting after the three years of

Water Quality and Public Health Improvements

this grant will be funded and carried out by the project partners.

How will greenhouse gas emissions be reduced or mitigated under this project? And what policies or measures has your organization put in place to reduce greenhouse gas emissions apart from this project?

The Watershed Alliance tries to be conscious of greenhouse gas emissions in all our work. Our Executive Director routinely uses bike transportation to and from work and for meeting attendance in downtown Vancouver. We always carpool to attend meetings outside downtown Vancouver and walk to meetings in the downtown. One staff person responsible for field projects in the eastern part of the county also lives near these projects. He always schedules field work at these sites either early in the day on the way to work or later in the day on the way home to avoid as many trips as possible from the office to the sites and back. A second staff person who works throughout Clark County with private homeowners always schedules site visits by location each day, e.g. the Battleground area, to reduce the number of miles driven between sites.

Our work in general is about offsetting greenhouse gas emissions by improving the native shrub and tree canopy throughout southwest Washington. Our partnership with the City of Vancouver has resulted in over two miles of Burnt Bridge Creek shoreline with a healthy riparian buffer. We have planted over 89,000 trees in the last 10 years by hosting community stewardship events at parks and other public spaces in Vancouver. In 2019 alone, we planted almost 9,000 trees.

We will apply the same concepts in reducing greenhouse gas emissions to this project such as carpooling to the work site and scheduling site visits around other outside office meeting and tasks to cut down the miles driven. And we will use hand labor to complete site preparation work and planting thus avoiding use of heavy machinery.

Upload a map that shows an aerial view of the project area, an estimated direction of flow for the project area, potential locations for the proposed facility or activity, and how the project connects to the water body named above.

The map does not need to be precise, but it should help reviewers with a general understanding of the area. If access to GIS software is not available, screen shots or snips from Google Maps with arrows and text added using a paint program may be used.

Upload Documents

Click the Browse button

Select your file

Click Save, your file will appear in the List of uploaded documents

Repeat for each file

To Delete a file, select the Delete checkbox next to the file and click SAVE

https://ecyeag/IntelliGrants_BASE/_Upload/122480_9 Project site showing 100 foot buffer with existing vegetation zones
14131-ManleyCreekProject3.pdf

Water Quality and Public Health Improvements

https://ecyeagl/IntelliGrants_BASE/_Upload/122480_914131_2-ManleyCreekProperties.docx

Map showing private property parcels along Manley Creek

https://ecyeagl/IntelliGrants_BASE/_Upload/122480_914131_3-AerialphotoofthemiddlesectionoftheManleyCreekprojectsite.docx

Aerial photo of the middle section of the project area

Environmental and Cultural Review

If you have a wastewater or stormwater facility project, and you are applying for or have received a loan from the CWSRF, when applicable upload the following documents.

- SEPA Checklist
- SEPA Threshold Determination
- Affidavit of Publication of SEPA Threshold Determination
- Public Meeting Documents
- SERP Coversheet
- SERP Checklist
- SERP Determination
- Other SERP/SEPA Documentation
- ✓ Cultural Review Final Determination
- ✓ DAHP Letter of Concurrence
- ✓ Completed activity/location specific Inadvertent Discovery Plan (IDP). An IDP is not associated with consultation and is required in the event of a discovery during ground disturbance.

In addition to the above documents, if you are required to prepare a federal cross cutter report, when applicable upload the following documents.

- Cross Cutter Report
- Cross Cutter Checklist
- Cross Cutter Final Determination

If you have a stormwater facility project, and you are applying for or have received funding via SFAP but not CWSRF, when applicable upload the following documents.

- SEPA Checklist
- SEPA Threshold Determination
- Affidavit of Publication of SEPA Threshold Determination
- Cultural Review Final Determination (No sensitive information allowed)
- DAHP Letter of Concurrence
- Completed activity/location specific Inadvertent Discovery Plan (IDP). An IDP is not associated with consultation and is required in the event of a discovery during ground disturbance.

Environmental and Cultural Review

If you have a nonpoint activity, an onsite sewage system, or a stormwater activity project, regardless of the funding source, when applicable upload the following documents.

- ✓ Cultural Review Final Determination (No sensitive information allowed)
- ✓ DAHP Letter of Concurrence
- ✓ Completed activity/location specific Inadvertent Discovery Plan (IDP). An IDP is not associated with consultation and is required in the event of a discovery during ground disturbance.

Upload Documents

Click the Browse button

Select your file

Click Save, your file will appear in the List of uploaded documents

Repeat for each file

To Delete a file, select the Delete checkbox next to the file and click SAVE

Description

WATER QUALITY COMBINED FINANCIAL ASSISTANCE

Organization: The Watershed Alliance

WQC-2021-Waters-00002

Uploads

Description

Clark County Landowner Agreement

Clark Skamania Fly Fishers match
commitment letter

Friends of the East Fork match
commitment letter

Clark Conservation District match
commitment letter

Clark County Match commitment letter

Attachments

https://ecyeagl/IntelliGrants_BASE/_Upload/125082_884773-ClarkCountyLandownerAgreement.pdf

https://ecyeagl/IntelliGrants_BASE/_Upload/125082_884825-WatershedAllianceCommitmentClarkSkamaniaFlyFishers.pdf

[https://ecyeagl/IntelliGrants_BASE/_Upload/125082_884823-FEFtoWtshdAlliance-1\(1\).docx](https://ecyeagl/IntelliGrants_BASE/_Upload/125082_884823-FEFtoWtshdAlliance-1(1).docx)

https://ecyeagl/IntelliGrants_BASE/_Upload/125082_884823_2-CCDmatch.pdf

https://ecyeagl/IntelliGrants_BASE/_Upload/125082_884823_3-ClarkCountyMatchletter.pdf