



Natomas Levee Improvement Program

Request for Proposals & Statement of Qualifications for

CUSTOM DESIGN, FABRICATION/MANUFACTURE AND DELIVERY OF A CUSTOMIZED RIDGER-ROLLER - SEEDER FARM IMPLEMENT

Proposal Due Date: April 15, 2010 at 12:00 Noon
Award Date: April 29, 2010
Delivery Date: September 2, 2010
Cost Estimate: \$100,000 - \$200,000

Submit Sealed Proposals to: Clerk of the Board
Sacramento Area Flood Control Agency
1007 7th Street, 7th Floor
Sacramento, CA 95814

Submittal Contents: Written & Cost Proposal

Questions regarding the content of this RFP should be directed in writing to: Peter Buck, Natural Resources Supervisor at buckp@saccounty.net or Tel. 916-874-7606.

PART 1 GENERAL

1.1 SCOPE

The products and services to be provided under this contract shall include the furnishing of all plans/drawings, labor, materials, equipment and supervision, for the fabrication/manufacture delivery, and training on its operation, of a custom "Ridger-Roller-Seeder" (RRS). The RRS will be used by the Agency and its contractors to texture the soil surface and apply a native perennial grass seed mix to graded 3H:1V levee slopes, seepage berms and flat areas associated with the Sacramento Area Flood Control Agency (SAFCA or Agency) Natomas Levee Improvement Program (NLIP) under construction in the Natomas Basin (Sacramento and Sutter Counties). The intent of the seeding project is to establish perennial grass cover for erosion protection, wildlife habitat, and prevention of common weed infestations which add to maintenance costs and create fire hazard.

NLIP project features to be seeded using the Ridger-Roller-Seeder include: approximately 20 miles of new levees with uniform 3H:1V landside slopes; several miles of seepage berms varying in slope (5H:1V to 10H:1V) and width from 100 to 500 feet; approximately 20 miles of maintenance right of way averaging 35-foot wide; 3H:1V side slopes at excavated soil borrow sites; and a few hundred acres of reclaimed fields at borrow sites. Seeding equipment field trials were conducted in November 2009 on 3H:1V levee slopes. Most equipment, including standard 5-foot and 10-foot wide Truax grass seed drills, could not be operated effectively on the levee

slope. However, a standard 20-foot wide rice roller was very effective and stable while pulled behind a Fiat-Allis cat-track tractor, similar to a D-5 Caterpillar tractor. The RRS will be pulled parallel to the levee slope by a tractor equipped with a pin hitch and hydraulic hose connections. A chain harrow or light-duty ring roller may be attached to the rear of the roller frame and pulled behind to lightly cover the seed deposited in the rolled V-grooves with soil.

The custom-built RRS will be similar to a standard rice ridger-roller, but with additional mounted features that enable the application of 'fluffy' native grass seed and fertilizer in a single pass. It shall have the ability to operate on a 3H:1V slope as well as flat areas. Roller dimensions, design features, and performance requirements are contained in the specifications (Exhibit A attached).

1.2 MINIMUM QUALIFICATIONS

The Manufacturer's principal business shall be in connection with specialized design, custom fabrication and manufacture of mechanized farm machinery. The manufacturer must demonstrate at least 10 years successful experience with manufacturing/customizing equipment of similar size, scope and function and shall submit verification of their qualifications for approval by the Agency with their written cost proposal before the award of contract.

1.3 SCHEDULE

The Manufacturer's strict conformance to the project schedule is essential which is as follows:

1. Delivery of 3 hardcopy sets and one electronic copy (AutoCAD) of detailed plans and engineering/fabrication drawings within 30 days or less following the date of award of contract.
2. Agency review shall be completed in 30 days from the date of initial submission.
3. Completion of manufacture and manufacturer testing by August 31, 2010.
4. Delivery of the RRS to the NLIP project site by September 2, 2010.
5. RRS Operation Training Period: September 8-17, 2010, or as directed by the Agency.
6. Warranty: a period of 1 year beginning from the date of delivery of the RRS to the Agency.

