

# AEM GIS

## Data Creation Procedures Manual



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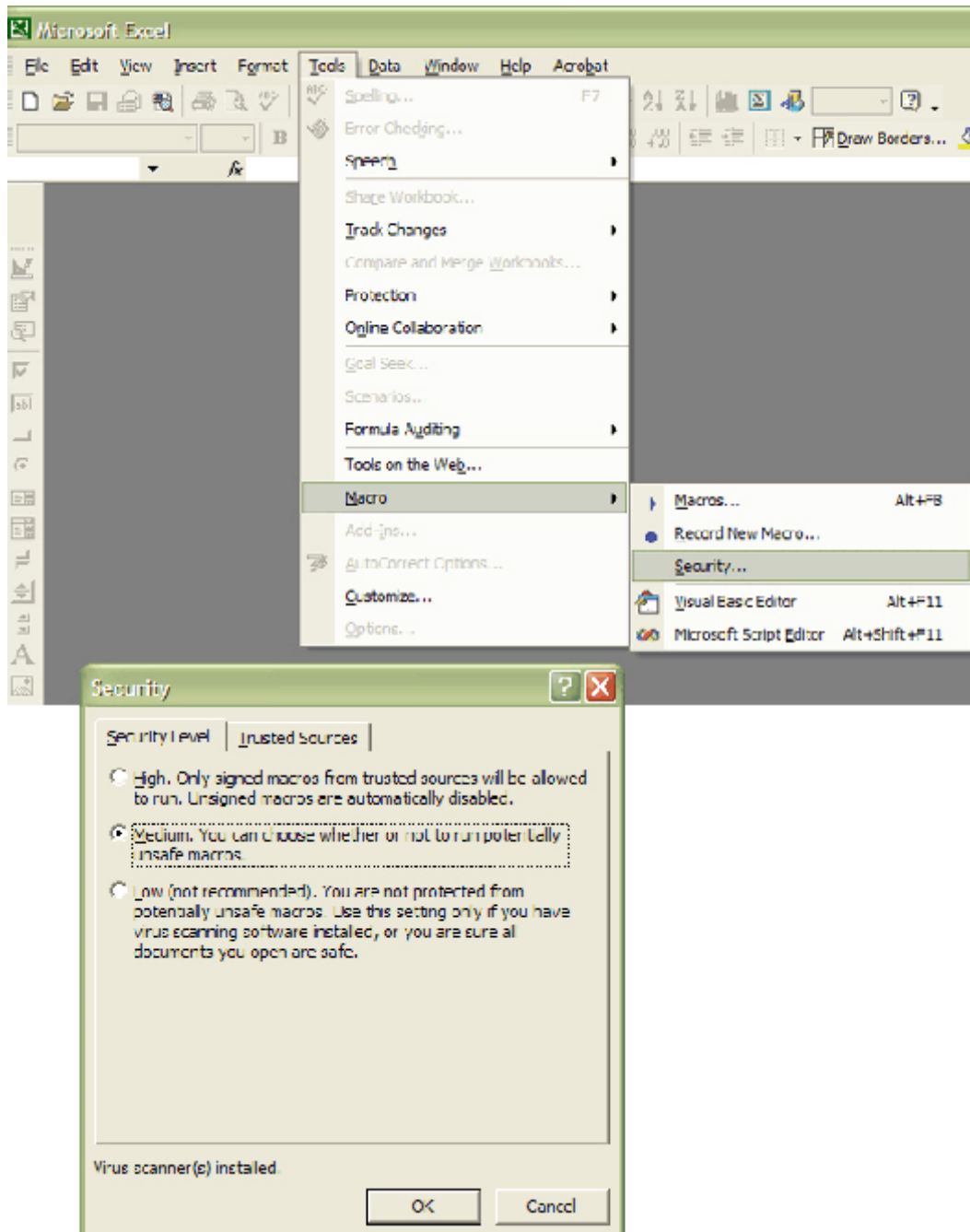
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# IMPORTANT ADDENDUM

You must enable macros in Microsoft Excel in order to run the AEM GIS Data Entry spreadsheet program. If excel macro security is set to HIGH, then the spreadsheet will load but the macros will not run. Follow these steps to set Excel security to medium PRIOR to loading the AEM GIS Data Entry spreadsheet.

Before opening the AEM GIS Data Entry spreadsheet, launch Excel. Open the macro security dialogue box using the menu Tools | Macros | Security. Select the Medium button on the Security Level tab, then press the "OK" button.



