

# **REQUEST FOR PROPOSALS FOR ELECTRONIC MONITORING VENDOR**

March 5, 2019

## **STATEMENT OF PURPOSE**

Cape Cod Commercial Fishermen's Alliance, Inc. ("Customer") is soliciting Proposals for an Electronic Monitoring Vendor. Those receiving this Request for Proposal (RFP) are referred to as "Vendor".

Project Duration: April 1, 2019 – June 1, 2020

Proposals are due: March 18, 2019, 7:00 am EST

Email proposals to both: [melissa@capecodfishermen.org](mailto:melissa@capecodfishermen.org) and [cmcguire@tnc.org](mailto:cmcguire@tnc.org)

## **SUMMARY**

The Cape Cod Commercial Fishermen's Alliance, in partnership with the Maine Coast Fishermen's Association, The Nature Conservancy (TNC), and fishermen from the Fixed Gear Sector, Northeast Fishery Sectors XI, V, & III, Maine Coast Community Sector, Northeast Coastal Communities Sector, and Sustainable Harvest Sector, is issuing this Request for Proposals to obtain the services of an electronic monitoring provider to refine and implement an audit-based electronic monitoring (EM) plan in accordance with 50 CFR 648.87(b)(4) Provider Standards issued by the National Marine Fisheries Service for a subset of up to 35 vessels in the New England groundfish fishery. The Alliance has secured grant funding to continue and expand the existing EM Audit Model Pilot Program in 2019-20.

## **BACKGROUND**

New England fishermen are entering year four of implementing Electronic Monitoring (EM) as a replacement for human at-sea monitors (ASM) to meet the monitoring and compliance requirements for the 2019 fishing year, May 1, 2019- April 30, 2020 (FY2019). This third-party program will supplement the existing Northeast Fisheries Observer Program (NEFOP) and provide the necessary data for accurate discard estimation to account for sector ACE (annual catch entitlement) utilization. The EM partners have been working closely with National Marine Fisheries Service (NMFS) to develop and submit an exempted fishing permit (EFP) application for the upcoming fishing year to test and refine EM technology in the New England multispecies fishery. A subset of vessels (20 to 27) will run their EM systems on 100% of fishing trips and have at 50 to 100% of the video reviewed, while others will only run EM systems on trips selected for human observer coverage (was 15% in FY18). This pilot will facilitate the finalization of an audit based program design, as well as test improvements to video review and fish handling efficiencies, scale up the number of participating vessels, and ensure EM data streams contribute to fisheries science and stock assessments.

We estimate that the 22 existing EM vessels (already have Ecotrust EM equipment installed) plus 3 new vessels (which need new equipment installed) will use EM at the beginning of FY2019, and that 5 to 10 additional vessels will join the program mid-season (which need

new equipment installed), for a maximum of 35 vessels total (although we predict to only add 5 mid-season based on interest – as such the effort table only has 30 vessels listed). Their trips range from 12 to 75 hours in duration. These vessels will use one or more of four gear types: sink gillnet, otter trawl, benthic longline or jigging machine/rod & reel.

EM trips will depart from and land at ports across New England including principally: Portland, ME; Port Clyde, ME; Cundy’s Harbor, ME; Harpswell, ME; Portsmouth, NH; Hampton, NH; Seabrook, NH; Gloucester, MA; Chatham, MA; Provincetown, MA; Barnstable, MA; Harwich, MA; and Point Judith, RI. See attached table for full breakout.

For trips selected for audit, vendor is expected to complete high-speed compliance review of entire trip to assess completeness of video capture, and note if vessel fails to follow VMP catch handling instructions. During times of discarding Vendor will accurately account for complete discard weights of regulated groundfish species using length/weight key or other NMFS approved volumetric/weight sampling technique (varies by vessel).