1.4 DETAILED PLANS AND FABRICATION DRAWINGS

The Manufacturer shall provide the Agency with three (3) hardcopy sets and one (1) electronic copy (AutoCAD) of detailed plans and engineering/fabrication drawings that conform to the RRS specifications contained in Exhibit A, or as modified and accepted by the Agency during the design and fabrication process. At a minimum, the plans and drawings shall include the assembly, a material parts list identifying all of the materials used to build up the fabrication, weld details, layouts, detail drawings, machining details, hydraulics and hookups, wire diagrams, schematics, assembly drawings and installation drawings. The items used to make up the fabrication will be identified with leader lines to balloons which include the item reference number linking to the parts list.

1.5 QUALITY CONTROL AND TESTING

1.5.1 INDUSTRY STANDARDS: Anything customarily necessary, based on industry standards, for proper completion of the work shall be furnished even though not specifically contained in the specifications.

1.5.2 SUPERVISION: The Manufacturer is responsible for direct supervision of the Manufacturer's personnel or subcontractors involved in the fabrication of the RRS.

1.5.3 MANUFACTURE AND MANUFACTURER TESTING: The Manufacturer is responsible for assuring the operational capability, quality, value and reliability of its workmanship, products and product components prior to delivery of the finished product. The Manufacturer shall provide 2 business days notice to the Agency prior to the Manufacturer's RRS prototype testing trial.

1.6 PERFORMANCE STANDARDS

The Manufacturer is responsible for designing and fabricating the RRS in compliance with the attached specifications (Exhibit A). Following Agency approval of the Manufacturer's detailed plans and fabrication drawings, no materials substitutions or deviations from the approved plans and fabrication drawings shall be allowed without prior written approval from the Agency.

1.7 MEASUREMENT FOR PAYMENT

1.7.1 Measurement for payment for the design, fabrication, testing and delivery for the RRS supplied by the Manufacturer and accepted by the Agency will be on a lump sum price basis. Three progress payments of one third (1/3rd) equal value will be provided upon Agency acceptance at the following milestones:

1. On the acceptance by the Agency of the detailed plans & fabrication drawings.
2. Upon completion of manufacture and prototype testing by the manufacturer.
3. Upon final delivery and completion of operator training period.

1.8 PAYMENT

1.8.1 Payment for the design, fabrication, testing, delivery and training of Agency personnel, measured as specified above, will be made at the contract lump sum price, which price shall include all costs in connection therewith.

1.9 LIQUIDATED DAMAGES AND INSURANCE

1.9.1 The Manufacturer's conformance to the project Schedule is essential to the success of this project and agrees that time is of the essence and that the work shall be completed in compliance with the milestones identified in *Section 1.3 Schedule*. The Manufacturer's failure to complete the custom design, fabrication/manufacture and delivery of the Ridger-Roller-Seeder within the time allowed will result in damages to the Agency. The liquidated damages for this Contract shall be one

thousand five hundred dollars (\$1,500) per day or part of a day and shall apply after the specified Date of Delivery of the RRS.

1.9.2 The Manufacturer's insurance shall meet the following minimum and coverage requirements: Manufacturer shall maintain in force at all times during the term of the contract and any extensions or modifications thereto, general liability insurance with limits of not less than \$1 million occurrence and \$2 million aggregate with an insurance company rated not less than A-:VII by A.M. Best. The Manufacturer's general liability insurance policy shall be endorsed to name the Agency as an additional insured and shall include primary and non-contributory language in favor of the Agency. Manufacturer shall furnish Agency with a certificate of insurance with the required additional insured and primary and non-contributory endorsements. Failure to maintain insurance as required by the contract may be grounds for material breach of the contract.

PART 2 MATERIALS

2.1 MATERIALS AND PRODUCTS

Materials and products to be supplied are to be of the highest quality and reliability per the specifications attached as Exhibit A.

PART 3 EXECUTION

3.1 COORDINATION AND SCHEDULING

The Manufacturer shall be responsible for coordinating and scheduling the design, fabrication, testing, delivery and operator training of the RRS.

3.2 INSPECTIONS

The Agency will conduct three visits to the Manufacturer's shop facility site to observe the progress of the design and fabrication of the RRS. The Agency will conduct one inspection at start up, the second during fabrication, and a third inspection when fabrication has been substantially completed and the RRS is ready for Manufacturer testing. The Agency reserves the right to inspect the Manufacturer's fabrication site at any other time through the duration of the contract, and encourages Manufacturer's contact with the Agency in order to achieve design objectives.

