

AGNPS Installation Procedures

Version 5.45

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AGNPS Installation Procedures - Version 5.4 - December 2016

AGNPS Installation Procedures

Introduction: The purpose of this documentation is to provide information on installing and executing the programs that make up the AGNPS watershed modeling tool. The software has been designed to run under Windows 2000, Windows NT, Windows XP, Windows 7, Windows 8 and Windows 10. The entire AGNPS modeling components are recommended to be downloaded using the “**Download the complete self-extracting AGNPS package here**” links on the AGNPS download page. As a result, downloading individual modules or components are not necessary. The user then has the option of installing 32-bit or 64-bit versions of the executable programs. Installing the 64-bit version requires that the computer the software is installed onto has a 64-bit operating system. The advantage of utilizing the 64-bit versions of AGNPS is that these components provide the capacity to handle more memory demands by the programs, which also executes faster than the 32-bit versions. Users should be aware that the GIS capabilities within the AnnAGNPS Input Editor are only contained within the 32-bit version of the AnnAGNPS Input Editor software. Although, the 32-bit and 64-bit versions of the Input Editor can both be installed together on one system if needed and are both included in the 64-bit version of the complete AGNPS download package.

Text in this document that is to be typed or screen objects that are to be clicked on by the user will generally be highlighted in **bold** typeface.

Overview: AGNPS is a tool for use in evaluating the effect of management decisions impacting a watershed system. The installation of the project files for AGNPS requires a few simple steps to ensure that the computer system and project files will function properly. The steps involved are:

- 1.) Download the complete, self-extracting zip file, AGNPS download module;
- 2.) Extract all files from the download file;
- 3.) Install the Input Editor and the MapWinGIS software;
- 4.) Extract the watershed example files;
- 5.) Extract the template containing the recommended project folder structure helpful in applying AGNPS;
- 6.) Review the document outlining the procedures for utilizing the AGNPS GIS components; and,
- 7.) Review the documents describing the input specifications, user guides, model application and technical information.

The following is a description for each of these steps.

Step 1: Download the complete, self-extracting zip file, AGNPS download module.

To download AGNPS go to the web site: <http://www.ars.usda.gov/Research/docs.htm?docid=5199>

Select “**Click here to go to the AGNPS Home page**” (Figure 1).

In the AGNPS Home Page (Figure 2) select “**Download**” to go to the registration page. As part of the AGNPS Registration page (Figure 3), users are asked to provide the described information to alert the AGNPS team of the user’s information. Otherwise, select “**Continue to the Download Page**”. Then select the download link described as “**complete, self-extracting, AGNPS download module**” (Figure 4). The file ‘AGNPS_Complete.exe’ should be saved onto the user’s computer within some user created folder like C:\Download\AGNPS or onto the computers desktop.



[Click here to go to the AGNPS Home page](#)

AGricultural Non-Point Source Pollution Model (AGNPS) is a joint USDA - Agricultural Research Service ([ARS](#)) and - Natural Resources Conservation Service system of computer models developed to predict non point source pollutant loadings within agricultural watersheds. It contains a continuous simulation surface runoff model designed to assist with determining BMPs, the setting of TMDLs, and for risk & cost/benefit

Figure 1: Opening AGNPS Web Page.



Figure 2: AGNPS Home page.

