



# Final Reporting Template

National Clean Diesel

Campaign

## National Grants

March 2014

|                          |  |
|--------------------------|--|
| <b>Grant Program:</b>    | <b>FY11 EPA DERA</b>                                     |
| <b>Project Title:</b>    | <b>Makah Sustainable Fishing Fleet Project (Phase I)</b> |
| <b>Grant Recipient:</b>  | <b>Makah Tribe</b>                                       |
| <b>Grant Number:</b>     | <b>DE-00J50501-0</b>                                     |
| <b>EPA Award Amount:</b> | <b>750,000.00</b>  |
| <b>Date Submitted:</b>   | <b>June 24, 2016</b>                                     |

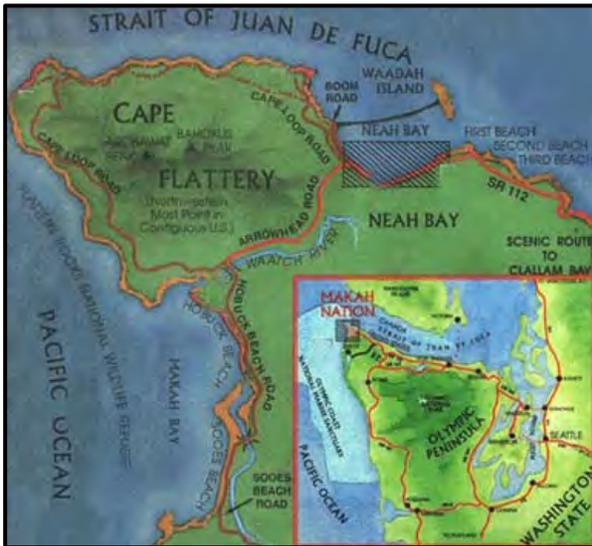
| <b>Table 1. Expenditures</b><br>(Record all funds expended for each budget category.) |                                     |                                  |  |
|---|-------------------------------------|----------------------------------|--|
|   | <b>Total Federal Funds Expended</b> | <b>Total Cost-Share Expended</b> | <b>Total Additional Leveraged Funds Expended</b> |
| Personnel   | 132,507.59                          |                                  | 0.00   |
| Fringe Benefits   | 41,848.29                           |                                  | 0.00   |
| Travel  | 5,052.56                            |                                  | 0.00   |
| Equipment   | 2,985.16                            |                                  | 0.00   |
| Supplies  | 2,477.06                            |                                  | 0.00   |
| Contractual   | 553,701.94                          | 207,767.00                       | 0.00   |
| Other   | 35.00 Training                      |                                  | 0.00   |
| Indirect Charges  | 0.00                                |                                  | 0.00   |
| <b>TOTALS</b>   | <b>738,607.60</b>                   | <b>207,767.00</b>                | <b>0.00</b>                                      |

| <b>Table 2. Actual Results</b>                   |                            |           |           |           |            |
|--|----------------------------|-----------|-----------|-----------|------------|
|  | <b>NOx</b>                 | <b>PM</b> | <b>HC</b> | <b>CO</b> | <b>CO2</b> |
| <b>Annual Reductions</b><br>(tons)               | 12.67                      | 0.90      | n/a       | n/a       | n/a        |
| <b>Lifetime Reduction</b><br>(tons)              | 472.12                     | 33.85     | n/a       | n/a       | n/a        |
| <b>Total Project Cost Effectiveness</b> (\$/ton) | \$2,005                    | \$27,962  | n/a       | n/a       | n/a        |
| <b>Gallons of Diesel Fuel Saved</b>              | 4,740/Year<br>161,160/Life |           |           |           |            |

**Provide a narrative description of the project.**

The Makah Tribe’s ancestral home and permanent reservation is located on the northwest corner of the Olympic Peninsula in the State of Washington, at the entrance to the Strait of Juan de Fuca from the Pacific Ocean.

The reservation is 30,067 acres in size and is bounded to the west by the Pacific Ocean, to the north, by the Strait of Juan de Fuca, and to the east, by privately owned commercial timber-lands. To the south, the reservation is bounded by privately owned timber-lands and by Olympic National Park. The following is a map showing the location of the Makah Indian Reservation.



Based on Year 2000 census information and Year 2006 updated tribal enrollment information, the population of the Makah Reservation is approximately 1,700 people including both tribal and non-tribal community members.

For centuries, the Makah have managed and sustainably harvested the resources of the sea from this strategic vantage. In 1855, they told United States treaty negotiators that the sea was their country and that without it they would be poor. In the Treaty of Neah Bay, the Tribe agreed to cede most of its lands to the United States, but reserved “the right of taking fish and of whaling and sealing at usual and accustomed grounds and stations”.

*Makah Indian Reservation (Neah Bay, WA)*

The ocean and its resources remain the foundation of Makah economy, culture, and subsistence today. The Makah Tribe has the largest treaty fishery for marine species in the United States. Harbored at Neah Bay in the Makah Marina, more than 70 marine fishing vessels participate in the Makah fishery, including 40 longline vessels and 12 trawlers. Makah’s adjudicated fishing areas extend 40 miles into the Pacific Ocean and east about 50 miles into the Strait of Juan de Fuca, although much of the Tribe’s traditional marine territory is now in Canadian waters and not available to the Tribe. Makah fishermen commercially harvest salmon, halibut, many species of groundfish (including whiting, black cod, flatfish and a variety of rockfish), and shellfish, which collectively provide approximately fifty percent of household income on the Makah Reservation. As interpreted by the federal courts, the treaty right of taking fish guarantees to the tribe not just the right to harvest fish but the right to manage environmental and marine resources consistently with sound conservation principles and the right to protection and preservation of the marine environment. At the same time, the treaty right imposes a trust responsibility on the federal government to consult with the tribe and assist in the protection of the tribe’s treaty resources and management rights. The tribe’s extensive involvement in environmental management forums and marine resource protection initiatives demonstrates the central importance of marine resources to the tribe and its commitment to environmental conservation and protection. The tribe looks to the

federal government as a partner and trustee to preserve and protect these resources and the tribe's ability to harvest them sustainably for generations to come.