# Introduction

The AEM GIS initiative is a program to collect basic AEM data in a geographic information system in order to promote AEM at the state level and to make the AEM data more usable at the County level. The information collected is not tied to an individual farm owner and will only be examined on a watershed summary basis at the state level. In order to participate, each county is being asked to assign farm identification numbers for each farm in the county, locate those farms on maps, and enter some basic Tier I data into a spreadsheet. The data will be compiled by our GIS consultant, and returned to the county as a ready-to-use GIS data layer.

## Farm Identification

### Assigning Farm Identification Numbers

Each farm in the county should be assigned a farm identification number that consists of the three digit county FIPS code (see Appendix A) plus a four digit sequential number. A Farm ID number should be assigned to every farm, whether or not they have participated in AEM Tier I planning. It does not matter the order in which Farm ID numbers are assigned, so long as they are no duplicates. If you wish, you may use the form in Appendix C to keep track of the AEM GIS Farm ID, farm owner, and the USDA/FSA farm number. Make as many copies as you need. This form is for your own internal reference. You do not need to send this form in to the consultant or to State Committee.

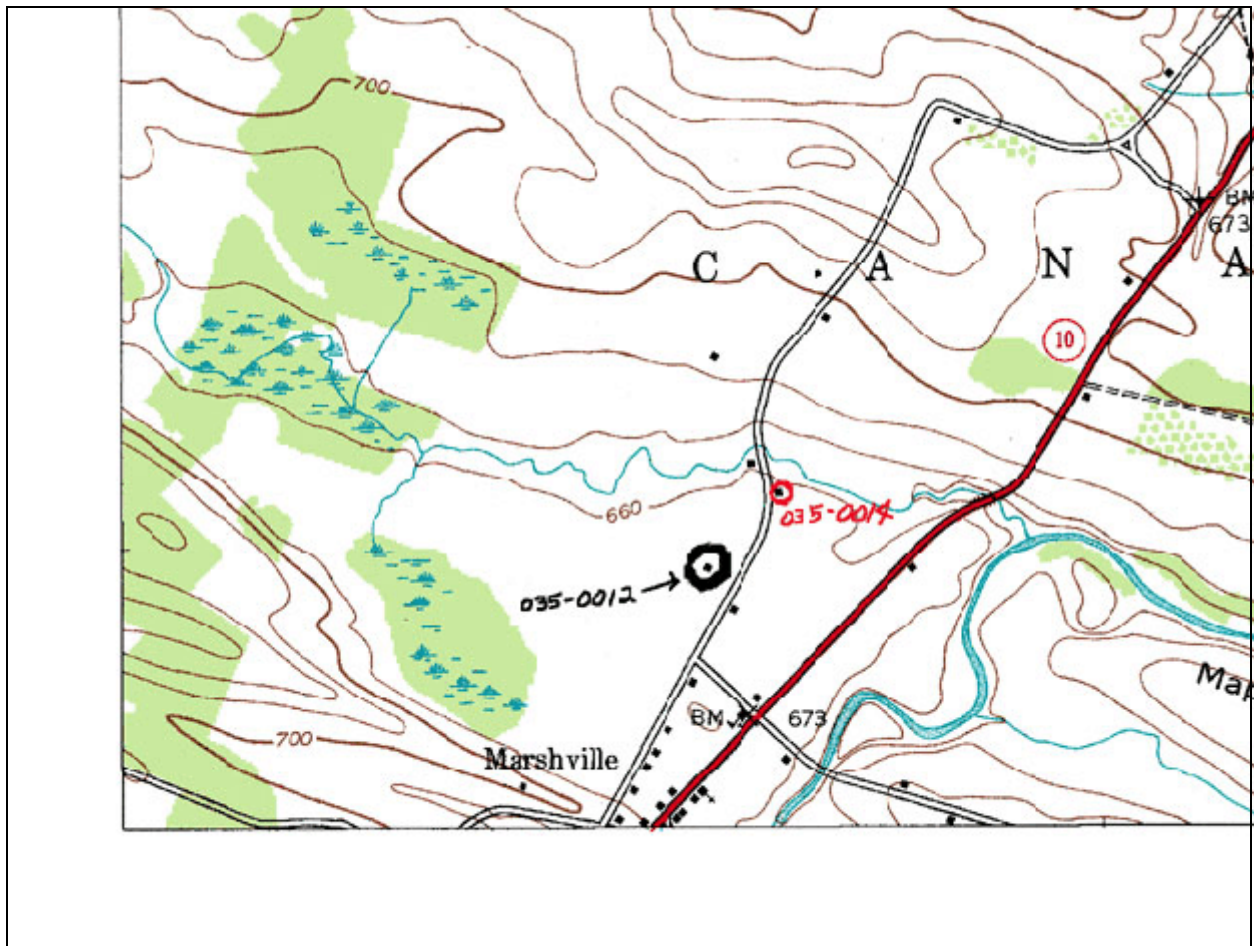
An example Farm ID number for a farm in Genesee County would be 037-0012. Note that leading zeros are included in the Farm ID number.