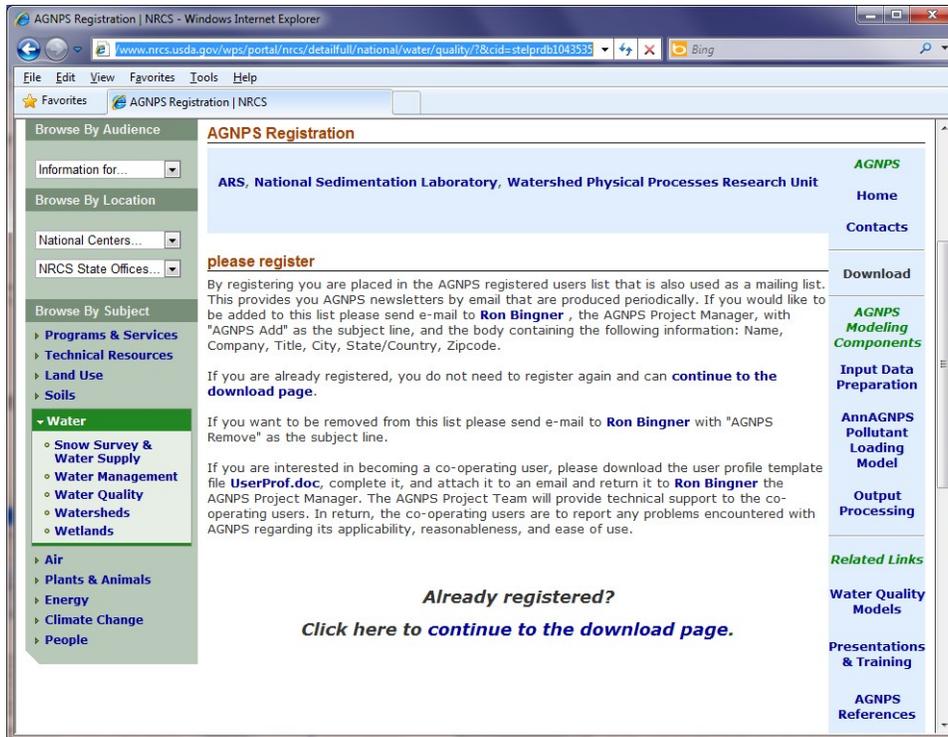


Figure 3: AGNPS Registration page.

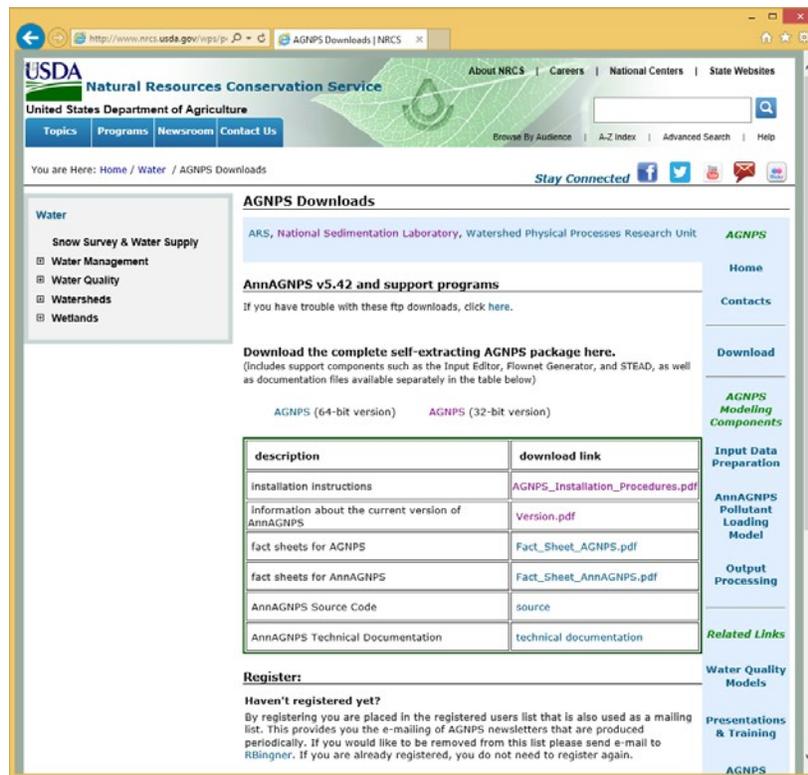


Figure 4: AGNPS Download web page.

Step 2: Extract the download files.

