Performance Work Statement

Aerial Herbicide Application to Control Phragmites at

Edwin B. Forsythe National Wildlife Refuge, Oceanville, New Jersey

1. GENERAL INFORMATION

1.1 The U.S. Fish & Wildlife Service is seeking quotes from qualified vendors for aerial application of herbicides for the control and eradication of common reed *(Phragmites australis)* on specified areas at Edwin B. Forsythe National Wildlife Refuge in Oceanville, New Jersey. Work shall consist of furnishing all necessary equipment, labor, and materials necessary to accomplish the specified vegetative control and eradication (with exception noted in Section 1.2, below). Spraying will occur by approved UAS or alternative application (see Section 6.5).

Timing: The herbicide application shall be timed to take place during the active translocation season for Phragmites to achieve the optimum results. The active translocation season in the Oceanville, New Jersey area is estimated to be between approximately August 15 and September 30 each year. The Phragmites should be tasseling at the time of herbicide application. **No applications shall occur after the first hard frost of the season.** All herbicide applications shall be consistent with the product label instructions, manufacturer's guidance, and the requirements of this contract.

1.2 **Important note**: Staff at Edwin B. Forsythe NWR will furnish necessary herbicide and surfactant (e.g. Rodeo, Roundup Custom, or equivalent: Aquachem90, LI 700 or equivalent).

2. LOCATION

2.1 General Location: The work areas are located in Oceanville, Galloway Township, New Jersey. Estimated application acres and chemicals to be used are included in the following table.

NWR	Location	Acres to treat	Herbicide, surfactant, EPA registration numbers
E. B. Forsythe NWR	Oceanville, NJ	Approximately 156 acres of *Phragmites*	**Rodeo® or Roundup Custom or equivalent (Glyphosate)*** **Aquachem90® or LI 700 surfactant** **Herbicide dye***

PLEASE NOTE: Treatment area acreage was estimated using manual digitization from digital orthophotos with on-the-ground data proofing. Actual acreage may be somewhat more or less than that listed above, but should be close to the estimate.

Site Location: Treatment areas are located in the vicinity of the Wildlife Drive at the eastern ends of Great Creek Road and Lily Lake Road in Oceanville, Galloway Township, New Jersey, and are indicated on sites provided on the attached map. The estimated extents of infestations to be treated will be depicted on more specific location maps and will be provided upon award. These maps will include specific polygons of infestations to be treated.

3. TREATMENT AREAS, CONTROL GOALS, AND HERBICIDES

3.1 General: Specific treatment areas are identified on the attached maps, and more precise maps will be furnished upon contract award. A site visit will be coordinated at Edwin B. Forsythe National Wildlife Refuge (800 Great Creek Rd., Oceanville, NJ 08231), in advance of the date of treatment to help determine the logistics required for the project.

3.2 Vegetation Control Objectives: A minimum of 90% of all of the identified infestations to be treated in the treatment areas will be sprayed, with each infestation receiving at least 90% coverage by foliar spray. The Project Officer will be responsible for documenting (e.g. survey the area, take digital photographs) areas where less than 90% of the area was treated (if any), and notifying the contractor, as soon as possible after the spraying activity).

3.3 Herbicide Selection Procedure: The contractor will use herbicides, adjuvant, and dye provided by the refuge and listed under Section 2.1 above. These herbicides and additives will be appropriately labeled for specific application (i.e. aquatic label for use directly over water). Herbicides must be registered for aquatic use. No restricted use herbicides are allowed. No herbicides can be used on National Wildlife Refuge property without prior approval from the Project Officer. In addition, all carriers and adjuvants must be non-toxic and registered for water applications. The surfactant shall be added per label instructions to all herbicide mixtures. FAR Clause 52. 223-2 Affirmative Procurement of Biobased Products Under Service and Construction Contracts will apply. The contractor can provide recommendations of which adjuvants and dyes work best with their equipment with the herbicide provided by the Refuge, but must provide the guidance well in advance of the herbicide application date(s) to give the Refuge enough time to acquire the preferred product(s).

3.4 Minimizing Impacts to Non-Target Species: No broadcast spraying shall be performed when wind speeds exceed specifications listed on the herbicide label, or 10 mph, whichever is greater, or wind directions are likely to result in drift to non-target areas, or public use areas. There will be zero tolerance for direct spray or drift of herbicides into non-target vegetation or on adjacent property. No broadcast spraying shall be performed if more than 10% chance of rain is forecast for the day of application or for the 24- hour period following the planned application. The chemical will be applied between August 15 and September 30. Assessment of impact will be conducted by the Project Officer.

