Soil Conservation and Water Quality Planning
Inventory – Assessment & Planning Procedure

1. Currently there doesn't seem to be any tracking mechanism at the "on the farm" level.
2. What and where are the environmental conditions/concerns (especially those effecting water quality) on each farm?
3. In PA every farm is suppose to have a "compliance" or conservation plan since 1977 and Manure Management Plans for over 2 decades. Most still don't have these plans.
4. NRCS' definition of a conservation plan is "A tool to help landowners accomplish their objectives and protect the natural resources. A record of the landowner decisions." The landowner makes all of the decisions. "**1 – What is a Conservation Plan**"
5. NRCS has a 9-step planning process. "**2 – The Nine Step Conservation Planning Process**"
6. Step – 3 is Inventory the Resources
7. Step – 4 is Analyze the Resource Data (("clearly defining the existing conditions of the resources".
8. Step – 5 is to Formulate Alternatives – what is needed to solve **ALL** identified problem (water quality concerns).
9. The farmer decides which conservation practices he wants to install thus addressing a particular water quality concerns.
10. At the same time he decides that there are additional conservation practices he ***does not want*** to install at this time. Thus deciding that there are certain water quality concerns that he doesn't or is unwilling to address at this time.
11. Currently in the NRCS planning procedure there is no way to track those practices that are needed to address an environmental (water quality) concern and the farmer has decided not to address.
12. A NRCS conservation plan only contains those practices that the farmer has decided to install in the foreseeable future (over the next couple of years).
13. These is no numerical value given to the level of environmental (water quality) concern.
14. Proposing a ranking system of: "**3 – ACRE Evaluation System**"
    - **0** = **Not Applicable or Not Inventoried/Assessed** (at this time)
    - **1** = **Slight water quality issues** (good management according to current guidelines)
    - **2** = **Moderate water quality issues** (fair management provide reasonable water quality protection)
    - **3** = **Serious water quality issues** (inadequate management providing poor protection in many situations – needing addressed within 3 years)
    - **4** = **Critical water quality issues** (critical management conditions posing a high risk of causing water pollution - needing immediate corrective action)
15. We need a procedure to pull all of the above items into one workable program. A decision would need to be made as to how confidential the data collected and evaluations made are to be.
16. Develop a process to rank all operations within a county/state/watershed to determine the level of environmental impact (e.g. slight, moderate, serious or critical) that each operation has on the stream.
17. Each large watershed within a county should be broken down to approximately 3,500 acres and given an identification number using the 14 digit HUC plus 2-3 digits (to indicate these sub-watersheds of approximately 3,000 to no more than 4,000 acres).
18. Conduct an inventory of each sub-watershed to determine the "farms", how many and of which types of operation are located within the sub-watershed utilizing the county tax map as a base. A farm being equal to a FSA identified tract.

19. Based on the results of this inventory and ranking, develop a priority listing of which sub-watersheds should be the first to have the Inventory – Assessment & Planning Tool performed and data collected.
20. Beginning with the highest priority sub-watershed, schedule "one-on-one" interviews with landowners/operators, beginning with operator(s) identified as the highest priority within the sub-watershed (i.e. those having the anticipated highest environmental impact), to begin the inventorying portion of the process.
21. Beginning with "**4a - I&A – 1 Signature Page**" to obtain the landowner/operation signed agreement to participate in this planning process; thus giving the planner permission to continue and to enter the property.
22. Utilizing the "**4b - I&A -2 Interview Work Sheet**" – at a one-on-one meeting with the landowner/ operator gather the necessary pertinent operational data.
23. After gathering the operational information from the farmers, proceed to the next step utilizing "**4c** - **I&A – 3 Total Work Sheet**". Using this documentation tool the planner would walk the whole farm evaluating the headquarters/farmstead area, croplands, pasturelands and miscellaneous lands (woods and wildlife lands).
24. This Total Work Sheet is the hardcopy of what is happening on the land. The planner would inventory the condition on each of these landuses and give a numerical rating/value to some 21 concerns. The data collected from the hardcopy then needs to be entered into the computer where it would be easily retrieved and compiled with the data collected from the other farms and where it can be sorted and filtered by watershed, resource concern, resource value, etc.
25. A computer Excel spreadsheet program was developed. This program was developed "quick and dirty" and would need to be "seriously cleaned up" and have GIS capabilities.
26. ConservationApp **Page #5a - Enter-Edit Parcel** – On this page the property is given identification and location information, then the property ID is exported to a "**5c - Parcel Index**" page.
27. From page ConservationApp **Page #5c - Parcel Index** - the planner selects which parcel/tract they wish to work on.
28. Selecting a parcel will bring up ConservationApp **Page #5b - Parcel Details** - where the rest of the parcel information may be edited, e.g. landowners and/or operator names, addresses and phone numbers).
29. After making any changes to the parcel data, the planner would hit "Update – Go To I/A" at which point the taps for the different landuses come up.
30. Starting with the tap "**5d - Farmstead**" the planner would enter the data and thoughts they documented on the hardcopy of the I&A Worksheet. This gives them an opportunity to expand with their written comments and recommendations.
31. After completing the "Farmstead" section they would precede through tabs for "**5e - Cropland**", **5f - Hay/Pasture**" and "**5g - Woodland**".
32. The final tab entitled "**5h - Miscellaneous**." is the page containing the over-all assessment and final comments. This page contains confirmation on the level of any existing conservation plans. And finally signatures of all receiving a copy of the completed I&A Worksheet.
33. A program has been developed that takes the data in the "I&A Total Worksheet" (which isn't too printer friendly) and exports it to a word document that can be spell checked and formatted thusly creating a much neater looking document. At which point the word document can be saved to an individual file.