Double-click on the file ‘AGNPS_Complete_32.exe’ or ‘AGNPS_Complete_64.exe’ for use on 32 or 64-bit computer operating systems, respectively. All of the extracted files are contained within the self-extracting zip file with the appropriate associated folder names. By selecting the root drive of C:\ or D:\ or E:\ and so on in the ‘Unzip to folder:’ field in the Winzip self-extracting box (Figure 5) all of the AGNPS files will be copied correctly onto your computer in the appropriate folder after selecting the “Unzip” button in Figure 5. Although, the recommendation is that the files be extracted to the C:\ for the best performance of AGNPS, since some Input Editor help text features may not directly default to other drives.

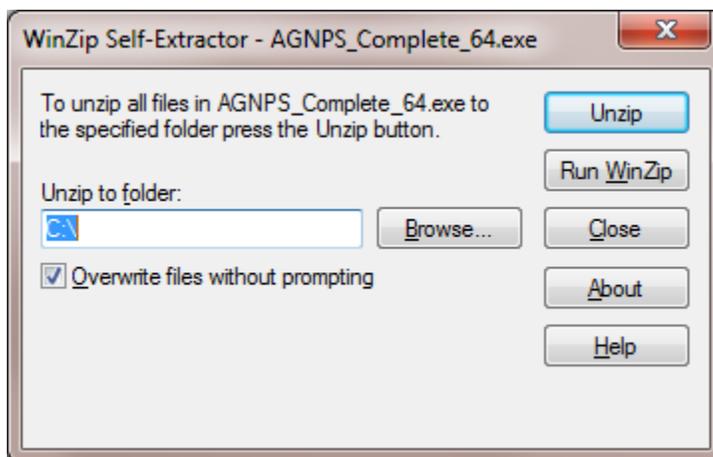


Figure 5: AGNPS_Complete.exe Unzip box.

After extracting the 64 bit version files into the C:\ path, the files should be in the following folder structure:

```
C:\AGNPS
+---AGNPS_References
+---DataPrep
| +---Document
| | \---AGNPS_Users_Guide
| | \---AnnAGNPS_Input_Specifications
| | \---RUSLE_Users_Guide
| | \---Supplemental_Documentation
| | \---TOPAGNPS_Users_Guide
| +---Editor
| | +---DataSets
| | | \---Example_Input_Data_Files
| | | \---RUSLE1_Data_Files
| | | +---RUSLE2_Data_Files
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| | | | +---CMZ
| | | | \---BASE
| | | | \---CMZ 01
| | | | \---CMZ 02
| | | | \---CMZ 03
| | | | \---CMZ 04
| | | | \---CMZ 04.1
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| | | | \---CMZ 06
| | | | \---CMZ 07
| | | | \---CMZ 08
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| | | | \---CMZ 15
| | | | \---CMZ 15.1
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| | | | \---CMZ 72 AK
| | | | \---CMZ 73 HI
| | | | \---CMZ 74 PB
| | | | \---CMZ 75 PR
| | +---Document
| | | \---Input_Documents
| | +---Execute
| | | \---Setup
| +---TopAGNPS
| | +---DataSets
| | | +---Input
| | | | \---DNMCNT_Control
| | | | \---Optional_Control_Files
| | | | \---TopAGNPS_Control
| | | +---Output
| | | | \---DNMCNT_Control
| | | | \---TopAGNPS_Control
| | | \---Document
| | | \---Execute
| +---Weather
| | +---agGEM
| | | +---Datasets
| | | | \---Input
| | | | \---Output
| | | | \---Document
| | | | \---Execute
| | | \---preGEM
| | | +---Datasets
| | | | \---Input
| | | | \---Output
| | | | \---Document
| | | | \---Execute