ASM EFP vessels (~7 to 8 vessels) will use their EM Systems in lieu of an ASM and in addition to NEFOP, on the trips required to carry an observer (it was 15% coverage in FY18). Vessels will enter their intent to conduct an ASM-eligible groundfish sector trip through the PTNS<sup>1</sup> system as required; if selected for an ASM, the vessel will use the EM system to identify and enumerate groundfish discards, instead of carrying an At Sea Monitor. If selected for a NEFOP observer, vessel will run EM system and carry the NEFOP observer to facilitate direct comparisons. If not selected for ASM or NEFOP, the vessel will not be required to run the EM system to meet ASM requirements. Some ASM EFP vessels may voluntarily choose to run the EM system for secondary data collection purposes. ASM and NEFOP assignments are shared with the Vendor through email. We estimate 280 trips taken by these ASM vessels, resulting in 40 ASM or NEFOP trips that require EM during the fishing year.

100% EFP vessels (~20 to 27 vessels) will use their EM systems on 100% of their trips, regardless of ASM-eligible status. These vessels will also be required to take a NEFOP observer if selected. These vessels do not receive ASM assignments and NMFS retroactively selects which trips will be counted as ASM trips. We estimate that the 100% EFP vessels will take ~680 trips during the fishing year and have 80% of their video reviewed by the vendor, resulting in ~545 trips reviewed.

- Of those 680 trips, ~80 trips are non-groundfish sector trips, where they are not interacting with groundfish but still need a high speed compliance review. For these trips, assume discard measuring time and number of entries is 10% of that on a normal groundfish trip.
- Of those 680 trips, ~100 trips will require a full 100% review of their video due to certain exemptions. (NFMS may require the vendor to review less or more of the video, but for the purposes of the RFP bid, assume the proposed review rate of 80%).

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<sup>1</sup> <http://www.nefsc.noaa.gov/fsb/notification.html>

Fishing effort in FY2019 will vary depending on quota, market factors, and regulatory changes. Therefore, EM participation and trip projections are merely an example to develop comparable proposals and cost estimates; they are not a guaranteed number of sector trips or required EM services. The selected provider must be adaptable and capable of either providing services for additional trips or shifting resources elsewhere based on effort. Please review the attached table for full details on the assumed effort; this table should be the basis of your cost estimate.

A subset of vessels participated in the program in previous years and already have EM equipment installed. Proposals and budget breakdowns must include appropriate estimates to account for changes to existing EM equipment if necessary (replacement or modification).

### **INFORMATION FOR VENDORS**

Vendors should include in their bid all of costs associated with providing strong local technical support and vessel visits, including installation, thorough training in hardware use and program protocols/rules, ongoing technical support and maintenance, pre-season refresher training and equipment checks, assisting with video review feedback to fishermen and development and maintenance of an effective Vessel Monitoring Plan for each vessel.

The EM partners will consider bids for a portion of the services required. However, to be competitive, partial bids must combine into a multi-vendor solution that provides all of the required services.

In the past, video from project participants was used in a data science competition (see [blog](#) of results) designed to dramatically accelerate video review. Competitors were asked to count, measure and ID each discarded fish in a video segment. Our partners at CVision consulting have created an open source semi-automated video review tool, designed to bolt onto a provider's existing review software, to catalyze the adoption of automation for review. <https://github.com/openem-team/openem> Vendors should describe how they plan to collaborate with CVision on this project.

Our partners at The Nature Conservancy are developing an open source library of annotated and raw images (video and stills) to be used for training computer vision tools. Selected video from this project may be submitted to the library, and may require some processing to anonymize and clean.

Additionally, the technology onboard vessels is in the midst of a transition toward reduced video capture through activity recognition, simple onboard video analysis, and wireless data transfer. All vendors should describe where their technology is in this transition and on what specific timeline. Some ports may have wifi access at the pier for testing. Successful bids will be using technological advances to reduce video review costs.

