

# TACF TreesDB Request for Proposal

## 1. Company Background

The American Chestnut Foundation® (TACF) is a 501(c)3 non-profit organization. TACF's mission is to restore the American chestnut tree to its original range. As part of that process, TACF seeks to incorporate as much genetic diversity and disease-resistance as possible into the American chestnut. As a result, the breeding work of TACF extends throughout the original range of the tree species and beyond. Officially-termed the "Regional Adaptability Breeding Program", volunteers, organized within state chapters along the original range, work with chestnut germplasm to further advance breeding generations through controlled pollination and chestnut orchard management.

## 2. Project Purpose & Scope:

### *Current Process Overview*

Currently, data collected from all breeding work are housed by administrators within each chapter, and/or at various TACF office locations. As a result, there is divergence in data management systems within each chapter and throughout TACF. Such a disjunct system results in the inability to fully utilize the potential of the collected data: administrators have not collected the same data in the same fashion, and data on all trees from similar genetic backgrounds cannot be analyzed easily, if at all. Queries of data relating to all individuals within a certain generation could reveal important trends, especially those concerning regional differences. However, with the current distributed collection and storage of the data, these important comparisons are not possible.

### *Proposed Solution Overview*

Creating a centralized system of data storage and analysis – as provided by today's web-based information systems - would allow a more systematic and consistent approach to managing the data. It will allow breeding efforts to be better analyzed and better coordinated. It will facilitate identification of data and process errors and omissions – and lead to normalization of data collection and evaluation. In addition, such a system will impart the ability to track the genealogy of regional TACF germplasm, a process that will be vital to the eventual certification and distribution of our blight-resistant material. The realization of a single database system, one which works to quantify and assure the regional background and blight resistance of our genetic material, will be the most efficient way to provide the most suitable and best-adapted blight-resistant American chestnut material to landowners, both public and private.

### *Project Scope*

The development of the proposed TACF TreesDatabase (TreesDB) system requires significant TACF resources – both financial and professional. The current system design

includes approximately 60 entities and about 250 screens. The first phase of development will aim to balance project scope with cost. We recognize that the initial scope may need to be adjusted to meet any financial or scheduling constraints, and we fully expect to undertake at least a second phase of development at a later date. As such, a modular approach to development is sought to help effectively manage implementation based on priorities and options for the initial system build.

## • **Project Details**

The TreesDB system requirements package has been developed by a core team led by TACF staff and volunteer professionals. In both development and implementation, this project will be a highly collaborative process between this core team and the system developer.

Because of time constraints, the process for this proposal is different from most other RFPs. For more details, please see section 3. Vendor Instructions (below).

We now deliver a partial user-requirements and partial design specification. Please download the full package from this website:

<http://sfr.psu.edu/public/chestnut/reports/TACFTreesDB>

or request a CD of materials from contacts listed below in section 3. Vendor Instructions.

We expect this to be a long-term, multi-phase project; however, this RFP is limited to addressing the system requirements for Phase I. Within the design specifications, certain elements have been prioritized, such that the scope of the initial phase is negotiable.

1. **Data Management:** This system is intended to maintain all TACF research data from large-scale to detailed for the objects of interest to the research project including, but not limited to: wild-trees, observations, pollinations and distribution; orchards, orchard trees, observations; reforestation units; and the people associated with each.
2. **Web-based:** To assure access to the system by a variety of users in a variety of places and using a variety of PC types and operating systems, the interface to the system will be web-based.
3. **Usability:** Although we accept that system use may require a minimal amount of training, the user-interface must be reasonably obvious to people with a wide-variety of computer usage backgrounds.
4. **Data Import/Export:** Batch import of data from spreadsheets and delimited files, with validation, including identification of duplicate and incorrect data. Export of data and/or data connectors that allow introspection and analysis of our data with external software tools. Almost all data import/export will be managed through web-based interfaces.
5. **Reporting:** Reporting capability for all data managed in such a way that TACF scientists can analyze breeding program status and make future plans. Need a

reporting mechanism that allows the creation of additional reports. Reports will be canned, parameterized, and/or ad hoc.

6. **Software Architecture**: Leverages best practices in architectural patterns using software with a large support community, with a preference for open-source, scalable platforms, which facilitates maintenance allows for future upgrade and expandability.
7. **Tiered Access**: A secure, tiered-access infrastructure, with authentication and authorization, to allow access by the broadest group of constituents and ease internal administration.
8. **Operational Support**: A system which, post-development, minimizes operational production costs including both data and system management and maintenance.
9. **System Design**: System is to be hosted in either shared or dedicated environment with an external service provider.
10. **Integration w/ Donor Perfect Online (DPO)** – TACF uses DPO to maintain membership/constituent information. TACF TreesDB must be integrated with DPO. This is non-trivial in that the lists have a large overlap, but neither is a subset of the other. For the people in common, the information contained may differ and these differences must be reconciled.
11. **System Reporting** – System usage reporting and analytics to identify bottlenecks and potential areas of difficulty such that user workflow can be streamlined (pathing tags, variables, and reports).

- **Audience**

The TACF TreesDB will be used by TACF staff, partnering research scientists, collaborators, and citizen scientist volunteers, all with varying degrees of computer literacy and experience.

- **Project Verification**

The system will be verified through a set of pre-established test cases to be defined at a later date.

- **Target Hardware, Software & Platform – Server and Client**

- The system must be a web-based application.
- We probably will continue with one or both of our hosting solutions, but any information about sizing and capacity planning will be useful.
  - Any minimal hardware and software requirements for the server must be discussed in advance.
- There will likely be some negotiations regarding hardware and platform for the server.