```

```

\---Example_AGNPS_Watershed_Studies
\---Fact_Sheets
+---OutputProcessor
| +---STEAD
| | +---Datasets
| | | +---Examples
| | | | +---Multiple_Files
| | | | | \---GC_Gaging_Station_Data_Multiple_Files_Event_csv
| | | | | \---GC_Gaging_Station_Data_Multiple_Files_Event_txt
| | | | | \---GC_Gaging_Station_Data_Multiple_Files_Hydrograph_csv
| | | | | \---GC_Gaging_Station_Data_Multiple_Files_Hydrograph_txt
| | | | +---Single_Files
| | | | | +---With_STEAD.fil
| | | | | | \---GC_Gaging_Station_Data_Multiple_Files_Event_csv
| | | | | | \---GC_Gaging_Station_Data_Multiple_Files_Event_txt
| | | | | | \---GC_Gaging_Station_Data_Multiple_Files_Hydrograph_csv
| | | | | | \---GC_Gaging_Station_Data_Multiple_Files_Hydrograph_txt
| | | | | +---Without_STEAD.fil
| | | | | | \---Event
| | | | | | \---Hydrograph
| | | \---Input
| | | \---Output
| | \---Document
| | \---Execute
| +---STEAD_Editor
| | \---Datasets
| | \---Document
| | \---Execute
+---PLModel
| +---DataSets
| | +---Input
| | | \---CSV-format
| | | \---Fixed-format
| | +---Output
| | | \---CSV-format
| | | \---Fixed-format
| +---Document

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| | \---Tech
| | \---User
| \---Execute
\---Ref_Data
+---Utility
| \---AGNPS_Project_Structure
| \---FAO_Crop_Evapotranspiration
| +---Helpful_files_for_Arcview-AnnAGNPS
| | \---AGNPS_Arcview_Interface
| | +---DEM_CONVERSION_TO_TOPAGNPS
| | | +---Datasets
| | | | \---Input
| | | | \---Output
| | | \---Document
| | | \---Execute
| | | \---Source
| | \---Scripts_and_Extensions
| +---Source_Load_Contributing_Area_Graphing_Feature
| | \---Input_Files
| | \---Output_Files
| \---TR55

```

Step 3: Install the Input Editor and the MapWinGIS Software.

The installation process for the Input Editor will copy library files to the computers windows operating system and may require administrative privileges. Both the 32-bit and 64-bit versions of the Input Editor can both be installed at the same time on a computer and are both included in the 64-bit version of the AGNPS complete download files. The 32-bit version of the Input Editor provides GIS functionality to view shape and grid files, clip DEMs, select the watershed outlet location needed for TOPAGNPS, and overlay climate, landuse, and soils shape files over the AnnAGNPS cell shape file in order to update the AnnAGNPS cell data section with the soil or management field identifiers. The 64-bit version provides expanded file size capabilities to work with AnnAGNPS input files, but contains no GIS functionality. The following is a description of the procedures for the installation of the AnnAGNPS Input Editor.

The Input Editor, written in Visual Basic, requires a few installation steps.

Using Windows Explorer, locate the "AnnAGNPS_Input_Editor_Setup_32-bit.msi" file in the "Setup" subdirectory: "C:\AGNPS\DataPrep\Editor\Execute\Setup"

Double-click the installation file "AnnAGNPS_Input_Editor_Setup_32-bit.msi" to begin the extraction and Visual Basic Installation of the Input Editor— Figure 6 will appear after the files are successfully extracted. If a message appears requesting that the user select 'Repair' or 'Remove', select 'Repair' to ensure the latest version is installed.