3.3 RIDGER-ROLLER-SEEDER ACCEPTANCE/REJECTION

Acceptance or rejection of the RRS by the Agency will coincide with the milestones identified in *Section 1.3 Schedule* as follows:

1. RRS plans and detailed fabrication drawings.
3. Manufacture and testing of RRS.
4. and 5. Delivery, operational capability and functionality of the RRS.

The Agency reserves the right to rescind an acceptance if, in the opinion of the Agency, Manufacturer has deviated from specific fabrication details that either reduce effectiveness or result in a likely departure from the Agency's stated design objectives referred to in Section 1.1 SCOPE and Exhibit A - Specifications.

3.4 SUBSTITUTIONS

No substitutions are permitted without prior written approval from the Agency.

PART 4 POST MANUFACTURE

4.1 DELIVERY AND STORAGE

The RRS shall be delivered by the Manufacturer to the NLIP project site as directed by the Agency. Access to the site shall be as directed by the Agency. The RRS shall be stored in such a manner to prevent damage. The Agency shall provide written acceptance of the delivered RRS to the Manufacturer at the project site.

4.2 RIDGER-ROLLER-SEEDER INSPECTION

Until delivery and storage of the RRS to the NLIP project site, the Manufacturer is solely responsible for the safety of the RRS and Manufacturer shall, at its sole cost, be responsible for any damages thereto.

4.3 OPERATIONAL TRAINING

The Manufacturer shall provide a total of up to 16 hours of operator training. Such training shall be segmented in no less than four 4 hour periods but can, at the discretion of the Agency be two 8 hour sessions. Training shall minimally provide for the safe operation, use, maintenance and troubleshooting procedures of the Ridger-Roller-Seeder during the training period(s) as directed by the Agency. The number of persons to be trained shall be at the Agency's sole discretion.

4.4 OPERATIONS MANUAL

The Manufacturer shall provide the Agency with six fully complete sets of RRS operations manuals that contain technical guidance in the following topical areas: standard operation procedures, routine and long-term maintenance/service procedures and requirements, safety and safe operation of the RRS, troubleshooting procedures, parts and machine specifications. The manual shall also include catalog data and operations and maintenance manuals for each major piece of equipment (e.g. seeder unit and hydraulic pumps) provided with the RRS. One (1) draft manual shall be provided for Agency approval. Six (6) sets following Agency approval shall be delivered at the time the training is provided.

4.5 WARRANTY AGAINST DEFECTS AND WORKMANSHIP

The Manufacturer shall warranty its product to the Agency for a period of 1 year for mechanical breakdown caused by defective components, due to faulty materials, or original workmanship. Maintenance, high-wear items, and Agency attachments are excluded.

PART 5 ORGANIZATION OF THE PROPOSAL

The proposal shall contain the following information in the sequence noted:

5.1 ORGANIZATION/QUALIFICATIONS (1 page maximum)

Describe the Manufacturer's qualifications as set forth in *Section 1.2* above, the fabrication facilities and list key staff proposed/committed to the project and a brief summary of their roles and qualifications.

5.2 PRELIMINARY FABRICATION PLAN

Provide a preliminary fabrication plan in the proposal, including these contents:

- Brief description/summary of key RRS features, including any recommended alternative design elements or improvements to the features and standards in Exhibit A of this RFP;
- Preliminary sketches, as appropriate, to communicate the Manufacturer's proposed approach to RRS design and fabrication.; and
- Schedule of project including dates of key milestones (at minimum, include dates for start-up meeting with Agency; submittal of draft plans, materials and specifications; one or more in-progress visits by Agency during fabrication; completion of RRS manufacture; delivery of RRS and testing and operator training).

5.3 CONFLICT OF INTEREST

Disclose, if relevant or appropriate, any actual, apparent, direct, indirect, or potential conflicts of interest that may exist with respect to the firm, management, or employees of the firm or other persons relative to the services to be provided under the Agreement for Manufacturer services to be awarded pursuant to this RFP. It is assumed that no response to this issue indicates no conflict of interest.

5.4 REFERENCES

Provide a minimum of three pertinent client references with the name, address, telephone number, and e-mail address of owner/clients' representatives on projects completed in the last five (5) years which are similar to this RFP. Briefly state the fabrication product delivered for each project.

5.5 COST PROPOSAL

The Manufacturer’s cost proposal shall be on a lump sum price basis for all costs associated with the design, fabrication, testing, delivery, operator training and servicing of the RRS as described in this document. Manufacturer may choose to list separate itemized costs for suggested optional features or design alternatives that are different from the Specifications described in Exhibit A.

