Request for Qualifications: Development of a Spatially-Explicit Tool to Estimate the Carbon Benefits of Conservation Projects

Questions and Responses (August 20, 2021)

Carbon calculations

How complex are the models, algorithms or processes involved in the tool calculations for carbon estimation? Can you share any documentation on the calculations? Do you already have the GIS version of the model implemented (e.g. in model builder?) or will you need assistance translating the Excel calculations to GIS.

The basic format for most calculations is a subtraction of the pre-restoration baseline carbon value from an enhanced carbon value resulting from habitat creation/restoration.

OUTPUT = ENHANCED CARBON – BASELINE CARBON

These enhanced and baseline carbon values are usually calculated with relatively simple arithmetic calculations (e.g., multiplication, division) using input data derived from tables.

The tool is not yet implemented in a GIS. The Excel tool is built upon county-level summary statistics that were measured in a GIS, whereas the upgraded tool will measure carbon values at a sub-county level (i.e., within polygons depicting project footprints). The algorithms in the existing Excel tool will provide a template that needs to be implemented in a GIS.

We will share the Excel calculator and all associated documentation with the selected offeror.

Does the current excel based app run the calculations for acreage, run the simulations for investments already, or is it a completely new feature that we need to be built by the partner? We are referring to the scope specified in Tasks 3 through 5

The current Excel-based tool uses acreage as a key input for estimating carbon benefits. There are other inputs that are specialized for particular types of habitat creation/restoration practices.

However, the current calculator does not run simulations for a hypothetical portfolio of investments. We currently have to do those simulations outside of the tool, although the tool is used to derive a sample of output values for carbon benefits.

Can you share high level features that exist on the excel sheet today in form of a help guide or existing user guide? We would use this to help make our assumptions more accurate

The Excel tool calculates carbon benefits for various types of habitat creation/restoration practices in a variety of ecosystems including forests (afforestation/reforestation/restoration of existing forest), grasslands (creation/restoration, grazing management), agricultural systems (various regenerative agriculture practices), wetlands (creation/restoration), and marine habitats (creation/restoration of mangroves, kelp, seagrass).Users enter acreages and other supporting information as needed (land-use change, or more specific parameters for individual practices).

Can we get access to the excel based calculator app?, or if not, can a Demo be provided prior to submitting our proposal? We'd like to understand the complexity of the tool in order to more accurately estimate the level of effort that might be required

The Excel tool will be provided to the selected offeror only and a demo before the proposal will not be possible.

In general, the tool obtains input data from tables, calculates baseline carbon values, and then calculates enhanced carbon values (i.e., the change in carbon due to creation/restoration of habitat types). The enhanced value can also be obtained from a from a table but is sometimes multiplied by a change factor representing the change that will result from a creation/restoration practice. The tool currently calculates carbon benefits over a 30-year time horizon.

Can you share a description of the input datasets for the calculation (e.g. format, sources, size…)?

The input datasets in the web-based spatially-explicit tool will mainly consist of large national-scale raster datasets with a variety of spatial resolutions. The finest resolution is likely to be 30 m, whereas the coarsest may be up to several km. These rasters will often need to be multiplied by values representing change factors that could be stored in another raster or table/matrix.

Could you provide an example of the project footprint output indicators?

Project footprints are spatial polygons and associated attribute data in a linked table. Footprints are rarely smaller than a sq km. Output-data units depicting change in carbon will be reported as metric tons of Co2 equivalents.

How often will users run simulations or revisit the data, will the calculations need to run on-the-fly? How do you plan to update/upload new input data?

Some projects will require multiple simulations because an accurate spatial footprint of the project is not available at the start of a project. For example, often our grantees do not know exactly where the habitat creation/restoration work will occur, particularly at the proposal stage. Spatial footprints at this point may even encompass multiple states. However, even in these situations, the grantee will provide an estimate of project area (e.g., 100,000 acres). Through time, the project footprints become known and the carbon calculations will need to be rerun on the more accurate spatial footprints.

Does the excel app use any certification standard for calculation of CO2 offsetting? E.x: Verra, The Gold Standard, etc

No.

Does the formula/algorithm developed and implemented on the excel uses any of the standard calculations for CO2 offsetting, or it is custom made?

The current Excel calculator uses county-level averages derived from raster or tabular data. The web-based tool will need perform geoprocessing operations on the those raster or tabular data in the specific locations defined by project footprints. Nonetheless, the tool will likely provide coarser estimates than is what is commonly used for offsetting.