*Makah Marina*

Over the past decade, the Makah Tribe has endeavored to build infrastructure and capacity within its environmental programs, which include solid waste, water and air quality, and environmental health. As part of the effort, the Makah Air Quality Program was established in 1999, with much of that time used to build infrastructure and capacity under CAA 103 funding.

In 2009, the program began receiving funding under CAA 105, and more recently became the first Air Quality Program to be included under Performance Partnership Grant funding pursuant to, and under, Treatment as a State (TAS). The Makah Air Quality Program's "2003 Makah Emissions Inventory" was instrumental in the development of the Makah Air Quality Program's strategic planning efforts, and identified mobile marine diesel emissions as a major area of concern, both locally, within the Strait of Juan de Fuca, and along the Pacific Coastline. Pursuant to this, IMPROVE (PM<sub>2.5</sub>-PM<sub>10</sub>) monitoring began in August of 2006 followed closely by Nephelometer PM 2.5 and meteorological monitoring. Recent analysis and interpretation of the data shows that there "seems little doubt that Makah sees shipping emissions much more clearly than its neighbors" (IMPROVE sites to the east and south along the Northern California coastline). In addition to this, the Puget Sound Maritime Air Emissions Inventory (PSMAEI) was released in April 2007. Portions of the inventory data are organized into the regional clean air jurisdictions. The Makah Reservation, Clallam County, and the Olympic Peninsula are included in the Olympic Region Clean Air Agency (ORCAA) regional area. Out of the total maritime related emissions inventoried in the PSMAEI, the ORCAA region receives 40% of all NO<sub>x</sub>, 4% of VOCs, 2% of CO, 83% of SO<sub>2</sub>, 13% of PM<sub>2.5</sub>, and 66% of Diesel PM (DPM). Furthermore, Clallam County is the area of major concern for maritime emissions within the ORCAA region and in Washington due to maritime activity on the Strait of Juan de Fuca. Clallam County was identified as the area with the highest levels of NO<sub>x</sub>, SO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, and DPM emissions out of all 12 counties inventoried in Washington State. Air monitoring data (AQS), analysis and interpretation show the Makah Reservation to be in attainment, however the Reservation is in close proximity to Olympic National Park, which is one of the 156 Mandatory Class I Federal Areas listed under 40 CFR Part 81, and is the largest such area in the State of Washington, with almost 900,000 acres, managed by the National Park Service.

Within the past few years, and especially as fuel prices started to rise, inquiries from Makah Tribal commercial fishermen in reference to helping them improve fuel efficiency started filtering into the Makah Air Quality Program. Our fishermen had heard of government programs that could assist both public and private fleets in improving fuel efficiency and air quality. A large part of this concern was due to diesel emissions and exhaust resulting in "indoor air pollution" aboard their



vessels, which many fishermen felt were causing them health problems. More recently, outreach and education efforts by the Makah Air Quality Program has also helped make the fishermen and the community aware of outdoor “ambient” air quality and greenhouse gas emissions related to climate change. Many of them know Alaskan Natives that are experiencing first hand, the effects of climate change in their communities. Pursuant to these overwhelming concerns, the Makah Sustainable Fishing Fleet Program was developed with direct support from the community. The goals and objectives of this project are multidimensional, and fall not only into the Makah Air Quality Program’s Strategic Plan, but also address issues of energy efficiency and economic/business sustainability.

Makah Fisheries Management received funding for to assist our commercial fishermen in replacing or repowering their diesel boat engines with clean burning technology to help owners to lower their operating costs. The Environmental Protection Agency (EPA) to under the Diesel Emissions Reduction Act (DERA) funding is now available to implement a Phase I of the Makah Sustainable Fishing Fleet Program. Not only will this help keep our tribal fishermen remaining competitive in the marketplace, help us to retain and create jobs in our fishing industry but it will help reduce air pollution and “greenhouse gas” (GHG) emissions within the marina and surrounding areas which are triggering global warming and climate change.

Funding will cover the following percentages of these costs:

- Up to 75% for engine and transmission replacements
- 100% for retrofit technologies
- 100% for idle reduction technologies
- 100% for engine upgrades (kits only)

Applications are located at the Environmental Building 101 at the Makah Tribal Center, Office #1. Please return your completed application to Seraphina McGee – Project Coordinator I. She can assist you with your application and answer any questions you may have. Her phone number is 645-3263 (office) 640-5335 (business cell) and email: [seraphina.mcgee@makah.com](mailto:seraphina.mcgee@makah.com). You must submit an application to be eligible. Once your application is submitted, eligibility will then depend on a number of other factors, including the seaworthiness of your fishing vessel. Seaworthiness will be determined by a licensed marine surveyor. This project specific survey will be free of charge for the participating vessel owners. Inaccurate or incomplete forms will not be considered. Thank you for your interest.



