Little Green Valley Fen Fencing and Spring Construction
Statement of Work and Request for Proposals
Tonto National Forest, Arizona

Background and Statement of Work: Fens are peat-forming wetlands that rely on groundwater input and require thousands of years to develop, and cannot easily be restored or replaced once destroyed. In Arizona, fens are an especially unique wetland type, home to rare plants, native wildlife, and important in groundwater discharge function and processes in the watershed.

Little Green Valley is one of the largest fens in Arizona, draining into the Salt River Watershed. A 20-foot-deep head cut has been migrating upstream for many years. Comparison of 1946 and 1988 aerial photos revealed that the head cut had migrated upstream approximately 750 feet between those years. While the original head cut is no longer advancing into the fen, a 1200 foot-long, 10 foot deep and up to 20 feet wide gully persists. This gully has lowered the groundwater table such that the fen is now dry. It has also caused downstream water quality issues. This project will reduce sedimentation and increase groundwater levels in the fen, restoring its aquatic habitat and promoting hydrologic function.

Phase I of the project consists of constructing 1 portion of new fence (~5,400 linear feet), enclosing approximately 18 acres. When completed to specifications, the fence will remain in place for a minimum of 20 years and be a sturdy barrier that will prevent elk and cattle from damaging riparian vegetation and soil. The new fence will be constructed on the side of a mountain and will require installation on a slope. All old and unused materials will be removed from the fen and neatly stored at an approved location (See Map, Appendix A). A spring located within the fen will be developed with a spring box and pipeline leading to a trough outside of the fenced area.

Information Requested
If interested in this project, please provide a bid for the above statement of work by providing approach, work experience, and cost. Please also explain how operations will meet the access needs of the landowners as described below. Include your capacity for this project and efficiency in fencing and spring development projects in the past, if any.

This is a request for proposals only and quotations furnished are not offers. This request does not commit the National Forest Foundation to pay any costs incurred in the preparation of submission of the quotation or to contract for supplies or services.
General Specifications

(a) Description of Work – This Request for Proposals is for restoration services related to riparian fen protection and fence construction, and spring development, including the following:

1. Prior to fence construction, site preparation will include removal of an existing non-functioning elk fence. All old fencing material shall be removed. This includes fence wire, braces, posts, gates. These materials shall be stacked neatly at the north end of the project area in a location designated by the NFF and approved by the adjacent property owner (See Map, Appendix A).

2. Construction of the new field fence will be placed along the entire perimeter, largely upslope of the existing fence line. 10’ T-posts will be placed every 10’ along the perimeter. Field fence may be installed as a single roll, 8 ft. in height OR two 47 in. rolls stacked, attached with hog rings (Appendix B, Figure 3).

3. Steel Gates will be installed at two locations, one each on the north and south end of the exclosure (Appendix B, Figure 5).

4. Spring Development includes site preparation and construction of a spring box (Appendix B, Figure 7). The spring development will be installed at the south end of the project area that will collect water from an existing spring and pipe it to storage and a trough up to 400’ away. This will provide a water source outside of the elk exclosure for wildlife and cattle. The terminus of this development must be functional and have a float to prevent overflow.

5. The Contractor shall provide all materials for fence construction and spring development identified in Appendix B. The contractor shall not substitute for the listed materials any used or inferior quality of materials to facilitate cost or completion of the fence.

The Contractor shall identify which efforts and materials they can supply in terms of materials, labor, equipment, supplies, supervision, quality control, and incidentals required to complete the work described. The Contractor shall perform all work in a safe and conscientious manner.

(b) Project Location- The project area is on the Payson Ranger District of the Tonto National Forest. It is located approximately 10 miles east of Payson, Arizona.

(c) Work Schedule- The Project should be initiated no later than November 2021 and finished no later than December 31, 2021.

Pricing Schedule

Contractor shall price work according to the schedule below.