### Locating Farms on Map

Each county is being asked to provide the location of each farm along with its Farm ID number to our consultant. The simplest and preferred method to accomplish this is to mark the locations on USGS topographic quadrangles. As an alternative IF THE DATA ALREADY EXIST, the county may provide a spreadsheet containing Farm ID and locational (X, Y) coordinates or the county may provide a GIS point layer containing farm ID and location. Please DO NOT use the alternatives unless this work is already done in your county. We can not provide technical support for setting these up, and you will be getting these products back from our consultant as part of this process.

#### **PREFERRED METHOD: DOTS ON A MAP**

The location of each farm in the county needs to be drawn on a USGS topographic quadrangle map, using a small open circle around the homestead building. The Farm ID number should be written legibly next to the circle. You may wish to use a colored pen for clarity. See Figure 1 for an example of how this should look.



**Figure 1** Corner of USGS quadrangle with marked farm locations and farm identification numbers

Once all farms have been located on the map, these maps are to be mailed to our consultant (see Appendix B). If you have a large number of farms on one topographic map, you should send the whole map (maps WILL be returned to you). However, if you have only a few farms on a map, a good photocopy of a map portion is acceptable. You MUST include a map corner in the copy and write the quad name on the copy so that the farm can be located digitally. This photocopy must be made at 100 % (not photo-reduced).

#### FARM LOCATIONS IN SPREADSHEET FORM

If you already have GPS coordinates for your farms, then you may provide a spreadsheet containing the Farm ID Number and the X and Y coordinates for the farms in your county. You must also provide the projection and datum that were used for generating the coordinates (eg., UTM Zone 18 NAD27).

## FARM LOCATIONS IN GIS LAYER

If you already have your farm locations in a GIS layer, you can provide this layer. You must have the Farm ID numbers associated with the farms in the GIS data table. If you have the farm points in a layer without the Farm ID numbers, you may be able to print the layer out on a large plotter and write the numbers next to the points. Please contact the consultant before proceeding with this option.

# Tier I Data Entry

## Software Installation

The Tier I Data Entry software has been provided for you on a floppy disk. The software is an excel spreadsheet that uses VB scripts and macros to create a guided data entry screen. Copy the files on the floppy disk to your computer's hard drive to install the software. Do not run the program off of the floppy disk. You may wish to create a folder on your hard drive entitled AEMGIS to store the software.