**Provide a narrative discussion of the actual project results (outputs and outcomes) and how the results are quantified. These may include, but are not limited to:**

- Number of replaced or retrofitted engines/vehicles/equipment and/or hours of idling reduced;
- Emission Reductions, Cost Effectiveness and Diesel Fuel Saved, as shown in Table 2 above;
- Adoption of an idle-reduction policy or changes in driver behavior regarding idling practices
- Sub-recipient information (name, award amount, project description);
- Vendor information (name, payment amount, good/services provided);
- Dissemination of the project information and increased knowledge via list serves, websites, journals, and press/outreach events (provide web links where applicable);
- Widespread adoption of the implemented technology;
- Increased public awareness of project and results
- Other

The FY11 EPA-Makah Cooperative Agreement was reviewed, signed, and returned. Project staging and mobilization, including the following: Outreach and education to vessel owners/community about project and award for Phase I. Applications still being accepted. Internal budget development, review, and approval. Developed RFQ/RFP for Marine Vessel Consultant, advertisement, received, and reviewed proposals. Clarifications from consultants. Negotiation. Consultant selection. Begin contract development. Finalized MSFFP Project Coordinator I position description. Makah Tribal Council and Human Resources approval of position and added to Fisheries Management Organizational Chart. Developed position posting documents.

Marine Vessel Consultant contract completed and signed by both parties. David C. Weed Marine Services was selected. Project Coordinator I position advertisement posted, interviews conducted, and selection made. Seraphina McGee was selected to fill position. Project Coordinator completed PETE training. A "kick off" meeting held consisting of introductions, orientation, questions and answers. Vessel inspections scheduled and completed. Vessel Inspection Reports completed. Engine repower recommendations have now been completed for each vessel. Two engine alternatives were recommended for each vessel, based on parameters such as best physical fit to compartment, size, weight, horsepower, availability of services, parts, etc. "Scopes of Work" (SOW) have also now been developed for each vessel, which will be finalized when vessel owners select their engine repower based on recommendations. Vessel Inspection Reports and Scopes of Work w/ vessel engine recommendation documents have all been sent to vessel owners for review. Scheduling for review of documents with vessel owners will be done during first week of April. The Marine Vessel Consultant was not contracted by end of first quarter as per timeline nor was the Project Coordinator I position filled per our timeline. The Marine Vessel Consultant has now been contracted and the Project Coordinator I hired and trained. Vessel inspections, Inspection Reports, Scopes of Work, and engine recommendations were completed as of the end of March instead of the end of January. Compared to our anticipated schedule, we are now running about two to three months behind. Our revised schedule will put us about mid-summer to completion of Phase I (instead of the end of March) where those vessel owners who have the matching funds in place will have the work done sooner. Phase II, which allows for "lay away" payments to be made until owner's matching funds meet the 25% requirement, will be done by April 2013 according to our original schedule. Here is where we will have the time to make up for our overly ambitious original timeline. Based on conversations with vessel owners, and depending on how the bids come in, many say they already have what they anticipate will be the 25%.



## National Grants

Vessel owners were then asked to provide a signed statement that they had reviewed and understood the inspection reports, engine recommendations, and the final scopes of work and were in agreement with them. This second round of meetings was very productive. Pursuant to finalization of the engine recommendations and the "scopes of work", advertisement and solicitation for/to qualified contractors and boat yards was implemented. Finally, the RFQ/RFP documents package was developed, finalized, and sent out to contractors and boat yards that responded to the advertisement/solicitations. Packages were sent out on Friday, June 15, 2012. Bids are due back by July 31, 2012. Under applicable EPA and Makah Tribal policies and procedures, in order to obtain professional services, the Makah Environmental Division will be using a qualifications-based form of the competitive proposal purchasing method. This method will allow us to select the most qualified competitor based on the technical evaluation, subject to negotiation of fair and reasonable compensation. According to EPA guidance, "if you cannot reach agreement on price with the firm, you can open price negotiations with the next most qualified firm". Although price is important here, a decision will not necessarily be based on the "low bid". Pursuant to this procedure, we have advertised using the "RFQ/RFP" process and not the "Advertisement for Bids" process.

RFQ/RFP documents were finalized and the package was sent out on 6/15/12. A site visit/inspection and pre-proposal (bid) meeting was held on 7/13/12 at the Makah Marina in Neah Bay. Interested, qualified contractors/boatyard representatives met with the project team and vessel owners and inspected all vessels. This was an important component of the project, and was an opportunity for the team and vessel owners to meet the boat yard owners. Proposals were due by 7/30/12 however due to the complexity of the project and by request from all participating boatyards that were at the site visit/inspection the deadline was officially extended to 8/15/12. The next meeting was a project team meeting/retreat that took place on 8/17/12 August in Lynwood, WA to discuss and analyze the proposals that came in. We developed questions for the boatyards and sent them out during the week of 8/19/12. We allowed two weeks for the boatyards to respond, and once again had to evaluate the proposals based on these answers. Although there were five qualified boatyards that were interested, only three of them submitted proposals. The other two opted out of the proposal process due to conflicting work schedules. Those that submitted were Platypus Marine out of Port Angeles and Bluewater and Haven out of Port Townsend. All prices were high as follows

|           |                 |
|-----------|-----------------|
| Platypus  | \$ 1,804,169.00 |
| Bluewater | \$ 1,568,965.00 |
| Haven     | \$ 1,245,865.00 |

Platypus was not selected because of their high cost. Bluewater and Haven each came in low on different vessels, effectively further reducing to total price to \$ 1,067,578 by combining the low bids from each boatyard. This means that we must split the work and the contract between two boatyards. However, this is still well above our budget. Our budget within the 25%/75% equation is \$ 828,590 total. Given the \$ 1,067,578 Bluewater/Haven combined low bid we are still over budget by \$238,988. This puts us over budget by almost 30%, effectively raising the owners contribution from 25% to 41% when it is equitably applied to all nine remaining participating vessels (Kristena Rose was removed, effectively reducing the number of vessels from ten(10) to the Required (9) see below). Due to commercial fisheries openings and closures, the project team was not able to meet with vessel owners until 10/2/12 and 10/3/12 over a two day period to present the



proposal cost estimates/bids and our analysis. The increase in the owners share from 25% to 41% has created a situation where we may face vessel owners who decide to opt out of the project, however these are mostly the larger vessels. The increase has also created some controversy, and has resulted in Makah Tribal Council inquiries, however the team is confident that we can work through these challenges with some flexibility on behalf of the EPA.