34. All of the values for the approximately 21 conservation concerns (13 @ farmstead; 1 @ cropland; 4 @ pasture and 3 @ woodland/wildlife) are exported to one large database "**6 - Resource Concern Values**" (Excel spreadsheet). This data can then be sorted and/or filtered by watershed and any of the individual resource concerns. This way you would know where the environmental problems may be.
35. A separate (stand alone) worksheet was developed to enter RUSLE data "**7c**". This data (file) is then saved to the individual "Plan" folder contained on the computer hard drive.
36. A separate (stand alone) worksheet "**7b – Progress - Recommended Conservation Practice & Record of Landowner's/Operator's Decisions**" was developed to enter recommended, planned and installed conservation practices. If a recommended practice doesn't show as being planned then the farmer has "decided" not to install the practice and thusly address the environmental concern. But we can track what is needed, what is planned, what is not being addressed and finally what is actually being installed. This data is saved to the individual "Plan" folder contained on the computer hard drive under the title "Progress" sheet. The original worksheet contains what in the way of conservation management the farmer is currently doing; it is expected that that would be maintained. Under current conservation planning procedures the plans only contain what the farmer is doing or has agreed to implement. There is no way to track what needs to be installed or changes that may be needed in the farm operation. A practice code can be set up to indicate an estimated cost to install the different conservation practices. This would be useful for the farmer and for the planner to assist in finding cost-share funds.
37. All farms should have at least triennial follow-up to confirm that nothing has changed and that conservation practices or conditions originally existing are being maintained.
38. These individual "**7b - Progress**" sheets are then exported to one large database "**7c - Merged Progress Sheet"** (Excel spreadsheet). This large database can be sorted and/or filtered once again by NRCS practice code and date of planned installation. In this manner the planner can sort and see what is proposed to be installed in the fall of 2009. With the code for the estimated cost of installation, planner could determine what in the way of cost-share funding may be needed for a particular period of time. With a modification the sub-watershed could be exported with each tract so planners could calculate what may be needed in the way of cost-shares funds on a sub-watershed basis.
39. "**8 - Conservation Plan Maps**" need to be developed to go along with the plan document. It would be hoped that digitized, true-color aerial photography would be available for this purpose. It is not proposed that all of the inventory and assessment data would be "tied into" these maps. At a minimum a traceable colored dot should be placed on a digitized map so it could be shown graphically which properties have major water quality issues, which have moderate water quality issue and which have slight or no water quality issues.
40. This procedure is no more time consuming then the current conservation planning effort. But the final product is very much improved being able to account for individual farms impact on water quality. The farmer would better understand what additional conservation practices he needs to implement in order to address water quality concerns on his property.
41. The working hardcopy of the Inventory & Assessment & Plan Worksheet is 8 pages of data. It has some redundancy (e.g. between the Headquarters and Cropland sections when it comes to nutrient management planning). And there are some questions addressing the actual resources and not needed to address the water quality (e.g. Woodland – type and acres of trees).
42. This is a very workable procedure to document what agriculture is doing or needs to do to in order to protect water quality and the Chesapeake Bay.