Our team believes that rapid advancement toward the 2<sup>nd</sup> generation of EM systems and accelerated review are critical to achieving the cost and delivery time reduction necessary to take this project to scale in this and other fisheries. There is a regulatory action underway in

New England (Amendment 23) that could lead to a significant scaling up of EM as early as May 2020. Vendors should comment on their ability to scale to 100 boats a year from now.

The EM partners desire that the data output from the EM system on each vessel should be readable by any Vendor's EM review software. This may mean that in FY19 vessels could have EM hardware supplied by one Vendor, the output of which is being reviewed by a different Vendor.

We have already secured federal and non-federal grants to support this work.

### **GOALS OF PROJECT**

1. Accurate third-party validation of eVTR-reported regulated groundfish discards for the purpose of sector ACE accounting.
  - a. Note: EM Participants are required to report electronically. Participants currently use NMFS-supported FLDRS for eVTR reporting purposes, or the current EM vendor's eVTR software. Other eVTR programs will also be considered; please specify the preferred eVTR program in proposal. Integration between EM and eVTR software is highly desirable to reduce reporting burden for fishermen. However, the EM vendor is not required to provide this integration or to cover any eVTR related costs or support eVTR software, unless they already support the use of their own onboard eVTR software that integrates with their EM system. All vessels participating in the program are required by NOAA to use eVTR. We do ask that the EM technicians be able to help troubleshoot eVTR data entry by captains, in case there are questions during training or subsequent feedback conversations. A list of NMFS-approved eVTR applications and the technical specifications can be found at:  
<https://www.greateratlantic.fisheries.noaa.gov/aps/evtr/electronic/index.html>
2. Accurate third-party validation of eVTR-reported fishing information (date/time/broad stock area/gear) for the purpose of sector ACE accounting.
3. Refinement and testing of "audit-model" protocols with NMFS.
4. Accurate third-party validation of eVTR-reported activity inside vs. outside of closed areas.

### **EXPECTED SECONDARY OBJECTIVES**

1. Update and test EM program design in conjunction with NFMS and pilot partners, including:
  - a. Incentivize, demonstrate and utilize accurate catch reporting by participating fishermen.
  - b. Refine protocols for accurate electronic ID of all discarded regulated groundfish species.
  - c. Refine protocols for unseen discards (e.g. poor video quality, obstructed view, system failure) and interim discard data (until video review completed).
  - d. Strengthen feedback-loop between video reviewer and captain/crew for accelerated learning.

- e. Inform the ongoing development of Pass/fail criteria and appropriate audit percentages for future audit approach to EM and additional cost savings.
  - f. Develop criteria for ‘good’ reporting by fishermen and incentives to reward it.
  - g. Develop VMP compliance metrics and sector penalty schedule.
  - h. Develop review tools for gross measurement of kept catch (eg: count totes)
2. Secure approval of a full-scale, regional electronic monitoring program by NMFS.
  3. Attain an affordable groundfish fishery monitoring program that does not compromise the integrity of the data or fishing effort. This includes finding cost efficiencies through onboard handling protocols and technological advancements.
  4. Establish local vendor capacity to support an EM program over the long-term.
  5. Promote individual accountability in the Northeast groundfish fishery.
  6. Improve timeliness and accuracy of data streams for better fisheries management decision making. Reduce reporting redundancy with Northeast groundfish regulations.
  7. Increase industry buy-in of fisheries data and increased levels of trust between NMFS and fishermen.

### **DUTIES OF THE VENDOR**

The Alliance is seeking proposals for the refinement and implementation of an EM program in accordance with the ASM provider requirements provided by NMFS. Upon award of contract, the EM vendor and its necessary sub-contractors shall deliver the following:

