# Questions from December 08 webcast on the "Manure Management Planner" software.

All questions were answered on Jan. 8, 2009 by Phil Hess. You can contact Phil at: pjhess (at) purdue.edu

**I have used MMP, and in checking over the tables, it appears some calculations are wrong, and there is sometimes inconsistency from one table to another.  If I continue to use it, does NRCS or Purdue guarantee the resulting tables are accurate and consistent, and if the results get challenged, does NRCS and /or Purdue provide support to the challenge??**
*Please don't sit on this information! If you think you've found a bug in MMP, please send us the necessary information so we can reproduce it here. Normally that means sending us a dummy plan file that we can open in MMP. If we don't know about a bug, it probably won't get fixed!  (See the email address above)*

*If you think there are inconsistencies in the CNMP tables, please let us know about this too. Although both NRCS and EPA have reviewed these tables, they can probably still be improved, so let know what you think is inconsistent.*

*Almost no software is distributed with the sort of guarantee that you describe. For example, Microsoft does not even guarantee that the results of Excel are mathematically correct.*

*If you have questions for NRCS about this, please contact them directly. We can't speak for them.*

**Do GIS base layers include depth to groundwater?**
*The soil layer that the Missouri clipper Web app clips comes from the USDA-NRCS Soil Data Mart, where all digitized soil survey data are housed, both spatial and attribute data. You can view the attributes included in the soil layer in MapWindow. See "Viewing additional soils data" in the MMP Tools help: http://www.agry.purdue.edu/mmp/mapwindow/mwMmpTools.html*

*It doesn't appear as though depth to groundwater is one of the soil layer attributes. However, we can include high water table data for each soil in MMP's soils file. This also comes from Soil Data Mart and is defined as "distance from top of soil to upper boundary of moisture layer."*

**Mulitple areas can be defined besides farm fields next to main barn?**
*You can draw in any "feature" that you want, so you could probably draw in these areas on a polygon feature layer in MapWindow GIS.*

**What to do if we want to question RUSLE2 input factors such as slope length, etc?**
*I'm not certain how to answer this question. Perhaps you should refer your questions to the RUSLE2 team: http://fargo.nserl.purdue.edu/rusle2_dataweb/RUSLE2_Index.htm*

**Do GIS layers show impaired waterbodies on state 303(d) list?**
*If you have that layer, you can add it to any GIS. I don't see that as a layer that is available nationally. See the available layers that USGS provides:*
*http://seamless.usgs.gov/website/seamless/viewer.htm*

**Are CAFO setbacks specific for each state?**
*Yes. You can review the national setbacks database for your state here:*
*http://nmplanner.missouri.edu/software/setbacks.asp*

**How are field boundaries selected or created?**
*You can either draw or import field boundaries, just like with any GIS. Please refer to the MapWindow help for more information about how to do this:*
*http://www.agry.purdue.edu/mmp/mapwindow/mwMmpTools.html*

**Will slope dictate how many extra feet will be added and to what degree?**
*Added to what? I will need more information to answer this question.*

**Can you import shapefiles for your field boundaries?  If so, can you import FSA boundaries and what metadata will be carried over?**
*Yes. If you import a shapefile from a CLU layer, MMP Tools will look for the FARMNBR, TRACTNBR, CLUNBR and COMMENTS columns and import those data if present.*

**Is NRCS criteria used to select predominant soil type**
*What NRCS criteria are you referring to? Please send us a source for this. (see email address at the top of the document)*

*A field's predominant soil type is currently determined by the GIS that you use. With a field that encompasses parts of more than one soil map unit polygon, most GIS front-ends for MMP just select the soil that makes up the most area of the field. Most soil data is actually at the component level. With soil map units that have more than one component, the GIS normally just picks the component with the greatest percentage of the map unit since no information about the components is digitized. In MMP you can select any soil that you want if this is not the soil that you want to use. Also, you can subdivide your fields by soil if you need to, for example if the crop fertilizer recommendation or phosphorus index result will differ significantly depending on what soil you select for the field. Please refer to section 2.6.1 in MMP's Getting Started guide for more information about subdividing fields.*

**Would a TSP have to purchase GIS software to run this application or does this run independently from purchased software?**
*MapWindow GIS is completely free and open source and is included in our GIS installer. The MMP Tools plugin that we include with MapWindow GIS is also free.*


**Can you calculate the amount of water runoff from these fields based on rainfall?**
*I'm afraid that's beyond the scope of this project, which is software for developing nutrient management plans.*


**What is the year of these aerials?**
*You would need to check the source with NRCS, since they're the ones who provide the aerial imagery that the Missouri clipper Web app clips. You might check with Missouri to see if they can provide this information in some way.*

