



O'AHU
RESOURCE
CONSERVATION &
DEVELOPMENT COUNCIL

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January 14, 2022

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Mr. Alec Y. Wong, Professional Engineer, Chief
Clean Water Branch
Hawaii State Department of Health, Clean Water Branch
2827 Waimano Home Road, Rm 225
Pearl City, HI 96782

ASO Log No. 19-154

Dear Mr. Wong,

Enclosed please find the quarterly status report for O'ahu Resource Conservation & Development Council's project entitled "Buffers and BMPs for Windward Oahu." This report covers activities completed between October 1, 2021 and December 31, 2021. Per contract agreement, we have submitted an invoice for this quarterly status report.

The O'ahu RC&D appreciates the opportunity to work with the Department of Health and our partners to improve water quality in the Kahalu'u and Waihe'e Watersheds.

If you have any questions or concerns, please don't hesitate to call.

Sincerely,

Dave Elliott
Executive Director

cc: Scott Miyashiro and Joanna Yeh, via email

Department of Health Clean Water Branch Polluted Runoff Control Program

Quarterly Status Reporting Form

Clean Water Act 319(h) NPS Implementation Program

Quarterly Status Reports are required per contract terms. If no work was done during the reporting period, the CONTRACTOR must provide an explanation of the circumstances. This Quarterly Status Report is for the period indicated below (check only one and insert year):

<input type="checkbox"/>	January 1 - March 31	<input type="checkbox"/>	(Due April 15 th)
<input type="checkbox"/>	April 1 - June 30	<input type="checkbox"/>	(Due July 15 th)
<input type="checkbox"/>	July 1 - September 30	<input type="checkbox"/>	(Due October 15 th)
<input checked="" type="checkbox"/>	October 1 - December 31	<u>2021</u>	(Due January 15 th)

Project Title: Buffers and BMPs for Windward Oahu

Project Start/Completion Date: April 11, 2019 / May 10, 2022

Estimated % of Project Completed: 66%

Estimated % of Grant Funds Previously Requested: 85%

Quarterly Status Report Number: 11

Name, telephone number, and e-mail of person to be contacted for questions regarding this report: Dave Elliott, 808-622-9026, dave.elliott@oahurcd.org

Please provide the following information for this reporting period. Additional sheets may be attached:

1. Progress/tasks started and/or completed as defined in the Contract's Scope of Services during current reporting period.

A. Summary of work completed (list all tasks and deliverables):

Task/Deliverable	Date Task Completed/ Deliverable Submitted
Continue conducting site visits to target farms for conservation plans and/or Best Management Practice (“BMP”) implementation	Ongoing
Continue attending community meetings and engaging local stakeholders	Ongoing
Continue conducting education and outreach activities	Ongoing
Continue conducting photo point monitoring	Ongoing
Continue conducting sediment monitoring	Ongoing
Continue conducting nutrient monitoring	Ongoing
Continue conducting conservation plan monitoring	Ongoing
Continue implementing BMPs on participating farms	Ongoing
Continue submitting a summary of implemented BMPs	Ongoing
Continue executing Operations and Maintenance (“O&M”) agreements with participating farms	Ongoing

B. GRTS Load Reductions

Pollutant	Estimated Load Reduction
Nitrogen (lbs/yr)	None at this time
Phosphorous (lbs/yr)	None at this time
Sediment (tons/yr)	None at this time

C. Narrative Progress Report

Conservation Plan Development and Approval

Conservation planning services are being conducted with nine farms as follows:

Cooperator	In-Planning	Approved
21 Degrees Estate		X
Jones and Keanui		X
Hamama Baptist Church		X
Hoina Farms		X
Ka'alaea Koa Farm (pre-existing)		X
KMWP/OOKI*	N/A	
Pono Aina Farms LLC	X	
Pisces Pacifica	X	
Teresa Vast (pre-existing)		X
Winnie Graham		X

*Cost-share practices do not require a conservation plan nor does cooperator engage in agricultural activities.

Community Outreach

Our staff has identified community interest in demonstrating Best Management Practices (BMPs) that are used in stream restoration projects. BMP's relevant to stream restoration projects in this region of the watershed will focus on riparian buffers and may demonstrate the practices of brush removal, establishing a vegetative barrier, installing a critical area planting and conservation cover. In addition to informing riparian landowners and the general community about riparian restoration techniques, we have worked with a local consultant to produce maps identifying high-flow concentration areas that are prone to runoff. These maps will be used to help the community identify high priority areas within the Kahalu'u and Waihe'e watershed.