4. NOTIFICATION OF TREATMENT:

The contractor will provide a 72-hour notice to the NWR Project Officer before arriving at the onsite for herbicide treatment work. This will ensure that Refuge staff is available to answer questions, if required, to participate in any reconnaissance that may be conducted, and provide the herbicides and other chemicals to be applied.

5. HANDLING, MIXING, APPLICATION RATES AND METHODS

5.1 Handling and Mixing: All herbicides will be handled and stored in accordance with instructions on the EPA registration label. All herbicides shall be mixed in accordance with the label instructions so that the desired rate of application can be attained with the contractor's application equipment. Acquiring mixing water is the responsibility of the contractor. Well water may be obtained onsite if needed. Mixing of chemical solutions is the responsibility of the contractor. The contractor is required to provide a secondary containment system around their herbicide mixing area when herbicides are mixed on government property. This containment system must be constructed of impervious materials. In addition, the contractor will ensure that no contamination of any water

source occurs and that emergency spill containment equipment is at the worksite and is capable of containing all potential herbicide spills from contractor vehicles/equipment. Unused, mixed pesticides will be disposed of in accordance with local, state and EPA guidelines. Spray equipment cleaning will also be accomplished in accordance with these guidelines. Prior to leaving a worksite for the day, the contractor shall remove all equipment and unused materials, any waste materials, oil, empty herbicide containers, and litter resulting from contract activities on government property.

5.2 Equipment: The equipment used by the contractor shall be designed for such work and operated in a safe manner. The equipment will be capable of accurately delivering a predetermined rate per acre dosage of herbicide.

5.3 Rates and Method of Application: Application rates will be per the specification on the material safety data sheet, labeling and manufacturer's suggested rate tables, per chemical used, and the desired results identified in "3.2 Vegetation Control Objective". For example, the label for 53.8% Roundup Custom lists a broadcast rate for Phragmites for areas other than the Gulf Coast as 2 to 3 quarts (0.5 to 0.75 gallons) of chemical per acre. The solution for the herbicide spray would consist of 0.5 gallon of chemical with 4.5 gallons of water per acre and to be sprayed at a rate of five (5) gallons per acre. This would be a 10% solution.

6. SAFETY AND CERTIFICATION

6.1 Safety Manual: Notwithstanding any other provisions of this contract, the Contractor shall comply with all safety and health requirements as outlined in OSHA Safety Standards to ensure the safe working conditions for themselves and others.

6.2 Hazard Communication: The contractor shall implement a hazard communication program in accordance with 29 Code of Federal Regulations (CFR) 1910.1200 or 1926.59. The written hazard communication program shall address, as a minimum, the following: training (to include potential safety and health effects from exposure), labeling, current inventory of hazardous chemicals on site, and the location and use of Safety Data Sheets (SDSs).

6.3 Licensing: The contractor or any employees or subcontractors performing any of the work under this contract shall possess a valid state commercial herbicide applicator's license for New Jersey and shall comply with all Federal, State, and local laws and regulations applicable to the contract work and to the products and materials used by the contractor in performing that work. A New Jersey Department of Environmental Protection license/permit for aquatic applications (NJ Aquatic Pest Control) and aerial applications (Aerial Pest Control - Category 11) are required. Evidence of such licensing shall be submitted prior to award and also with the "Application Plan" as outlined in Paragraph 7.1. Contractor must by fully licensed to apply herbicide by UAS on aquatic sites in New Jersey. Documentation must be provided with bid.

6.4 Contractor must provide with bid:

A. Contact information, including names, addresses, and phone numbers for at least 3 references from prior aerial herbicide applications completed in the last 3 years.
B. A performance guarantee including an estimated percent control one-year post-treatment. The contractor is expected to achieve a minimum of 90% kill of Phragmites within the specified treatment areas. Percent control will be assessed by refuge staff.
C. Per acre cost estimate based on a site visit for the above-described work including all personnel, equipment, materials, transportation, clean-up, and documentation costs.
D. Resumes or CVs for personnel who will be doing the work must be provided with the bid.

6.5 UAS Requirements:

A. Spray Drone Requirements:

The preferred method of application will be via drone because of the efficiency and precision which a skilled operator can target invasive plants. The Contractor shall conduct the project using an National Defense Authorization Act (NDAA) compliant and BlueUAS approved survey drone if Orthomosaic mapping services are required.

The Contractor's agricultural spray drone will not record, transmit, or store visual data such as photographs or videos. The Contractor may store operational data as needed to perform the scope of work. Operation data may include application rate, swath width, and GPS coordinates for spray coverage. This data may be stored locally on the drone or associated control tablets. The Contractor will not upload the data, as defined in Section 6.5, to external networks or cloud-based systems.

B. Alternative Application

If the Contractor cannot obtain the required permits for UAS herbicide application at the project location by September 1, herbicide application can take place via helicopter.