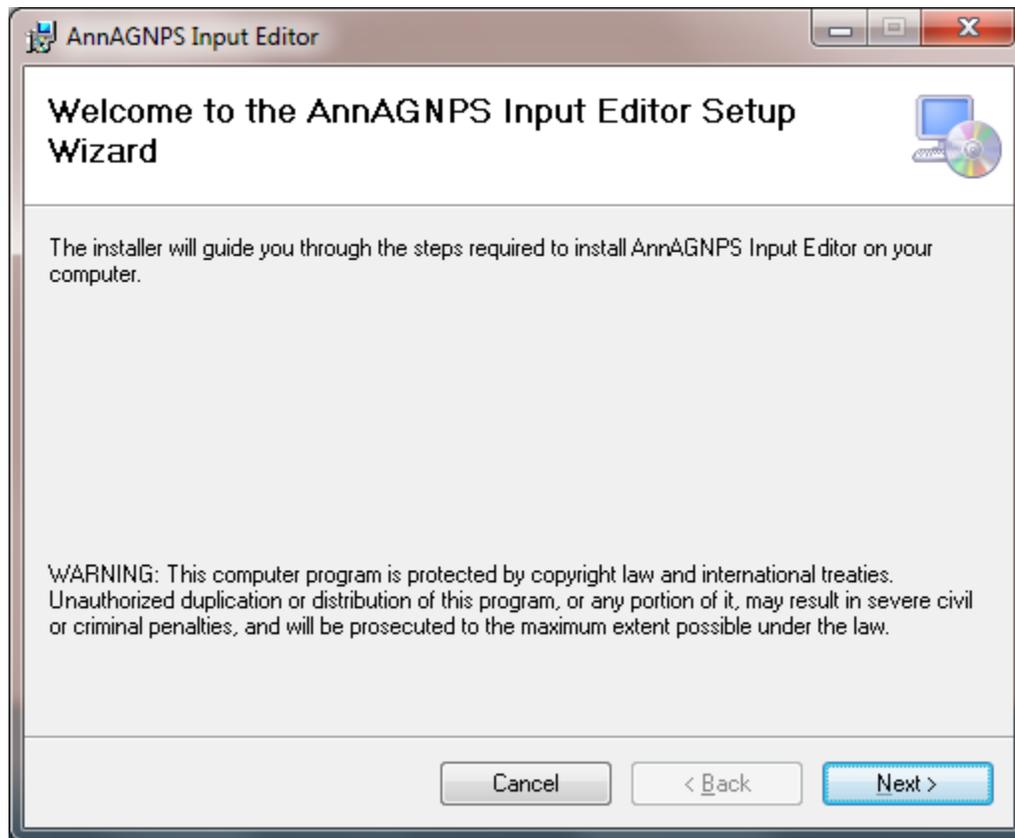


Figure 6: Input Editor Installation.

Installation of the 32-bit version of the AnnAGNPS Input Editor via 'AnnAGNPS_Input_Editor_Setup_32-bit.msi' may require the installation of .NET Framework version 3.5 or version 4.0 as described below for Windows 8.1 systems. Installation of the 64-bit version of the AnnAGNPS Input Editor via 'AnnAGNPS_Input_Editor_Setup_64-bit.msi' may require the installation of .NET Framework version 4.0 that follows a similar procedure described for .NET Framework version 3.5.

Clicking “Next” in Figure 8 will begin the steps to install the execution files to the recommended folder "C:\AGNPS\DataPrep\Editor\Execute".

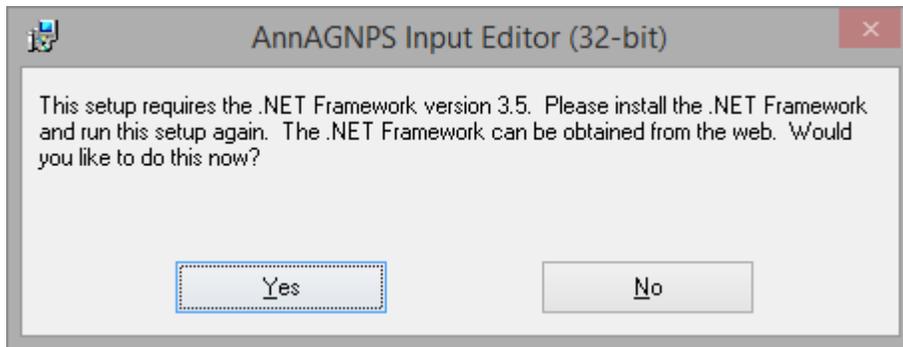


Figure 7: Message indicating .NET Framework Version 3.5 installation is required.