We are currently working with potential community partners to identify a site to conduct the stream restoration demonstration as part of the community outreach event. The community forum is scheduled for March 2022 in order to accommodate the schedule of our community partners and to conduct the BMP demonstrations when the wet winter conditions have improved. Our staff is currently exploring the best option for producing these maps to facilitate community dialog in a manner that adheres to the current COVID mandates. We are exploring using paper and/or digital formats, which in addition to the maps, will provide photographs and narrative examples of the BMP's farmers and riparian landowners in this region have implemented through this project and the watershed health services these conservation practices have provided the community.

BMP Implementation Fund

Riparian landowners selected for additional BMP cost-share funding found it challenging to work around the wet winter conditions. They are currently on track with their work, with one cooperator successfully completing their BMP Implementation Plan and committing to their Operation and Maintenance Plan. The second riparian landowner is working with a contractor from this region who has technical experience in implementing practices identified in their BMP Implementation Plan and plans to complete their work by March 2022.

The target for conducting 300 linear feet of riparian restoration has been met and exceeded through the work of the following riparian landowners: Aaron Jones (350 linear feet restored through brush removal, riparian forest buffer, vegetative barrier and conservation cover), Steven Loui, Ka'alaea Koa Farm (180 linear feet restored through brush removal, riparian forest buffer and vegetated barrier), Marcell Prow, Pono Aina Farms (520 linear feet protected from runoff through the installation of conservation cover), Teresa Vast (265 linear feet restored through brush removal, riparian forest buffer, herbaceous weed management, vegetative barrier, critical area planting and the installation of two sediment basins).

2. Description of any major issues/problems encountered and/or resolved that may affect the CONTRACTOR's ability to complete the project as required (i.e., weather, personnel, equipment, etc.). If there is a change in the project timeline or budget, provide an explanation, revised timeline, budget, and completion schedule. (Please note that no-cost extensions must be applied for through the Department, and will only be granted when the CONTRACTOR has demonstrated unforeseeable setbacks.)

None at this time. A no-cost 6-month extension (revised end date of April 4, 2022) was granted to provide additional time for the successful completion of project tasks, which were delayed

due to impacts of the COVID-19 pandemic upon the ability to recruit additional cooperators and organize a successful community day.

3. Description of any significant findings, results, or conclusions. If none, please indicate so.

None at this time.

4. Based on the Scope of Services, a description of tasks expected to be completed in the next reporting period.

- Complete conservation plan monitoring
- Complete riparian restoration
- Complete photo point monitoring
- Complete sediment monitoring
- Complete nutrient monitoring
- Conclude executing O&M agreements with participating farms
- Complete implementing BMPs on participating farms
- Conclude submitting a summary of implemented BMPs
- Continue attending community meetings and engaging local stakeholders
- Conclude conducting additional education and outreach activities
- Conduct community forum/work day
- Draft and release the second of two (2) project press releases

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List of Implemented BMPs, QSR 11

List of Implemented BMPs
QSR
October 1, 2021 - December 31, 2021

ASO Log No. 19-154

Buffers and BMPs for Windward O'ahu
O'ahu Resource Conservation and Development Council

ASO Log No. 19-154
List of Implemented BMPs, QSR 11

Farm/Cooperator: Aaron Jones and Kauai Keaunui, Ahaolelo Farm

Conservation Plan Status: Approved Cooperator and Conservation Plan

BMP Contract: \$18,537 executed for a total estimated reimbursement of \$18,537.

BMP	Status	Notes
<p>Brush Management Removal of 9 large stature invasive trees and understory to prepare for planting low to medium stature riparian buffer.</p>	100%	Mechanical removal of invasive trees, including False Makani, Java Plum, Albizia, Gunpowder, and Umbrella tree, leaving trunks and root systems in place to mitigate bank erosion.
<p>Micro-irrigation To service the establishment of the riparian forest buffer and vegetative barrier.</p>	100%	Irrigation has been established for 45 ulu trees and a majority of the vegetative barrier.
<p>Land Smoothing Prepare land for conservation cover planting, ensuring adequate drainage and grade that can be maintained by mowing.</p>	100%	Following brush removal, the land has been smoothed and prepared to plant a conservation cover. The grade will be easily maintained by mowing and allow for proper drainage.
<p>Tree/Shrub Establishment Establishment of at least 40 perennial trees to suppress invasive weeds and stabilize soils. All trees to be caged.</p>	100%	45 ulu trees have been installed and caged along 725 linear feet of the stream channel. A second row of these ulu trees have been planted along 165 linear feet at the mauka border of the area designated for conservation cover.
<p>Vegetative Barrier Establishment of 200 slips of vetiver grass or similar native sedge (e.g. ahuawa, carex) in one densely planted row to stabilize banks, slow runoff and prevent sediment delivery to the stream.</p>	100%	150 vetiver slips have been planted along 165 linear feet of the streambank, with an additional row of vetiver planted in the most critical areas.
<p>Conservation Cover Purchase and install grass and/or another type of ground cover to protect critical areas and flood areas.</p>	100%	Bermuda and El Toro grass are fully established and are actively being maintained with a lawn mower.