Outreach and education by flyer, community newsletter, e-mail, phone and by personal contact between MSFF Project Team and fishing vessel owners and the community. The project team spent time doing some additional outreach and education by answering questions being asked about the project by participating vessel owners, interested fishing vessel owners and the Makah Tribal Council. Much of the issues revolved around the increased matching amount that is now required in order to participate and the process that had to be followed in order to implement the work. Concurrently, we also worked with the Administrative Services/Accounting Department in setting up participating vessel owner accounts and in determining how, once a contract was developed, negotiated, and signed, the payment schedule would be met and how each payment distribution would work. Given that different contractors/boatyards may have somewhat different payment schedules it was determined that each payment, once the work was confirmed and the invoice was approved, would come from two different accounts/costs centers. One account would be the owners matching account with the required 41% +/- matching amount (full amount required in this account before contract is signed) and the other account would be the Tribal account with EPA funds amounting to the 59% +/- . This included the final retention payment to be made only after sea trials and final sign off by the Marine Consultant and engine distributors/suppliers/manufacturers reps. The project team did coordinate and facilitate meetings, contract negotiation, and signing. Once the contract was signed and Sunstar was delivered, and the repower of the Sunstar was successfully implemented and completed by the beginning of March, in time for the Halibut Fishery opener. The completion of the first vessel in this project, the Sunstar, constituted a threshold and landmark for us, proving that the process does and is working successfully. The owner is very pleased with the outcome, and has reported high efficiency operation with a noticeable savings in fuel costs and a decrease in "on board" air pollution and stack emissions.

During the seventh quarter, the owner of the F/V: Increase committed his matching share to his account and the vessel was delivered to Haven Marine in Port Townsend for repower work to commence. As of the end of this quarter, the Increase has not yet been completed. Numerous challenges have caused delays, however the vessel is scheduled for sea trials and delivery during the first week of August. The project team has continued to spend time doing some outreach and education by answering questions being asked about the project by interested and participating vessel owners and the Makah Tribal Council. Much of the issues continue to revolve around the increased matching amount that is now required in order to participate and the process that has to be followed in order to implement the work. Pursuant to some of these challenges for the vessel owners, three vessels have opted out of the project. However, project team was successful in recruiting three new vessels from the existing waiting list that have now moved up to fill these vacancies. The two qualified contractors that have been consistently successful in providing low bids for the vessels to date were then invited to participate in a site visit and inspection of these vessels in order to submit bids (Haven Marine out of Port Townsend and Bluewater Boatworks out of Port Angeles).



The owners of one of the vessels on the waiting list, the F/V: Garda Marie, has committed the required matching amount to their account, and are scheduled with Bluewater to have the repower done in November, after their fishing season. In addition, a third boatyard contractor (Boat Haven out of Port Angeles) who did not participate in the original process, but has since requested to submit qualifications and bid, was also included. The project team has also been assertive in encouraging participating vessel owners to move forward as fast as they can with dedicating their matching amounts to account. We are now experiencing some positive signs in regards to this, as vessel owners have confirmed that they will be forthcoming during this 2013 fishing season with their matching amounts. We are hopeful that this is the case.

During the eighth quarter, the F/V: Garda Marie committed his matching share to his account and the vessel is scheduled to be delivered to Bluewater Boatworks in Port Angeles on 11/15 for repower work to commence. The project team has continued to spend time doing some outreach and education by answering questions being asked about the project by interested and participating vessel owners and the Makah Tribal Council. The Boat Haven has submitted three bids as part of their first round of the bidding process for the F/V: Mariah Mae, F/V: Angela Carol and F/V: Sonny Boy. The F/V: Mariah Mae will be going into shipyard mid-October. After reviewing bids, meetings with vessel owners and contract negotiation and approval these five vessel are undergoing repower in their respective shipyards.

During the ninth quarter, a Makah Natural Resources Fair was held on 1/31/14 that included the Environmental Division's Air Quality Program with the Makah Sustainable Fishing Fleet Project as one of the highlights. We gave public presentations to the community and to the Neah Bay High School students (Grades 9-12). We also had booths set up with poster board/photo displays and staff available to answer questions being asked about the project. Booths included Environmental Management with Air, Water, Earth Quality, Environmental Health, Forestry Management, Fisheries Management with Scientific Research, Habitat Division with Salmon Recovery and Hatchery Operations in conjunction with the Makah Cultural and Research Center. This event was an excellent education and outreach opportunity. Several applications have been handed out periodically to vessel owners who inquire about the project, but have not been completed and turned back in to add them to the waiting list.

During the tenth quarter, one vessel has completed repower in late-June. The project team had posted an announcement that we were still accepting applications for smaller scaled vessels. We have two completed, eligible applications that were added to the waiting list. The project is continuing to move forward, now we have seven out of nine vessels completed. The two eligible vessels from the waiting list have had site visits, inspections completed, and scopes of work developed for bidding.

During the twelfth quarter, two vessels from the waiting list were inspected, scopes of work were developed, and bids were received from marine contractors. One vessel owner of a 29' vessel chose to participate in the program, they had paid their cost share in full in a prompt timely manner and will begin shipyard services soon. The other owner of a 55' vessel decided to opt-out due to their bid being too expensive. The project is continuing to move forward, now we have eight out of nine vessels being worked on or completed. We awaited costshares from the two remaining participating



vessel owners, one met their costshare, and the other has kept in touch with the project team as they have been moving closer to having their loan approval. We have been in contact with their financial institution and have been providing necessary documents to assist with this process.