<table>
<thead>
<tr>
<th>Description</th>
<th>Method of Measurement</th>
<th>Pay Unit</th>
<th>Quantity</th>
<th>Unit Cost</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Removal of old/unused fence material</td>
<td>LS</td>
<td>Mile</td>
<td>1.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Materials and Installation of Fence</td>
<td>AQ</td>
<td>Mile</td>
<td>1.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elk Fence Gates</td>
<td>AQ</td>
<td>Each</td>
<td>2</td>
<td></td>
<td></td>
</tr>
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</table>
### Materials and Spring Development

<table>
<thead>
<tr>
<th></th>
<th>LS</th>
<th>LS</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobilization</td>
<td>LS</td>
<td>LS</td>
<td>1</td>
</tr>
</tbody>
</table>

### Other Project Requirements and Specifications

(a) **Utilities** – There will be no or limited sanitation, water, electrical or housing services available. The Contractor shall make its own arrangements for temporary facilities if needed.

(b) **Specifications** – Project work shall be accomplished in accordance with Appendix A.

### Contractor Qualifications

(a) **References** – Please provide three references.

(b) **Past Experience** – Please provide a brief explanation of previous work experience with land management agencies.

### Access to Project Area

The Contactor will be required to access the project area through private property, adjacent to and north of the project area (See Map, Appendix A). A staging area is located on the private property, several hundred yards east of the project area. This staging area may be accessed by vehicular traffic (but not a semi-truck), where equipment may be placed and stored for the duration of the work in addition to building material. From the staging area, materials will be unloaded for foot traffic transport to the job site. Livestock are not authorized to assist in material transport.

In addition to, a single trip to mobilize heavy equipment and stage additional materials will be authorized into the project area past the private landowners house to drop off equipment for the duration of the project (See Map, Appendix A). A single trip is authorized prior to work beginning, and one additional trip to remove equipment and remaining materials after entire job has been completed. Access through this location does not allow for a semi-truck to deliver materials.

Due to access and logistic complexities associated on and off private property, it is required that contractors attend the pre bid meeting. Work must be completed during the months of November and December. Any misuse of access may result in the property owner further restricting access.

### Insurance Requirements

Upon selection of the winning bid, chosen contractor will be asked to affirm that it has and shall maintain State minimum workers’ compensation insurance coverage for its employees, if any. The selected contractor shall also maintain broad form general liability, property damage, and automotive liability insurance in the minimum amount of $1,000,000 for bodily injury, death, or damage to property of any person and $2,000,000 for bodily injury, death, or damage to property of more than one person. The Contractor shall name NFF an Additional Named Insured and provide NFF with documentation evidencing such coverages.
Pre-Bid Site Visit

A site visit is scheduled Tuesday, August 31. Due to access requirements through private property, the contractor is required to attend prior to submitting a project bid to fully understand materials and equipment staging. During the site visit, prospective contractors, the NFF and the USFS will evaluate the project area, staging areas, and access needs. The conditions described in this RFP will be discussed and clarified as necessary. PLEASE RSVP to sstortz@nationalforests.org by Friday, August 27 to receive confirmation and additional details related to safety and PPE required for the site visit. We will meet at the Payson Ranger Station at 1009 E. State Highway 260, Payson AZ at 10:00am, and caravan to the project site.

Bid Submission

Submit bids via email to sstortz@nationalforests.org by Tuesday, September 7.

Contractor Selection Process

The NFF will use the Evaluation Factors below to review each submitted bid. Based on the outcomes of that selection process, the NFF will notify successful and unsuccessful bidders by <<Date>> and will prepare a separate contract document.