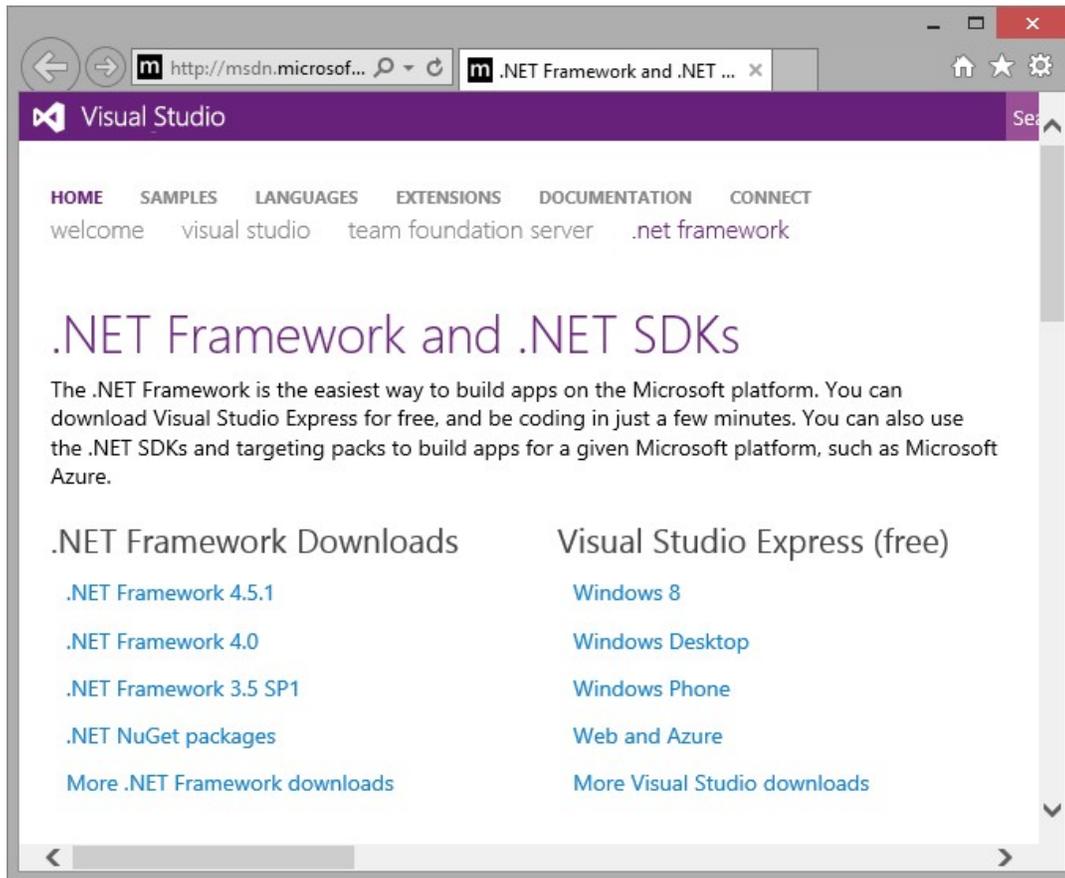
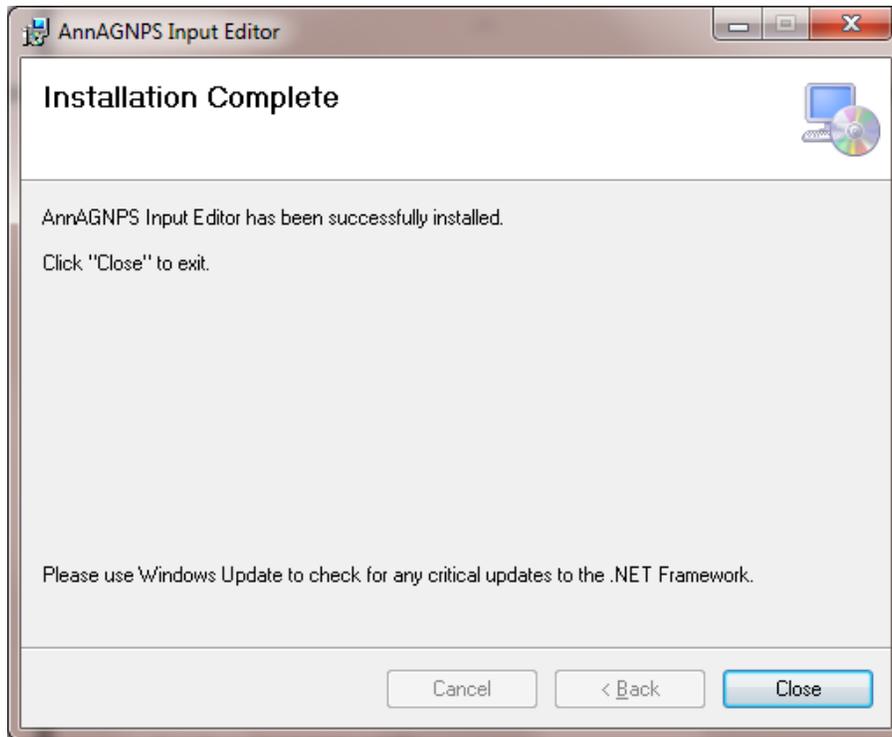