During the fourteenth quarter, the ninth vessel entered shipyard and almost ready for seatrials. After doing a budget analysis, the project team figured we can repower a tenth vessel of a smaller scale. There is two applications on the waiting list that fit the criteria. Both have been inspected and statements of work have been developed.

We remain confident that the project team is moving forward in this project successfully. We are closely monitoring and tracking our budget to make sure that we can repower the nine vessels as per the agreement, and are pleased we can complete ten as our original target.

There was a Blessing of the Fleet event held on 3/12/15 which included all the vessel owners, crews and Makah Fisheries Management staff. Seraphina attended and set up DERA applications and brochures next to the registration table and conducted Q&A with interested vessel owners in recruitment of the tenth vessel.

During the fifteenth quarter, we were pleased to hear our Project Officer will arriving to conduct a site visit and take project photos of the vessels that have completed the program. We assisted her with travel arrangements, and have coordinated with the vessel owners to have their vessels take part.

During the sixteenth quarter, there has been a growing interest regarding this project, so the project team has worked very hard on a grant application for future funding and submitted it in July 2015. We have six additional waiting list applications to date.

During the seventeenth quarter, all vessels have completed repower and have passed sea trials.

After conducting an updated budget analysis it has become certain that we simply do not have enough remaining funding to repower another vessel. With that in mind the project team worked diligently on applying for a new round of funding to repower additional vessels to keep the program active to continue to assist tribal commercial fishermen and the environment which will benefit all. Flyers were posted indicating that the program was accepting applications for a potential Phase II, the result is we do have additional completed applications in a waiting list file ready for processing.

**Provide a summary of the proposed outputs and outcomes as listed in the approved project Work Plan. Provide a comparison of actual results with the proposed outputs/outcomes specified in the approved project Work Plan. Explain the reason for any differences in proposed versus actual outputs/outcomes.**



The Marine Vessel Consultant was not contracted by end of first quarter as per timeline nor was the Project Coordinator I position been filled yet as per our timeline. The Marine Vessel Consultant has now been contracted as of this report write up effective 2/10/12. Vessel inspections/surveys were not completed as of 1/31/12. Anticipate completion of this activity by 2/29/12. Anticipated hiring of the Project Coordinator I by no later than 2/29/12. Halibut and black-cod fishery will begin in March and extend through summer however vessel owners will work around openings to complete work. Anticipate it will take March to develop scopes of work for each vessel and RFQ/RFP development for contractors.

Due to a number of questions from vessel owners regarding the draft vessel inspections, engine recommendations, and scopes of work, the Project Team decided to coordinate and facilitate a second round of meetings to explain and clarify information and the initial engine recommendations. The second round of meetings were "one on one" with vessel owners. Calculations on engine specifications were discussed and it was mutually decided that these calculations should be re-addressed on some of the larger vessels, of concern was under powering of these vessels with resultant performance that may require an increase in fuel consumption, instead of equal or less fuel consumption. While all agreed that a reduction in diesel emissions could be achieved, it was "efficiency" and "value" that was the main concern. As a result engine recommendations were re-examined and changed on these vessels to account for these factors. Pursuant to this, all inspection reports, engine recommendations, and scopes of work for each vessel were finalized. As per the second quarter report, the Project Team was about two to three months behind in our project work plan according to our initial timeline. This was due to first quarter delays in contracting our Marine Vessel Consultant and in hiring our Project Coordinator I.

During the month of October 2012, there was much internal discussion and outreach and education with vessel owners about the challenges faced by the program. Because of the importance of this issue, it was felt by the project team that we should meet with the EPA. Pursuant to this we met with DERA program management at Region 10 EPA offices in Seattle on November 9th, 2012. Part of the challenge also included the poor 2012 fishing season. Although it was understood that there were no additional funds available for this program, the EPA showed flexibility in the possibility of extending the program to allow vessel owners to take advantage of the 2013 fishing season to save (similar to a "lay away program") or make arrangements to finance the matching share. Thereafter, outreach and education efforts resulted in discussions with vessel owners, promulgating a "Letter of Commitment" which vessel owners were asked to sign with the understanding that the matching share increased from 25% to 41+%. The intent of the letter was to determine if they were still interested in participating in the "voluntary" program or did they prefer to opt out. Letters were signed and returned (list available). Due to traditional challenges presented during the holiday season (November 21, 2012-January 1, 2013) with holiday events and vacations, there was very little activity on this project during the remainder of the quarter. Finally, what appeared to be the start of a successful fishing season turned out to be much less successful than anticipated, adding to the delays. As of the beginning of the 6th quarter, we have set up vessel owner accounts with the Tribal Government Administrative Services/Accounting Department and are beginning to schedule vessels for work. As of the end of February 2013, F/V: Sunstar will be the first vessel to be repowered.



According to the original application, repowers were initially scheduled to take place in the late Winter of 2012, however given the current additional challenges we face, we are now 12 months behind in our original schedule. We are maintaining a positive "one step at a time" attitude and are working closely as a project team to overcome these setbacks. Our reports to the Makah Tribal Council and our conference calls with the EPA have been productive in confirming that the project team is adhering to and complying with both Tribal and EPA policies and procedures. We are working on an outreach and education mechanism to address the public relations issue. We have also looked at our DERA funding and our management and consulting budget line items to see what we can do, if anything, to address these potential cost overruns. Pursuant to this, the Project Manager has moved off of DERA funding and is drawing on Makah Tribal self-governance environmental health funds to cover salary and fringe. We have also stopped charging project related travel to the DERA grant. Project related travel has been strictly limited and will also be coming out of Makah Tribal self-governance environmental health funds. Funds from these budget line items are being reprogrammed for the Project Coordinator I position and for consulting funds.