Photo-point Monitoring



Image above: In addition to the conservation cover, a vegetative barrier of densely planted vetiver is becoming fully established and is serving as an extra protective measure to slow and filter any potential surface waters that may flow across the field and into the stream.

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List of Implemented BMPs, QSR 11



Image above: The brush removal is complete, the land has been smoothed and planted successfully with a conservation cover of Saint Augustine grass. These conservation practices are routinely maintained with a mower. The ulu trees have been successfully maturing with the protection of the cages. The cages will soon be removed.

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List of Implemented BMPs, QSR 11

Farm/Cooperator: Winifred Graham

Conservation Plan Status: Approved cooperator and plan (May, 2021)

BMP Contract: \$5,796 executed with a total estimated reimbursement of \$7,923.49

BMP	Status	Notes
<p>Multi-story Cropping Establishment of minimum 50 perennial tree and shrub crops, resulting in a diversified forest or cropping system.</p>	100%	50 cacao trees have been successfully installed and caged in 4 rows, each 100 ft. in length.
<p>Brush Management Prepare land for multi-story cropping and insuring adequate drainage and a grade that can be easily maintained.</p>	100%	Invasive trees and shrubs have been removed from the project area. Roots have been left in the ground to stabilize the soil.
<p>Micro-irrigation To service the establishment of multi-story cropping and vegetative barrier.</p>	80%	Micro-irrigation has been installed to feed the multi-story cropping. The system is setup to irrigate the vegetative barrier, which is not yet established.
<p>Mulching Applying 4-6" of wood mulch to improve soil health and facilitate the multi-story cropping establishment while reducing erosion and suppressing weeds.</p>	100%	Trees and shrubs removed during brush management were chipped in place. Bare soil has been covered appropriately with up to 6" inches of soil. Thick layers of mulch are serving to suppress weeds, retain moisture, increase water infiltration and build soil health in project area for the multi-story crop.
<p>Vegetative Barrier Establishment of vetiver grass or similar native sedge (e.g. ahuawa, carex) in two densely planted rows to slow runoff and prevent sediment delivery to wetland or stream.</p>	0%	

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List of Implemented BMPs, QSR 11

Critical Area Planting Establishment of a minimum 4 rows of vetiver along the 1,250 sq. ft. of exposed slope below access road, planted at a density of every 6".	0%	
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Photo-point Monitoring



Image above: 50 cacao plants have been planted and caged in four rows, each 100 ft. in length. Mulch has been applied to a depth of 6" to keep the bare soil covered and prevent erosion. A vegetative barrier will also be installed upslope of the waterways to capture any sediment or nutrients that might runoff during heavy winter rain events.

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List of Implemented BMPs, QSR 11



Image above: The slope above the cacao orchard will be stabilized through a critical area planting. This additional conservation practice will slow and filter surface waters that runoff from the mountain and prevent the slope from eroding and sediment from entering the waterways.

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List of Implemented BMPs, QSR 11

Farm/Cooperator: Justina & Andres Acevedo-Cross, Graham & Tiare Eastmond - Hoina Farm
Conservation Plan Status: Approved cooperator and plan (August, 2020)
BMP Contract: Executed 9/23/2019 with a total estimated reimbursement of \$9,762.