- Client constraints must be listed in terms of features/functionality, not in terms of browser/operating system requirements.
  - The system must support a client running under a variety of PC operating systems, including Windows, Mac, and Linux.
  - The client must run under any common browser including Internet Explorer (IE), Firefox, Chrome, Safari, and Opera. In the case of browsers, the client may restrict maximum usability to a minimum version.
- Details of server installation and configuration are not yet decided but will need to be addressed in any final proposal.

- **General Software and Hardware Standards to follow**

- TACF will own the final product. If it proves useful, TACF may consider licensing, most likely as open-source.
- We have a preference to use open-source components in development and implementation. Any exceptions/variance from this must be negotiated in advance.
- We expect some coding standards to be followed but we don't have a specific preference.
- Integration with an existing framework such as Drupal or CiviCRM is an option and can be discussed.

- **Integrated Help System and Training for End Users**

- While the system should be as user-friendly as possible, it is not expected that the entire system will be useable without some prior training. A subset of functionality will be identified, the use of which should be inherently obvious (i.e. log-in and basic reports).
- Developers are responsible for establishing an architecture for interactive help.
- TACF is responsible for writing the help and training materials.
  - Developers will review all help and training materials to identify any mismatches between it and the actual system.

### **3. Vendor Instructions**

We have a well-defined system specification, but are open to ideas on user-experience that still allow enforcement of business rules and data integrity. Several requirements have been intentionally left open because they are not critical to core functionality and developers may have methods or processes that would increase usability beyond what we have specified.

To ensure that any eventual design does not overlook a critical but unspecified requirement as defined above, we expect a highly-collaborative development process. As a result of this approach, a change control methodology will be negotiated prior to initiation of development. This methodology will allow for 1) frequent review of snapshots of developed pieces by the design team; 2) the recognition and resolution of any design problems as early as possible; and 3) compensation for development should significant revision beyond the original design intent be imposed by the design team.

Initial production installation must occur by March 1, 2011. The production schedule is somewhat flexible, but there are some constraints. The above deadline was chosen to meet the requirements created by a combination of funding sources as well as natural, chestnut-related biological cycles and related design team availability. Further, to meet the March 1, 2011 deadline, the production schedule is subject to negotiation of scope and potential later delivery of remaining modules that are components of phase I.

- **Proposal Format**

- In order to encourage well-focused proposals, we will make an effort to answer any questions regarding the project prior to proposal submission
- Initial response should be no more than 2 – 3 pages and should include:
  - a. An expression of interest in the project
  - b. Some expression of understanding of the nature and scope of the project, including confidence in your ability to develop a system with approximately 60 entities and about 250 screens within the proposed time frame.
  - c. Information regarding the vendor – history, examples of and, if possible, links to past projects, capabilities, firm size, etc.
  - d. Statement of proposed architecture and development methodology
  - e. Why will you be a good fit for this project?

- **Schedule for Evaluation Process**

- We will accept submission of initial responses until November 12, 2010, although we may close the process early if we receive a sufficient number of responses. We will be as open as possible about this. Please contact us about interest as soon as possible. This does not need to be the full response, just an e-mail expressing interest.
  - We expect to eliminate few vendors, if any, at the first round.
  - Announcement will be made within 2 weeks of closing.
- After reviewing all initial responses, all selected vendors will be asked to submit more standard, complete proposals.
  - We expect this will involve more detailed discussion of requirements and design.
- Following those negotiations, we'll establish a deadline for submission of a more complete proposal for development.
  - At that time, 1 – 3 vendors will be selected to enter a final stage of interviews and contract negotiations.
  - Expected project deliverables include the designed system, in addition to a specification document, a system administration guide, and a system design justification document. During negotiations, we would like to see any examples of these types of documents that have been created by your firm for other projects.
- For all of this, we expect to have a contract signed by December 1.

- **Price Quotation**

As a not-for-profit organization with certain funding restrictions, the development process should be modular so as to match scope to cost. To facilitate the ability to control the cost of Phase I, the scope may be adjusted by deferring certain elements to a later phase.

To support this process, we've prioritized each element within the requirements document. We'd like the full proposal, not the initial response, to include several cost options of Phase I based on the inclusion or exclusion of certain elements. To enable a reasonable bid, we'd like to discuss the modularity of design and whether some elements are included or excluded and how these decisions influence final costs. We recognize that there will be elements in the specifications that will likely be deferred in favor of higher priority components.

We do expect there to be a second round of development in the future, which would include elements desired but not implemented in Phase I. It is likely that the vendor chosen to complete Phase I would be asked to develop Phase II, however this is not definitive.

- **Warranty and Service Level Agreements**

- The initial contract period will include a 1-year warranty from the vendor.
- We expect that if a system problem or malfunction is identified and brought to the vendor's attention we receive a response from the vendor within 2 business days and subsequent resolution within 3 -5 business days.

- **Proposal Submission & Contact Information**

System requirements and accompanying documentation are available to vendors, in order to provide a clear picture of scope, system objects and functionality. Please contact Sara Fitzsimmons at [sara@acf.org](mailto:sara@acf.org) or (814) 863-7192 with any questions regarding this request or the design package.

Initial responses and final proposals should be submitted in electronic format to Sara Fitzsimmons as well.

- **Confidentiality**

The design specifications and associated materials are for the purposes of creating a proposal and/or bid packet only. Further distribution or use is prohibited.