It is mentioned that the application should have "the ability to conduct spatial analyses". Is this analysis intended to be based on data generated from direct auditing of the projects, or will it be generated from images/thermal scans?

The tool will use polygon spatial data depicting the footprints of NFWF projects to calculate carbon fluxes resulting from habitat creation/restoration. The required geoprocessing operations will use rasters or tabular data to estimate carbon in those project footprints. The carbon fluxes will be calculated by subtracting baseline carbon values from enhanced carbon values.

Website/platform/hosting

Do you have specific requirements for how the data or model will be hosted or managed? For example, is it important that the data and model can be managed and modified by an ArcGIS administrator?

Our ESRI license is currently administrated and managed by a third party. We do not envision these administrative duties will be changed to internal management by NFWF at this time.

Will NFWF provide the licenses required to develop & integrate with ArcGIS?

Yes.

Do you have an existing ArcGIS Server that you plan to use? Do you need assistance setting up an ArcGIS Server and/or acquiring Esri licenses? Is there a specific reason why you prefer to use ArcGIS rather than other solutions?

Our ESRI license is currently administrated and managed by a third party. We do not envision these administrative duties will be changed to internal management by NFWF at this time.

We would consider other platforms other than ArcGIS. However, we will avoid proprietary tools that would be difficult to update or replicate if a different contractor needs to work on the tool in the future.

Do you have specific requirements or vendors (Amazon, Google) for hosting?

Not necessarily, although we do frequently utilize Amazon AWS for our existing databases and tools.

Is the new website targeted only for the US region or also other regions in the world? As based on that, we will need to explore language preferences for the website

The new web-based tool will be targeted to the U.S. and should be written in English.

As a part of the environment availability (Dev, QA Prod) are these environments are required to be provided by the vendor and own it for hosting? If so is there any specific service provided NFWF is partnered with that we should be aware of?

*We anticipate the tool will be built on the ESRI ArcGIS platform. The tool will need to obtain some information via an API from internal NFWF databases (Microsoft SQL Server). We anticipate output data will be stored in an Amazon AWS cloud-based server. Eventually, the tool will likely be hosted at a *.nfwf.org URL. NFWF does have a licensing agreement with ESRI and Microsoft.*

Is there a preferred commercial model that NFWF is looking for? Are you open to other creative models?

We prefer the tool to be on an ESRI ArcGIS platform but would consider other non-proprietary spatially-explicit platforms (e.g., open source software). We want to avoid a proprietary tool that cannot be easily updated or replicated in event we'd need to use a different contractor in future.

Users

What kind of audience/user/stakeholder engagement, if any, have you already done to learn more about their interests and motivations for using the calculator? Are you only targeting NFWF internal users or external users (e.g. project grantees, specific funders) as well? Will different users need to have different access permissions?

The tool is currently only planned for internal use at NFWF. Staff will use the tool to measure the carbon impacts of our investments. The development of the Excel tool devoted considerable effort to refining user needs, and some lessons were learned that can be applied to the upgraded tool. However, the target audience is largely non-technical and will only require user access. Use of tool at NFWF will be overseen by a group of technical users who will require administrative access to the tool.

What will the availability of NFWF stakeholders during the engagement. Will there be a single product owner that can represent "voice of the customer?"

The selected offeror with work closely with a team of approximately 5-10 individuals that should provide most of the information on user needs. There could be a need for some additional interaction with other NFWF employees to better refine user needs.

Timeline/Budget

Do you have any important milestones (e.g. conferences, meetings) around the launch on December 31st?

There is no specific event planned for Dec. 31, 2021. However, we want to develop the tool quickly.

Can you share a rough target budget or budget range expected for the contract? Can you share the link to the Contractor Budget Template?. We did not find it.

To ensure a fair and competitive process, we do not provide budget ranges. We will discuss budget adjustments with potential vendors during proposal review.

A link to the budget template has been added to the RFQ announcement (**https://www.nfwf.org/media-center/announcements/request-qualifications-development-spatially-explicit-tool-estimate-carbon-benefits-conservation**).

Do you envisage some oral presentation from vendors after proposal submission?

We generally do not ask potential vendors to perform an oral presentation during the interview process.

Can you clarify the expected timing of the engagement. We do not see any time allotted for services agreements signature, vendor onboarding (if applicable), team rampup, or any other due diligence that might be required.

We strongly prefer the tool to be developed by the Dec. 31, 2021 deadline specified in the RFQ. However, we may consider offerors that could not complete the work by Dec. 31, 2021.