PART 6 SELECTION PROCESS AND AWARD OF CONTRACT

Upon receipt of qualifying proposals by the indicated deadline, SAFCA may convene a selection committee to review the submittals and evaluate and rank according to the following criteria:

Criteria	Possible Points
Qualifications/experience of the manufacturing team	25
Appropriateness of the recommended design approach	5
Ability to successfully deliver the specified equipment (schedule, facilities, materials used, quality of workmanship etc.)	25
Cost	45
Total	100

Manufacturers submitting the most highly ranked proposals may be invited to an interview with the selection committee. Based on the interview and the submittal, a final candidate will be chosen. If a contract cannot be successfully negotiated with the final candidate, the next most highly-ranked candidate will be chosen, and so on.

In the event of a conflict between this Request for Proposals and Exhibit A, Exhibit A shall control.

The Agency at its sole discretion reserves the right to reject any or all proposals, to waive any informality in any proposal and to determine which proposal, in the judgment of SAFCA, is the most responsive proposal of a respondent.

EXHIBIT A

Specifications for Custom Built Ridger-Roller-Seeder

1. Purpose of Ridger-Roller-Seeder

This contract calls for the custom fabrication of a “Ridger-Roller-Seeder” (RRS) which will be used to texture the soil surface and apply a seed mix of native perennial grasses to graded 3H:1V slopes and flat areas associated with the Natomas Levee Improvement Program (NLIP) under construction in the Natomas Basin north of Sacramento. The intent of the seeding project is to establish perennial grass cover on newly constructed levee and seepage berm slopes for erosion protection, wildlife habitat, and prevention of common weed infestations which add to maintenance costs and create fire hazard.

NLIP project features to be seeded using the Ridger-Roller-Seeder include: approximately 20 miles of new levees with uniform 3H:1V landside slopes; several miles of seepage berms varying in width from 100 to 500 feet; approximately 20 miles of operation and maintenance right of way averaging 35-foot wide; 3H:1V side slopes at excavated soil borrow sites; and a few hundred acres of reclaimed fields at borrow sites.

Field trials of various seeding equipment were conducted in November 2009 on 3H:1V levee slopes. The trials demonstrated that most equipment, including standard 5-foot and 10-foot wide Truax grass seed drills, could not be operated effectively on the levee slope. However, a standard 20-foot wide rice roller was very effective and stable while pulled behind a Fiat-Allis crawler tractor similar to a D-5 Caterpillar. The RRS will be pulled longitudinally along and parallel to the levee slope, likely by a D-6 or D-5 CAT or similar tractor, equipped with a pin hitch and hydraulic hose connections. A chain harrow or light-duty ring roller may be attached to the rear of the roller frame and pulled behind the RRS to lightly cover the seed deposited into the RRS rolled V-grooves with soil.

It is intended that the custom-built Ridger-Roller-Seeder will be similar to a standard rice ridger-roller, but with additional mounted features that enable the application of ‘fluffy’ seed and fertilizer in a single pass. The RRS must have the ability to operate on a 3H:1V slope as well as flat areas. Roller dimensions, essential design features, and performance requirements are listed below.

2. ROLLER DIMENSION SPECIFICATIONS

- a. Cylinder width: 15 feet, not including frame
- b. Cylinder diameter: 42 inch (pipe)
- c. Cylinder material face: face-hardened steel w/ welded seams

d. Main frame structure: 8" x 8" square channel, 5/8" thick for heavy duty use

3. ROLLER CYLINDER FEATURE SPECIFICATIONS

- a. Roller groove angle: "narrow pinch" 3-inch deep groove
- b. Roller groove spacing: 8-inches on-center ridge spacing (flat between grooves) to match unit dimension spacing of seed box(es) and seed tube module(s)
- c. Mud scrapers between roller groove ridges
- d. Frame/roller bearings: sealed, double backed, heavy duty type (e.g., Dodge Type-E "cylinderized", or equivalent)
- e. Water fill option (Note that water fill will not be used on levee or borrow pit slopes due to weight shift downhill)