Figure 8: Web page indicating the location to download the .NET Framework Version 3.5 Redistributable Package.

Follow the instructions on the subsequent windows. The window below will appear at the end of the installation process informing the user that the Input Editor has been successfully installed and click “Close”.



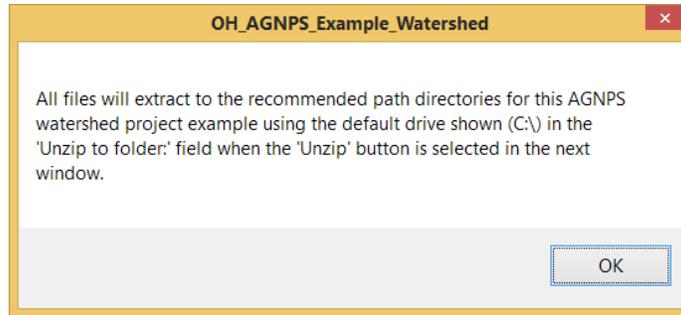
Clicking “**OK**” completes the installation of the AnnAGNPS Input Editor.

In order to utilize the TOPAGNPS and GIS features of the AnnAGNPS Input Editor, which are only functional in the 32-bit version, installation of the MAPWindows GIS features of the AnnAGNPS Input Editor are required. Locate this installation file at “C:\AGNPS\DataPrep\Editor\Execute\Setup\MapWinGIS-only-v4.9.3.6-Win32.exe” and double-click to start the installation of this program. Follow the instructions to complete the installation.

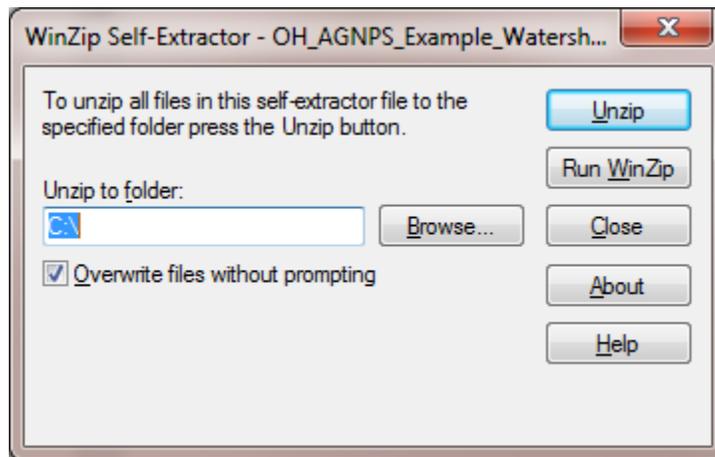
Step 4: Extract the watershed example files.

Locate the self-extracting zip file

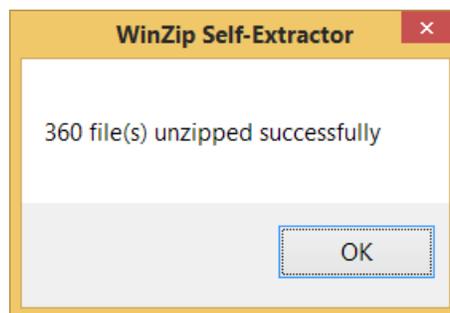
“C:\AGNPS\Example_AGNPS_Watershed_Studies\Example_AGNPS_Watershed_Studies” and double-click on “**OH_AGNPS_Example_Watershed.exe**”. The window as shown below will appear.