According to the original application, most of the repowers were initially scheduled to take place in the Winter of 2012 and into January of 2013, with project completion as early as March, 2013. However given the current additional challenges we face, we are now 12-14 months behind in our original schedule. We now anticipate and are hopeful that, given a not cost grant extension, that we can complete the project by March, 2014.

F/V: North had decided to opt-out. Project applications have been handed out to vessel owners within the community to replace that vessel on the list. Our office will continue to handle all invoices and ensure payment in a timely manner, handle all phone calls and emails regarding the project while the vessels are in the shipyard to ensure smooth overall project success. In the event that we have one or both of the remaining vessels opt out of the program, we have been working with "waiting list" vessel owners to cover this contingency.

Every effort has been made to keep the vessel owners informed either by mail, e-mail, telephone or "in person" contact. Also, a financial institution HomePort Funding offered loan services to the remaining vessel on the project list. Four out of seven remaining vessel owners filled out applications to assist with their individual cost shares.

The loan phase for the final vessel had actually taken a lot longer than normal for approval. Certain facts regarding the fisheries needed to be researched by our fisheries biologists, their staff were out sick periodically which limited the lenders capacity during the holiday period. Also, our offices were closed from Dec 24th to Jan 5th for our holiday break. The Project Manager, Project Coordinator, Marine Technical Consultant, and vessel owners remained in contact via email and telephone. Paperwork was drafted, but we had to wait for the accounting department to return to reopen for final processing.

By the sixteenth quarter, we were satisfied with completion of all repowers, our goals and objectives have been met.

**Provide a narrative discussion of the successes and lessons learned for the entire project.**

The project team did not anticipate major problems. We think now that all vessels can be repowered by mid-summer given vessel owner cooperation in working around fisheries openings. This was not anticipated. However will depend on inspections/surveys which will tell the complete story. This would put the project well ahead of schedule. The Work Plan was too ambitious given holiday and weather challenges (Tribal Government closures etc.). Roughly two to three months behind. In addition, it was not anticipated that the Fisheries Management Organizational Chart would have to be updated and approved for the Project Coordinator I position. This took a review process. Also, an unsuccessful fishing season has also added to delays, however this is not seen as a liability to the project, but as an asset, since it is anticipated that this will allow vessel owners to meet their 25% matching requirement in a timelier manner. Altogether, cumulative challenges in meeting the initial timeline will result in Phase I of the project being postponed until this coming fall and anticipated to be completed early in 2013.

During the third quarter, progress has also been slowed due to a tribal internal re-organization resulting in additional responsibilities, duties, and burdens placed on the Project Manager. These are unrelated to the project. Additional communications, clarifications, and a third meeting requested by vessel owners in reference to vessel inspections, draft engine replacement recommendations, and draft vessel "scopes of work" resulted in a layer of outreach and education efforts that was not anticipated in the initial timeline. Both the project team and the vessel owners feel however, that changes made to because of this effort and engagement will ultimately result in a much more successful project.

Platypus Marine was very helpful in assisting us in developing and providing costs for our grant application, however, we now realize that these original cost estimates were simply too low, given that we did not have the time to do an on-site inspection of the vessels at the time due to grant submittal deadlines. The bids came in very high. We were not surprised that the costs came in high however, we did not anticipate that they came in as high as they did. We are now working internally and externally with both Bluewater and Haven to develop alternative solutions to help the vessel owners lower their share. One solution is to ask for an extension on the project and set up "lay away" style accounts so that owners can build their contribution over a period of from three to six months. We are also looking at including owner "in kind" work. Finally we are considering asking the EPA to reduce the number of vessels from nine to eight.

During the sixth quarter, we had a handful of the original participating vessel owners opt out of the project and have replaced them with vessel owners who are on our waiting list. In regards the F/V: Increase, Haven Marine has performed less than satisfactory, and delays for various reasons have caused problems with the vessel owner and the project team. Although not the fault of Haven Marine, the new John Deere engine that was purchased and installed had to be itself replaced, re-installed, as it was damaged, apparently at the factory. For these reasons the F/V: Increase has taken nearly three months to complete, costing the vessel owner entry into the salmon fishery. Once again



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this has also resulted in additional management and consulting costs and we are still concerned that we will not have enough management and consulting funds to complete this project.

Additionally, a handful of participating vessel owners met with and submitted complaints to the Makah Tribal Council and developed and wrote formal letters to the EPA regarding and questioning the administration and management of the project, this having mostly to do with the advertising, bidding, and owner cost share (now at 41%) of this project. Much of this allegedly had to do with vessel owners wanting to do their own work while getting paid from EPA, even while clearly not being qualified, licensed, bonded, and insured to do so. This has significantly slowed this process down even further as much time has been spent internally in meetings and in meetings with the EPA in order to explain and justify decisions that have been arrived at. This has affected the morale of the project team and has caused some participating vessel owners to waiver in their commitments.

In addition to the loan phase for the eighth vessel taking longer than normal for approval, a necessary part was faulty and needed to be sent back to manufacturer, it took an additional two weeks to receive a replacement plus installation.

**If any cost-share or additional leveraged funds are reported in Table 1 above, identify the source of the funds.**



This grant did have a mandatory match of \$207,767.00 in which the vessel owners paid at 41.64% during the project period.

**Was any program income generated during the project period? Identify amount of program income, how it was generated, and how the program income was used.**

No.