BMP	Status	Notes
Vegetative Barrier Vetiver barrier on shoulder of property's upper tier to mitigate soil erosion on slope.	100%	Vetiver has been successfully planted in two rows and irrigation installed along 120 linear feet of slope.
Micro-irrigation To service establishment of the vegetative barrier	100%	Drip line has been successfully installed along 450 linear feet in orchard 1, orchard 2 and the vegetative barrier on the slope.
Windbreaks Planting of windbreak trees to minimize storm damage and runoff in orchard and other crop areas, especially on slopes.	100%	Neem, banana, mahogany and pigeon pea have been planted as windbreaks in orchard 1 and orchard 2 and will meet the 450 linear feet proposed for this BMP.
Compost To build soil health and maintain soil structure in heavy rains.	100%	Compost has been applied to 2 acres, covering orchard 1 and orchard 2. The last application was applied with the cover crop for orchard 2 and tilled into the soil.
Mulching To remove invasive species from conservation zones areas of property and build soil health / facilitate establishment of windbreaks and other plantings.	100%	Mulching complete for orchard 1 and orchard 2.
Cover Crops Plant two successions of cover crop in orchard area.	100%	Perennial peanut is well-established as a ground cover in Orchard 1 and is being cultivated and transplanted to Orchard 2. Orchard 2 has been tilled and Sun Hemp is planted. This cover crop will be tilled-in, along with compost to improve the soil for future crop plantings.

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List of Implemented BMPs, QSR 11

<p>Grassed Waterway To convey runoff while mitigating erosion and ponding or other flooding in crop fields.</p>	<p>100%</p>	<p>Over 150 linear feet of brush has been cleared and the grassed waterway has been widened with native sedges beginning to successfully grow. An additional 50ft. field ditch has been installed to convey surface water into existing sediment basin. An installation of vetiver has been planted on the slope where the water exits the ditch and filters to the sediment basin to assure the water quality for all drainage exiting the property.</p>
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Photo-point Monitoring
Completed in Quarter 7.

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List of Implemented BMPs, QSR 11

Farm/Cooperator: Ikaika Higa - Hamama Pacific Baptist Church

Conservation Plan Status: Approved cooperator and plan (August, 2020)

BMP Contract: Executed 9/16/2019 with a total estimated reimbursement of \$5,117.

BMP	Status	Notes
<p>Agro-forestry Establish perennial tree and shrub crops with a ground cover to improve soil health and reduce runoff and ponding through improved percolation.</p>	100%	The 5,850 sq. ft. agro-forestry zone has been planted out with avocado, breadfruit, cacao, clove, abiu, banana and citrus trees, awa, pia, maile, and pigeon pea.
<p>Mulching Mulch</p>	100%	Hillside agro-forestry zone and annual cropping areas have received over 1,000 sq. ft. of weed mat. This will allow for the suppression of weeds in growing areas while also reducing potential erosion on the sloped areas.
<p>Brush Management Removing hau and invasive trees and shrubs from spring to allow for lo'i field system.</p>	100%	Hau, invasive shrubs and herbaceous weeds were removed over the 625 sq. ft. initially slated for this project.
<p>Micro-irrigation system</p>	100%	Practice is modified to include a liner to capture and convey surface water through traditional irrigation channels to wetland crops. Additionally, an irrigation system controller has been installed to supply dripline irrigation to the dryland crops and the agro-forestry slope.. These areas cover the anticipated 5,850 linear ft. of micro-irrigation proposed for this BMP.

Photo-point Monitoring

Completed in Quarter 7.

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List of Implemented BMPs, QSR 11

Farm/Cooperator: Aaron Jones and Kauai Keaunui

Conservation Plan Status: Approved Cooperator and Conservation Plan

BMP Contract: Executed on 7/27/2019 for a total estimated reimbursement of \$13,400.

BMP	Status	Notes
<p>Brush Management Maintenance: removal of invasive and weedy vegetative material (fiddlewood, umbrella tree, albizia), including six 60 ft. hazardous trees on streambank.</p>	100%	Mechanical removal of invasive trees, including Fiddlewood, Albizia and Umbrella tree, is complete along .10 acres of the stream bank, leaving trunks and root systems in place to mitigate bank erosion. Technical work to remove six 60 ft. hazard trees hanging over the stream channel is complete.
<p>Mulching Applying 4-6" of wood mulch to protect and enhance soil health, favoring the establishment of tree crops and other desirable vegetation</p>	100%	Removed trees have been prepped and mulched over .10 acres, using an on-site chipper.
<p>Riparian Forest Buffer Maintenance: re-planting perennial plants, including tree crops and low maintenance, non-invasive trees and shrubs.</p>	100%	An initial planting of low-maintenance vegetation such as vetiver, ti, and banana is complete. A second row of breadfruit has been planted.

Photo-point Monitoring

Completed in Quarter 7.