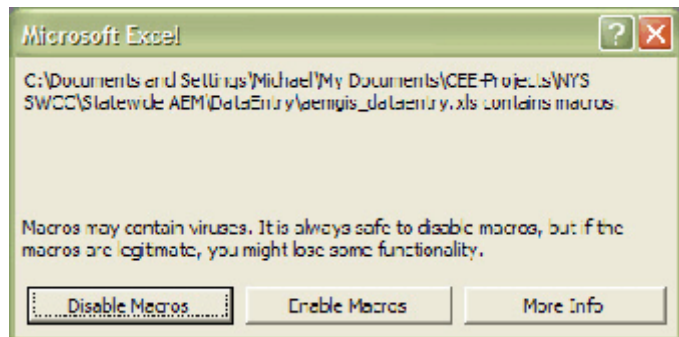
## Using the Software

### GENERAL INSTRUCTIONS

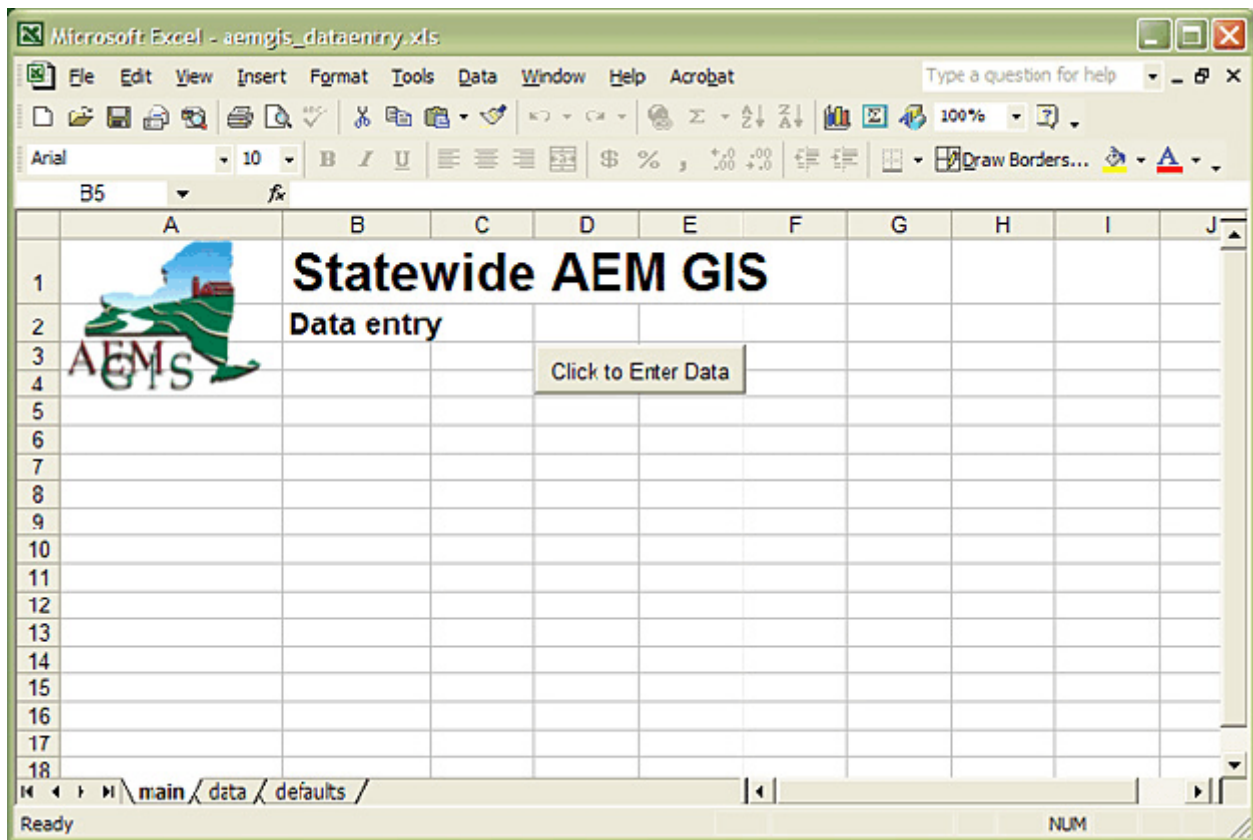
Start the AEM Data Entry spreadsheet by starting MS Excel and opening the file "aemgis\_dataentry.xls" that you have copied to your hard drive. Alternatively, you can use windows explorer to browse to the directory where you copied the spreadsheet, and double click on the spreadsheets name.

The AEM Data Entry spreadsheet contains macros. When you first start the program, a Security Warning dialogue box will pop up (Figure 2). Select the "Enable Macros" button to start the program.

Once you select enable macros, the spreadsheet main screen will come up (Figure 3). A "splash screen" will display for a few seconds, showing the AEM GIS title and contact information. The spreadsheet main screen consists of the data entry sheet ("main") where you can launch the data entry form, the data sheet ("data") where entered data are stored, and the defaults sheet("defaults") where program lookup values are kept.



**Figure 2** Security Warning Dialogue Box



**Figure 3** Main spreadsheet program screen

Click on the button entitled “Click to Enter Data” to begin data entry. The data entry screen will open in front of the spreadsheet (Figure 4). The data entry screen guides you through the entry of farm-specific AEM data using dropdown lists, text and number entry fields, and radio buttons. Fill out the fields for a specific farm and click the “OK” button. The data entry screen checks the data to ensure that you have entered all of the required values when you click the “OK” button, then writes the formatted data to the spreadsheet data tab. Click the “Cancel” to quit data entry. You can view the entered data on the spreadsheet data tab. You can also edit or delete entries.