*You can also obtain aerial imagery from the USGS:*
*http://seamless.usgs.gov/website/seamless/viewer.htm*

*If you clip the NAIP (National Agriculture Imagery Program) imagery from this site, there's a Metadata.xml file included in the downloaded .zip that has several dates that might be useful to you.*


**How does it determine the storage distance? Does it take into account water crossings or topography?**
*You determine the storage distance yourself by drawing the driving route between field and manure storage.*


**Can drain tiles be mapped?**
*Yes. Just add a feature layer. To locate a tile inlet or tile line accurately on the map, you might want to use GPS for this, then convert it to a shapefile and import the shapefile into a feature layer in MapWindow.*


**Does it take into account AU's manure or fertilizer also previously or currently aplied to fields?**
*Not sure what the context of your question is. In general, MMP accounts for all planned nutrients applied during a given crop year in its nutrient balance report and also when determining a nutrient-based manure application rate. For nutrients applied in previous years, these are shown as carryover amounts for P and K; with manure applied in previous years, if the state accounts for residual N from organic matter being carried over into the current year, then MMP accounts for that too. Note that not all states bother with this since it's normally a fairly small amount of N.*

**I thought Rick [Swenson] said that the P risk assessment was embedded into MMP for each state. However, it looks like there is simply a box to enter your P value and the user will still have to find the state's guidance on the P numbers, complete it outside of MMP and then enter the number? Is this what is meant by "embedded". Then is the P risk value used to determine nutrient recommendations based on each states NRCS nutrient management 590 standard?**
*As indicated in MMP's help, the P Index column on the Assessment panel is only to be used if you're not using the built-in P.I. that we've programmed. Note that we don't have the P.I. programmed yet for all states that MMP supports. What state(s) are you working in?*

*In MMP's rate calculator, there's a choice for "Maximum allowable rate". As indicated in the MMP help, "Select this item if you want MMP to use your state's phosphorus risk assessment tool to determine automatically the highest rate that is acceptable to the tool. This rate will never be higher than the N-based rate."*

**Once the initial nutrient management planning work is complete, are there capabilities within MMP to use this as a continuous nutrient accounting tool? For example, is the tool capable of tracking manure applications by field by year to account for organic nutrient buildup and mineralization over time?**
*MMP is a planning tool, not a recordkeeping tool. You can try out the free WinMax crop recordkeeping program if you want. It has some of the basic recordkeeping capabilities needed for nutrient management. Note that we do not have any funding at this time for developing recordkeeping software. http://www.agry.purdue.edu/max/*

**Along those same lines can the software track a carbon balance if famers become eligible to sell carbon credits?**
*I'm afraid that's beyond the scope of the MMP project!*

**For pastures, does MMP track/calculate manure apply rates for time grazing?**
*Not sure if I understand this question. Please expand on it a bit.*

**How do you deal with animals on pasture? Is that information accounted for when looking at field fertilizer requirements?**
*This would be accounted for in the Extension fertilizer recommendation for the type of pasture. Usually this comes down to the assumptions made with the Extension fertilizer recommendations. For example, is most of the manure deposited on a small portion of the pasture (for example, under shade trees)? If so, the assumption may be that the rest of the field is grazed similarly to mechanical harvesting and so the fertilizer recommendation is for the larger part of the field and thus similar to a hay recommendation. Or is the manure deposited uniformly across the pasture? If so, some of the expected recycled nutrients may be taken into account by the fertilizer recommendation. Check with your Extension fertilizer specialist for more information.*

*Note that manure deposited by grazing animals is almost never a net addition of nutrients to the field.*

**How do would you account for manure pond nutrient concentrations that vary significantly with time?**
If you have significant differences in nutrient concentration depending on the time of year and you will making applications during more than one season, then you would probably want to define that storage more than once in MMP in order to enter more than one manure analysis.

**How do you account for varied rainfall and water runoff that varies during the year - basically how is the water budget handled?**
You can use an engineering program like AWM to estimate a water budget for external storages. That's beyond the scope of MMP.

**Are legume and manure credits from prior years calculated by MMP?**
Yes, within the plan. If you want to take credits for historical activities before the start of the plan, you can reduce the first year fertilizer recommendations by the amount of credits. Please refer to MMP's Getting Started guide for more information on how and when to do this. Note that this assumes the producer has accurate historical records!

**Did I miss the input for your soils test, Ph or salts information?**
See the Soil Test panel.

**Does Maximum allowable rate reflect N limits also?**
Yes. See MMP's help. Calculated rates are always limited to the target crop's current year N limit.