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List of Implemented BMPs, QSR 11

Farm/Cooperator: - Steven Loui, Ka'alaea Koa Farm

Conservation Plan Status: Approved cooperator, pre-existing conservation plan

BMP Contract: Executed 8/1/2019 for a total estimated reimbursement of \$9,498.

BMP	Status	Notes
<p>Tree / Shrub Prep Maintenance: establishment of minimum of 50 trees and shrubs</p>	100%	Over 50 trees and shrubs, including Kukui, Koa, cacao, avocado, mamaki, ti and other plants have been successfully installed over the .7 acres proposed for this BMP.
<p>Brush Management Maintenance: removal of invasive and weedy vegetative material (fiddlewood, umbrella tree, albizia)</p>	100%	Brush management is complete at both project area sites, exceeding the .7 acres proposed for this BMP.
<p>Vegetative Barrier Maintenance of riparian area by removing invasives and hazard trees and establishing natives, tree crops and herbaceous riparian plants</p>	100%	The vegetative barrier is complete in both project sites, with terraced plantings of crop trees and shrubs such as cacao and awa established in one of the areas and 960 ft. of weed cloth used on a steeper slope, studded with the installation of koa, kukui, hala, ahuawa and other native and non invasive plants.
<p>Riparian Forest Buffer Install vetiver grass and/or native sedges (e.g. ahuawa, carex) to slow surface flow and mitigate sediment entry into waterway.</p>	100%	Completed at both sites with the non-invasive trees and shrubs (. kukui, koa, cacao, mamaki, hibiscus) and native sedges (ahuawa, carex, vetiver) being well established and successfully mitigating the runoff of sediment and nutrients into waterways at both project areas. Cooperator reports that the restoration of riparian plants are showing an improvement in the quality and temperature of the waterway and the return of aquatic organisms, such as o'opu and o'pae.

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List of Implemented BMPs, QSR 11

Photo-point Monitoring
Completed in Quarter 5

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List of Implemented BMPs, QSR 11

Farm/Cooperator: Ko'olau Mountains Watershed Partnership /Ohu'Ohu' Ko'olau Inc.
Conservation Plan Status: n/a

BMP Contract: Executed 7/30/2019 for a total estimated reimbursement of \$12,400.

BMP	Status	Notes
Herbaceous Weed Management Manual removal and suppression of vines and herbaceous weeds using weed control fabric.	100%	Invasive vines and weeds have been removed and covered with weed matt for over .9 acres.
Fence Installation of ungulate exclusion fencing.	100%	Over 800 linear feet of heavy duty fencing has been installed along the perimeter of restoration areas.
Brush Management Strategic removal of understory and midcanopy invasive shrubs and trees, especially coffee (targeting 100% removal) and fiddlewood (targeting 60% removal). Canopy species will be removed strategically to facilitate the establishment of perennial, native species.	100%	Over .9 acres of invasive midcanopy and understory trees have been removed, with 100% removal of coffee. Perennial, native species including koa, kukui and mamaki are established.
Conservation Cover Out planting of more than 450 understory and midstory native and non-invasive species into areas where invasives have been removed.	100%	550 (252 trees, 149 shrubs, 150 groundcover) native plants have been installed.

Photo-point Monitoring

Completed in Quarter 6.

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List of Implemented BMPs, QSR 11

Farm/Cooperator: Pono Aina Farms LLC - Marcell Prow

Conservation Plan Status: Approved Cooperator, plan under development

BMP Contract: Executed 9/17/2019 for a total estimated reimbursement of \$7,000.

BMP	Status	Notes
Conservation Cover Hydroseed el toro turf or other perennial grass groundcover	100%	Conservation cover planted with centipede grass over 7,000 sq. ft.
Land Smoothing Prepare land for conservation cover planting, insuring adequate drainage and a grade that can be maintained by mowing.	100%	7,000 sq. ft of the property has been successfully leveled and prepped to plant and maintain the conservation cover.
Irrigation System Provide overhead irrigation system to insure adequate establishment of conservation cover	100%	Sprinkler risers installed to assure the successful establishment and maintenance of the 7,000 sq. ft. of conservation cover.

Photo-point Monitoring

Completed in Quarter 6.

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List of Implemented BMPs, QSR 11

Farm/Cooperator: Pisces Pacifica - Jeff Preble and Paul Hogan

Conservation Plan Status: pending

BMP Contract: Executed 9/24/2019 for a total estimated reimbursement of \$10,000.