Point of Contact

For questions about the details of producing the bid, please contact:

Sasha Stortz
National Forest Foundation, Arizona Program Manager
928-961-0318
sstortz@nationalforests.org

Evaluation Factors and Relative Importance

<table>
<thead>
<tr>
<th>Level 3 Criteria</th>
<th>Level 2 Criteria</th>
<th>Level 1 Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Price / cost</td>
<td>• Technical proposal / proposed approach to project</td>
<td>• Benefits to the local community</td>
</tr>
<tr>
<td>• Equipment and contractor capability</td>
<td>• Overall strategic benefits to meeting NFF goals and grant needs, requirements, and timelines</td>
<td>• Relationship to local community</td>
</tr>
<tr>
<td>• Timing of when contractor can begin and/or finish the project</td>
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<tr>
<td>• Past performance, references, and USFS feedback</td>
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</tbody>
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Equal Opportunity Provider

In accordance with Federal law and U.S. Department of Agriculture policy, the National Forest Foundation is prohibited from discriminating on the basis of race, color, national origin, sex, age, religion, political beliefs, or disability.
Elk Exclosure and Spring Development

AZ State Route 260
Payson, AZ - 12 miles W
Heber, AZ - 44 Miles E

Single-use access
Removed fence collection point
Project Area
Staging area

Planned Work
Spring Development
- Spring Box
- Storage & Trough
- Pipe

Exclosure
- Fence

Reference
- USFS
- Private
- Cattle Fence
- SR Hwy 260

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Appendix B
Construction Fen Fence & Spring Construction
Tonto National Forest, Payson Ranger District

Scope of Work and Technical Specifications

Figure 1

TECHNICAL SPECIFICATIONS

PART I: FENCE CONSTRUCTION

a) Site Preparation

An existing non-functioning Elk fence exists at the project location. It is close to the same size as the new fence, but slightly smaller. Existing 10’ t-posts and field fence will need to be removed before the new fence may be constructed. Old materials will be hauled to the private property located at the north end of the project area and stacked neatly on pallets.

The fence perimeter will be identified on the ground with flagging (color to be designated during contract pre-work). The NFF working with the Forest Service will create a construction corridor wide enough to roll out and erect the field fence wire materials. The Forest Service will cut trees that need to be removed from the new fence line, but the contractor may be required to remove some at a later time, if they were missed. The contractor will cut and scatter any vegetation removed. Standing live sapling trees, dead trees, or dead and down trees may be removed, in addition to bucking up logs and slash. All vegetation cut may be scattered and left.
b) Construction

**10’ T-posts** will be placed every 10’ along the perimeter. In some locations where there is uneven ground topography or unstable soil conditions, it may be necessary to have closer t-post spacing to maintain fence specifications. T-posts will be driven into the ground with a post pounder or by other means until the spade is buried completely beneath the ground surface. T-posts will be inserted into the ground so that the bumps are facing outward, away from the exclosure area.

**Field fence** will be placed along the entire perimeter (*figure 3*). Field fence may be installed as a single rolls, 8 ft. in height **OR** two 47 in. rolls stacked, attached with hog rings. Field fence will be placed on the outside of the t-posts, wood posts, or live trees. The top of the wire must be no less than 8 ft. from the ground. Field fence wire will be pulled tightly between corners with a fence stretcher, come-along, or other device so that there is not any visible sag in the field fence panel. Fencing will be installed on the outside of trees, t-posts, or wood posts along curved sections. If field fence is stretched down into a drainage or over undulating ground surface, extra T-posts and/or field fence will be used to reduce excess space between bottom of the fence and the ground. There shall not be any spaces greater than two inches from the bottom of the field fence wire to the ground level (unless approved by the government to allow for drainage). Any changes in fence line direction or method of construction must be approved by the NFF with Forest Service input.
If trees are used as fence posts, wood stays will be utilized to protect the tree and prevent girdling. All trees used in lieu of T-post will need prior approval by the NFF with Forest Service input. Only healthy, live ponderosa pine trees greater than 8 inches dbh and 15’ in height may be utilized as designated by the NFF. All lower branches will be properly pruned at the bole of the tree within 10 feet of the ground. A 2x2 inch wood stay, 7-10 foot in length, shall be placed between the tree and the field fence to prevent girdling of the tree. Wood stays will be attached to the boles of trees with nails 5 inches or longer. Field fence will be stapled or nailed to the 2x2s. It may be necessary to drill holes in the 2x2 stays to prevent wood splits from the nails. When a tree is used to begin or end a stretch of field fence, as a corner post, or post where the fence changes direction, several 2x2 stays shall be nailed around the tree trunk. Field fence shall be wrapped around the tree and tied off approximately 1-2 feet away from the tree trunk to allow it to expand in growth for the lifetime of the fence.