**IMPORTANT:** If you wish to delete an entire entry, select the entire row by clicking on the row number on left to select, right click within the selected row, and select delete (Figure 5). This will remove the row and move other rows up. **YOU MUST NOT LEAVE A BLANK ROW WITHIN THE SPREADSHEET** between rows of data.

Save the spreadsheet often as you enter your data. The first time you save the spreadsheet, save the file with your county name (“aemgis\_dataentryCounty.xls”) using the excel menu: File | Save As. Once the file has been saved under the new name, use File | Save from the menu to save changes (Figure 6).

**AEM GIS Data Entry**

## Statewide AEM GIS

Tier 1 Data Entry Screen

Select Your County FIPS Code

ALBANY 001  
ALLEGANY 003

OK  
Cancel

**Basic Farm Information**

Farm ID (0000) 001 AEM Level Achieved I Primary Farm Type dairy Animal Units 0

Date Tier 1 Completed II beef

**Land Ownership**

	Tillable Land	Grazed Land	Fields in Hay	Woodland	Total Farm
Owned (ac)	0	0	0	0	0
Rented (ac)	0	0	0	0	0

**Threat Presence**

Manure Spreading:  Yes  No  ?

Manure Storage:  Yes  No  ?

Pesticide Use:  Yes  No  ?

Pesticide Store/Mix:  Yes  No  ?

Presence of Barnyard or Feedlot:  Present  Absent

Presence of defined stream(s) within or adjacent to farm:  Present  Absent

Is there a barnyard or feedlot present?