After selecting “**OK**”, the following window will appear:



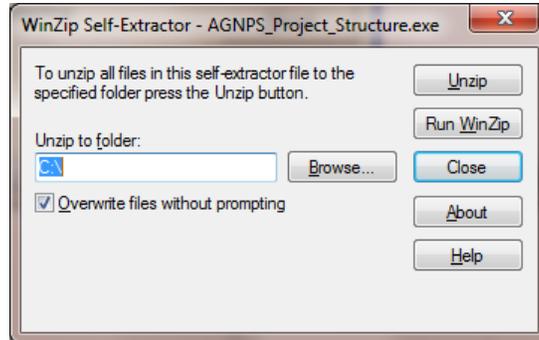
Click “**Unzip**” with the “Unzip to folder” set as the root drive of “C:\” or “D:\”, etc., to extract the example files to the assigned folder where the box will appear below after successful extraction.



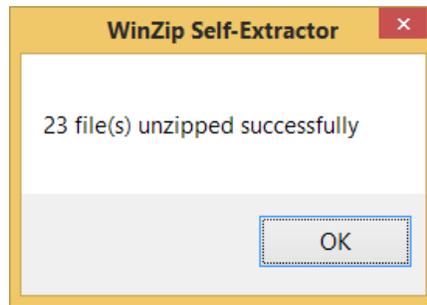
Click “**OK**” to complete the extraction of the example files to the folder “C:\AGNPS_Watershed_Studies\OH_AGNPS_Example_Watershed”.

Step 5: Extract the template containing the recommended folder structure for AGNPS projects.

Locate the self-extracting zip file “C:\AGNPS\Utility\AGNPS_Project_Structure\AGNPS_Project_Structure.exe” and double-click on “AGNPS_Project_Structure.exe”. The box will appear below.



Click “Unzip” to extract the AGNPS project structure files where the box will appear below.



Click “OK” to complete the extraction of the AGNPS watershed project structure files to the folder “C:\AGNPS_Watershed_Studies\AGNPS_Project_Structure”. This file and folder structure is recommended when using the AGNPS components. The folder name ‘AGNPS_Project_Structure’ can be renamed to fit whatever name the user wants to provide to describe their project. For the OH_AGNPS_Example_Watershed example, this folder was renamed to “C:\AGNPS_Watershed_Studies\OH_AGNPS_Example_Watershed”. This folder structure provides a framework for the user to develop databases and organize output information that can be used by the AGNPS components, including AnnAGNPS.

Step 6: Review the document outlining the procedures for utilizing AGNPS GIS components.

The document that provides information on the utilization and development of AGNPS projects and the AGNPS GIS components is located at “C:\AGNPS\Utility\AGNPS_Project_Structure\AGNPS_Project_Setup.pdf”. Information describing the format of the GIS layers used within the components required for successful completion of the procedures is in the file ‘AGNPS_GIS_Database_Development_Overview.pdf.’ Description and user guides for TOPAGNPS are located in the folder ‘C:\AGNPS\DataPrep\Document\TOPAGNPS_Users_Guide’.

Step 7: Review the documents describing the input specifications, user guides, model application and technical information.

The documentation for various components of AGNPS are typically located in the folder labeled “Documents” within the folder structure for that component. Many of the user documents are contained in the folders “C:\AGNPS\DataPrep\Document”, “C:\AGNPS\PLModel\Document”, and “C:\AGNPS\Utility\AGNPS_Project_Structure”. There are additional documents for the weather generator contained in the folder ‘C:\AGNPS\DataPrep\Weather\agGEM\Document’ and others within the folder structure for any other program. The technical documentation describing the science used within AnnAGNPS is located at ‘C:\AGNPS\PLModel\Document\Tech\Technical_Documentation.pdf.’