BMP	Status	Notes
<p>Grassed Waterway Shape and seed swale on SE property boundary to insure proper drainage</p>	10%	Cooperator has curtailed activities in their BMP plan, which no longer align with the needs of their operation. The scope and funding of their BMPs was reduced accordingly.
<p>Critical Area Planting Vegetate areas subjected to concentrated flows of runoff or erosion due to slope in area surrounding the grassed waterway.</p>	n/a	Practice removed from contract to accommodate cooperator's preference.
<p>Tree/shrub establishment Hala, cacao and fruit trees with carex and perennial peanut groundcover in conservation zone above residence.</p>	25%	Cooperator has curtailed activities in their BMP plan, which no longer align with the needs of their operation. The scope and funding of their BMPs was reduced accordingly.
<p>Brush Management Remove strawberry guava, fiddlewood and other invasive trees in conservation zone above residence.</p>	10%	Cooperator has curtailed activities in their BMP plan, which no longer align with the needs of their operation. The scope and funding of their BMPs was reduced accordingly.

Photo-point Monitoring

Completed in Quarter 6.

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List of Implemented BMPs, QSR 11

Farm/Cooperator: 21 Degrees Estate - Michael Rogers

Conservation Plan Status: Approved Cooperator, plan under development

BMP Contract: Executed 10/7/2019 for a total estimated reimbursement of \$1,890.

BMP	Status	Notes
Tree/shrub establishment Plant and mulch in rings around 60 koa trees	100%	Over 60 koa trees have been installed and well-established over an .5 acre project area.
Conservation Cover Seeding and maintaining ground cover	100%	Rye grass has been successfully established and maintained over the .5 acre project area.
Land Smoothing Finish grading, enabling maintenance and mowing to establish ground cover	100%	Land has been graded over a .5 acre project area to reduce ponding or erosion and provide for easy maintenance.

Photo-point Monitoring

Completed in Quarter 5.

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List of Implemented BMPs, QSR 11

Cooperator: Teresa Vast

Conservation Plan Status: Approved Cooperator, pre-existing conservation plan

BMP Contract: Executed 8/9/2019 for a total estimated reimbursement of \$16,940.

BMP	Status	Notes
<p>Tree / Shrub Establishment Establishment of perennial trees to create shade for tree crops and suppress invasive weeds.</p>	100%	Perennial trees are planted along the 6,450 sq. ft. including kuki, koa, cacao, avocado, mahogany and other trees.
<p>Shrub / Plant Establishment Maintenance: establishment of riparian herbaceous plants and shrubs adjacent to maintain area adjacent to gulch.</p>	100%	Riparian shrubs and sedges are planted along a 200 sq. ft. area adjacent to the gulch.
<p>Brush Management Maintenance: removal of invasive and weedy vegetative material, focusing on invasive canopy trees (fiddlewood, umbrella tree, albizia) and hau. Removal of invasive canopy and understory trees and shrubs.</p>	100%	Removal of hau has been completed over the 6,450 sq. ft. project area proposed for this project.
<p>Mulching Application of 4-6" of wood mulch to protect and enhance soil health around vegetative plantings.</p>	100%	Trees removed have been chipped on site and used to mulch new planting areas exceeding 600 sq. ft. area.
<p>Vegetative Barrier Establishment of vetiver grass or similar native sedge (e.g. ahuawa, carex) in two densely planted rows to slow runoff and remove sediment.</p>	100%	Over 240 linear ft. of vetiver grass, ahuawa, carex and other native sedges has been installed in two rows, preventing erosion and capturing sediment from the upper and midslope of the project area.
<p>Riparian Forest Buffer Maintenance of riparian area through the combined removal of invasive species and the establishment of perennial plants, shrubs and trees (crops or other non-invasives).</p>	100%	Over 300 sq. ft. of invasive trees and shrubs has been removed and planted with perennial trees, shrubs and plants, including Koa, Neem, Cacao.
<p>Clearing and snagging Removal of debris and obstacles to effective drainage of surface flow in the spring run.</p>	100%	Over 200 linear ft. of vegetative and other debris has been cleared to allow for the successful drainage of surface flow in the spring run, including the establishment of 3 small retention

