Region 9 Office and Texas State NRCS Office

The Farmland Protection Policy Act (FPPA) Review Tool: An ArcGIS Tool Approach for Completing FPPA Requests

Purpose

As the number of requests for Farmland Protection Policy Act (FPPA) reviews increased, the need for a more efficient process was required for the staff to meet the short turnaround time. With this great of a workload, staff met to define the objective and brainstorm the potential for using Python to develop a Review Tool to automate the process. The collaborative efforts of Alex Stum, USDA-NRCS-SPSD-Region 9, GIS Specialist; and USDA-NRCS-Texas staff Carlos Villarreal, soil scientist; Alan Stahnke, Texas State soil scientist; Steven Diehl, cartographic technician; and Pam Jannise, Texas State GIS specialist; resulted in the development of an ArcGIS Toolbox to increase efficiency and reduce processing time when completing FPPA Review Requests in Texas.

Background

FPPA is a law that requires federal agencies to consider the impact of federal programs on the irreversible conversion of farmland to non-agricultural use.

The Farmland Protection Policy Act defines farmland as soils designated as prime, unique, or land of statewide or local importance. Land use is not a consideration for FPPA purposes.

Common activities subject to provisions of FPPA are highway construction projects, multi-family housing facilities, and electrical cooperative construction projects. Projects involving belowground installations, aboveground transmission lines, and sites located within previously converted urbanized areas are exempt.

Figure. 1. The FPPA Toolbox.

Prior to developing the FPPA Toolbox (Figure 1), an FPPA review involved downloading the Farmland Classification and National Commodity Crop Productivity Index (NCCPI) tables from Web Soil Survey for the soil survey area (SSA) and area of interest (AOI). NCCPI is the approved rating system for Texas.

Using Microsoft Excel, the soils are ranked on productivity by county. The relative ratings and rankings are then applied to the soils involved in the AOI. Several county statistics are needed to populate the

Farmland Conversion Impact Rating Form (AD1006 or the CPA-106 used for corridor projects). National Agricultural Statistics Service (NASS) data is used to determine these inputs as shown in Figure 2.

Using several platforms for one request, the process involved many files downloads, mouse-clicks, and data entry, that took anywhere from 15 to 30 minutes depending on the amount of map units within the AOI, or, if the proposed site included more than one county.

Key Outcomes

The development of the FPPA toolbox includes a Data Prep Tool that merges the soils and county data and incorporates the rating system; the LNU Script derives relative ratings and rankings for the AOI; and the Form Population Script is used to populate the AD-1006 and CPA-106 forms; and, finally, the Data Sweep Script compiles year-end reporting values. Figure 3 demonstrates the LNU Farmland Non-Corridor Script on a proposed solar farm project in Live Oak County, Texas. The user defines three parameters; the project name, AOI boundary, and geodatabase output folder. Similar to Web Soil Survey, the AOI can be drawn out by the user, or the user can input a shapefile. The dialog box displays the AOI statistics. The output of the LNU Farmland Non-Corridor Script is a file geodatabase with soils, county, and boundary feature classes. The Data Population Script requires project description parameters to produce the populated Farmland Conversion Impact Rating form.

There are several benefits to using the FPPA Review Tool for completing FPPA requests.

- The Data Prep Script allows the user to define the state approved rating system, and incorporate the most current, official soils data.
- The user may complete the FPPA review process in a matter of a couple of minutes; this includes projects that involve several counties.
- The FPPA review workload is reduced by as much as 50 to 75 percent.
- The FPPA Review Tool is consistent, reliable, and repeatable, and is ready to be shared with any state in the United States.

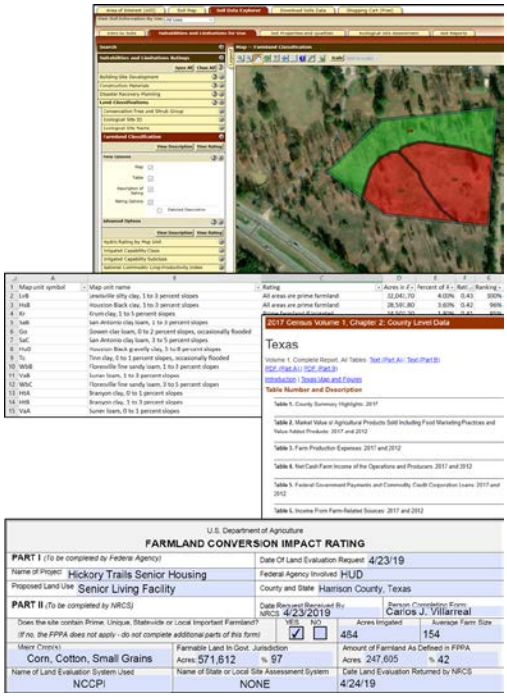

Figure 2. Manual FPPA Review Process.

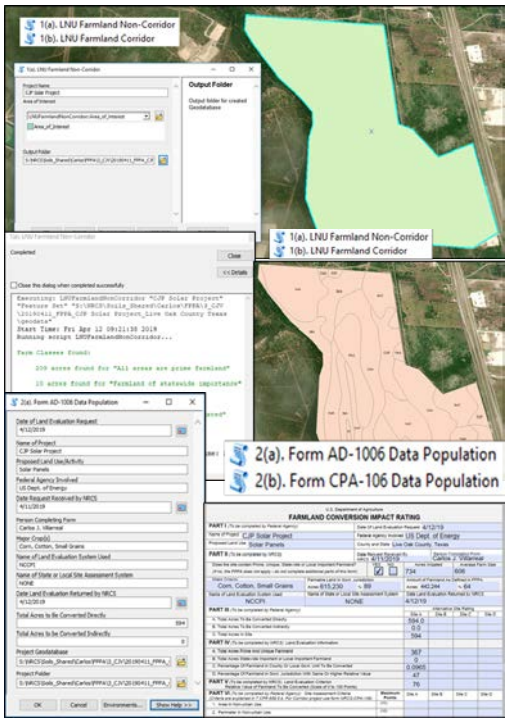

Figure 3. Automated FPPA Tool Process.

The findings and conclusions in this presentation are those of the author(s) and should not be construed to represent any official USDA or U.S. Government determination or policy. This work was supported by the U.S. Department of Agriculture, Natural Resources Conservation Service, Soil and Plant Science Division.