When crossing depressions or drainages, a third panel of field fence will be attached as a flap to the bottom of the fence (figure 4). The piece will be cut to best accommodate the profile of the drainage and let small debris flow under, while stopping elk or cattle that may want to press through. Two 2x2 boards will be attached with 6 gauge wire to provide structure and rigidity, but also the ability to breakaway in high flows.
Hog rings will attach the overlaps of upper and lower field fence (if 47 in. rolls are used). A minimum of 5 rings (or one ring every 2 feet) will be used between T-posts.

Fence clips will attach the fence to the T-post. A minimum of 6 fence clips will attach the fence to each post.

Wood Stays will be placed every 5’.

Steel Gates will be installed at two locations, one on the north and south end of the exclosure (figure 5). The width of the fence gate should not be greater than 10’ wide and attached in a way so it may be locked. Gates will be attached to posts, concreted into the ground. Gates will be constructed with a welded steel cross brace place diagonally across the gate frame. Gate frame will be installed by setting 2, 12’ steel posts in the ground to a depth of 3-4 feet. Posts will be placed in 24” x 48” diameter holes and set with cement. Gate frame will be completed with no smaller than 4” diameter tubing and hog wire securely attached to the frame. It may be welded in place. A single 1” diagonal cross brace will provide additional support. There shall not be a gap greater than 3 inches between the ends of the fence gate and its attachments to a tree bole or fence post. Any changes to fence gate location shall be approved by the NFF in consultation with the Forest Service. Gate will be secured by an H brace assembly on either side.
**H-Braces** will be constructed at designated locations, typically every 150’, as determined by the COR (*figure 6*). The H-brace shall be constructed with two 12 foot steel posts in the ground to a depth of 3-4 feet. Posts will be placed in 24” diameter holes and set with cement. One 2 inch diameter, approximately 4-6’ long steel pipe shall form the crosspiece between the two steel posts. The steel post crosspiece shall be welded in place approximately ¾ of the way up on the brace. Field fence shall be used to complete the fence brace.
PART II: MATERIAL REMOVAL
This project area has historically been fenced with both elk and livestock fence. Over several decades it has become non-functional. Prior to fence construction, all old and unusable fencing material shall be removed. This includes fence wire, braces, posts, gates. These materials shall stacked neatly at the north end of the project area in a location designated by the NFF.

PART III: SPRING DEVELOPMENT

a) Site Preparation

A spring development will be installed at the south end of the project area that will collect water from an existing spring and pipe it to storage and a trough up to 400’ away. This will provide a water source outside of the elk exclosure for wildlife and cattle. The terminus of this development must be functional and have a float to prevent overflow.

b) Construction

Spring box can be made of concrete, plastic, culverts, or galvanized steel (figure 7). The spring box also will also function as a sediment trap. Spring box will be buried up to 6’ deep. Galvanized or polyethylene type fittings may be used to plumb the spring and 1.25” polyethylene pipe will be used to supply two 2,500 gallon water storage tanks and a single trough, no further than 400’ from the spring at a location designated by the Forest Service. Shutoff valves will be installed as the water leaves the springbox and as the water leaves the storage tanks. The trough will be no smaller than 200 gallons in size and have Forest Service approved wildlife escape ramps.
CONTRACTOR FURNISHED MATERIALS

The Contractor shall provide all materials for fence construction. The contractor shall not substitute for the listed materials any used or inferior quality of materials to facilitate cost or completion of the fence.