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List of Implemented BMPs, QSR 11

		ponds designed to capture sediment and concentrate surface flows.
Herbaceous Weed Management Removal of herbaceous, invasive weeds and vines in riparian area to allow for establishment of appropriate vegetation.	100%	Removal of invasive herbaceous plants over 3,600 sq. ft. in the riparian zones have been completed along the entire segment of the river with a small section left to complete.
Critical Area Planting Planting of appropriate vegetation along the west bank of the spring run, including native groundcover species.	100%	Planting is underway along 4,125 sq. ft. of the critical area at the upper and lower reaches of the spring run, along the embankments of the sediment basin system and extending where the water exits the property. Mamaki, native ferns, ti, ai ai and other native ground cover and shrubs are well established.
Agro-forestry Establishment of mixed canopy tree and shrub crops.	100%	Planting of fruit trees and ground cover has been completed with kukui, sweet potato, citrus, cacao olena, and banana. This area has been reduced to budget for the installation of the sediment basin system.
Irrigation System An irrigation system to insure the effective establishment of the agro-forestry, windbreak and vegetative barrier.	100%	PVC piping and a hose bib has been installed to supply a 7,500 sq. ft. area with irrigation needed to establish and maintain planting areas.
Mulching To improve soil health and facilitate agroforestry establishment while reducing erosion and suppressing weeds.	100%	180 sq. ft. of weed cloth and wood chips has been installed to improve soil health and suppress weeds around newly planted trees and shrubs.
Vegetative Barrier Installation of a shade tolerant carex vegetative barrier to provide persistent erosion control on slope.	100%	Vegetative barriers have been established successfully with ahuawa and carex.
Sediment Basin Installation of sediment basins constructed with an engineered outlet, formed by constructing an embankment and excavating a dugout.	100%	Three sediment basins have been installed with drainage outlets and conveyance ditches. All exposed soil has been planted by ground cover. Aea and other native sedges and ferns are successfully establishing along the embankments of the basin.

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List of Implemented BMPs, QSR 11

Photo-point Monitoring
Completed in Quarter 7.

Complete	Task / Deliverable	Timeline	Due Date	Status / Date Task Completed / Deliverable Submitted
Note: Items in bold are newly completed.				
x	Submit a list of name and credentials of personnel hired.	QSR No 1	JUN 19	Submitted with QSR 1
x	Submit the draft Project Effectiveness Monitoring Plan	NTP +1	MAY 19	Submitted, QSR 2.
x	Submit the final Project Effectiveness Monitoring Plan	NTP +3	JUL 19	Submitted, QSR 3.
x	Draft and release the first of two (2) project press releases	NTP +3	JUL 19	Submitted, QSR 2.
x	Begin large landowners riparian outreach	NTP +3	JUL 19	Began, QSR1.
x	Begin conducting site visits to target farms for conservation plans and/or Best Management Practice ("BMP") implementation	NTP +3	JUL 19	Began, QSR1.
x	Begin attending community meetings and engaging local stakeholders	NTP +3	JUL 19	Began, QSR2.
x	Begin conducting education and outreach activities	NTP +3	JUL 19	Began, QSR2.
x	Conduct first of two (2) project field days	NTP +6	OCT 19	Conducted, QSR 3.
x	Begin developing a minimum of five (5) conservation plans	NTP +6	OCT 19	Began, QSR2.
x	Begin submitting lists of farms with new conservation plans	NTP +6	OCT 19	Submitted, QSR 3.
x	Begin submitting lists of farms with approved conservation plans	NTP +6	OCT 19	Submitted, QSR 3. Additional farm conservation plan scheduled for review May 2021.
x	Begin conducting photo point monitoring	NTP +6	OCT 19	Began, QSR3.
x	Begin conducting sediment monitoring	NTP +6	OCT 19	Submitted, QSR 3.
x	Begin conducting nutrient monitoring	NTP +6	OCT 19	Began, QSR6.
x	Begin conducting conservation plan monitoring	NTP +6	OCT 19	Began, QSR3.
x	Establish BMP Investment Fund	NTP +6	OCT 19	Established, QSR2.
x	Begin requesting applications for first round of BMP Investment Fund cost-share assistance	NTP +6	OCT 19	Requested, QSR2.
x	Begin submitting list of farms and BMPs selected for first BMP Investment Fund cost-share assistance	NTP +6	OCT 19	Submitted, QSR 2.
x	Begin implementing BMPs on participating farms	NTP +9	JAN 20	Began, QSR3.
x	Begin submitting a summary of implemented BMPs	NTP +9	JAN 20	Submitted, QSR 3.
x	Begin requesting applications for second round of BMP Investment Fund cost-share assistance	NTP +9	JAN 20	Began, QSR2.
x	Submit lists of farms and BMPs selected for second round of BMP Investment Fund cost-share assistance	NTP +9	JAN 20	Submitted, QSR3.
x	Begin executing Operations and Maintenance ("O&M") agreements with participating farms	NTP +9	JAN 20	Began, QSR5.
x	Submit summary of findings from riparian landowner outreach	NTP +12	APR 20	Submitted, QSR7
x	Begin riparian restoration	NTP +15	JUL 20	Began QSR3, first reported QSR4
x	Complete developing a minimum of five (5) conservation plans	NTP +18	OCT 20	Completed, QSR9
x	Conclude submitting lists of farms with new conservation plan	NTP +18	OCT 20	Completed, QSR9
x	Conclude submitting lists of farms with approved conservation plans	NTP +18	OCT 20	Completed, QSR9
x	Complete conservation plan monitoring	NTP +18	OCT 20	
x	Complete riparian restoration	NTP +21	JAN 21	Completed, QSR11
x	Conduct second of two (2) project field days	NTP +21	JAN 21	Completed, QSR7
	Complete photo point monitoring	NPT +27	JUL 21	
	Complete sediment monitoring	NPT +27	JUL 21	
	Complete nutrient monitoring	NPT +27	JUL 21	
	Conclude executing O&M agreements with participating farms	NPT +27	JUL 21	