**Can a "custom" report format--template--be developed and saved for future use?**
Yes. Experienced planners often create customized versions of MMP's national templates. MMP's templates are just Microsoft Word template files (.dot), so you can add whatever you need with Word to your customized .dot files. What MMP's templates really provide are the basic structure that NRCS wants to see, as well as automatic generation of data tables that would be extremely tedious to construct manually. If you have additional things that you find yourself adding to every plan document that you develop, these would be good candidates for adding to a customized template file.

**What if I type everything into the report .doc and then realize I need to add a field.  Will I have retype everything or will MMP simply update the tables in the existing report?**
*When you generate a plan document that already exists, MMP detects this and "updates" the document rather than creating a new document. This means that it replaces the contents of the tables, but the additional text and other things that you entered are not affected. It does this by looking for hidden "tags" that surround the tables. You can reveal these tags in Word by pressing Alt+F9 to turn them on and Alt+F9 to turn them off again. As long as you don't insert anything between a pair of tags, updating a document by MMP won't touch what you've inserted. Make sure you don't delete or edit the tags or MMP may not be able to update the document properly. For more information, see the technical documentation on MMP's Web site.*

**With maps inserted into CNMP how large will the file become in MB?**
*Depends entirely on how big the maps are. Word will save anything that you insert as part of the .doc file, so if what you insert is large, the resulting .doc file will be large too.*

**Does the legend for the map transfer with the map?**
*With MapWindow GIS, the legend is separate from the map itself. This allows you to position it anywhere in relation to the map that you like.*

**How does MMP handle exporting manure to an internal compost operation and then account for shrinkage in the compost when it is exported to farmers?  I've tried this before and the compost area is always overloaded because less goes out than comes in.**
*Remember that MMP doesn't really deal with the manure once it has been exported. Exporting is really just an "accounting" trick to account for what happens to all manure generated on the originating operation.*

**Can P soil test level still be used to assess P movement risk (i.e. instead of P index)**
*Not sure if I understand the question. In general, MMP uses whatever method of assessing risk of P loss that the state requires. In most states, this is the phosphorus index that the state developed.*

**As a supplement to the application calendars, does (or can) the CNMP output include a section that specifies state-specific land application timing restrictions (e.g., no spreading on frozen or saturated ground)?**
*If the state has provided us with these restrictions, the planning calendar should indicate the months when the restrictions apply.*

**Does the program allow for potential changes in crop rotations?**
*MMP is used to develop a plan. Changes in crop rotation would be handled when the plan is implemented.*

**Where in the CNMP output are residual nitrogen values shown?**
*In table 6.8, Field Nutrient Balance, any residual N credits are flagged. The actual amount of N credit is not shown to avoid making this table too complicated, but you can easily determine what it is by subtracting the indicated amount of N applied from the indicated N fertilizer recommendation.*

**How do you account for residual nutrients in the soi?**
*By soil testing. Please refer to your state's Extension soil testing and fertilizer recommendation publications.*

**This tool prepares an initial plan. Does it also help calculate an application rate prior to application?**
*MMP is software for strategic planning. What you're asking about is what we call "tactical planning", in which you base your rate on known conditions rather than on planned or assumed conditions. There's a big need for that kind of software, but we don't have any funding to develop it at this point.*

**What about credits for legumes and manure from prior years?**
*See answer above for similar question.*

**Is it possible to use the program in projects outside US?**
*Currently MMP can only be used in 34 U.S. states and the province of Alberta in Canada. While we've received a number of inquiries over the years from other countries and Canadian provinces, the amount of preparation to support other regions is considerable and some entity in that country or province would need to fund the effort. Note that ideally the region would have well-developed crop fertilizer recommendations and probably a soil survey in order for MMP to work well there.*

*MapWindow GIS on its own can be used anywhere in the world and it's also possible that the MMP Tools plug-in we developed could be adapted for other regions.*

*If you're interested in pursuing any of this, please contact us.*

**Why can't MMP show how the calculations for the various tables are made?**?
*The CNMP document that MMP generates cites the original sources for a state's crop fertilizer recommendations, how manure nitrogen availability is determined, and the state phosphorus risk assessment procedure. Those are the things that we've programmed in MMP. There really isn't any in-between step. If you have specific questions or if you don't understand the source documents, please contact us.*

**How is a drought or other climactic changes handled?**
*MMP only develops a plan of what is expected to happen.*

**Are there states where NRCS takes TSP-developed MMP's and plugs into toolkit and protracts?**
*I need some additional explanation to answer this question.*