6.6 Public Safety: Public safety must be ensured when spraying or using pesticides. In application areas where there is potential for use by the public, the refuge staff will station personnel to enforce closure during time of spraying and/or place appropriate warning signs which inform the public that pesticide application work is on-going. The refuge is heavily visited by the public, especially on weekends. **No spraying will take place on weekends at the refuge.**

6.7 EPA Registration Label: All work shall be performed in accordance with the instructions on the EPA registration label of the chemical herbicide used. All safety instructions featured on the label shall be strictly adhered to.

6.8 Safety Data Sheets: Safety Data Sheets (SDS) shall be submitted to the Project Officer with the "Application Plan" as outlined in Section 7.1. The Contractor shall also make these SDSs readily available to all affected contract employees.

6.9 Spills and Contamination: The contractor shall submit as part of the "Application Plan" described in Section 7.1, the response measures to be implemented should a spill or contamination occur. The contractor's immediate response to a spill or contamination shall be to proceed with the required measures to limit the contamination. Immediately following this initial response, the contractor shall notify the appropriate Project Officer at the work location and other appropriate local, state, and federal officials. Subsequent to these actions, the contractor shall take actions to clean up the spill as recommended by the Project Officer. Should a personnel contamination occur, the contractor shall take immediate actions as prescribed by chemical manufacturer so as to protect the safety and health of the contaminated individual(s). Immediately following the contractor's initial response, the incident shall be reported to the appropriate Project Officer.

7. SUBMITTAL AND REPORTING

7.1 Application Plan: The contractor shall submit an electronic copy of an application plan to the Project Officer. This plan shall outline, per the National Wildlife Refuge site, the types of herbicides, planned application rates, hyperlinks to SDS's and labels for each chemical to be used, scanned copies of applicator licenses, and a spill and contamination action plan. Additionally, the contractor shall certify in writing that all employees engaged in handling, mixing and spraying herbicides have read the

MSDS's and that personal protective equipment as specified by the MSDS's will be provided to and worn by these persons. Further, one hard copy of the approved plan shall be provided that will include a signed statement by the contractor that this plan complies with all state, local and federal regulations. This plan shall be submitted for review and approval within 10 working days of the notice of contract award and prior to the desired start of work. Government approval of this plan in no way relieves the contractor of any liability for compliance with all Federal, State, and/or local regulations, should there be omissions/errors within said plan.

7.2 Post-Application Documentation: The contractor shall submit a spray log to the Project Officer detailing: day(s) and time(s) sprayed, crew members, chemical applied, application rate, weather conditions (average windspeed, temperature, humidity, cloud cover). The contractor shall also provide ArcGIS shapefiles to the refuge Project Officer showing areas sprayed (this is only if the contractor has AgNav or similar system on-board; we would prefer this, so the refuge can geo-reference application areas). Shapefiles will be geo-referenced using the Grid Coordinate System: UTM zone 18 and Horizontal Datum: NAD 1983.

8. PREWORK MEETING:

Within 10 days after contract award, the contractor shall contact the Project Officer to arrange a meeting to discuss and develop a mutual understanding of the requirements and details of work. There may also be occasions when subsequent conferences will be called to reconfirm understandings or provide clarifications on contract requirements.

9. LIABILITY OF AND DAMAGES TO THE GOVERNMENT

9.1 Insurance: The contractor will carry liability insurance that will cover the application of pesticides as defined in this specification. This coverage will include as a minimum drift, run-off, and pollution (sudden and accidental) for all contract operations. The amount of coverage this insurance will provide will not be less than $1,000,000 per incident. A Certificate of Insurance form signed by the insuring agency shall be provided to the Contracting Officer prior to award of the contract. The insurance must provide coverage for the entire contract period. The insurance policy shall state that it cannot be cancelled without 30 days written notice to the Contracting Officer. Failure to secure insurance will be grounds for non-award and termination of the insurance during the performance period of this contract for any reason will be grounds for termination of this contract. The contractor will be in default and the contract terminated if the insurance lapses and is not immediately replaced with equal coverage. (If an insurance lapse occurs, work is suspended pending replacement insurance. The delay is not compensable to the contractor).

9.2 Government Liability: The Government assumes no liability from the contractor's performance of the contract work. The contractor shall hold and save the Government harmless from any and all liability arising from the performance of the contract.

9.3 Responsibility for Damages: The contractor is responsible for all damages to persons and property. The contractor shall return any Government furnished property (such as the handy flat) to the Government in the condition that it was received, ordinary wear and tear excepted. The contractor shall comply with FAR 52.245-1 for any Government furnished property lost or damaged in the course of contract performance.