1. Updates to existing EM program design and implementation plan that fulfills the requirements set forth by NMFS and the EM partners.
2. Updates to FY2018 catch monitoring protocols that use recorded image/video to generate piece counts and weight estimates of regulated groundfish<sup>2</sup> discards on all groundfish trips where EM systems are used to quantify discards using NEFSC length weight key<sup>3</sup>.
3. Align EM program with NMFS At-Sea Monitoring requirements and guidance as necessary (see 50 CFR 648.87(b) and <http://www.nefsc.noaa.gov/fsb/asm/>).
4. Provide necessary EM equipment for purchase or lease– hardware (EM cameras, control box, sensors, GPS, hard drives, and spare parts) and software. Note that 22 current participants have Ecotrust systems already installed (see attached table); proposals should account for costs of switching and new installations. Vendors may choose to modify existing equipment or submit a bid for just a portion of the vessels.
  - a. System must have logging self-test function and be tamper-proof or tamper-evident.
5. Install EM equipment and software, and eVTR software (if not already installed), on project participant’s vessels as necessary.
6. Develop or update unique Vessel Monitoring Plan (VMP) in coordination with the vessel owners/operators, the EFP project team, and NMFS (update VMP for previous participants as needed, new VMP for new participants).

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<sup>2</sup> The 13 groundfish species which will be enumerated by video reviewers (cod, haddock, yellowtail flounder, pollock, plaice, witch flounder, white hake, windowpane flounder, Atlantic halibut, winter flounder, redfish, Atlantic wolffish, and ocean pout).

<sup>3</sup> Wigley, S.E., McBride, H.M. and McHugh, N.J., 2003. Length-weight relationships for 74 fish species collected during NEFSC research vessel bottom trawl surveys, 1992-99. *NFMS Technical Memorandum NMFS-NE, 171*, p.26p.

7. Establish and execute procedure for video delivery either by submission of tamper-evident hard drives for each vessel (by technician recovery or mail) that maintains chain of custody, or with different wireless technology.
8. Contract and train video reviewers and ensure that the ASM requirements can be met (see again 50 CFR 648.87(b)). Previously trained NEFOP or ASM observers are strongly preferred for video reviewers.
9. Train fishermen participants and any sub-contractors/technical staff in tasks including: use of EM and eVTR software, maintenance of hardware, VMP catch handling methodologies, minor troubleshooting, and data retrieval/shipment.
10. Strong technical support, coordinated with fishermen's schedules:
  - a. Maintain and troubleshoot system function.
  - b. Provide 24 hour access to technician support by phone and email.
  - c. Provide for local technician support to service vessels as needed.
    - i. Vessels that haven't used their EM system in a month or more must do a pre-trip system check while on the phone with technician.
    - ii. Vessels that haven't used their EM system in more than 6 months must schedule a technician service visit to check the system and review VMP.
  - d. Notify ASM EFP vessels via text or email when selected for observer coverage, as a reminder to turn on their EM System. (This does not include 100% EFP vessels)
11. Analyze video and generate 'EM summary report' for each trip (all EM trips: both ASM trips and 100% coverage), to meet federal reporting requirements, and submit to NMFS in appropriate digital (JSON) specifications via API. Summary report is expected to be submitted to NMFS no later than 21 days after trip end or 8 business days after receiving video, whichever is less. Faster is better.
  - a. Definition: Report submitted to NMFS of weight and piece count of regulated groundfish discards by species, gear type, and location. JSON specs are included in the attachment (EM Summary Data Technical Specifications)
  - b. NMFS will provide select information from eVTR to the Vendor to facilitate video review (number and time of hauls).
  - c. Up to 15 of the proposed EM trips (estimate) will occur with a secondary exempted fishing permit that allows 5 vessels to switch gear from groundfish to tuna rods and land tuna. Additional data reporting to Highly Migratory Species is required on these trips. Details are included in the attached Tuna VMP (see the last page for details on service provider reporting) and Tuna EFP.
12. Generate 'EM feedback memo' for each trip, at the same time as the summary report (no later than 21 days after trip end, faster is better), to improve performance, and send to vessel and sector manager. If catch handling corrections are required a phone or in-person follow-up with the Captain is expected.
  - a. Definition: Feedback directly to vessel from video reviewer. Designed to improve catch handling. This does not include catch information.
13. For 100% EM trips Vendor must be able to show when vessels are inside normally closed areas to satisfy NMFS EFP requirement.
14. Cooperate and collaborate with 3<sup>rd</sup> party contractors working to develop automated review and activity recognition algorithms to speed review process and onboard processing. This may include sharing video and testing new software tools, among other things.