Figure 4 AEM GIS Data Entry Screen

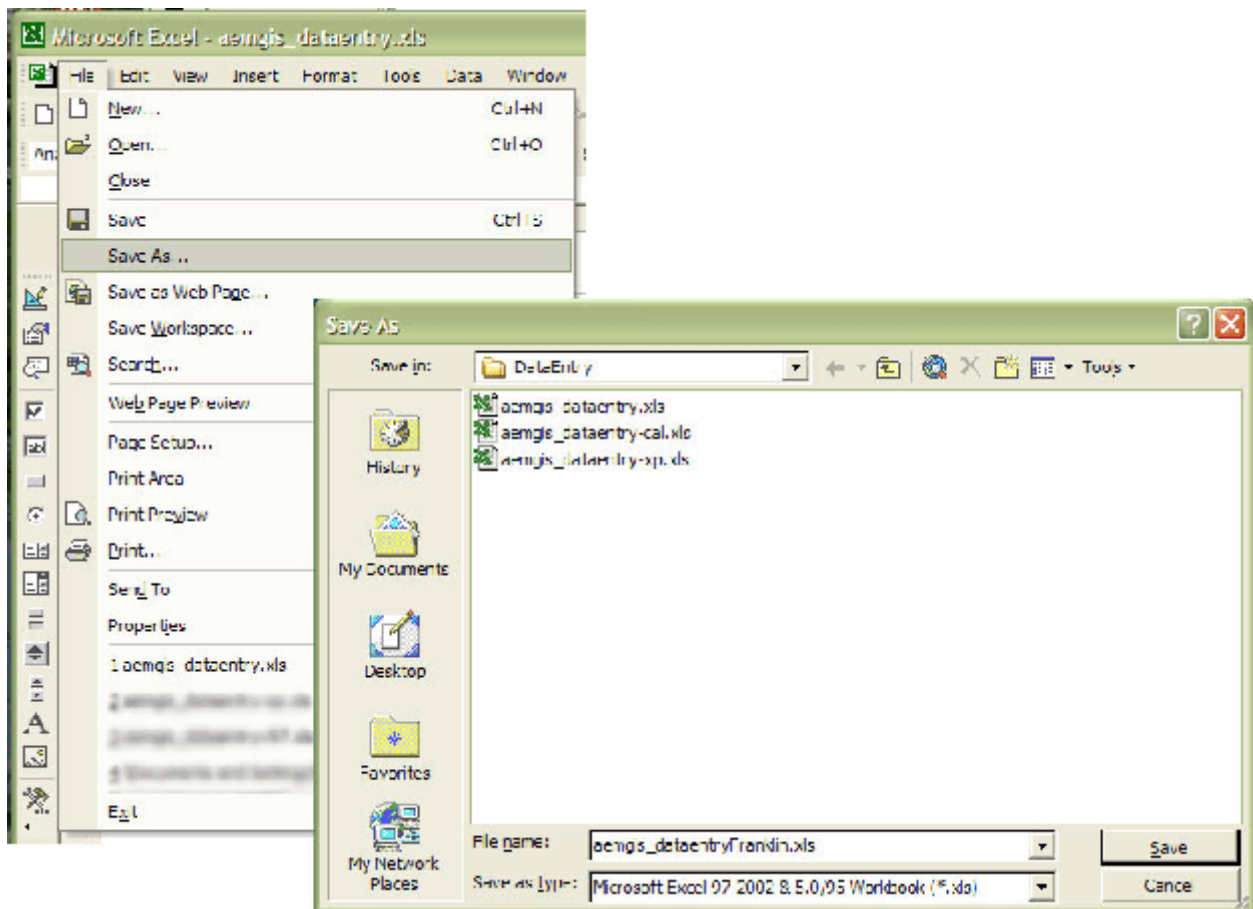
Microsoft Excel - aemgis\_dataentry.xls

File Edit View Insert Format Tools Data Window Help

AS 330016

	A	B	C	D	E	F	G	H	I
1	AEMID	AEMDATE	AEMLEVEL	FARMTYPE	AU	TILLOWN	TILLRENT	GRAZEOWN	GRAZERENT
2	033-0012	2/4/1997	II	dairy	15	100	100	50	50
3	033-0013	2/4/1997	II	dairy	15	100	100	50	50
4	033-0014	2/4/1997	II	dairy	15	100	100	50	50
5	033-0015	2/4/1997	II	dairy	15	100	100	50	50
6	033-0016	2/4/1997	II	dairy	15	100	100	50	50
7	033-0016	2/4/1997	II	dairy	15	100	100	50	50
8	033-0019	2/4/1997	II	dairy	15	100	100	50	50
9	033-0020	2/4/1997	II	dairy	15	100	100	50	50
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25									

Figure 5 To delete record, select entire row, right click and select delete



**Figure 6** Use File | Save As to add your county name to file when you save for the first time

#### FIELD BY FIELD INSTRUCTIONS

We understand that there are several AEM Tier I data sheets in use. Please select the best answers based upon the Tier I data sheets AND your own personal knowledge of the farm operation.

**Select Your County FIPS Code** - Use the dropdown list to select your county FIPS code. Use the scroll buttons on right of list to move up and down the list. Click on your county name to select it. If you click in the list box and type the first letter of your county, you can quickly jump to that portion of the list. Once selected, the FIPS code should automatically be written into the first part of the Farm ID field. The FIPS code will stay set to your county until you cancel out of the entry screen.

**Farm ID** - The county FIPS code will be automatically entered in the first part of this field. Type the four digit farm number in the second part of this field. Include the leading zeros when entering this number.

**Date Tier I Completed** - Type the date Tier I was completed (MM/DD/YY). If you do not know the exact date, put an approximate date in this field.

**AEM Level Achieved** - Select the highest AEM Level achieved for the farm from the dropdown list. Tier IIIA, B, and C are explained below.

Tier IIIA = A plan is developed to provide a solution to a specific environmental problem or concern identified in Tiers 1 and 2. Solutions should not seriously effect the viability of the farm operation.

Tier IIIB = A "Comprehensive Nutrient Management Plan (CNMP)" is developed to address animal waste and nutrient management issues on the farm. This plan often brings the farm into compliance with requirements for the state SPEDES permit required of Concentrated Animal Feeding Operations (CAFO) under the federal Clean Water Act. A Tier 3B plan requires the coordination of farm business objectives with environmental stewardship.

Tier IIIC = A "Whole Farm Plan (WFP)" or Total Resources Management Plan is developed when the farmer desires one, or there is a need to address other priority environmental concerns on the farm beyond Tier 3B (CNMP). A WFP includes the components of Tier 3B (CNMP), as well as additional priority environmental concerns such as pest control, pesticide management, petroleum products storage, fish and wildlife habitat management, and forest management of concern to the farmer, community, or watershed. This plan requires the coordination of farm business objectives with environmental stewardship.

**Primary Farm Type** - Select the primary farm type from the dropdown list.

**Animal Units** - Enter the number of animal units for the farm. One animal unit is equal to 1,000 pounds. A value of zero is valid here.