**For projects involving vehicle/equipment replacement and repowers provide:**

- 1) Evidence that the replacement activity is an “early replacement,” and would not have occurred during the project period through normal attrition (i.e. without the financial assistance provided by EPA). Supporting evidence can include verification that the vehicles or equipment replaced had useful life left and fleet characterization showing fleet age ranges and average turnover rates per the vehicle or fleet owner’s budget plan, operating plan, standard procedures, or retirement schedule; and
- 2) Evidence of appropriate scrappage or remanufacture, including the engine serial number and/or the vehicle identification number (VIN).

| Vessel name   | Engine SN or Hull # |
|---------------|---------------------|
| Sunstar       | 6A223663*RA*6175    |
| Increase      | 107888/36663        |
| Mariah Mae    | 1Z301183            |
| Garda Marie   | MKH-604 (boat)      |
| Sea Hunter    | 6VF020226           |
| Turning Point | MKH-630 (boat)      |
| Wanda Mae     | U802604S            |
| Primetime     | MKH-636 (boat)      |
| Sonny Boy     | 8V824929            |

Photos of scrapped engines included as an attachment.



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**For projects that take place in an area affected by, or that include affected vehicles, engines or equipment affected by, Federal, State or local law mandating emissions reductions, provide evidence that emission reductions funded with EPA funds were implemented prior to the effective date of the mandate and/or are in excess of (above and beyond) those required by the applicable mandate.**

Not applicable.

### Additional Information

**Applicant Information**

| Organization/<br>Applicant Name | FirstName | LastName | JobTitle         | Address    | City     | State | EmailAddress   | ZipCode | OfficePhone                     | OfficePhone<br>Ext |
|---------------------------------|-----------|----------|------------------|------------|----------|-------|----------------|---------|---------------------------------|--------------------|
| Makah Tribe                     | Dana      | Sarff    | Env. Div.<br>Mgr | PO Box 115 | Neah Bay | WA    | a.sarff@makah. | 98357   | 360-640-8125<br>(Business Cell) | 360-645-<br>3151   |

**Project 1 Information**

| ProjectName                                      | Organization<br>Performing<br>Project | TargetFleet | Number of<br>Vehicles | City     | County     | State | Region | Funding<br>Amount | Additional<br>Funding<br>Source | Additional<br>Funding<br>Amount | Public Benefit |
|--|---------------------------------------|-------------|-----------------------|----------|------------|-------|--------|-------------------|---------------------------------|---------------------------------|----------------|
| Makah<br>Sustainable<br>Fishing Fleet<br>Project | Makah Tribe                           | Marine      | 9                     | Neah Bay | Clallam Co | WA    | 10     | \$750,000         | Match                           | None                            | Yes            |