15. Cooperate and collaborate with NFMS and project partners to refine audit model protocols. NFMS will compare eVTR catch reports to the Vendor-provided EM Data Summary report.
16. Archive all video required to be collected for three years from the date of collection. Video remains the property of the Alliance and the participating fishermen.
17. Vendor staff are expected to participate in biweekly project management calls and other project development planning and troubleshooting sessions.
18. Describe how NMFS staff will access video for secondary review purposes. NMFS staff will complete secondary review of some (% unknown) video to determine the efficacy of Vendor's video review.
  - a. Remote access of video is ideal
  - b. Vendor shall provide software to NMFS that allows for video review that is comparable to the vendor's review.

### **PROPOSAL FORMAT**

All costs of preparation and presentation associated with the RFP are the responsibility of the bidder. Prospective firms warrant by virtue of submission of proposals that all prices, terms, and conditions stated shall be honored for a period of thirty (30) days after the proposal deadline.

All proposals must contain the following information in order to be considered:

1. The bidding Provider's name, office address, address of the office providing the services under the contract and telephone number for each.
2. Indication of personnel who will be assigned to the contract including their qualifications, location, certifications and affiliations.
3. A description of the Provider's understanding of the work to be performed.
4. Suggested modifications to proposed scope of work outlined above, as appropriate.
5. Fixed price cost to complete the scope of work.
  - a. If you are bidding on a subset of the vessels, make it clear what portion of the fleet the bid covers.
  - b. Please use the attached table as the basis of estimated fishing effort.
  - c. The number of anticipated versus actual vessels/trips and review rates in 2019 may vary depending on quota, market, and NMFS decisions other unforeseen factors in the fishery. Final contracts will be fixed price to provide EM equipment, service, and video review for one calendar year for up to 35 vessels, regardless of actual effort.
6. The names, phone numbers and e-mail addresses of two (2) references relevant to the subject of this RFP.
7. A statement of the insurance coverage carried by the bidding Provider.

The Fishermen's Alliance is a 501(c)(3) non-profit charitable organization. We strive to minimize administrative costs to ensure that maximum fundraised dollars go towards our mission.

### **CRITICAL DATES**

1. Questions Regarding the RFP: Vendor should submit questions to Melissa Sanderson (melissa@capecodfishermen.org; 508-945-2432 x103) as needed while preparing proposal no later than March 13.
2. Questions and answers may be shared by e-mail with all Vendors. Vendor understands and agrees that it has a duty to inquire about and clarify any RFP questions that the Vendor does not fully understand or believes may be interpreted in more than one way. Customer, however, is not required to answer all questions that are not pertinent to the RFP or are considered to be Customer's proprietary information.
3. Proposal Due Date: Proposals shall be delivered to the Fishermen's Alliance via electronic mail to Melissa Sanderson (melissa@capecodfishermen.org) and be copied to Chris McGuire (cmcguire@tnc.org) no later than 0700 EST on March 18, 2019.
4. Contract award decisions will be made by March 22, 2019
5. If awarded the contract, the initial program design plan must be submitted to the Fishermen's Alliance for review by April 5, 2019.
6. Equipment installations/modifications must be complete by May 1, 2019 for the existing fleet of participants (priority given to vessels fishing in May). Additional participants will be scheduled throughout the fishing year.
7. Participant trainings are to be completed following the equipment installation, before the EFP is issued for that vessel.
8. Technical services and catch auditing must go into effect on May 1, 2019.
9. Project Duration: April 1, 2019 – June 1, 2020 (Fishing year 2019 plus prep/installations and post-fishing year analysis time)

#### **CRITERIA FOR SELECTION**

1. Proposals will be reviewed by Alliance, TNC, and Maine Coast Fishermen's Association project staff. Award of the contract will be based upon the highest score using these proposal evaluation criteria:
  - a. Technical merit, approach and understanding of issues – 15 points
  - b. Ability to meet desired timelines and deadlines – 25 points
  - c. Cost-effectiveness– 40 points
  - d. References – provide two (2) relevant to this RFP – 5 points

#### **FINAL CONTRACTING**

A portion of the EM provider contract for video review of the ASM trips will be drafted directly between the Sectors and the selected using this RFP as a basis.