4. SEED DELIVERY SYSTEM SPECIFICATIONS

- a. Seed delivery unit shall be based on a design similar, or equal to, a Truax Grass Drill from Truax Company Inc., New Hope, MN (assembly manufacturer-supplied by special order; website: www.truaxcomp.com/grassdrill.html), or equal.
- b. Seed boxes and tube modules shall be a Truax Flex-II Grass Drill No. FLXII-822 or equal, including a "fluffy" seed box and a small seed (e.g. legume) box with seed tube. There shall be a minimum of 22 seed drop tube assemblies.
- c. Top- or front-mounted, 15-foot wide seed box assembly (can be two shorter units assembled together) with baffled wall separations and hopper units with double wheel agitators. Seed shall be dropped ahead of cylinder.
- d. Vibration isolation and shock protection, such as Firestone 'Air Ride' cushions or elastomeric tensioners (e.g., Lovejoy, Rosta) or equal, shall be provided between roller frame and seed box assembly and seeder mechanism mounting points.
- e. Hydraulic or electric drive unit to power seed agitators and draw gears shall be variable, proportional to ground speed travel rate.
- f. Draw gear and seed tubes shall be mounted 8-inches on-center with adjustable outlet height above ground.

5. FERTILIZER DELIVERY SYSTEM SPECIFICATIONS

- a. Rear-mounted, 500 gallon total capacity liquid fertilizer tank or twin tanks, with dual wall, and a self-leveling platform and/or V-shaped bottom(s). Tank material shall be stainless steel, polypropylene, or equivalent.
- b. Adjustable liquid fertilizer delivery system powered by hydraulic or electric pump with directional stream or fan delivery tips, capable of a minimum injection rate of 20 gallons per acre.

- c. Retractable hydraulically operated, minimum 10-inch long, liquid injection knives aligned at 8-inch intervals that line up with the 8-inch grooves on the roller cylinder.
- d. Injection knives shall inject liquid fertilizers up to 3 inches below soil groove depth.

6. OTHER REQUIRED FEATURES AND SPECIFICATIONS

- a. Single hydraulic lift, front-mounted tool bar with 6-inch long spike-tooth harrow (to break up track marks from pulling tractor)
- b. Folding hydraulic tongue with standard agricultural, single-plate, heavy duty pin hitch for towing on public roads.
- c. Lengthwise axle lift with road transport wheels, heavy duty (10-hole) budd wheel hubs or standard single nut, and 14 x 17.5-inch or 19.5-inch, 10-ply or 14-ply tires (e.g., Redneck Supplies, or equivalent).
- d. Open grid grate walk-board(s) with safety rail and ladder to access and fill seed hoppers and fertilizer tank(s).
- e. Minimum 4-inlet hydraulic hose hook-up to remotely operate accessories from tractor seat and at front of unit.
- f. Two-plate front pin hitch on roller frame for attachment of RRS to pulling tractor, and two-plate rear pin hitch to attach a chain harrow or ring roller.

7. TRAINING AND WARRANTY

- a. Prior to fabrication, Manufacturer shall submit preliminary design drawings and specifications for Agency review and approval.
- b. Manufacturer shall provide 16 hours of training in field operation of RRS following completion of fabrication.
- c. Manufacturer shall warranty parts and labor against defect or failure of operational parts and systems for a period of 1 year following RRS date of delivery.

8. DESIGN PERFORMANCE REQUIREMENTS FOR RIDGER-ROLLER-SEEDER

The following list of performance standards must be met by the custom-built Ridger-Roller-Seeder:

- a. Unit shall be stable while operated on 3H:1V slopes, and withstand the gravitational and mechanical stresses while operated at an angle.
- b. Cylinder end bearings and shaft shall withstand the frictional and mechanical stresses of prolonged operation at a 3H:1V side angle.
- c. Draw gear speed must be adjustable to calibrate the seed application rate according to the ground speed of RRS. Adjustable application rates for “fluffy” grass seed must vary at minimum from 10-35 lbs/acre.

- d. Seed delivery mechanism shall have the ability to disperse seeds of native grasses (a 5-species mix) which are more lightweight than typical crop or erosion control seed (Some native grass species have long awns that can “bridge” inside typical hoppers, or form seed balls, unless properly agitated inside the hopper and metered out effectively.).
- e. A shock isolation and vibration cushioning design shall be provided to ensure that the seed delivery system operates as intended without interruption, influence or damage from the vibration of the roller unit.
- f. Unit shall have multiple hydraulic pump and/or electrical operation capacities to reliably operate all system features described above.
- g. RRS shall be capable of being hydraulically lifted on transport wheels and safely transported on public roads.