**Fleet 1 Information for MARINE VESSELS ONLY**

| Current Vessel Information |                       |                                     |  |             |                             |  |                      |   |            |                                      |                       |  |  |                             |  |                            | New Vessel/Technology Information                                  |                    |                    |                                 |   |   |  |   |   |  |                         |  |
|----------------------------|-----------------------|-------------------------------------|--|-------------|-----------------------------|--|----------------------|---|------------|--------------------------------------|-----------------------|--|--|-----------------------------|--|----------------------------|--|--------------------|--------------------|---------------------------------|---|---|--|---|---|--|-------------------------|--|
| Sector                     | Application           | Boat Name or<br>Other<br>Identifier | Total<br>Number of<br>Engines per<br>Vessel (max<br>5) | Engine Type | Engine<br>Make and<br>Model | Engine<br>Family Name<br>(if<br>unregulated<br>engine, then<br>NA) | Engine Model<br>Year | Activity Level<br>(Hours per<br>Year per<br>engine) | Horsepower | Annual Idling<br>Hours per<br>engine | Current Tier<br>Level | Current<br>Standard Level<br>for PM and NOx<br>or NMHC+NOx | Displacement<br>per cylinder<br>(Liters) | Current Fuel<br>Type        | Amount of<br>Fuel Used<br>(gallons/year) | Year of Retrofit<br>Action | Serial or VIN #<br>of scrapped/<br>replaced<br>engine or<br>vessel | Technology<br>Type | Technology<br>Make | Verified<br>Technology<br>Model | New Engine<br>Family Name<br>(replacements<br>and repowers<br>only) | New Engine<br>Model Year<br>(replacements<br>, repowers,<br>and upgrades<br>Only) | Activity Level<br>(hrs/yr per<br>engine -<br>replacements,<br>repowers, and<br>upgrades<br>Only) | Annual Idling<br>Hours<br>Reduced per<br>engine | New Engine<br>Tier Level<br>(replacements<br>, repowers,<br>and upgrades<br>Only) | New Standard<br>Level for PM<br>and NOx or<br>NMHC+NOx | Technology<br>Unit Cost | Technology<br>Unit<br>Installation<br>Cost |
| Marine                     | Commercial<br>Fishing | Sunstar                             | 1 Primary  | Propulsion  | Detroit<br>Diesel<br>6-71   | NA   | 1973                 | 4000  | 205        | 800                                  | Tier 0                | NOx = 4.7347<br>PM2.5 = 0.2159                             | 0.9 <= size <<br>1.2                     | Diesel<br>(ULSD), 15<br>ppm | 6000                                     | 2013                       | 6A223663*<br>RA*6175   | Engine<br>Repower  | John Deere         | 6090AFM75                       | John Deere<br>6090AFM   | 2013  | 5700   | 800   | Tier 2  | NOx = 2.8882<br>PM2.5 =<br>0.0551                      | 40,255                  | 69,259                                     |
| Marine                     | Commercial<br>Fishing | Increase                            | 1 Primary  | Propulsion  | Volvo<br>70B                | NA   | 1980                 | 4000  | 250        | 2000                                 | Tier 0                | NOx = 3.551<br>PM2.5 = 0.162                               | 1.2 <= size<br><2.5                      | Diesel<br>(ULSD), 15<br>ppm | 8000                                     | 2013                       | 107888/<br>36663   | Engine<br>Repower  | John Deere         | 6068AFM75                       | John Deere<br>6068AFM   | 2013  | 4000   | 0   | Tier 3  | NOx = 1.811<br>PM2.5 = 0.041                           | 38,403                  | 44,447                                     |
| Marine                     | Commercial<br>Fishing | Mariah Mae                          | 1 Primary  | Propulsion  | Cat 3126                    | V714V  | 2000                 | 1000  | 450        | 500                                  | Tier 0                | NOx = 1.631<br>PM2.5 = 0.055                               | 1.2 <= size<br><2.5                      | Diesel<br>(ULSD), 15<br>ppm | 5000                                     | 2013                       | 1Z301183   | Engine<br>Repower  | Caterpillar        | C7                              | Caterpillar C7  | 2013  | 1000   | 0   | Tier 2  | NOx = 0.998<br>PM2.5 = 0.021                           | 35,962                  | 38,450                                     |
| Marine                     | Commercial<br>Fishing | Garda Marie                         | 1 Primary  | Propulsion  | Detroit<br>Diesel<br>6-71   | NA   | 1973                 | 2700  | 260        | 2000                                 | Tier 0                | NOx = 4.7347<br>PM2.5 = 0.2159                             | 0.9 <= size <<br>1.2                     | Diesel<br>(ULSD), 15<br>ppm | 7500                                     | 2014                       | MKH-604<br>(boat)  | Engine<br>Repower  | John Deere         | 6090AFM75                       | John Deere<br>6090AFM   | 2013  | 2700   | 0   | Tier 2  | NOx = 2.8882<br>PM2.5 =<br>0.0551                      | 43,331                  | 88,427                                     |
| Marine                     | Commercial<br>Fishing | Sea Hunter                          | 1 Primary  | Propulsion  | Detroit<br>Diesel<br>6V92   | NA   | 1974                 | 2700  | 276        | 1350                                 | Tier 0                | NOx = 3.1959<br>PM2.5 = 0.1054                             | 1.2 <= size<br><2.5                      | Diesel<br>(ULSD), 15<br>ppm | 9000                                     | 2014                       | 6VF020226  | Engine<br>Repower  | Isuzu              | 6HK1WM-AB2                      | Isuzu<br>6HK1WM   | 2013  | 2700   | 0   | Tier 2  | NOx = 1.9176<br>PM2.5 =<br>0.0403                      | 35,654                  | 55,134                                     |
| Marine                     | Commercial<br>Fishing | Turning Point                       | 1 Primary  | Propulsion  | Detroit<br>Diesel<br>6-71   | NA   | 1970                 | 2000  | 285        | 1000                                 | Tier 0                | NOx = 4.7347<br>PM2.5 = 0.2159                             | 0.9 <= size <<br>1.2                     | Diesel<br>(ULSD), 15<br>ppm | 4500                                     | 2014                       | MKH-630<br>(boat)  | Engine<br>Repower  | John Deere         | 6068AFM75                       | John Deere<br>6068AFM   | 2013  | 2000   | 0   | Tier 2  | NOx = 1.4441<br>PM2.5 =<br>0.0276                      | 35,960                  | 40,062                                     |
| Marine                     | Commercial<br>Fishing | Wanda Mae                           | 1 Primary  | Propulsion  | Perkins<br>6.354            | NA   | 1990                 | 1800  | 200        | 900                                  | Tier 0                | NOx = 1.3316<br>PM2.5 = 0.0607                             | 0.9 <= size <<br>1.2                     | Diesel<br>(ULSD), 15<br>ppm | 5000                                     | 2014                       | U802604S   | Engine<br>Repower  | John Deere         | 6068AFM75                       | John Deere<br>6068AFM   | 2013  | 1800   | 0   | Tier 2  | NOx = 0.8549<br>PM2.5 =<br>0.0310                      | 33,700                  | 34,800                                     |
| Marine                     | Commercial<br>Fishing | Primetime                           | 1 Primary  | Propulsion  | Isuzu<br>6BD1               | NA   | 1990                 | 1750  | 185        | 875                                  | Tier 0                | NOx = 1.2299<br>PM2.5 = 0.0561                             | 0.9 <= size <<br>1.2                     | Diesel<br>(ULSD), 15<br>ppm | 2400                                     | 2015                       | none   | Engine<br>Repower  | John Deere         | 4045SFM85                       | John Deere<br>4045SFM   | 2014  | 1750   | 0   | Tier 3  | NOx = 0.7897<br>PM2.5 =<br>0.0151                      | 33,890                  | 25,600                                     |
| Marine                     | Commercial<br>Fishing | Sonny Boy                           | 1 Primary  | Propulsion  | Detroit<br>Diesel<br>8V71   | NA   | 1973                 | 2750  | 305        | 1375                                 | Tier 0                | NOx = 3.2551<br>PM2.5 = 0.1484                             | 0.9 <= size <<br>1.2                     | Diesel<br>(ULSD), 15<br>ppm | 5000                                     | 2015                       | 8V824929   | Engine<br>Repower  | Cummins            | QSM11                           | Cummins<br>QSM11  | 2014  | 2750   | 0   | Tier 2  | NOx = 2.1362<br>PM2.5 =<br>0.0449                      | 48,722                  | 71,399                                     |