**Land Ownership** - Enter the amount of acres owned and rented for each of the categories shown. A value of zero is valid here. Note that the total farm acreage is not necessarily the sum of all the other values.

**Manure Spreading** - Select the appropriate answer for whether the farmer spreads manure (yes, no, ? = don't know).

**Manure Storage** - Select the appropriate answer for whether the farmer stores manure in an engineered structure (yes, no, ? = don't know).

**Pesticide Use** - Select the appropriate answer for whether the farmer uses pesticides on the farm (yes, no, ? = don't know). This would include application by owner/operator and/or by custom applicators.

**Pesticide Storage/Mix** - Select the appropriate answer for whether the farmer stores or mixes pesticides on the farm (yes, no, ? = don't know).

**Presence of Barnyard/Feedlot** - Select the appropriate answer for whether a barnyard or feedlot is present on the farm

**Presence of defined stream** - Select the appropriate answer for whether a defined stream is within or adjacent to the farm

## Complete Data Entry

When you have entered all of your data or wish to leave the program and come back later to finish, click the Cancel Button on the Data Entry Form. Save your file using the File | Save command on the excel menu. The first time you save the spreadsheet, save the file with your county name (“aemgis\_dataentryCounty.xls”) using the excel menu: File | Save As. Once the file has been saved under the new name, use File | Save from the menu to save changes (Figure 6).

If you wish to check your data, go to the “data” tab in the AEM GIS spreadsheet and view your data. You can type any corrections directly into this spreadsheet. IMPORTANT: If you wish to delete an entire entry, select the entire row by clicking on the row number on left to select, right click within the selected row, and select delete (Figure 5). This will remove the row and move other rows up. YOU MUST NOT LEAVE A BLANK ROW WITHIN THE SPREADSHEET between rows of data.

Once you are done entering data and the file has been saved under the new name, you may exit Excel. If you wish to add more data later, be sure to use the renamed file you created “aemgis\_dataentryCounty.xls” and not the original file.

## Submission of Completed Data

Please mail the farm location maps to our consultant as soon as you have completed them so they can begin the creation of the GIS farm layer. Mail or email the completed spreadsheet to the consultant as soon as you have finished your data entry for all farms in the county.

## For More Information

For more information, contact our consultant. Our consultant for this project is Michael R. Martin of Cedar Eden Environmental, LLC. His contact information is below. The preferred method of contact is via email. You may also visit the project website for the latest information on this project, answers to frequently asked questions, project guidance, and a contact/question form.

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### Project Website

<http://www.cedareden.com/aemgis>

# Appendix A

## County FIPS Codes

<b>County</b>	<b>FIPS Code</b>	<b>County</b>	<b>FIPS Code</b>
ALBANY	001	NIAGARA	063
ALLEGANY	003	ONEIDA	065
BRONX	005	ONONDAGA	067
BROOME	007	ONTARIO	069
CATTARAUGUS	009	ORANGE	071
CAYUGA	011	ORLEANS	073
CHAUTAUQUA	013	OSWEGO	075
CHEMUNG	015	OTSEGO	077
CHENANGO	017	PUTNAM	079
CLINTON	019	QUEENS	081
COLUMBIA	021	RENSSELAER	083
CORTLAND	023	RICHMOND	085
DELAWARE	025	ROCKLAND	087
DUTCHESS	027	SAINT LAWRENCE	089
ERIE	029	SARATOGA	091
ESSEX	031	SCHENECTADY	093
FRANKLIN	033	SCHOHARIE	095
FULTON	035	SCHUYLER	097
GENESEE	037	SENECA	099
GREENE	039	STEUBEN	101
HAMILTON	041	SUFFOLK	103
HERKIMER	043	SULLIVAN	105
JEFFERSON	045	TIOGA	107
KINGS	047	TOMPKINS	109
LEWIS	049	ULSTER	111
LIVINGSTON	051	WARREN	113
MADISON	053	WASHINGTON	115
MONROE	055	WAYNE	117
MONTGOMERY	057	WESTCHESTER	119
NASSAU	059	WYOMING	121
NEW YORK	061	YATES	123

# Appendix B

## Consultant Contact Information

Our consultant for this project is Michael R. Martin of Cedar Eden Environmental, LLC. His contact information is below. The preferred method of contact is via email.

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Website: <http://www.cedareden.com>

Project Website: <http://www.cedareden.com/aemgis>

# Appendix C

## Farm ID Cross-reference Form