#### **DISCLAIMER**

The scope of the service and delivery of an EM program is based on owner/operator small fishing businesses, and the business decision of deciding when to fish is determined solely at the discretion of the vessel captain. The scope of work may change based on the final EM program design as well as the conditions of the Northeast Groundfish fishery next fishing season. NOAA has estimated that video will be audited at somewhere between 50% and 100%; we are using 80% estimate for purposes of having standardized bid assumptions.

We have secured \$496,096 in funds towards this EM vendor contract. If final actual costs are more than the contracted bid (including R&D on new technology), we would hope the EM

vendor would provide documentation of in-kind match towards the project to meet the funder's matching requirements.

### **ADDITIONAL DETAILS**

Electronic Monitoring as a component of At-Sea Monitoring has been considered a potentially viable option for monitoring at-sea catch in a cost-effective manner. The NMFS is working with partners at the Alliance, Maine Coast Fishermen's Association, The Nature Conservancy, and Gulf of Maine Research Institute in preparation for FY2019 implementation. NMFS has yet to define all EM performance standards necessary for an approvable EM program; the specification development and approval process will be both iterative and collaborative.

The Customer requests that Vendor presentations utilizing the project as an example during the contract period be vetted through project partners before finalizing content.

The Vendor will conduct all such activities in compliance with all applicable Federal, State, and local laws, regulations, and ordinances and to secure all appropriate necessary public or private permits and consents. The final contract will include federally-required compliance with U.S. laws, regulations and executive orders regarding lobbying, trafficking in persons, employee whistleblower protections, money laundering, terrorist financing, U.S. sanctions laws, U.S export controls, restrictive trade practices, boycotts, and all other economic sanctions or trade restrictions (details available upon request).

### **PROCUREMENT PROCESS**

Procurement activities will be conducted in a nondiscriminatory manner with fair treatment given to all Vendors. The Alliance is an equal opportunity employer and provider. The Alliance reserves the right to reject any and all offers for any reason whatsoever, to waive technicalities, and to pursue purchasing in a manner that is in the best interest of the organization.

### **DISPOSITION OF PROPOSALS**

All material submitted in response to this RFP will become the property of the Customer and may be returned only at the option of the Customer and at the expense of the Vendor. Successful and unsuccessful bidders will be notified in by email. Customer shall not be obligated to detail any of the results of the evaluation.

### **ATTACHMENTS**

Please review the following attachments to the RFP, which are provided so vendors are all working from the same information and scope of work. Contact [melissa@capecodfishermen.org](mailto:melissa@capecodfishermen.org) if you need the attachments sent in a different format.

1. Estimated Fishing Effort Table. This has been set up as a standardized estimate for FY19 fishing effort to reduce the amount of interpretation and guessing that goes into your proposed bid.
2. Northeast Groundfish Electronic Monitoring: Audit Model Video Review Protocols for Multispecies Sector Trips (provided by NFMS)

3. FY2018 EM Summary Data Technical Specifications (for the EM Data Summary report), which are undergoing revision by NMFS before the beginning of FY2019.
4. EFP Application for FY2019
5. 2018 100% EM Exempted Fishing Permit
6. 2018 ASM EM Exempted Fishing Permit
7. Tuna VMP & HMS Reporting Instructions
8. 2018 Tuna Exempted Fishing Permit
9. Questions and Answers from previous RFP