10. WARRANTY

The contractor warrants that:

10.1 The contractor is responsible for damages to persons or property, including unreasonable or unnecessary damages to non-target vegetation, within and outside the treatment areas resulting from the performance of the contract work. Other penalties may be assessed based on local, State, or Federal laws.

11. INSPECTIONS AND ACCEPTANCE:
Work will be inspected periodically for conformance with these specifications for timeliness, safety, and results achieved.

AERIAL SPRAYING MAP FOR EDWIN B. FORSYTHE NWR:

The following map is for reference purpose only. It does not represent a real estate survey and should not be used to establish legal ownership. The products were developed using Atlantic County and Township of Galloway GIS and are not state authorized.

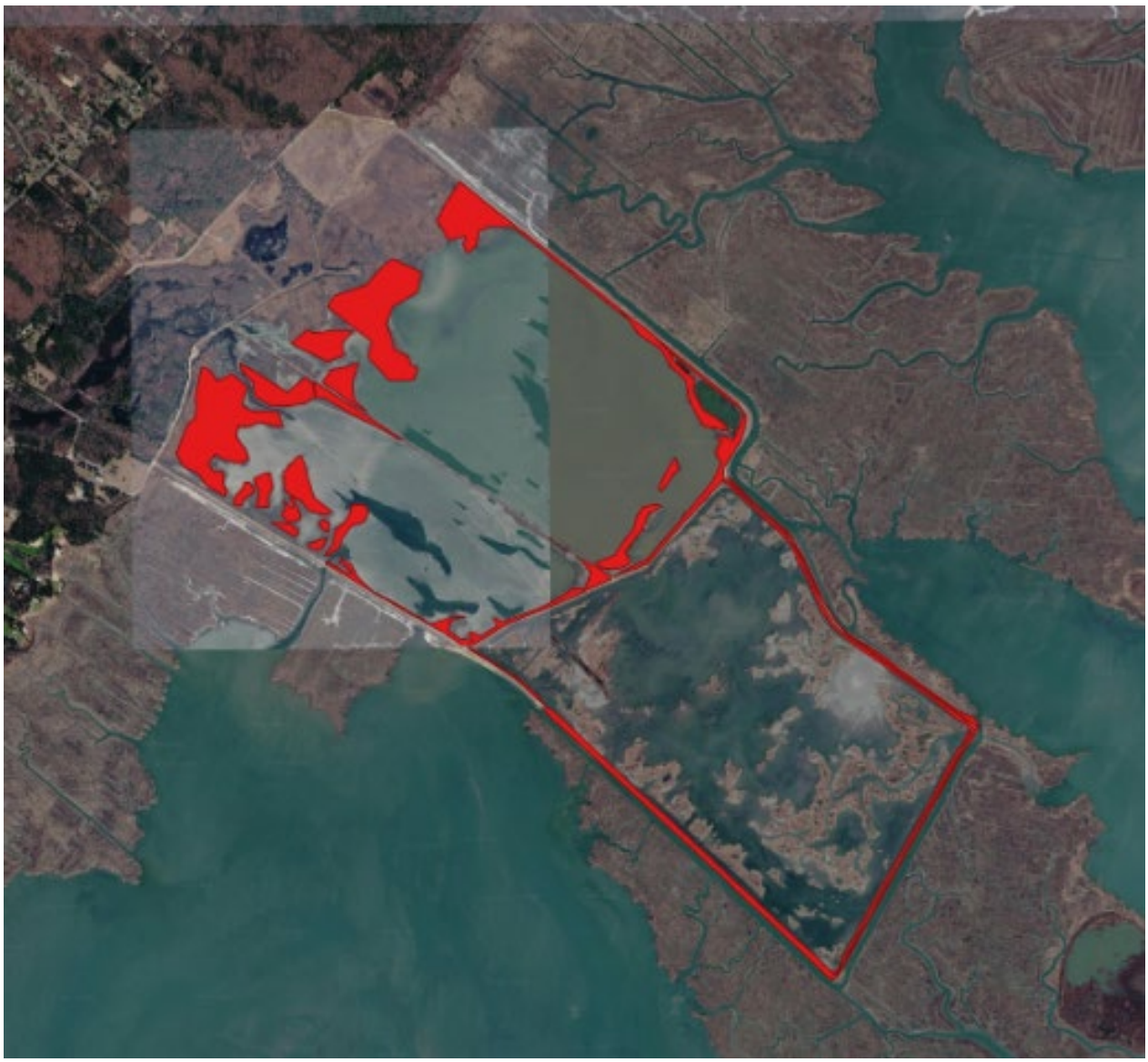

Figure 1. Map of approximate Phragmites distribution within and adjacent to the Wildlife Drive at Edwin B. Forsythe National Wildlife Refuge in Oceanville, New Jersey.