Complete	Task / Deliverable	Timeline	Due Date	Status / Date Task Completed / Deliverable Submitted
Note: Items in bold are newly completed.				
	Complete implementing BMPs on participating farms	NPT +27	JUL 21	
	Conclude submitting a summary of implemented BMPs	NPT +27	JUL 21	
	Conclude conducting additional education and outreach activities	NPT +27	JUL 21	
	Conduct community forum/work day	NPT +27	JUL 21	
	Draft and release the second of two (2) project press releases	NTP +28	AUG 21	
	Submit the draft final report.	NTP +28	AUG 21	
	Submit the final report.	NTP +30	OCT 21	

QUARTERLY GRANT FUND EXPENSE REPORT

(Must be attached to an invoice and correlate with the Project Budget.

No invoice will be processed for payment without this report to document the invoice.)

Contractor: Oahu Resource Conservation & Development Council ASO Log 19-154
 Project Name Buffers and BMPs for Windward Oahu
 Report/ Invoice No: 13 (QSR 13)
 Date: 09/01/21-11/30/21

Summary - Grant Funds

No.	Description	Original Contract Amounts	Contract Amount from Previous Quarterly Invoices	Amount Requested in this Invoice	Remaining Contract Amount
A	Personnel Services	\$156,325.00	-\$9,813.30	\$17,920.94	-\$27,734.24
B	Travel	\$4,321.85	\$3,114.24	\$123.46	\$2,990.78
C	Operating Expenses	\$4,895.00	\$1,217.53	\$385.44	\$832.09
D	Equipment	\$0.00	\$0.00	\$0.00	\$0.00
E	Professional Services	\$6,675.00	\$5,891.95	\$0.00	\$5,891.95
F	Materials & Supplies	\$113,446.89	\$40,716.04	\$0.00	\$40,716.04
G	Other Miscellaneous Expenses	\$19,062.50	\$5,099.14	\$607.10	\$4,492.04
	AD-BMP Technical Assistance		-\$16,505.75	-\$16,505.75	\$0.00
Total		\$304,726.24	\$29,719.85	\$2,531.19	\$27,188.66

Summary - Matching Funds

No.	Description	Original Contribution Amounts	Contribution Amount from Previous Quarterly Invoices	Contributions Submitted in this Invoice	Remaining Contribution Amount
A	Personnel Services	\$39,287.40	\$7,770.38	\$3,804.06	\$3,966.32
B	Travel	\$0.00	\$0.00	\$0.00	\$0.00
C	Operating Expenses	\$0.00	\$0.00	\$0.00	\$0.00
D	Equipment	\$0.00	\$0.00	\$0.00	\$0.00
E	Professional Services	\$3,750.00	-\$12.50	\$0.00	-\$12.50
F	Materials & Supplies	\$34,482.30	-\$24,887.77	\$0.00	-\$24,887.77
G	Other Miscellaneous Expenses	\$1,250.00	\$300.00	\$14.27	\$285.73
Total		\$78,769.70	-\$16,829.89	\$3,818.33	-\$20,648.22