Materials used for elk fence include:

<table>
<thead>
<tr>
<th>Quantity¹ (Maximum expected)</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>37</td>
<td>rolls of 12.5 gauge, 47 inch height OR rolls of 12.5 gauge 8 foot height field fence</td>
</tr>
<tr>
<td>19</td>
<td>(standard sizes are 330' rolls)</td>
</tr>
<tr>
<td>540</td>
<td>10 foot steel T-posts</td>
</tr>
<tr>
<td>540</td>
<td>7-10 foot length 2x2 inch wood stays</td>
</tr>
<tr>
<td>6</td>
<td>12.5 gauge barbless wire (quantity in number of 400' rolls)</td>
</tr>
<tr>
<td>3,240</td>
<td>t-post fence clips</td>
</tr>
<tr>
<td>2700</td>
<td>9 gauge hog rings</td>
</tr>
<tr>
<td>912</td>
<td>12 foot, 4&quot; diameter steel pipe (quantity in total feet, N=76)</td>
</tr>
<tr>
<td>2</td>
<td>10' Panel gate</td>
</tr>
<tr>
<td>2</td>
<td>locking mechanism</td>
</tr>
<tr>
<td>216</td>
<td>2 inch diameter steel pipe (quantity in total feet, N=36) (minimum .15&quot; wall) for H-brace</td>
</tr>
<tr>
<td>230</td>
<td>80 lb. bags of concrete</td>
</tr>
</tbody>
</table>

Any other materials or tools necessary for fence work completion including, but not limited to; post pounder, fence stretcher, fencing pliers, nails/staples, cordless drill, welder, claw hammer.

Materials to be supplied for spring development include:

<table>
<thead>
<tr>
<th>Quantity (minimum expected)</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>roll of 1.25” inch diameter polyethylene pipe</td>
</tr>
<tr>
<td>1</td>
<td>concrete, plastic, or galvanized steel springbox</td>
</tr>
<tr>
<td>1</td>
<td>Minimum 200 gallon steel trough</td>
</tr>
<tr>
<td>2</td>
<td>2,500 gallon polyethylene water storage tank</td>
</tr>
<tr>
<td>1</td>
<td>wildlife escape ramp</td>
</tr>
<tr>
<td>~12</td>
<td>1.25 pipe fittings, float, plumbing</td>
</tr>
</tbody>
</table>

any other materials or tools necessary for spring work completion including, but not limited to; shovel, digging bar, wrenches, pipe cutter, and mini excavator with thumb attachment

It will be the contractor's responsibility to provide any necessary security while the materials are stockpiled at or near the project work site. Any location on Tonto National Forest lands of stockpiled materials and fencing equipment shall be discussed with and approved by the NFF with Forest Service input. Any changes to the contractor furnished property are subject to approval.

¹ The east boundary of the Fen is heavily wooded. Existing Ponderosa pines may be utilized in lieu of T-post or brace placement. This could potentially reduce these materials needed by up to 30%.
All scrap materials shall be hauled off after completion of the fence, and disposed of properly by the contractor.

**ACCESSIBILITY & USE OF MOTORIZED EQUIPMENT**

The project area is accessible by pickup truck through private property adjacent to the job site. The property owner will have requirements of passage to minimize disturbances to their private residence (Map Appendix A). Crews may drive in and out of the job site daily through an approved route, however multiple trips are strongly discouraged. If the contractor is unable to follow the property owner rules of passage, or the property owner feels the traffic is too much of a disturbance, access may be lost. Material and supplies can be staged, but must be delivered to the site via non-motorized means. This is approximately ¾ of a mile from the nearest road.

Approval from the NFF in coordination with the Forest Service must be received before a front-end loader, tractor, tracked vehicle, or any other heavy machinery that might excessively impact the subsurface soil is utilized to haul materials or utilized to stretch the fence.

The contractor shall restore to functional condition any severe damage to roads, erosion barriers, drainage ditches, fence gates when such damage is a result of their operation. The NFF shall be notified immediately if any road or other forest improvements are disturbed as a result of the Contractor's operations. Any cost of restoration shall be at expense of the Contractor.
Photos of project area

Arrow pointing to approximate new fence location will be uphill from existing fence, which will be removed.
Arrow pointing to approximate new fence location will be uphill from existing fence, which will be removed.
Arrow pointing to approximate new fence location will be uphill from existing fence, which will be removed.